

The Analysis of Relationships Among Variables Toward Medical Tourism to Malaysia by Employing Structural Equation Modelling

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Abstract

Medical tourism which is a new combination of tourism and medical treatment is now rapidly advancing. The medical tourism phenomenon gives positive impact to the destination country and at the same time negative impact to the country where the tourists come from. Medical tourism is also growing in Indonesia. For instance, Acehese people commonly visit Malaysia for a treatment and it is called medical trip. To cope with this situation, deep analysis is necessary to identify factors which contribute to medical tourism behavior, which affects the loyalty of Aceh citizen. This study employed *Structural Equation modelling* (SEM) and there were 208 questionnaires as the samples collected through the non-probability technique. Gathered By means of AMOS software, the data revealed that the loyalty of Acehese people were either directly or indirectly affected by perceived quality, perceived value, satisfaction, trust, image, destination competitiveness, medical tourism in Malaysia and medical tourism loyalty

Keywords: Medical tourism, structural equation modeling (SEM), perceived quality, perceived value, destination competitiveness, satisfaction, trust, image, medical tourism in Malaysia, medical tourism loyalty.

Introduction

Medical Tourism becomes the choice for having a treatment and it has recently developed tremendously. This phenomenon is a combination of medical and tourism that provides a positive impact to the economy and the health of a country's investment (Pocock and Phua, 2011). This phenomenon contributes to increasing employment, foreign exchange earnings, infrastructure, health and quality of living standard of the country of destination (Sharma, 2013). Therefore, many countries around the world have begun to promote medical tourism to obtain benefits (Sarwar, 2013), for example Jordan (Muala, *et al.*, 2011), Iran (Kazemi, 2008), India (Crooks, *et al.*, 2011), Taiwan (Chen, 2012), Thailand (Wongkit and McKercher, 2013), Korea (Oh, *et al.*, 2013), and Singapore (Pocock and Phua, 2011).

However, medical tourism gives a negative impact to the countries where medical tourists come from (Johnston, *et al.*, 2010). For instance, the United States suffered from loses, for its citizens preferred to have a treatment with cheaper medical costs and the same facilities in India (Washington Times, 2013). Specially attracting the international tourists, Medical tourism steadily develops year after year. Asian Medical Tourism Analysis 2013 pointed out that India and Thailand are currently competing to earn the nickname as the "crown" medical tourism. It is estimated that in 2013, medical travelers will experience an increase of more than 25% and it is also supported by the emergence of new treatment destination countries in Asia such as the Philippines, Malaysia, Singapore and South Korea.

The phenomenon of medical tourism is also grown in Indonesia. For example, Acehese people often travel to Malaysia for a medical tourism. According to the management of a hospital in Malaysia, Aceh residents spend an average of 20 billion per month and more than 300 billion per year having a treatment in Malaysia (Serambi Indonesia, 2013). This statement is strongly supported by the head of the immigration office first class Banda Aceh. According to him, the Immigration Office issues the passport about 1300 books each month, more than 70% of which is intended for medical treatment abroad (Serambi Indonesia, 2013). Another factor supporting the increasing number of medical tourism abroad is that people find it easy to deal with the bureaucracy and even get the special promotion programs of medical tourism tour packages offered by several travels and airlines. Based on data from PT. Angkasa Pura II (Persero), there are 2000 Acehese heading to Malaysia and Penang each month. Similarly, the secretary of Commercial Aeronautical also

acknowledges that Acehese departing from Sultan Iskandar Muda to Malaysia generally have an interest to seek treatment. The high interest of the people of Aceh to conduct a medical tourism has caused some hospitals in Malaysia and Penang to establish an Johor treatment office (KPJ). KPJ is an office that provides information and free consultation for those who intend to conduct a medical tourism. The existence of several KPJ is apparently supposed to threaten the health industry in Aceh.

Aceh government has actually attempted to design some programs to increase public confidence in the medical and health facilities in Aceh. One of the strategies undertaken is to increase the medical system performance through Aceh health insurance program (JKA) in early June 2010. However, this strategy has not been effective enough so that further analysis is required to analyze the factors that influence the development of medical tourism in Aceh. The data collection for the study is conducted through questionnaires and interviews, while the data is analyzed by using structural equation modeling (SEM).

Therefore, the problem in this study is that uncomplicated bureaucracy, facilities and services offered to go to Malaysia affect Acehese society to conduct a medical tourism in Malaysia. Furthermore, the presence of Johor treatment office (KPJ) in Aceh is also a threat to the health industry in Aceh, resulting in lack of trust of Aceh citizens and causing the services in Aceh hospitals to unable to progress. In addition, it also makes Indonesia lose its income every year and thus it is necessary to identify the variables that affect the behavior of medical tourism and the need for the development of medical tourism in Aceh to reduce public interest to have a medical treatment in Malaysia. Meanwhile, this study aims to determine the relationship among variables that affect medical tourism activities in Malaysia and is expected to result in the inputs that can be used to improve the performance and competitiveness of the hospitals in Aceh.

Literature Review

This part deals with the previous studies that serve as the underlying theories of this research. The medical tourism which has become a blooming phenomenon is thought to be able to give the benefits and potentially help the economic growth of a country. Many previous studies in the area of medical tourism have been carried out. Chen (2012) for example investigated the strategies used in medical tourism by means of DAMATEL method. The finding showed that the best strategy to increase the medical tourism is to improve information and marketing. Other strategies in enhancing medical tourism were to boost the service quality, satisfaction and loyalty. Similarly, in his case study with regression analysis in Pattaya, Thailand, Mechinda et al (2010) found that the most important factor for tourists in a hospital is trust, whereas satisfaction became the main factor for them in clinic.

Beside, several qualitative research related to medical tourism have also been done by some researchers. Crooks et al (2001) and Song et al (2010) conducted the studies by using content analysis and pointed out that the medical tourism in Barbados and Hong Kong will give a positive effect if infrastructure, human resources, government policies and cooperation with hotels and medic are managed and conducted well.

Table 1. Research Literature Review

Researchers	Years	Satisfaction	Trust	Tourist loyalty	Service quality	Destination competitiveness	Costumer service	Image	Medical tourism
Lertwannawit, <i>et al.</i>	2011	X	X	X	X				
Sarwar	2013				X	X	X		X
Yoon, <i>et al.</i>	2003	X		X		X			
Muala, <i>et al.</i>	2011	X		X				X	
Ho, <i>et al.</i>	2014	X	X	X					
Fatehi, <i>et al.</i>	2010	X			X				
Debata	2010	X	X	X					X

The researches related to the factor analysis and causal relationship were conducted by Yoon et al (2003), Lertwannawit, *et al.* (2011), Muala, *et al.* (2011) and Sarwar (2013) by employing SEM method. These studies found that there is a significant relationship between satisfaction, service quality, and image and medical tourists' destination loyalty throughout the world. These studies were carried out in Bangkok, Jordan, Mediterranean and Malaysia. The phenomenon of medical tourism above gives a positive effect for the destination countries and simultaneously results in a negative impact for the medical tourists' native countries such as the exacerbation of health care, loses for tourist' native countries (Johnston, *et al.*, 2010)

and health discrepancy globally (Johnston, *et al.*, 2012). According to Synder, *et al.* (2013) medical tourism provide potential economy and job vacancy for the destination countries yet decreases the people trust of health in the native countries (Snyder, *et al.*, 2013).

Based on the table above, it can be concluded that this research tried to analyze medical tourists in their original countries and the factors that affect the interests of Acehnese in doing medical tourism to Malaysia through some additional variables based on literature, interviews with KPJ stakeholders in Aceh and the Acehnese who have done medical tourism. Through analysis of these variables, it is expected to obtain more comprehensive, valid, reliable and objective data or research results. Hence, the variables that influence the medical tourism in Aceh trend could be figured out. The finding was expected to be right recommendations and strategies for medical industries in Aceh.

a. Medical Image

Image is formed based on news, media and word of mouth information (Mayo and Jarvis, 1981). Some research revealed that tourism destination can build an image, give effect to the satisfaction of travelers and shape behavior in the selection of travel destinations (Bigne, *et al.*, 2001; Chon, 1990; Hunt, 1975; Ritichainuwat, *et al.*, 2001; Ritichainuwat, *et al.*, 2003). Therefore, the hypothesis is proposed :

- H₁ : Medical image influences destination competitiveness.
- H₂ : Medical image influences overall satisfaction.

b. Destination Competitiveness

Destination is the intended tourism places that are visited by tourists, for they have something which can influence people to come (AIEST)., multiple promotions and marketing trends of medical tourism carried out have increased the tourists' trust and encourage them to give a visit to Malaysia (Sarwar, 2013). Based on the above argument, the following is hypothesis :

- H₃ : Destination competitiveness influences medical tourism in Malaysia.
- H₄ : Destination competitiveness influences overall satisfaction.

c. Perceived Quality

Service quality is a very important part in the health industry (Wanlanai, 2011). Many tourists who come from developed countries to developing countries to get cheap medical treatment with high quality (Bookman and Bookman, 2007). A qualified service at affordable prices, expert staff, and friendliness is the core of customers' satisfaction (Sarwar, 2007). Therefore, the hypothesis is proposed :

- H₅ : Perceived quality influences medical image
- H₆ : Perceived quality influences overall satisfaction
- H₇ : Perceived quality influences perceived value
- H₈ : Perceived quality influences medical tourism in Malaysia

d. Perceived Value

Consumers' assessment of the usefulness of a product is based on perceptions that have been obtained and received (Zeithaml, 1988). The assessment is measured based on services, benefits received and costs budgeted to obtain such services (Hellier et al, 2003). Eggert and Ulaga (2002) states that the perceived value gives a direct influence on satisfaction. Qualified service will provide benefits to the consumer which will end on trust and vice versa (Kang, Shin & Lee, 2012). Therefore, the following is hypothesis :

- H₉ : Perceived value influences overall satisfaction.
- H₁₀ : Perceived value influences trust.

e. Overall Satisfaction

Satisfaction is an evaluation of the use based on perspective, cognitive and affective point of view (Oliver, 1997). According to Baker & Crompton (2000) satisfaction tourism is influenced by tourists' perception after experiencing an event / experience and feels its benefits that led to the creation of trust. Medical tourism is a combination of medical travel and tourism, so in the healthcare industry patient's satisfaction is the main priority (Wanlanai, 2011). Therefore, the hypothesis is proposed :

- H₁₁ : Overall satisfaction influences trust.
- H₁₂ : Overall satisfaction influences medical tourism in Malaysia.
- H₁₃ : Overall satisfaction influences medical tourism loyalty.

f. Trust

A trust will be created if there is confidence and feelings of security of a thing perceived by consumers (Morgan & Hunt, 1994). Trust is one of the things that underlies medical tourism goal in deciding to take a trip to Malaysia (Sarwar, 2013). Therefore, the hypothesis is proposed:

H₁₄ : Trust influences Medical Tourism in Malaysia.

g. Medical Tourism in Malaysia

Malaysia has offered various competitive programs in an attempt to make Malaysian become an attractive place in Asia for tourists. The Malaysian government also puts a high priority on improving the overall quality of health for both public and private hospitals to attract more medical tourists (Manaf, 2005). In addition, to adhere to the international standard, every hospital in Malaysia is demanded to obtain accreditation MSQH and quality certificate (ISO 9000, 9002) by the Malaysian government (Chua, 2007). Based on the above argument, the following is hypothesis :

H₁₅ : Medical tourism in Malaysia influences medical tourism loyalty.

h. Medical Tourism Loyalty

Loyalty is a behavior exhibited by routine purchases based on the decision-making unit (Griffin, 2005). Bei and Chiao (2001) explain that loyalty is not directly affected by the presence of comfort, satisfaction and alternative/intention to return again in the future.

i. Structural Equation Modeling (SEM)

Structural Equation Modeling (SEM) is a statistical procedure employed to investigate the relationship among complex variables which is either recursive or non recursive to elicit the overall picture of the model thoroughly (Marlina, 2009). SEM uses multiple models to find out the relationships among the variables observed by employing quantitative test to prove the theories hypothesized by the researcher (Susetiyana, 2009). By testing the hypothesis through the interrelated statistical formula, the researcher can examine various theories by using SEM. SEM is the development of double equation model derived from the econometric principle and psychology and sociology principles (Hair, Anderson, Tatham, & Black, 1984). Thus, SEM is numerously used in the social, economic, managerial, and academic researches. It is also called covariance structure analysis, latent variable analysis, LISREL model dan AMOS model. It is also recognized as multivariate technique due to its procedure in combining confirmatory factor analysis and double regression analysis (Marlina, 2009)

Research Methodology

Research Methodology explain about several issues related to research methodology, particularly the data collection, questionnaires design , identification of variables (constructs) and sample size determination. The method of data collection in this study was conducted by distributing questionnaires to respondents who had medical travel to Malaysia for use in the current study. The questions in the questionnaire are based on a reviewing scientific journals and books, and using the results of interviews with KPJ stakeholders in Aceh and the Acehnese who have done medical travels. Part 1 of the questionnaires present respondents demographic information with 12 items, such as sex, age, education, occupation, travel purpose, last year travel, destination of country, accompany travel, another country to destination, kind of treatment and etc. Part 2 of the questionnaire deals with the measurement using 34 attributes is also rated using a five point likert scale. The Data was successfully collected as much as 208 questionnaire that can be processed. Data collecting is done in non probability method with the kind of purposive sampling. For the Conceptual model, this research bases it on previous research literature and interviews with stakeholders in Aceh KPJ. Conceptual model of this study can be seen in Figure 1.

Result and Discussion

The data and the result of analysis is obtained based on the result analysis factor on medical tourism. The discussion of the research will start from the descriptive analysis of the profile of respondents, the test of validity and reliability factors used in the study and analysis of factors affecting medical tourism by means of AMOS software. The results of the study discussed in this chapter is based on the explanation of hypothesis testing, both the hypothesis objected and rejected.

The profile of respondents

After the questionnaires distributed and the data obtained, the next step was to conduct a descriptive analysis of the data to see its overall picture. Based on the findings, it can be seen that generally Acehnese people who travel to Malaysia medical tourism are women aged between 26–50 years. Meanwhile, the information and recommendations given by their friends / relatives who have ever done a medical trip to Malaysia become the main reason for Acehnese people to choose a medical trip to Malaysia. Most of the respondents stated that hearing and reading success of others who have already done the treatment in Malaysia is one of the main factors for choosing Malaysia as their medical trip. Another factor for Aceh Citizen to conduct a medical treatment in Malaysia is presence of KPJ in Aceh because the presence of KPJ in Aceh makes people easier to obtain information and consult with the intermediate Malaysian hospital office in Aceh. In addition to the reasons above, the other reasons are that people lack of trust toward the doctors in Aceh and the promotion like the one carried out by Malaysian government is still inadequate.

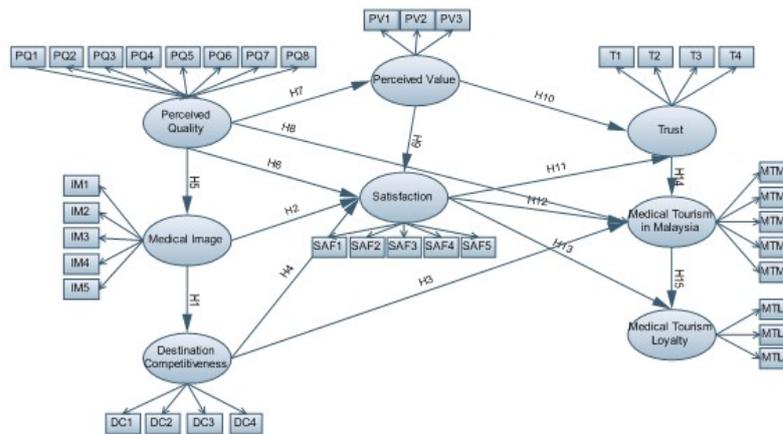


Figure 1. The structural model of medical tourism by Acehnese people to Malaysia

The analysis of Structural Model

After conducting a test on the measurement model (measurement model) and stating that the fit model and the entire construct could explain the latent variables formulated, the researcher then further tested the structural model (structural model). Santoso (2002) suggests that the structural model is a relationship among constructs that have a cause–effect relationship (causal). Structural model consists of independent variables and the dependent variable. This is in contrast to the measurement model (measurement), which treats all variables (constructs) as independent variables. This is a major difference between the measurement model with the structural model. But in essence, the basis of the SEM is all constructs and relationships between constructs should be based on certain theoretical basis. Testing the structural model consists of two main parts, namely the overall model test (overall model fit) and analyze the relationship between the constructs of the structural model (Susetiyana, 2009). Overall structural model (full model) can be seen in Figure 2.

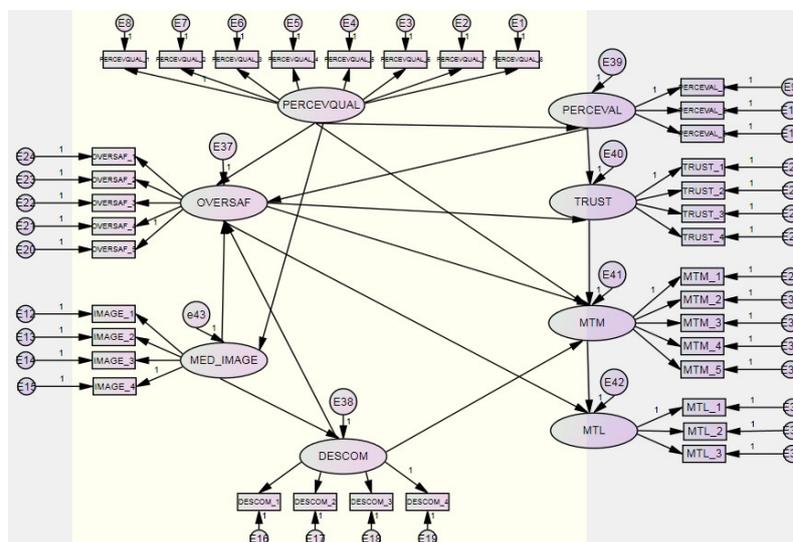


Figure 2. The model of equation structural through AMOS

To investigate the overall model, the testing can be conducted by employing software AMOS. The result of the test can be seen in Table 2. The Model is good if the result of CMIN on default model is in between CMIN Saturated Model and CMIN Independence Model (Santosos, 2002). As in Table 2, CMIN's value on default model is 2144,036 which is in between CMIN Saturated Model and CMIN Independence Model. The number of GFI indicates value of 0,650 and 0,60 for AGFI which approach to the value 1, whereas RMR's value indicates the value of 0,066 which approaches to the value 0, so with these matters support the statement that the model is fit with the existing data and the submitted model is good.

Table 2. The testing result of *Goodness of Fit Full Model SEM*

Testing Fit	The model of testing result	The Level of Acceptable Suitability
<i>Absolute Fit Indices</i>		
CMIN	2144,036	CMIN Independence Model < CMIN Default Model < CMIN Saturated Model
GFI	0,650	Approximate score 0-1; close to 1 better
AGFI	0,60	Approximate score 0-1; close to 1 better
RMR	0,066	Approximate score 0-1; close to 0 better
<i>Incremental Fit Indices</i>		
NFI	0,597	Approximate score 0-1 ; close to 1 better
RFI	0,561	Approximate score 0-1; close to 1 better
IFI	0,670	Approximate score 0-1; close to 1 better
TLI	0,637	Approximate score 0-1; close to 1 better
CFI	0,666	Approximate score 0-1; 1 better
<i>Parsimony Fit Indices</i>		
PNFI	0,548	Approximate score 0-1
PCFI	0,612	Approximate score 0-1

Figure 3. showed the result research of using AMOS Software. Based on the figure below it can be seen that there are 2 (two) hypotheses from 15 (fifteen) hypotheses that submitted in this research are rejected, the relation between perceived value construct and trust , and the relation between satisfaction construct and medical tourism in Malaysia. These cases indicate that the benefit perceived by Aceh people while taking medical treatment to Malaysia is not affected by the credibility of the Malaysia's treatment. However those cases are more affected by satisfaction level, which means when Aceh people has perceived the benefit, then it will affect the satisfaction level and inflict the trust. So it can be said that Aceh people who takes medical tourism to Malaysia is because the trust and the service quality that is given by Malaysia's hospital.

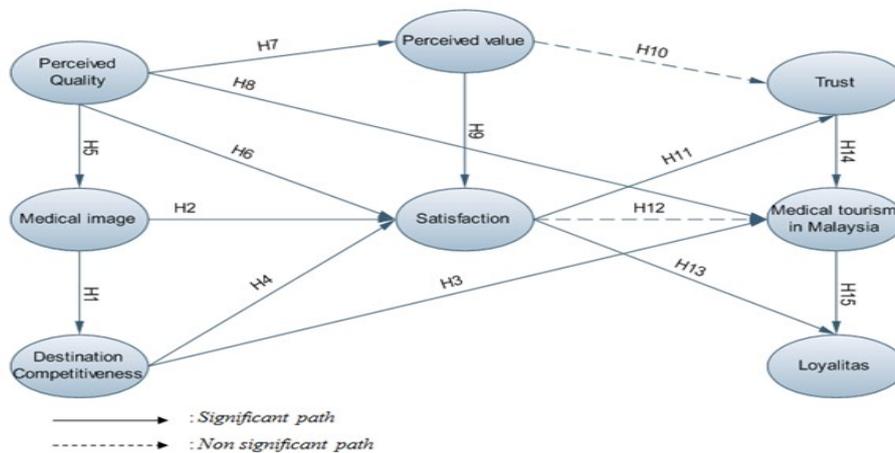


Figure 3. The result of model using AMOS

Conclusion

Based on the data collection, processing, and analysis conducted, it can be concluded as follows:

1. The effect of latent variable on structural equation modeling (SEM) can be elaborated as follow:

- a. The variables of medical image, perceived quality, perceived value, and destination competitiveness significantly influenced overall satisfaction and indirectly affected trust and medical tourism loyalty, while perceived value did not influence trust significantly.
 - b. Perceived quality significantly influenced medical image and indirectly affected destination competitiveness.
 - c. Overall satisfaction and medical tourism in Malaysia significantly influenced medical tourism loyalty, while overall satisfaction did not affect medical tourism in Malaysia.
 - d. Destination competitiveness and perceived quality significantly influences medical tourism in Malaysia and indirectly affected medical tourism loyalty.
 - e. Variable destination competitiveness and significant effect on the perceived quality of medical tourism in Malaysia, and indirectly affected on medical tourism loyalty.
2. To improve the customer loyalty and performance of hospitals in Aceh, the quality of hospital services in Aceh need to be improved. Also, doctors and medical staff should further improve their service in terms of attitude, friendliness and attention to patients. In addition, by improving the performance and expertise of the doctor, they can provide accurate diagnosis and information to patients.

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