Exploring key factors of medical tourism and its relation with tourism attraction and re-visit intention

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Abstract: Tourism is a globalized industry. Health, wellness and medical tourism are recognized as one of the most developed and thriving in the tourism industry. The purpose of this study is to explore the key factors of medical tourism and discuss its relation with tourism attraction and re-visit intention. The results reveal that: (1) The key criteria are doctor’s expertise and reputation, health evaluation, international certified doctors and staffs, the safety of medication quality, quality of medical treatment, high healthcare quality, service orientation of medical staff, advanced medical treatment, availability of medications, on-site pharmacy and prescription assistance, waiting time for medical treatment from time to first contact to real treatment, quality of required treatment, and hospital contact information. (2) The key criteria have a significant positive influence on tourism attraction and re-visit intention. (3) Tourism attraction has no influence on re-visit intention.

Keywords: Medical tourism; tourism attraction; re-visit intention

1. Introduction

Tourism has become a globalized industry and is an economic backbone (Hallmann et al., 2012). It is also the most important market in the service industry (Mir & Tajzadeh-Namin, 2014). UNWTO Tourism Highlights 2015 Edition by the United Nations World Tourism Organization (UNWTO) pointed out that tourism had experienced continuous expansion and diversification, which
makes it the largest and fastest-growing industry. It has become the key driver for creating job opportunities, start-ups, foreign exchange earnings and building infrastructures. The number of international tourists increased from 25 million in 1950 to 1.33 billion in 2014. It is expected to increase 3.3% annually from 2010 to 2030. The number of tourists may reach 1.8 billion in 2030. The international tourists’ expense in tour destinations increased from 2 billion USD in 1950 to 1.245 trillion in 2014, which was 3.7% more than in 2013.

Health, wellness and medical tourism are recognized as one of the most developed and thriving sectors of today’s tourism industry that has increased its activities worldwide (Quintela et al., 2016). It is also deemed as the sector with the fastest growing speed (Yeoh et al., 2013) and the most important type in tourism (Connell, 2013). Medical tourism is also called health tourism or medical travel (Hopkins et al., 2010; Sarantopoulos et al., 2014), and medical treatment combined with sightseeing activities (C. H. Lin et al., 2010). The development of medical tourism promotes the exchange and interaction of knowledge worldwide, which propels relevant industries in the medical and tourism sectors as well as the advancement of society. Medical tourism increases gross national income and foreign exchange earnings. It is also a very important channel to improve service, create employment, balance international payments and thrive on tourism (Liu & Zhang, 2016).

The Global Wellness Tourism Economy 2013 Edition jointly published by the Global Spa and Wellness Summit (GSWS) and Stanford Research Institute (SRI) shows that in 2013 the scale of global medical tourism was around 436 billion USD, which accounted for 14% in the entire world tourism (199IT Data Center, 2014). It was expected that in 2017 the earning of global medical income would reach 678 USD.5 billion, which would account for 16% of the revenue of world tourism, and the Compound Annual Growth Rate (CAGR) would reach 9.9% (199IT Data Center, 2015). The number of global medical tourists grew from 20 million in 2006 to 40 million in 2012, and each medical tourist contributed an average of around 1 USD,000 earnings (199IT Data Center, 2014). Medical tourism provides lower costs, but high quality and immediate treatment to the public and also the benefits from exotic tour and shopping. Moreover, for those who cannot afford higher medical costs in their home countries, the international medical tour can improve their life quality, or even extend their life span (Gao & Liu, 2010).

The cause for this study is due to most other studies generally focusing on international trends and globalization (Constantin, 2015; Kim et al., 2013), affecting factors and evaluating methods (Liu & Zhang, 2016; Shan & Yao, 2016), conceptual framework (Quintela et al., 2016), policy analysis (Liu, 2012; Pan & Loi, 2013; Pacock & Phua, 2011; Rikke & Despina, 2015; Zhang, 2012), feasibility analysis (Haddadzadeh et al., 2011; J. R. Wang et al., 2015), cost analysis (McKinnon & Bhatt, 2010), safety analysis (Turner, 2012), public hygiene analysis (Johnston et al., 2011), marketing analysis (Manhas & Ramjit, 2015), business strategies (Chen et al., 2015; K. S. Chang et al., 2013; Wu & Chen, 2013), and motives of participation and satisfaction (Wu et al., 2015; Zhang et al., 2013). It can be known from the fore-stated references that there is little research discussing the key factors that affect consumers’ willingness to participate in medical tourism. For the medical tourism industry, the exploration of key factors is critical for sustainable development. This study found few medical tourism studies integrating tourism attraction and re-visit intention. Most of all, we think that these three dimensions are the most critical factors to formulate sustainability strategies, and this study explores this issue in-depth.

2. Literature review

2.1. Key criteria of medical tourism and tourism attraction

This study would like to explore the key criteria of medical tourism have a significant positive influence on tourism attraction or not. However, few studies have studied the relation between them. Only some studies pointed out medical tourism can attract tourists to a destination to get the medical service and enjoy the tour (Li et al., 2011; J. R. Wang et al., 2015; C. S. Wang et al.,
It also can add to the attraction if the following can be done: to spend more on promotion and marketing (Ayoubian et al., 2013), to provide the high-quality guarantee, advanced medical treatment, and health service with competitive cost (Alberti et al., 2014), to set up proper marketing mix strategy (Al-Azzam, 2016), to create good medical standards (Izad et al., 2013) or have comprehensive health-care service and equipment (Goodrich, 1993). On the other hand, this study defines medical tourism as, “Based on one’s needs, such as plastic surgery or health check, one chooses to go to a destination to receive medical service. Meanwhile, during the treatment, one can also enjoy the local sceneries and customs” via Iulia-Maria (2015), Chuang et al. (2014), Sarantopoulos et al. (2014), Sheppard et al. (2014), Menville et al. (2011), Smith et al. (2011), and Hopkins et al. (2010), and tourism attraction as, “The intangible power to attract tourists to go to a destination for medical service and leisure activities” via Chu and Hsu (2015), Fadda and Sørensen (2017), Lin and Huang (2016), Y. L. Liu et al. (2012), and C. C. Yang et al. (2015). This study infers that if the key criteria of medical tourism of a destination perform better, such as treatment techniques or service quality, the target destination will attract more tourists. For example, Thailand is not only popular with many tourist attractions, but also famous for its surgery techniques, such as heart transplant surgery or sex reassignment surgery. Therefore, the Hypothesis 1 of this study is:

H1: Key criteria of medical tourism have significant positive influence on tourism attraction.

2.2. Key criteria of medical tourism and re-visit intention

This study focuses on the key criteria of medical tourism performance in better detail than previous studies previously mentioned, such as treatment techniques or service quality that will increase the tourists’ re-visit intention. In a time, this study defines re-visit intention as, “The level of intention of tourists’ willingness to revisit that destination for a medical tour” via Che et al. (2015), DiPietro and Campbell (2014), Weaver and Lawton (2011), Lee and Back (2008), Cole and Scott (2004), Kozak (2001), Baker and Crompton (2000), and Wongkit and McKercher (2016) indicated that, among various surgeries in Thailand, medical quality plays a very important role. Lai et al. (2016) also revealed that comprehensive service quality and approachable service would increase tourists’ re-visit intention. Past studies also showed that service quality would positively affect the re-visit intention (C. C. Chang et al., 2016; Han et al., 2016; Huang et al., 2016; Huang & Ku, 2013; Kuo & Hsiao, 2014; Orel & Kara, 2014; C. T. Lin et al., 2013; Ranjbarian & Pool, 2015; A. Y. S. Lin et al., 2015; C. T. Yang et al., 2013; Yee & Faziharudean, 2010), while some studies concluded that they have no significant relation (Liang & Tsai, 2008). The perspective of this study also inclines toward a positive relationship. For instance, South Korea is famous for its cosmetic surgeries. Many consumers would visit South Korea again due to its outstanding cosmetic surgery techniques. Thus, the Hypothesis 2 of this study is:

H2: Key criteria of medical tourism have significant positive influence on re-visit intention.

2.3. Tourism attraction and re-visit intention

Past studies showed that tourism attraction has had a significant positive influence on re-visit intention (Lin & Ku, 2009; Y. L. Liu et al., 2012; Liu & Hsiao, 2012; Liu & Lo, 2010; Kuo & Wu, 2014; Teller & Alexander, 2014; Vigolo, 2015; C. Y. Chang et al., 2015). Based on these findings, tourism attraction is an important predictable variable for re-visit intention. However, some studies showed that they have no significant influence on re-visit intention (Kuo et al., 2010; W. G. Yang et al., 2015). The perspective of this study also inclines toward a positive relationship. For example, Taiwan has not only tourism attraction, but excellent techniques for medical tourism. They will enhance the tourists’ re-visit intention. Thus, the Hypothesis 3 of this study is:
H3: Tourism attraction has significant positive influence on re-visit intention.

The research framework is shown in Figure 1.

3. Construct the evaluation framework of medical tourism

This study constructs the preliminary framework via literature review, and the aspects, the criteria, and the literature sources are shown in Appendix 1. After the preliminary framework was built, two experts were interviewed, and their background is shown in Table 1. The main purpose of interviewing these experts is for revising the preliminary framework, such as adding, removing, keeping or combining information. (If the interview details are required, please contact the correspondent author.) General Manager Yu has been working in this business for 3 years, and his educational background is tourism. He said in the interview that he had taken consumers for medical tourism to many destinations covering entire Asia and was with considerable experience. The consumer expert in this interview already had three plastic surgeries and had a certain level of understanding and experience of the medical tour. Therefore, their opinions are representory. Later, the second expert interview was held to ask the two experts to score the importance of each criterion for the medical tour. The scale ranges from 0 to 100. Zero means "not important at all", and 100 is "extremely important". (If details are required, please contact the correspondent author). Then, after discussing with the two experts, it was decided that only the criterion scores ≥87.5 would be in the final framework, as shown in Table 2. After the final framework constructed, this study invited the two experts to evaluate the inter-influence level among criteria – 0 means "no influence at all", and 100 is "extremely strong influence". After retrieving the criteria inter-influence evaluation from the experts, the study ran the average calculation and made a relation graph covering the scores ≥80, ≥82.5 and ≥85. After discussing with the experts, the study set the influencing threshold to ≥85. It indicates that if the inter-influence scores of criteria are ≥85, they are relevant or vice versa. The result is as demonstrated in Table 3.

4. Methodology and research design

This study adopted ANP to analyze the weights and the rankings of aspects/criteria to learn the key aspects/criteria, and SEM to test the hypotheses.

| Attribute     | Position   | Years of practice & Times of joining medical tour | Education  |
|---------------|------------|--------------------------------------------------|------------|
| Practical     | General Manager | 3 Years                                        | Master     |
| Consumer      | 3 Times                                              | Bachelor   |
| Aspect                          | Criteria                                                                 |
|--------------------------------|--------------------------------------------------------------------------|
| Hospital information and       | Hospital contact information (e.g., address, phone and email) (A1)       |
| facilities                     | Hospital introduction (e.g., mission or technique) (A2)                  |
| (A)                            | Related information and service of Getting to the hospital (e.g., Entry visa assistance) (A3) |
|                                | On-site pharmacy and prescription assistance (A4)                        |
|                                | Source of obtaining the related information about medical tourism (e.g., internet or recommendation from others) (A5) |
| Admission and medical services  | Billing information (B1)                                                 |
| (B)                            | Appointment booking (B2)                                                 |
|                                | Availability of medications (B3)                                         |
|                                | Safety of medication quality (B4)                                        |
|                                | Quality of medical treatment (B5)                                        |
|                                | Service orientation of medical staff (B6)                                |
|                                | Waiting time for medical treatment from time to first contact to real treatment (B7) |
|                                | Required treatment available here (B8)                                   |
|                                | Quality of required treatment (B9)                                       |
|                                | Health evaluation (B10)                                                  |
|                                | High healthcare quality (e.g., ISO, NCQA, ESQA) (B11)                    |
| Interactive online services    | Interactive tools for online enquiries (C1)                              |
| (C)                            | Pre-admission consultations at a distance (online or by phone) (C2)       |
|                                | Medical records available via the Internet (C3)                          |
| External Activities            | Referral services for international physicians (via teleconference, online enquiries or phone) (D1) |
| (D)                            | Links to relevant agencies/tourist attractions (D2)                      |
| Medical technique and level    | Number of hospital and clinic beds (E1)                                  |
| (E)                            | Accreditation by JCI (Joint Commission International) which is a gold standard in hospital certifications worldwide (E2) |
|                                | State-of-the-art medical equipment (E3)                                  |
|                                | Accreditation of the medical facility (e.g., JCI, ISQUA) (E4)            |
|                                | Reputation of the hospital/facility (E5)                                 |
|                                | Diversified medical treatment (E6)                                       |
|                                | Doctor's expertise and reputation (E7)                                   |
|                                | International certified doctors and staffs (E8)                          |
|                                | Advanced medical treatment (E9)                                          |
| Commercial environment         | Good arrangement of the program and pick-up service (F1)                |
| (F)                            | e-Commercial marketing (G1)                                              |
|                                | Clear contents of medical tour pamphlets (G2)                            |
| Marketing communication        | Multiple-language communication platform (such as websites) (G3)         |
| (G)                            | Overall positive country image (H1)                                      |
| Country environment            | Safe to travel to country (H2)                                           |
| (H)                            | Stable economy (H3)                                                     |
|                                | Perception of safety and security as related to culture and political environment (H4) |
| Tourism destination            | Popular tourist destination (I1)                                         |
| (I)                            | Attractiveness of the country as a tourist destination (I2)              |
Table 3. Result of dependence

|   | A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | C1 | C2 | C3 |
|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| A1| *  | *  | *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| A2| *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| A3| *  | *  | *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| A4|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| A5| *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| B1|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| B2| *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| B3|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| B4| *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  |
| B5|    | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  |
| B6| *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| B7| *  | *  | *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| B8| *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| B9| *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| B10| *  | *  | *  | *  | *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| B11|    | *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| C1|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| C2| *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| C3| *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| D1|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| D2| *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| E1| *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

(Continued)
|   | A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | C1 | C2 | C3 |
|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| E2 | *  | *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| E3 |    | *  | *  | *  | *  |    |    |    |    |    |    |    |    |    |    |    |    |    |
| E4 |    |    | *  | *  | *  |    |    |    |    |    |    |    |    |    |    |    |    |    |
| E5 |    |    |    | *  | *  |    |    |    |    |    |    |    |    |    |    |    |    |    |
| E6 |    |    |    |    | *  |    |    |    |    |    |    |    |    |    |    |    |    |    |
| E7 |    |    |    |    |    | *  |    |    |    |    |    |    |    |    |    |    |    |    |
| E8 |    |    |    |    |    |    | *  |    |    |    |    |    |    |    |    |    |    |    |
| F1 |    |    |    |    |    |    |    | *  |    |    |    |    |    |    |    |    |    |    |
| F2 |    |    |    |    |    |    |    |    | *  |    |    |    |    |    |    |    |    |    |
| G1 |    |    |    |    |    |    |    |    |    | *  |    |    |    |    |    |    |    |    |
| G2 |    |    |    |    |    |    |    |    |    |    | *  |    |    |    |    |    |    |    |
| G3 |    |    |    |    |    |    |    |    |    |    |    | *  |    |    |    |    |    |    |
| H1 |    |    |    |    |    |    |    |    |    |    |    |    | *  |    |    |    |    |    |
| H2 |    |    |    |    |    |    |    |    |    |    |    |    |    | *  |    |    |    |    |
| H3 |    |    |    |    |    |    |    |    |    |    |    |    |    |    | *  |    |    |    |
| H4 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | *  |    |    |
| I1 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | *  |    |
| I2 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | *  |
|    | A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 | A9 | A10 | B1  | B2  | B3  | B4  | B5  | B6  | B7  | B8  | B9  | B10 | B11 | C1  | C2  | C3  | C4  | D1  | D2  | E1  | E2  | E3  | E4  | E5  | E6  | E7  | E8  | E9  | F1  | F2  | F3  | F4  | G1  | G2  | G3  | G4  | H1  | H2  | H3  | H4  | I1  | I2  |
|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| D1 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| D2 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| E1 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| E2 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| E3 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| E4 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| E5 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| E6 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| E7 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| E8 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| E9 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| F1 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| F2 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| F3 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| F4 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| G1 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| G2 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| G3 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| G4 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| H1 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| H2 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| H3 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| H4 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| I1 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| I2 |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
### Table 3. (Continued)

|       | D1 | D2 | E1 | E2 | E3 | E4 | E5 | E6 | E7 | E8 | E9 | F1 | G1 | G2 | G3 | H1 | H2 | H3 | H4 | I1 | I2 |
|-------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| E3    |    |    | *  |    |    |    |    |    |    | *  |    |    |    |    |    |    |    |    |    |    |    |
| E4    |    |    | *  |    |    |    |    |    |    | *  |    |    |    |    |    |    |    |    |    |    |    |
| E5    |    |    | *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| E6    |    |    | *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| E7    |    |    |    |    |    | *  | *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| E8    | *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| E9    |    | *  | *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| F1    |    |    | *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| G1    |    |    |    |    | *  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| G2    |    |    |    |    |    |    |    |    |    |    |    | *  |    |    |    |    |    |    |    |    |    |    |
| G3    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| H1    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | *  |
| H2    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | *  | *  |
| H3    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | *  | *  |
| H4    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | *  | *  |
| I1    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | *  | *  |
| I2    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | *  | *  |

Note: * means the affecting scores are ≥85.

Note: A1-Hospital contact information; A2-Hospital introduction; A3-Related information and service of Getting to the hospital; A4-On-site pharmacy and prescription assistance; A5-Source of obtaining the related information about medical tourism; B1-Billing information; B2-Appointment booking; B3-Availability of medications; B4-Safety of medication quality; B5-Quality of medical treatment; B6-Service orientation of medical staff; B7-Waiting time for medical treatment from time to first contact to real treatment; B8-Required treatment available here; B9-Quality of required treatment; B10-Health evaluation; B11-High healthcare quality; C1-Interactive tools for online enquiries; C2-Pre-admission consultations at a distance; C3-Medical records available via the Internet; D1-Referral services for international physicians; D2-Links to relevant agencies/tourist attractions; E1-Number of the hospital and clinic beds; E2-Accreditation by JCI which is a gold standard in hospital certifications worldwide; E3-State-of-the-art medical equipment; E4-Accreditation of the medical facility; E5-Reputation of the hospital/facility; E6-Diversified medical treatment; E7-Doctor’s expertise and reputation; E8-International certified doctors and staffs; E9-Advanced medical treatment; F1-Good arrangement of the program and pick-up service; G1-e-Commercial marketing; G2-Clear contents of medical tour pamphlets; G3-Multiple-language communication platform; H1-Overall positive country image; H2-Safe to travel to the country; H3-Stable economy; H4-Perception of safety and security as related to culture and political environment; I1-Popular tourist destination; I2-Attractiveness of the country as a tourist destination.
4.1. Analytic network process (ANP)
Saaty advanced ANP in 1996, and, in 2001, he recommended using ANP to solve the problems of interdependent relationships among the criteria or alternatives (Saaty, 2001). In ANP, when nodes correspond to levels or components, that means there exists the network feedback in a system (Saaty, 1980). ANP has four steps (Meade & Sarkis, 1999; Saaty, 1996). (1) Establish the model and the framework. (2) Do the pairwise comparison to get the priority vector. (3) Construct the super matrix. (4) Choose the best alternative. In our study, we only did step 1 to 3.

4.2. Structural equation modeling (SEM)
SEM is mainly used for exploring the cause–effect relation among various latent variables, which is confirmatory analysis (Chiou, 2009). SEM includes three types of variables: manifest variables, latent variables and error variables. Confirmatory Factor Analysis (CFA) is majorly used for two conditions: (1) When developing a measurement model, it is used for testing whether the factor structure of the model is proper. (2) It is used for exploring the relation among latent variables to check whether they are consistent with a specific understanding or theory, which is a test for theoretical concept (Chi & Hung, 2011). Thus, this study employed AMOS to run CFA and confirmed the relation among variables, and then proved the hypotheses.

4.3. Scope, object, and sampling
Many Asian countries are actively promoting medical tourism and have become hot destinations for tourists from the Middle East, Europe and the U.S. (Wang, 2007). The costs of medical service are relatively cheaper in Asia than that of in Europe and the U.S., and the techniques of medical treatment are good and with shorter waiting time, high-quality treatment service and active government intervention (Liu, 2012). Such conditions tend to attract more international tourists to go for touring while engaging in medical service. Therefore, medical tourism has become trendy in the Asia region (C. S. Wang et al., 2011). According to the report of VISA Inc. and Oxford Economics, Thailand, Singapore and South Korea are the most popular countries of medical tourism in Asia region and the top three destinations for medical tourism in Asia (go.huanqiu.com, 2016).

Thailand is the major service provider of medical tourism (Arunanondchai & Fink, 2006). Its business in health and medical tourism developed quite early, and its world-class service and reasonable charges have won the favor of international tourists, so it is recognized as Asia Wellness Center (Amazing Thailand, 2016). In 2012, around 2.5 million tourists received medical treatments in Thailand’s international-certified hospitals and clinics, which accounted for 10% of the total number (MyMedHoliday, 2013). Furthermore, according to the report of Thailand’s Ministry of Public Health, in 2015, the output of medical tourism sector was 4 USD.516 billion with a year growth rate at 18%. Over three million international visitors got medical treatment in Thailand. Kasikorn Research Center’s report shows that, in 2016, 3.2 million foreign visitors received medical service in Thailand (Bioclub, 2016).

Singapore set its international medical tourism as the position Hub of Asia’s Medical Service (Singapore Tourism Board, 2016). In 2014, among 51 countries, Bloomberg ranked Singapore got the most effective medical health system. In the same year, the think tank of The Economist ranked its medical and wellness treatment effectiveness as the second best of the year (Singapore Tourism Board, 2016). The IMD World Competitiveness Yearbook 2009 ranked its medical and wellness infrastructure number four. In 2007 and 2008, Travel Weekly (Asia) reviewed Singapore the best destination for medical care and wellness tour in the world. In 2013, the Medical and Health Tourism Report evaluated it as the most favorable destination for medical tourism (Singapore Tourism Board, 2016). In addition, the total spending on medical tour visitors in Singapore reached 832 USD million (Singapore Tourism Board, 2016).

Despite the fact that Taiwan is not in the top three choices in Asia, the most prosperous regions in the twenty-first century are all nearby. It can be the bridge of the East Asia region, or even is
the center of Asia (Chi et al., 2012). According to the health evaluation of health care by the Economist Intelligence Unit (EIU) in 2000, Taiwan was ranked second, only after Sweden (Liu & Liu, 2010). In addition, among the top 200 hospitals, Taiwan got 14, which was ranked third in the world, just after the U.S. and Germany and far better than other Asian countries. Meanwhile, the medical quality, techniques and costs in Taiwan are superior to other Asia countries (Liu & Liu, 2010). There were 60,951 medical visitors in 2014 and 67,298 visitors in 2015 (Taiwan Tourism Bureau, 2016), which shows an increasing trend.

Thailand, Singapore and Taiwan all have resources, leverage, and research value on medical tourism, so this study focuses on these three locations and the researched objects are Chinese consumers whoever went for medical tour in these three locations. The convenience sampling was done at Guangzhou Baiyun International Airport and Shenzhen Baoan International Airport between 19 March and 8 April in 2017. One hundred and fifty questionnaires were distributed and 125 were retrieved. The response rate was 83.3%. After the questionnaires were retrieved, those incomplete ones were removed. There were 16 invalid responses and 109 valid ones. The valid response rate was 87.2%.

4.4. Questionnaire design
The scale of medical tourism is from Fetscherin and Stephano (2016), Lin and Huang (2012), C. H. Lin et al. (2010), Moghavvemi et al. (2017), Zhang and Gao (2016), and Woo and Schwartz (2014), tourism attraction is from Chiang and Wang (2016), and re-visit intention is from W. Y. Liu et al. (2013). Likert six-point scale is used, one means strongly disagree and six indicates strongly agree. In addition, demographic variables include gender, age, marriage status, educational background, average monthly income (RMB), the destination of getting medical service, time(s) of participating in the medical tour, and motive of going for medical tour.

5. Results and analysis
5.1. Reliability
This study distributed 32 pre-test questionnaires through wjx.com between 19 March and 8 April in 2017. All the respondents must have participated in medical tours. 32 responses were valid, and the valid response rate was 100%. This study has three scales, including: medical tourism, tourism

| Table 4. Weight and Ranking of Aspects |
|----------------------------------------|
| **Thailand** (n = 22) | **Singapore** (n = 42) | **Taiwan** (n = 45) | **Overall** (n = 109) |
| Average Weight | Ranking | Average Weight | Ranking | Average Weight | Ranking | Average Weight | Ranking |
| A 0.155 | 3 | 0.161 | 3 | 0.175 | 3 | 0.165 | 3 |
| B 0.113 | 5 | 0.113 | 5 | 0.115 | 4 | 0.113 | 5 |
| C 0.211 | 1 | 0.208 | 1 | 0.218 | 1 | 0.213 | 1 |
| D 0.175 | 2 | 0.168 | 2 | 0.181 | 2 | 0.173 | 2 |
| E 0.078 | 7 | 0.075 | 7 | 0.093 | 6 | 0.088 | 7 |
| F 0.012 | 9 | 0.015 | 9 | 0.016 | 9 | 0.015 | 9 |
| G 0.030 | 8 | 0.020 | 8 | 0.018 | 8 | 0.020 | 8 |
| H 0.125 | 4 | 0.130 | 4 | 0.096 | 5 | 0.114 | 4 |
| I 0.102 | 6 | 0.109 | 6 | 0.087 | 7 | 0.099 | 6 |

Note: Hospital Information and Facilities (A); Admission and Medical Services (B); Interactive Online Services (C); External Activities (D); Medical Technique and Level (E); Commercial Environment (F); Marketing Communication (G); Country Environment (H); Tourism Destination (I)
attraction and re-visit intention. Medical tourism has nine sub-aspects: hospital information and facilities, admission and medical services, interactive online services, external activities, medical technique and level, marketing communication, country environment, and tourism destination and the Cronbach’s α are 0.855, 0.919, 0.857, 0.808, 0.926, 0.793, 0.859 and 0.783, respectively, but commercial environment only got one criterion, so there is no Cronbach’s α therein. The overall Cronbach’s α of medical tourism and tourism attraction are 0.975 and 0.913, respectively. Re-visit intention has two sub-aspects, including re-visit intention and recommendation intention. The Cronbach’s α are 0.816 and 0.902, respectively, and the overall Cronbach’s α is 0.929. All in all, the

| Table 5. Weight and Ranking of Criteria |
|----------------------------------------|
|                         | Thailand (n = 22) | Singapore (n = 42) | Taiwan (n = 45) | Overall (n = 109) |
|                         | Average Weight   | Ranking | Average Weight | Ranking | Average Weight | Ranking | Average Weight | Ranking |
| A1                      | 0.021            | 13      | 0.036          | 12      | 0.022          | 13      | 0.027          | 13      |
| A2                      | 0.006            | 22      | 0.011          | 21      | 0.007          | 21      | 0.009          | 20      |
| A3                      | 0.014            | 15      | 0.022          | 14      | 0.015          | 15      | 0.018          | 15      |
| A4                      | 0.062            | 9       | 0.051          | 10      | 0.057          | 10      | 0.055          | 10      |
| A5                      | 0.002            | 33      | 0.003          | 34      | 0.001          | 36      | 0.002          | 35      |
| B1                      | 0.018            | 14      | 0.021          | 16      | 0.020          | 14      | 0.020          | 14      |
| B2                      | 0.003            | 28      | 0.004          | 29      | 0.003          | 28      | 0.003          | 29      |
| B3                      | 0.053            | 10      | 0.059          | 9       | 0.064          | 8       | 0.059          | 8       |
| B4                      | 0.065            | 6       | 0.076          | 3       | 0.085          | 3       | 0.080          | 2       |
| B5                      | 0.076            | 5       | 0.062          | 6       | 0.081          | 5       | 0.075          | 5       |
| B6                      | 0.091            | 3       | 0.062          | 6       | 0.065          | 7       | 0.066          | 7       |
| B7                      | 0.050            | 11      | 0.038          | 11      | 0.043          | 11      | 0.042          | 11      |
| B8                      | 0.007            | 20      | 0.008          | 23      | 0.010          | 18      | 0.009          | 20      |
| B9                      | 0.025            | 12      | 0.023          | 13      | 0.032          | 12      | 0.029          | 12      |
| B10                     | 0.064            | 7       | 0.076          | 3       | 0.088          | 2       | 0.080          | 2       |
| B11                     | 0.098            | 2       | 0.068          | 5       | 0.072          | 6       | 0.073          | 6       |
| C1                      | 0.014            | 15      | 0.022          | 14      | 0.014          | 16      | 0.018          | 15      |
| C2                      | 0.001            | 37      | 0.004          | 29      | 0.002          | 30      | 0.003          | 29      |
| C3                      | 0.012            | 17      | 0.017          | 17      | 0.011          | 17      | 0.014          | 17      |
| D1                      | 0.011            | 18      | 0.017          | 17      | 0.009          | 20      | 0.013          | 18      |
| D2                      | 0.007            | 20      | 0.013          | 20      | 0.007          | 21      | 0.010          | 19      |
| E1                      | 0.001            | 37      | 0.001          | 39      | 0.002          | 30      | 0.001          | 38      |
| E2                      | 0.003            | 28      | 0.003          | 34      | 0.004          | 24      | 0.003          | 29      |
| E3                      | 0.003            | 28      | 0.002          | 37      | 0.003          | 28      | 0.002          | 35      |
| E4                      | 0.008            | 19      | 0.008          | 23      | 0.010          | 18      | 0.009          | 20      |
| E5                      | 0.003            | 28      | 0.004          | 29      | 0.004          | 24      | 0.004          | 27      |
| E6                      | 0.006            | 22      | 0.006          | 27      | 0.007          | 21      | 0.007          | 24      |
| E7                      | 0.101            | 1       | 0.088          | 1       | 0.099          | 1       | 0.094          | 1       |
| E8                      | 0.084            | 4       | 0.077          | 2       | 0.085          | 3       | 0.080          | 2       |
| E9                      | 0.064            | 7       | 0.061          | 8       | 0.060          | 9       | 0.060          | 8       |
| F1                      | 0.002            | 33      | 0.004          | 29      | 0.002          | 30      | 0.003          | 29      |
| G1                      | 0.004            | 26      | 0.005          | 28      | 0.002          | 30      | 0.003          | 29      |

(Continued)
Cronbach’s α in this study are all ≥0.7. According to the reliability standard by Wu (1990), the scales of this study are with high reliability.

### 5.2. Demographic analysis

This study used SPSS 21 for running the descriptive statistical analysis. As for gender, Thailand is the more favorable destination for Chinese male consumers (54.5%), and Singapore, Taiwan and the overall samples are more favorable for female consumers- 52.4%, 62.2%, 55.0%, respectively. Regarding age, the majority of those who went to Thailand are between the ages of 41 to 50 (36.4%). Those who went to Singapore, Taiwan and the overall samples are mainly between the ages of 21 to 30 (26.1%, 42.2%, 26.6%, respectively). To sum up, in this sampling, those who ever went to Singapore and Taiwan for medical tour tent to be the younger generation. Regarding marriage status, Chinese consumers going to Thailand, Singapore, Taiwan and the overall samples are majorly married - 68.2%, 52.4%, 48.9%, 54.1%, respectively. About the educational background, Chinese consumers going to Thailand are majorly with a degree of college or high school or under (26.1% for both), whereas those going to Singapore, Taiwan and the overall samples are majorly with a degree of college- 57.1%, 66.7%, 56.9%, respectively. The average monthly income (RMB) for those going to Thailand, Singapore, Taiwan and the overall samples are mainly between 2,001 and 4,000 (36.4% for both), whereas those going to Singapore, Taiwan and the overall samples have been there for two or three times- 52.4%, 42.2%, 42.2%, respectively. About the motive of going for medical tour, Chinese consumers going to Thailand are to treat diseases and touring as well as health check and touring (36.4% for both). Those going to
Singapore, Taiwan and the overall samples are mainly for a health check and touring- 61.9%, 53.3%, 53.2%, respectively.

5.3. Analysis of aspects and criteria
This study employed Super Decisions (Windows 3.0 Beta) to analyze the weights of aspects and criteria to learn the ranking. After the values of pairwise comparison were entered, this study first checked if the C.I. (Consistency Index) value of each comparison matrix was less than 0.1 (Saaty, 1980) to reach the transitivity. Then, Super Decisions (Windows 3.0 Beta) was employed to get the Unweighted Supermatrix, the Weighted Superrmatrix and the Limiting Supermatrix of each questionnaire. For easy reading, this study only shows the weights of Limiting Supermatrix which represent the final results. At last, the Arithmetic Average Method was used for getting the average weight and the ranking in the Limiting Supermatrix.

5.3.1. Aspects
Table 4 shows that those Chinese consumers going to Thailand, Singapore, Taiwan, and the overall samples all value interactive online services (C), external activities (D), and hospital information and facilities (A) the most. In other words, these three aspects are the most important key aspects.

Table 6. Result of the Overall Samples’ Model Fit (n = 109)

| Test Statistic | Standard | Result |
|----------------|----------|--------|
| **Absolute Fit Indices** | | |
| $\chi^2$ | The smaller, the better | 108.855 |
| $\chi^2$/df | 1 ~ 5 | 1.76 |
| GFI | > 0.9/0.8 | 0.87 |
| AGFI | > 0.9/0.8 | 0.81 |
| RMR | < 0.08 | 0.08 |
| SRMR | < 0.08 | 0.07 |
| RMSEA | < 0.08 | 0.08 |
| **Incremental Fit Indices** | | |
| NFI | > 0.9/0.8 | 0.80 |
| NNFI (= TLI) | > 0.9/0.8 | 0.87 |
| CFI | > 0.9/0.8 | 0.90 |
| RFI | > 0.9/0.8 | 0.75 |
| IFI | > 0.9/0.8 | 0.90 |
| **Parsimony Fit Indices** | | |
| PNFI | > 0.5 | 0.64 |
| PGFI | > 0.5 | 0.59 |
5.3.2. Criteria
According to Table 6, those Chinese consumers going to Thailand, Singapore, Taiwan, and the overall samples all care most about hospital contact information (e.g., address, phone and email) (A1), on-site pharmacy and prescription assistance (A4), availability of medications (B3), the safety of medication quality (B4), quality of medical treatment (B5), service orientation of medical staff (B6), waiting time for medical treatment from time to first contact to real treatment (B7), quality of required treatment (B9), health evaluation (B10), high healthcare quality (e.g., ISO, NCQA, ESQA) (B11), doctor’s expertise and reputation (E7), international certified doctors and staffs (E8), and advanced medical treatment (E9), and their differences are just about the ranking. Meanwhile, all of them weigh to doctor’s expertise and reputation (E7) the most.

5.4. Regression analysis
This study tested the Confirmatory Factor Analysis (CFA) by AMOS 24 and then examined the hypotheses. With the analysis by ANP, it is learned that there are 13 key criteria (A1, A4, B3, B4, B5, B6, B7, B9, B10, B11, E7, E8, and E9). Accordingly, this study made the criteria of the same aspect into a group, and took the mean as the observational variable, and then ran the analysis. In addition, Figure 2 shows: (1) The key criteria of medical tourism are significantly positively to tourism attraction and re-visit intention which means H1 and H2 are supported; (2) Tourism attraction has no influence on re-visit intention which means H3 is not supported.

This study also organized the model fit of overall samples as shown in Table 6. According to the recommended indicator value proposed by Bagozzi and Yi (1988), Hair et al. (1998), and Jöreskog and Sörbom (1989), only the relative fit index (RFI) is close to the standard value, and others all reach the standard. Thus, the model fit for this study is good.

6. Conclusion

6.1. Key aspects
Chinese consumers going to Thailand, Singapore, Taiwan and the overall samples all more value the interactive online services (C), external activities (D), and hospital information and facilities (A). Based on this result, when engaging in medical tour, Chinese consumers pay more attention to before-and-after communication, such as online communication, to learn the essential parts of the tour, such as the risk of surgeries or the process of procedures, to decrease their insecurity. Moreover, when going for medical tour, Chinese consumers prefer combining medical service with touring. For example, they like to enjoy the local attractions and customs during the period when they have spare time. Chinese medical tourists also attach importance on relevant information about medical tour program, such as addresses, phone numbers and emails, and would like to know if the service providers have advanced complementary equipment to increase their sense of security and meet the needs of their medical requirements.

6.2. Key criteria
The key criteria (A1, A4, B3, B4, B5, B6, B7, B9, B10, B11, E7, E8, and E9) that Chinese consumers going to Thailand, Singapore, Taiwan and the overall samples value the most are all the same, and only the rankings are different. At first, hospital contact information (e.g., address, phone and email) (A1) and on-site pharmacy and prescription assistance (A4) mean Chinese consumers attach importance on if hospitals can provide accurate and detailed contact information or have good supporting system among departments (such as convenience for getting medication or medication description) in order to increase the sense of security. In addition, availability of medications (B3), the safety of medication quality (B4), quality of medical treatment (B5), service orientation of medical staff (B6), waiting time for medical treatment from time to first contact to real treatment (B7), quality of required treatment (B9), health evaluation (B10), and high healthcare quality (e.g., ISO, NCQA, ESQA) (B11) indicate that Chinese consumers highly consider the safety and effectiveness of the medication (such as having side effects or good control over the health issues), high quality of medical treatment and care, people-oriented service, length of
waiting time and accurate health assessment to ensure themselves to have healthy and secured medical service. Furthermore, doctor’s expertise and reputation (E7), international certified doctors and staffs (E8), and advanced medical treatment (E9) mean that the Chinese consumers highly care whether the medical tour can reach the outcome they expect; for example, when getting cosmetic medical treatment, consumers hope the attending doctors are internationally certified, with good techniques and reputation to ensure and increase the treatment success rate.

6.3. Relationship among key criteria of medical tourism, Tourism attraction, and re-visit intention
The key criteria of medical tourism (A1, A4, B3, B4, B5, B6, B7, B9, B10, B11, E7, E8, and E9) have a significant positive influence on tourism attraction and re-visit intention. Based on this ground, this study suggests that relevant business involving in medical tourism should improve and perfect their information system. They can reveal their information, such as working address, phone number, emails, on the website or social medial platforms to improve their approachability and accuracy. Moreover, it is suggested that relevant industries should purchase medication from large international or well-known pharmaceutical companies to improve the medication quality and effectiveness. Furthermore, for guaranteeing the safety and effectiveness, this study suggests hiring internationally certified, highly professional and well-reputed doctors and staff. This study also proposes the relevant business in the medical tourism sector: (1) To train and select medical personnel with high service orientation to make the consumers feel well-cared, (2) To set on-site pharmacies and provide prescription assistance, such as medication counselling, to make it convenient to get and use medication for consumers, (3) To provide consulting service online to reduce the waiting time from first contact to real treatment, and (4) To carry out high-standard quality care service and provide precise and accurate health assessment in order to create a medical service with high competitiveness and consumer-friendliness.

6.4. Relationship between tourism attraction and re-visit intention
Tourism attraction has no influence on re-visit intention, which is consistent with the study results by Kuo et al. (2010) and Yang, Yang, et al. (2015). This study reckons that the reasons might be the specialness of industry, and the intention of receiving medical service as the main purpose and touring as the complementariness; that is, the priority of the medical tour consumers is still to seek if their medical needs can be fulfilled, such as cosmetic surgery, premium health check. Therefore, if their medical demands are not provided, the consumers would not like to go to that destination for touring again, even though the tourism attraction is very strong.

6.5. Contribution
Concerning the academic gap, few past studies discuss the key factors that influence consumers to engage in medical tour. This study constructs the evaluation framework by literature review and expert interview, and discusses the key aspects and key criteria. Furthermore, this study found that few studies have integrated the key factors, tourism attraction and re-visit intention in a study. In this study, it is proved that the key criteria of medical tourism have a significant positive relation with tourism attraction and re-visit intention. Most past studies show that tourism attraction has a significant positive relation with re-visit intention (C. Y. Chang et al., 2015; Kuo & Wu, 2014; Lin & Ku, 2009; Y. L. Liu et al., 2012; Liu & Hsiao, 2012; Liu & Lo, 2010; Teller & Alexander, 2014; Vigolo, 2015), but this study has found that they show no significant positive relation with each other. Moreover, from a practice perspective, the relevant industry in the medical tourism sector can take the key criteria by this study to implement improvements and set up business strategies.

6.6. Limitation and future research
Due to the limitation of manpower, material resources and time, the locations for the survey were only at China’s Guangzhou Baiyun International Airport and Shenzhen Baoan International Airport. What is more, the respondents were limited to a specific group, which only could be the Chinese consumers who ever participated in medical tours in Thailand, Singapore and Taiwan, so the number of retrieved questionnaires is not that large. Based on this ground, it is suggested that
future researches can prolong sampling time to increase the number of samples. In addition, the locations in this study only limit to Thailand, Singapore and Taiwan, so it is suggested that future researches can expand the sampling countries (e.g., South Korea or India) and compare their differences. Also, future researches can further explore the relation between medical tourism and other variables (e.g., income or satisfaction level).

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## Appendix 1. Aspects, Criteria, and Literature Sources (Preliminary Framework)

| Aspect                        | Source                                | Criteria                                                                 | Source                        |
|-------------------------------|---------------------------------------|--------------------------------------------------------------------------|-------------------------------|
| Hospital Information and     | Moghavvemi et al. (2017)              | Hospital contact information (e.g., address, phone and email)            | Moghavvemi et al. (2017)      |
| Facilities                    |                                       | Hospital statement of purpose (e.g., mission or vision)                  |                               |
|                               |                                       | Photos or videos featuring the hospital facilities and technology        |                               |
| Getting to the hospital:      |                                       | Getting to the hospital: Ground transportation arrangements (e.g., pick-up from airports or home) |                               |
| Travel arrangements/ bookings |                                       | Getting to the hospital: Travel arrangements/ bookings                   |                               |
| Entry visa assistance         |                                       | Getting to the hospital: Entry visa assistance                           |                               |
| Partnerships with travel      |                                       | Getting to the hospital: Partnerships with travel agents or hotels       |                               |
| Patient privacy information   |                                       | Patient privacy information                                              |                               |
| Patient’s rights and obligations |                                   | Patient’s rights and obligations                                         |                               |
| Patient feedback (e.g.,      |                                       | Patient feedback (e.g., testimonials and survey results)                |                               |
| testimonials and survey       |                                       | On-site language interpretation services                                  |                               |
| results)                      |                                       | Food arrangements specific to international patients                    |                               |
| On-site pharmacy and          |                                       | On-site pharmacy and prescription assistance                             |                               |
| prescription assistance       |                                       | On-site facilities for patients’ companions (e.g., family lounge,        |                               |
|                               |                                       |                                                                          |                               |
| Off-site accommodation        |                                       |                                                                          |                               |
| arrangements for patients’   |                                       |                                                                          |                               |
| companions and outpatients    |                                       |                                                                          |                               |
| Ratio of patients and         | Singh (2013)                          |                                                                          |                               |
| medical staff                 |                                       |                                                                          |                               |
| Privatisation of facilities   |                                       |                                                                          |                               |
| Availability of advanced      | Woo & Schwartz (2014)                  |                                                                          |                               |
| or qualified medical          |                                       |                                                                          |                               |
| instruments used for          |                                       |                                                                          |                               |
| treatment                     |                                       |                                                                          |                               |
| Hospital facilities such as   |                                       |                                                                          |                               |
| rooms and other spaces        |                                       |                                                                          |                               |

(Continued)
| Admission and Medical Services | Moghavem i et al. (2017) | Billing information | Moghavem i et al. (2017) |
|--------------------------------|--------------------------|--------------------|--------------------------|
| Recreation facilities for patient’s family | | | |
| Recreation facilities for patients in the hospital | | | |
| Recommendation from family and friends | Wongkit & McKercher (2016) | | |
| Recommendation from others | | | |
| On newspaper and magazines | Lin et al. (2010) | | |
| From experts | | | |
| On the internet | | | |
| On television | | | |
| From relatives and friends | | | |
| State-of-the-art medical equipment | Fetscherin & Stephano (2016) | | |
| Accreditation of the medical facility (e.g., JCI, ISQUA) | | | |
| Reputation of the hospital/facility | | | |

(Continued)

| | Recreation facilities for patient’s family |
|-----------------------------|--------------------------------------------|
| | Recreation facilities for patients in the hospital |
| | Recommendation from family and friends |
| | Wongkit & McKercher (2016) |
| | Recommendation from others |
| | On newspaper and magazines |
| | Lin et al. (2010) |
| | From experts |
| | On the internet |
| | On television |
| | From relatives and friends |
| | State-of-the-art medical equipment |
| | Fetscherin & Stephano (2016) |
| | Accreditation of the medical facility (e.g., JCI, ISQUA) |
| | Reputation of the hospital/facility |

(Continued)
| Medical Service | Description | Reference |
|-----------------|-------------|-----------|
| Service orientation of medical staff | | |
| Availability of translators in the hospital | | |
| Waiting time for medical treatment from time to first contact to real treatment | | |
| Required treatment available here | Wongkit & McKercher (2016) | |
| Quality of required treatment | | |
| Availability of follow up service | | |
| Availability of post-treatment service | Lin & Huang (2012) | |
| Premium medical equipment | | |
| Advanced medical treatment | | |
| Excellent medical care | | |
| Short waiting time for treatment | | |
| Health assessment | | |
| Diversified medical treatment | | |
| Doctor’s training | Fetscherin & Stephano (2016) | |
| Doctor’s expertise | | |
| High healthcare quality indicators (e.g., low infection rate) | | |
| Reputation of doctors | | |
| High quality standards (e.g., ISO, NCOA, ESQA) | | |
| High quality of care | | |
| International certified doctors | | |
| Internationally certified staff | | |
| International educated doctors | | |
| Friendliness of staff and doctors | | |
| Interactive Online Services | Maghavvemi et al. (2017) | Interactive tools for online enquiries |
| Pre-admission consultations at a distance (online or by phone) | Maghavvemi et al. (2017) | |
| Medical records available via the Internet | | |
| Links to online forums for patient feedback and | | |

(Continued)
| (Continued)                                                                 |                                                                 |
|----------------------------------------------------------------------------|------------------------------------------------------------------|
| **Social networking**                                                      | (e.g., Twitter and Facebook)                                     |
| **Links to additional online venues for information generated by or about  | hospital (e.g., YouTube and blogs)                               |
| **External Activities**                                                    | Healthcare joint ventures, international affiliations and       |
|                                                                          | overseas referral networks with other hospitals                  |
| **Referral services for international physicians**                        | (via teleconference, online enquiries or phone)                   |
| **Links to relevant agencies/tourist attractions**                       |                                                                  |
| **Technical Items**                                                       | Site map present                                                 |
|                                                                          | Site-wide search tool present                                    |
|                                                                          | Availability of alternative language options for the website     |
|                                                                          | (besides English)                                                 |
|                                                                          | Website accessibility for people with sensorial disabilities     |
|                                                                          | Live (no broken) web links                                        |
| **Medical Technique and Level**                                           | Zhang & Gao (2016)                                               |
|                                                                          | Number of hospitals and clinics                                   |
|                                                                          | Number of hospital and clinic beds                                |
|                                                                          | Number of doctors                                                 |
|                                                                          | Medical training of staff                                         |
|                                                                          | Licensure of medical staff                                        |
|                                                                          | Doctor’s degree, certification and reputation                     |
|                                                                          | Accreditation by JCI (Joint Commission International) which is a  |
|                                                                          | gold standard in hospital certifications worldwide               |
| **Medical Tourism Costs**                                                 | Fetscherin & Stephano (2015)                                     |
|                                                                          | Low cost of treatment                                             |
|                                                                          | Low cost of treatment                                             |
|                                                                          | Lower healthcare costs                                           |
|                                                                          | Low cost of accommodation                                         |
|                                                                          | Low costs to travel                                               |
|                                                                          | Affordability of airfares                                         |
| **Commercial Environment**                                                | Lin & Huang (2012)                                               |
|                                                                          | Convenient transportation                                         |
|                                                                          | Reasonable cost                                                   |
|                                                                          | Good catering service                                             |
| Marketing Communication | Good arrangement of the program and pick-up service |
|-------------------------|------------------------------------------------------|
|                         | Custom-made service                                  |
| e-Commercial marketing  |                                                      |
| Clear contents of medical tour pamphlets |                                                      |
| Multiple-language communication platform |                                                      |
| Country Environment     | Fetscherin & Stephano (2016)                         |
|                         | Stable exchange rate                                  |
|                         | Fetscherin & Stephano (2016)                         |
|                         | Low corruption                                       |
|                         | Cultural similarity                                  |
|                         | Overall positive country image                       |
|                         | Language similarity                                  |
|                         | Safe to travel to country                            |
|                         | Stable economy                                       |
|                         | Image of Korea                                       |
|                         | Perception of safety and security as related to culture and political environment |
| Tourism Destination     | Fetscherin & Stephano (2016)                         |
|                         | Popular tourist destination                          |
|                         | Fetscherin & Stephano (2016)                         |
|                         | Exotic tourist destination                           |
|                         | Weather conditions                                   |
|                         | Attractiveness of the country as a tourist destination |
|                         | Many cultural and natural attractions                |

Source: This study
