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Determinants of Patients' Satisfaction: A Medical Tourism Study in Penang Island

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Abstract
This study examines the direct effect of service quality (using the dimensions i.e., tangibles, reliability, assurance, responsiveness and empathy) to medical tourist satisfaction. Besides that, this study also investigates the mediation effect of perceived value between service quality and medical tourist satisfaction. Data was collected through survey questionnaire and a total of 265 respondents who are medical tourist that acquired medical treatment from hospitals in Penang Island was collected and analysed. Data was analysed using Partial Least Squares. The results reveal that tangible, assurance and responsiveness dimensions are positively related to medical tourist satisfaction. In addition, medical tourist perceived value has a significant mediation effect on the relationship between perceived services quality dimensions (tangibles, reliability, assurance, responsiveness, and empathy) and satisfaction. The results provide a better understanding of medical tourist's satisfaction, perceived service quality and perceived value, its contribution factors. The managerial implication and future research directions are also suggested.
Keywords: Service Quality, Perceived value, Satisfaction, Medical Tourism, Penang Island

Introduction
Medical tourist is defined as an individual travelling beyond his/her borders of home country for holiday and to seek medical treatment simultaneously (Manaf et al., 2017). The concept of medical tourism is not entirely a new phenomenon and its popularity is constantly increasing (Sarwar et al., 2012). Asian countries such as Thailand, India and Singapore have been a very popular medical tourism destination and continuously attract numerous medical tourists since the past few decades (Connell, 2006). Since the Asia economic downturn in 1998, many other countries in Asia have realised the significance of economic diversification and this led Malaysia to increase its participation and development of medical tourism industry (Association of Private Hospitals of Malaysia, 2003). Since than Malaysia has been a distinguished destination for medical tourist (Businesscircle.com, 2014). In 2017, Malaysia's medical tourism industry earned revenues of RM 1.3 billion with a number of 1.2 million medical tourists visiting (MTHC, 2018).

Most of the medical tourists are from Indonesia, China, Japan, Singapore, United States of America and United Kingdom (Cham et al., 2015). According to MHTC, Penang Island is the

most sought-after destination by medical tourist followed by Melaka, Kuala Lumpur and Johor. In 2017 medical tourism industry in Penang generated RM500 million of revenue. According to Sarwar (2013) the main reasons medical tourism in Penang earn high reputation are because of the affordability of medical cost, government support and subsidies. The highly reputable in medical service quality and ability to save cost as high as 90% is a major contribution medical tourism in Malaysia (Cham et al., 2015). In addition to that a high rate of literacy of the people, and numerous facilities and services in medical aspect also contributes to its prominence among medical tourists. Hospitals that are actively involved in medical tourism in Penang Island are Pantai Mutiara Specialist Centre, Gleneagles Specialist Centre, Loh Guan Lye Specialist Centre, Island Hospital Penang, Adventist Hospital Penang, and Mount Miriam Cancer Centre. Hospitals in Penang Island offers a wide range of major services such as general medical screening, wellness and pain management, dental treatments, cardiothoracic surgeries, fertility treatments, cosmetic surgeries, cancer treatments, orthopaedic surgeries, and rehabilitative medicine (Bernama, 2010) which is very complete and comprehensive. Thus, making Penang Island as a competitive player in the medical tourism industry in Malaysia.

Despite all the interest regarding medical tourism, empirical research and finding concerning to medical tourism in Malaysia are still relatively limited (Heung et al., 2010; Manaf et al., 2015). In addition to that major of research on medical tourism were either from the perspective of service provider or conceptual papers (Taleghani et al., 2011). Furthermore, prior studies have also overlooked the view and opinions of medical tourists regarding aspects service quality and satisfaction (Hudson & Li, 2012). Since medical tourist are individuals who that are directly involved in experiencing the services offered by hospitals, thus its crucial to find out about their expectation and perception on the service quality, satisfaction and value. The relationship between service quality and satisfaction of customers has been explored by many authors, scholars and researchers within numerous settings covering many years. This includes internet marketing, insurance (Tsoukatos & Rand, 2006), banking and theme park (Tsang et al., 2012), thus in their respective studies they concluded that service quality is a vital component in determining satisfaction of customers. Hence the reflection of service quality in healthcare is also important in medical tourism perspective, as patients undertake the initiative to travel to a different country, and they look for excellent quality treatments along with services. Similarly, the delivery of quality service is compulsory for the purpose of satisfying foreign patients for them to constantly pursuing services from the provider. (Parasuraman et al., 1988). However, service quality does not necessarily signify patient's satisfaction and not all dimensions in the service quality is relevant in medical tourism industry. This is due to the fact there is very limited literature on the direct effect of service quality on satisfaction medical tourist in Malaysia (Cham et al 2015; Haque et al., 2018). Thus, Haque et al. (2018) in his research has recommended exploring the effects of dimensions of service quality to satisfaction in the medical tourism platform in Malaysia.

Perceived value is contemplated to be a vital aspect in the area of tourism as it is regarded as a crucial element of relationship-based marketing (Oh & Kim, 2017). It is also an important factor when it comes to the decision making the process of individuals (Sweeney & Soutar, 2001). The element of perceived value basically makes a comparison between the benefits or in other words the output attained from a product or services with its price (Zeithmal, 1988; Teas & Agarwal, 2000).

Hence it shares a close relationship with satisfaction, thus satisfaction is said to occur when individuals are of the opinion that they have attained a positive value. Besides that, perceived value acts as an antecedent of customer satisfaction (Eggert & Ulaga, 2002; Kuo et al., 2009; Raza et al., 2012). Researchers indicate that customer satisfaction is influenced by relational benefits and perceived value (Dagger & O' Brien, 2010; Han & Ryu, 2009). Further, the relationship between service quality, perceived value, and customer satisfaction are crucial to the service industry. However, there is virtually no empirical study to date in Malaysia examining the role of perceived value in mediating the relationship between service quality dimensions and patient satisfaction in healthcare services among medical tourist. (Malik et al., 2012; Manaf et al., 2017). In addition to that possible role of perceived value as mediating variable has received less academic attention, and very little is known about the mediating effect of perceived value in service quality models (Ismail et al., 2009). Hence to fill the gap this study also aims to find the mediating role of perceived vale between service quality and medical tourist satisfaction.

The objectives of this study are:
(i) To identify the effect of Service Quality dimensions on medical tourist Satisfaction;
(ii) To examine the effect of Service Quality on Perceived Value
(iii) To examine the effect of Perceived Value on medical tourist Satisfaction.
(iv) To examine the mediating effect of Perceived Value on the relationship between Service Quality and medical tourist Satisfaction

Next section will discuss on the past literature related to this research area. Followed by methodology section. This paper ends with the discussion and conclusion section.

Literature Review
Perceived Service Quality
Perceived service quality implies to the customer's evaluation of the superiority or inferiority of the services provided by the organization (Parasuraman et al., 1988). Service quality is the most crucial component of any service organization as it contributes to the triumph and existence of a business organization (McCain et al., 2005). In addition, according to Afridi et al. (2016) stated that service quality is important, not only because it reflects on service performance but also manifests the tangible aspect of the organization. However marketing studies from the past noticeably showed that perceived service quality and customer perceived value are important factors for any service providers in gaining a competitive advantage in any service industry (Shukla, 2010; Vargo & Lusch, 2004).In addition , it was reported by past researchers that the perceived service quality is the key aspect for the formation of perceived value in the service industry as well (Berry, 1995). Hence Malik (2012) in his recent study claimed that quality-related elements in service were anticipated as the most influential aspects for customer value, whereby it was found that a high level of perceived value can be formed with the high level of quality of service among service providers.

In the healthcare industry, receiving good quality care is a right of all patients and providing good quality healthcare is an ethical responsibility of all healthcare providers (Zineldin, 2006). Based on past literature on measuring perceived service quality in healthcare and medical tourism platform, SERVQUAL model was used (Butt & Run, 2010; Nazem & Mohamed, 2015,

Haque et al., 2018) The concept of SERVQUAL measurement scale was initially proposed by Parasuraman, Zeithaml, and Berry in 1985. Since than Butt & Run (2010); Akbolat et al (2011) have examined the applicability of SERVQUAL dimensions and mended it catering it to healthcare service through structural equation modelling analysis. The results of this research suggest that the SERVQUAL instrument is a useful measurement tool in assessing and monitoring service quality in hospitals, enabling the management to identify where service improvements are needed from the customers' perspectives. Service quality has recognized itself as an essential contributing factor of customer satisfaction. The interrelationships between the concepts of the study can be summarized as follows: perceived service quality is the antecedent of satisfaction (Murray & Howat, 2002); perceived service quality has direct and indirect effects on perceived value and satisfaction (Ladhari, 2009); service quality positively influences to customer satisfaction (Kuo et al., 2009) and there is a positive relationship between perceived service quality, perceived value, satisfaction, and revisit intension. Hence the 5 main dimension of service quality proposed by past literatures and adopted in this study are tangibles, reliability, assurance, responsiveness and empathy that can be effectively used to measure medical tourist satisfaction on the service quality.

Table 1. 5 Dimensions of the Service Quality model

Dimension	Definition
Tangibles	The physical environment of hospital including facilities, equipment, appearance of personnel and communication materials.
Reliability	Ability to perform the promise service dependably and accurately
Assurance	Knowledge and courtesy of employees of hospital and their ability to convey trust and confidence.
Responsiveness	Willingness to help patients and provide prompt service.
Empathy	Caring, individualized attention the hospital provides its patients

H1a-H1e: Service Quality dimensions (tangible, reliability, assurance, responsiveness & empathy) have a positive impact on medical tourist satisfaction.

H2a-H2e: Service Quality dimensions (tangible, reliability, assurance, responsiveness & empathy) have a positive impact on Perceived Value

Perceived Value
The role and value of the relationship between Perceived Value and customer satisfaction have been proven in management and marketing (Heskett & Sasser, 2010). Perceived value is a customer's psychological evaluation based on the product or service they have received. Researchers have found the advantages of perceived value and have incorporated them as organization competitive advantage (Birgelen et al., 1997). Early literature by Bolton & Drew (1991); Parasuraman (1988) have stated that customer perceived value is a major factor contributing to customer satisfaction. Since than many subsequent researchers described the pivotal role of perceived value where it directly influences customer willingness to buy or to purchase the service (Dodds & Monroe, 1985). Moreover, customer satisfaction and perceived value has positive relationship (Patterson & Spreng, 1997). Perceived value has been researched in more than 1 direction, for example in telecommunication service industry whereby it has incorporated with 3 direction such as economic, emotional and social values (Sweeney & Soutar, 2001). Customer perceived value is a rather crucial aspect in healthcare

industry, however Chahal and Kumari (2011) in their study stated that is neglected to a certain level in medical tourism platform. Since customer perceived value directly influences patient satisfaction and due to the complexity of healthcare industry, it needs high level of service customization for patients' requirements (Pedroso & Nakano, 2009). Besides that, several researchers such as (Manaf et al., 2017) and (Haque et al., 2018) have suggested that Perceived value has to be examined as mediator to medical tourist satisfaction and perceived service quality as it has some kind of association between the variables mentioned. Therefore, based on the importance of Perceived value in healthcare setting researchers have strongly suggested that perceived value should be included in medical tourism research (Anuwichanont & Gulid, 2010).

> H3 Perceived value has a positive effect of medical tourist satisfaction
> H4 Perceived value mediates between service quality and medical tourist satisfaction

Patient Satisfaction
Patient satisfaction refers to the degree to which the patient's desired expectations, goals, and preferences are met by the health care provider (Debono & Travaglia, 2009). Patient satisfaction can be explained as a collaborative process which reflects patients' quality review on the medical services experienced. For healthcare providers, researchers indicated that customer satisfaction leads to rewarding and beneficial results (Zeithaml, 2000). It has been found that patient satisfaction is imperative for the healthcare service providers in the following three areas: (1) maintaining their rapport & relationships with the patients because, satisfied patients are returning customers thus this will contribute to customer loyalty; (2) recognizing areas of strength and weaknesses in various areas in an organization, and (3) association with their financial benefits (Aldaqal et al., 2012). Thus, patient satisfaction is another key indicator for the healthcare service providers for their success & sustainability of the business (Pakdil & Harwood, 2005).

The Expectancy Confirmation Theory (ECT)
ECT is one of the widely acceptance model explaining the antecedents of customer satisfaction. The core of satisfaction process is the comparison of what was expected with the product or service's performance while this process has traditionally been described as the 'confirmation / disconfirmation' process. Hence, this research introduced ECT as a substantial theory for the framework that measure foreign patients' satisfaction. Oliver (1977) developed the Expectation confirmation theory (ECT). Basically, this theory proposed expectations, tied with perceived performance, lead to post-purchase satisfaction; while this effect is mediated through positive or negative disconfirmation between expectations and performance. Expectation of customers refers to the perceived value or benefits which they expected when consuming a product or services while the perceived performance refers the perceptions of the actual performance of a product or services. According to ECT, consumer will form a prior expectation on a specific product or service. Then, consumers develop their own perceptions of the performance of the products or services after they had used the products or services. After comparing the perceived performance with their initial expectation, they will determine whether their expectation had confirmed, and this led to their satisfaction or dissatisfaction. Consumers who are satisfied will have a repurchase intention, whereas dissatisfied consumers avoid consume again and seek for other alternatives. Besides, ECT was successfully tested in the study of Expectation Confirmation Perspective of Medical Tourism by Chou et al

(2012). Before foreign patients receive medical treatment overseas, they will form their own expectation on the service quality, value as well as the technology availability. Meanwhile, if the medical treatments they received had performed equal or exceed their expectations, the medical tourists will probably feel satisfied. Figure 1 depicts the conceptual associations between determinants of satisfaction.
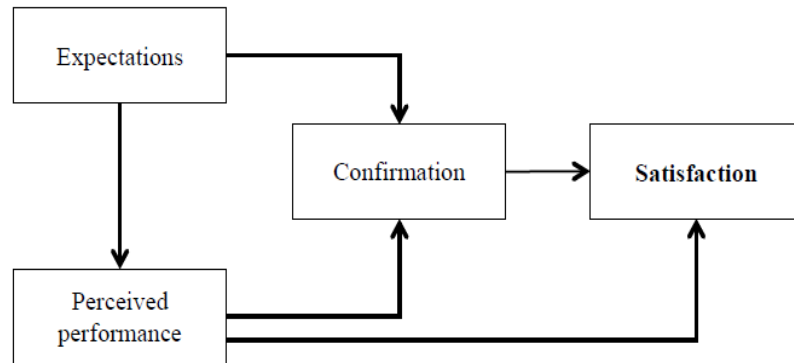
Figure 1. Expectancy Confirmation Conceptualisation

Conceptual Framework
This study analyses the relationships between service quality, perceived value and satisfaction of medical tourists who obtain the service in hospitals that are involved in medical tourism. Besides that, it also examines the direct effect of service quality towards medical tourist satisfaction. Hence the figure below illustrates the framework that has been established based on previous research finding. Service quality being the independent variable is composed from dimension of SERVQUAL (Parasuraman et al 1985) which are Tangible (TA), Reliability (RE), Assurance (AS), Responsiveness (RES) and Empathy (EM). Satisfaction being the dependant variable and perceived value being the mediator that associates service quality and satisfaction of medical tourists.

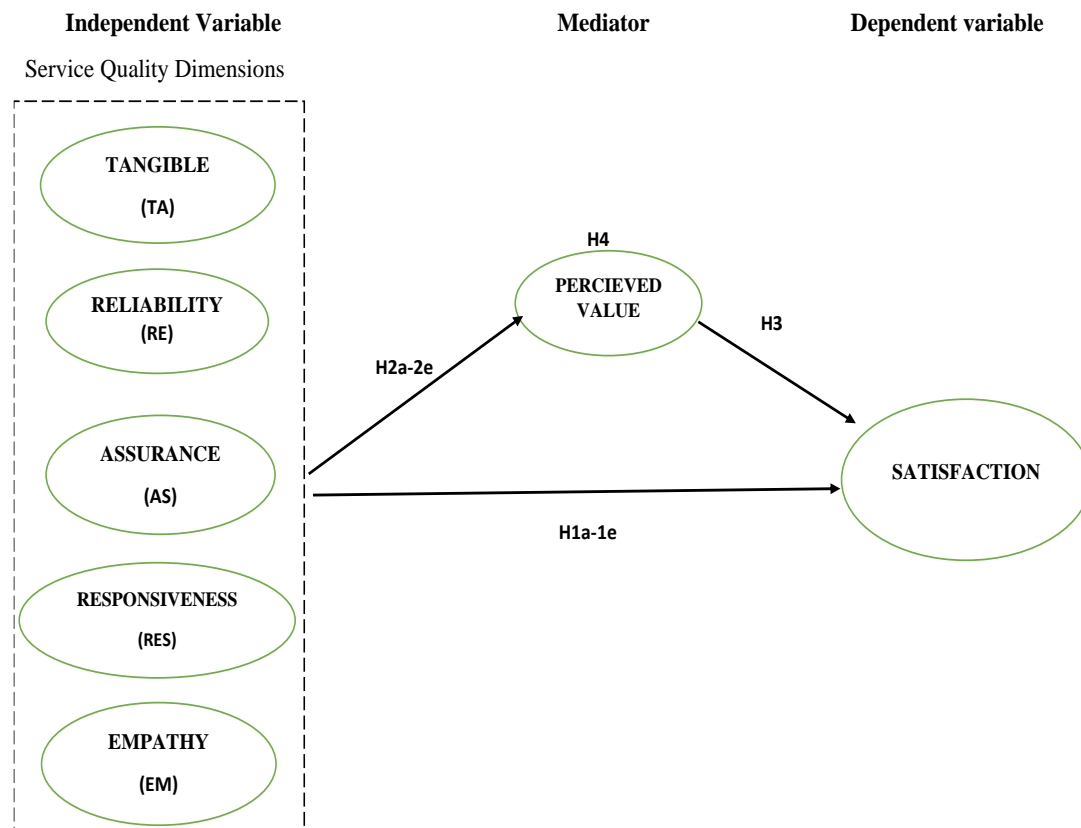Figure 2. Research Conceptual Framework

Methodology

Sampling Method

The target respondents in this study were the medical tourists that are seeking medical services in the hospitals involved in medical tourism in Penang Island such as Pantai Mutiara Hospital Penang, Gleneagles Penang, Loh Guan Lye Specialist centre, Island Specialist centre and Adventist Medical centre. A total of 300 survey questionnaires were personally distributed to the medical tourists in the five selected hospitals, in order for the medical tourists to qualify as the respondents for this study, they must have fulfilled two benchmarks which are they must come to Malaysia for a medical treatment, and they must have direct or indirect involvement in any tourism activities during the trip. These respondents took part in the survey on voluntary basis.

Survey Measurements

This study is ideal for focusing on the impact of hospital service quality and medical tourist perceived value to their satisfaction. It is a cross-sectional study with the adoption of a quantitative approach and aims to achieve objective results through regulated research design. The questionnaire adoption was done based on previous research such as Saiprasert (2011), whereby the setting was very similar to this study, in addition to that the Cronbach 's Alpha and Convergent Reliability values for the constructs of service quality, perceived value and satisfaction in their study were between 0.70 and 0.90 which is viewed as suitable and reliable for this study as well. All items were measured using a 6-point Likert scale, from 1 = Strongly Disagree to 6 = Strongly Agree. The questionnaire utilized was presented in two languages, English and Bahasa Indonesia.

Demographic

The demographic profile of respondents is demonstrated in Table 2. The 265 responses were obtained, from the five different private hospitals that are involved with medical tourism which are Pantai Mutiara Hospital Penang, Gleneagles Penang, Loh Guan Lye Specialist centre, Island Specialist centre and Adventist hospital. Among the 265 respondents, over one-half were female (61.6%) and 38.4% were male. Most of the respondents were between the ages 46 to 55 years (27%) and closely followed by the ages 36 to 45 years old (25%). In addition to that majority of them were married (75.5%). With regards to education level most of the medical tourist owned a bachelor's degree (28%) and Certificate or Diploma (24 %). The most sought medical treatment by medical tourist were in the orthopaedic field (37.8%), followed by comprehensive medical- check-up which is about 15%. Oncology rated third highest which is 12.2% and the lowest which is only 4.5% on cosmetic treatment. Overall, 40.3% of respondents visited Penang Island and received medical treatment for the 1st time and 59.7% at least 2 times or more. The highest number of tourists responded to this study voluntarily was from Indonesia which is 45%, followed by Japanese (25%) and China (10%). Meanwhile the least number was from Singapore which makes up to 3 % out of the total.

Table 2. Demographic Profile of Respondents *(n=265)*

Variables	Descriptions	%
Gender	Male	38.4
	Female	61.6
Age	25 years and below	3.4
	26-35 years	18
	36-45 years	25
	46-55 years	27
	56-65 years	20
	Above 65 years	6.6
Marital	Single	15.5
	Married	75.5
	Widowed	9
Education Level	High School or below	20
	Certificate or Diploma	24
	Professional Certificate	15
	Bachelor's degree	28
	Postgraduate	13
Number of visits	1st time	40.3
	2 or more	59.7
Type of Medical Service Sought	Orthopaedic	37.8
	Lasik's or Sight	15
	Fertility	10
	Cosmetic	4.5
	Cardiovascular	5.5
	Oncology	12.2
	Comprehensive medical -check up	15
Origin of Tourist	Korea	5
	Singapore	3
	Indonesia	45
	China	10
	Japan	25
	India	4
	United Kingdom (U.K)	8

Analysis
Data were analysed with using a Partial Least Squares (PLS) method employing Smart PLS Version 3.2 to assess the conceptual model. This study applied the PLS algorithm procedures to determine the significant levels of loadings, average variance extracted (AVE) and path coefficients. The standardized factor loadings and average variance extracted (AVE) of each construct to verify the convergent validity. The composite reliability (CR) for each construct is used to verify the convergent reliability. Bootstrapping technique was employed to determine

the significant level of the proposed hypothesis. Lastly, the blindfolding procedures were used to determine and assess the accuracy of the tested hypothesis and to obtain Q^2 values

Result

Assessment of measurement model

Multiple items used to measure stimulus service quality (Tangibles, Reliability, Assurance, Responsiveness, Empathy), mediator (Perceived Value) and the response (Patient Satisfaction). The measurement model was tested for convergent validity, which was assessed through factor loadings (FL), composite reliability (CR) and average variance extracted (AVE). According to Wu et al. (2018), for each construct, the standardized factor loading was above the threshold of 0.50 and the AVE estimate was higher than the threshold of 0.50, as suggested by (Bagozzi and Yi, 1989; Fornell and Larcker, 1981). As suggested by Fornell and Larcker (1981), the CRs were greater than the value of 0.60. These results revealed that the instrument had good convergent validity. As shown in Table 3, all items have exceeded the recommended value. The data of this study indicated a strong evidence of construct validity and reliability for the scales of perceived service quality (SERVQUAL), perceived value, and patient satisfaction.

Table 3. Assessment results of the measurement model

Constructs	Items	FL	CR	AVE
Tangibles (TA)	This hospital has up-to-date equipment	0.766	0.932	0.774
	The physical facilities of this hospital are visually appealing	0.872		
	The staffs of this hospital appearance are neat	0.938		
	The materials associated with this hospital are visually appealing.	0.933		
Reliability (RE)	The staffs of this hospital perform the medical service right on the first time	0.891	0.958	0.818
	The staffs of this hospital provided dependable services as promised	0.927		
	The staffs of this hospital are sincere to solve my problems	0.916		
	The staffs of this hospital provide services at the appointed time.	0.903		
	This hospital keeps accurate medical records.	0.886		
Assurance (AS)	The staffs of this hospital are trustworthy	0.921	0.957	0.847
	I feel safe in receiving services from the staffs of this hospital	0.970		
	The staffs of this hospital are consistently courteous to me	0.927		
	The staffs of this hospital have the knowledge to answer my questions	0.910		

		FL	CR	AVE
Responsiveness (RES)	The staffs of this hospital tell me when the services will be performed.	0.921	0.964	0.868
	I received prompt service from the staffs of this hospital	0.970		
	The staffs of this hospital are always willing to help me.	0.927		
	The staffs of this hospital are never too busy to respond my requests.	0.910		
Empathy (EM)	This hospital has convenient operating hours for my needs	0.658	0.958	0.819
	The staffs of this hospital give individual attention to me.	0.791		
	The staffs of this hospital give me personal attention	0.830		
	This hospital has my best interests at heart	0.889		
	The staffs of this hospital understand my specific needs	0.874		
Perceived Value (PV)				
	The time I spent travelling from my country to this country to receive medical service is worthwhile	0.921	0.966	0.876
	The money I spent for this medical service is well worth it.	0.941		
	The services provided by this hospital are good for what I have to pay.	0.942		
	The effort involved to decide on this medical service in this hospital is worthwhile	0.939		
Satisfaction (S)				
	I am satisfied with my decision to use the service at this hospital	0.940	0.958	0.850
	My overall experience in this hospital is satisfactory	0.946		
	My choice to come to this hospital to get medical treatment is a wise decision	0.935		
	I am not disappointed at all using the service in this hospital	0.964		

Note: FL=Factor Loadings, CR=Composite Reliability, AVE=Average Variance Extracted

HTMT (0.90)
According to Henseler et al (2015), the heterotrait-monotrait ratio of correlations (HTMT) is a new approach to assess discriminant validity. According to, Manaf (2017), "discriminant validity refers to the extent to which the measure is not a reflection of other variables and it is indicated by low correlations between the measure of interest and the measure of other constructs". Some authors mentioned that the value of HTMT should be lower than 0.85, whereas others propose a value of 0.90 (Henseler et al., 2015). In this paper, we use the HTMT

0.90 in order to establish discriminant validity. Table 4 clearly shows that all the values are below .90, hence confirming the discriminant validity of the variables.

Table 4. HTMT $_{(0.90)}$

	TA	RE	AS	RES	EM	S	PV
Tangibles (TA)							
Reliability (RE)	0.870						
Assurance (AS)	0.826	0.871					
Responsiveness (RES)	0.845	0.862	0.803				
Empathy (EM)	0.819	0.837	0.825	0.892			
Satisfaction(S)	0.792	0.805	0.772	0.856	0.817		
Perceived Value (PV)	0.780	0.816	0.793	0.848	0.856	0.835	

Coefficient of determination (R^2)
The accuracy of the model's predictions was determined by examining the proportion of variance explained. The R^2 is a way to evaluate the explanatory power of the model. The R^2 values for endogenous latent variables are classified as a strong, moderate, or weak, whenever the R^2 values are greater than the threshold values as much as 0.67, 0.33, or 0.19, respectively (Chin et al., 2008; Ali et al., 2018). The result of present study shows is 83.3% (R^2= 0.833) of the variance in medical tourist perceived value are explained by the endogenous construct of service quality dimension. While 81.1% (R^2=0.811) of variance in medical tourist satisfaction are explained by perceive value and service quality dimension.

Predictive relevance (Q^2)
In this study, the blindfolding procedure, Q^2 were employed to test how well the collected data can be reconstructed empirically with the help of the model and PLS parameters as guided by Saiprasert (2011) whereby each carried out their studies on medical tourism platform in Hong Kong and Thailand respectively. A Q^2 greater than 0 indicate the model has predictive relevance, whereas Q^2 less than 0 indicate the model lacks predictive relevance. As shown in Table 5, Q^2 for medical tourists perceived value, and satisfaction are 0.699, and 0.634, respectively, indicating acceptable predictive relevance.

Table 5. Results of R^2 and Q^2 Values

Constructs	R^2	Q^2
Perceived value	0.833	0.699
Satisfaction	0.811	0.634

Assessment of structural model
Direct Effect
A bootstrapping procedure was conducted, with 3000 iterations to determine the significance levels of proposed hypothesis. The result of the structural model and hypothesis testing are presented in Table 6. The results shows that the effects of service quality dimension namely tangible (β=0.207, p<0.001), assurance (β = 0.298, p < 0.05), responsiveness (β = 0.196, p < 0.05) are positive and significant on patients' satisfaction, on the other hand reliability (β = 0.008, p>0.05) and empathy (β =0.082, p>0.05) are not significant towards patients' satisfaction directly. Thus, H1a, H1c, and H1d are supported, while H1b, and H1e are not supported. The results also depict that patient perceived value (β = 0.519, p<0.001) have

positive and significant effect on patient's satisfaction thus H3 is supported. In addition to that the effects of all the service quality dimensions, tangible (β= 0.511, p<0.05), reliability (β = 0.307, p<0.05), assurance (β = 0.366, p<0.05), responsiveness (β =0.174, p<0.05), empathy (β =0.247, p<0.001) towards patients perceived value is positive and significant. As a result, H2a, H2b, H2c, H2d, H2e are supported. The structural model path coefficient is shown in figure 2.
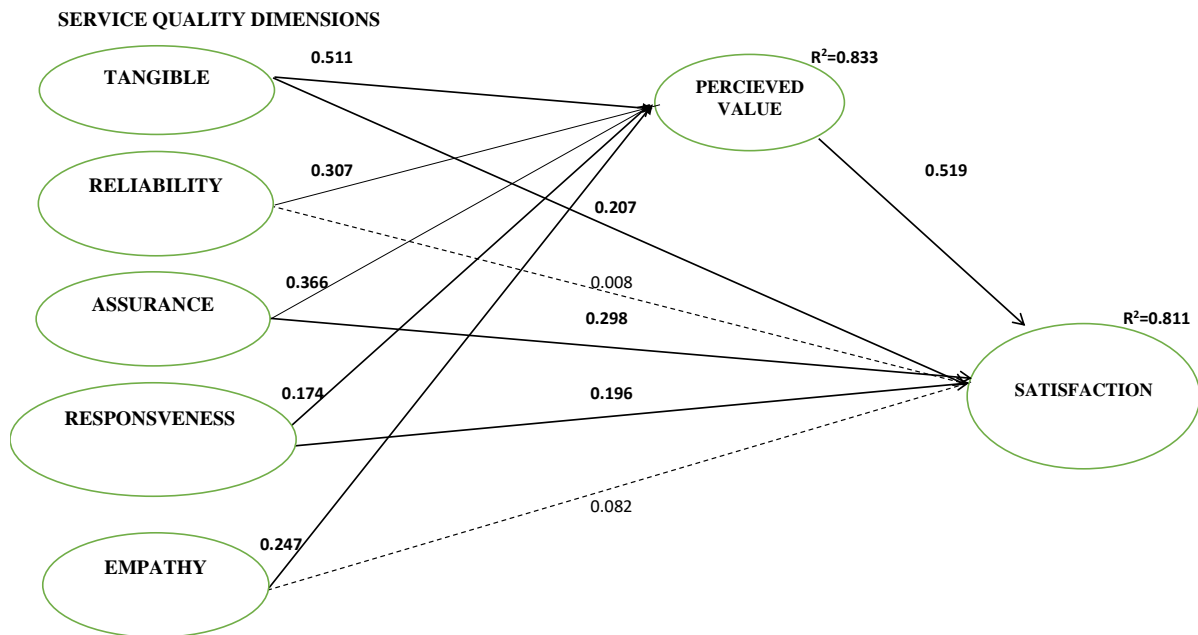

Figure 2. Structural Model Path Coefficients

Table 6. Structural Parameter Estimates

Hypothesis	Hypothesis Path	Path Coefficient	T-value	P Values	Decision
H1b	RE → S	0.008	0.924	0.478	Not supported
H1c	AS → S	0.201	1.710	0.048*	Supported
H1d	RES→S	0.196	5.338	0.045*	Supported
H1e	EM → S	0.082	0.122	0.167	Not supported
H3	PV → S	0.519	12.793	0.000***	Supported
H2a	TA → PV	0.511	11.702	0.000***	Supported
H2b	RE→PV	0.307	2.480	0.002*	Supported
H2c	AS → PV	0.366	1.799	0.048*	Supported
H2d	RES → PV	0.174	6.694	0.000***	Supported

Note: (TA, RE, AS, RES, EM) =SERVQUAL Dimensions; PV=Perceived Value; S=Satisfaction
Note: *p<0.05, **p<0.01, ***p<0.001 (One-tail)

Mediation Effect of Perceived Value
This research empirically examined the impact of service quality and mediating effect of perceived value on patient's satisfaction. There are two step procedures involved the use of bootstrapping including first checking the significant of direct effect without the presence of the mediators (perceived value) in the model. Secondly, checking on the significance of indirect effect and associated *T*-values using path coefficients with mediators included in the

model. The indirect effect was conducted to investigate whether hospitals service quality affect medical tourist satisfaction through the mediating effect of perceived value. As shown in Table 7, the tangible, reliability, assurance, responsiveness and empathy, dimension of hospitals service quality has positive indirect effect on patients' satisfaction mediating trough perceived value where, the t values are more than 1.96 and p values are less than 0.05 (t-value > 1.96, p < 0.05). In addition to that confidence interval for the indirect effect of each of the service quality dimensions does not straddle a zero in between, further supporting the presence of mediation effect of perceived value (Preacher & Hayes, 2004) Therefore, it can be concluded that in H4 the mediation effect is statistically significant and the hypothesis is accepted.

Table 7. Specific Indirect Effect

Path	Path Coefficient	T value	P Values	Confidence Interval LL	UL	Decision
TA →PV→ S	0.481	5.723	0.00***	0.231	0.601	Supported
RE → PV→ S	0.328	2.497	0.023*	0.212	0.500	Supported
AS → PV → S	0.149	3.452	0.00***	0.089	0.257	Supported
RES→ PV→ S	0.259	4.912	0.00***	0.122	0.488	Supported
EM→ PV→S	0.388	2.337	0.043*	0.219	0.517	Supported

Note: (TA, RE, AS, RES, EM) =SERVQUAL Dimensions; (PV) = Perceived Value; S= Satisfaction
Note: *p<0.05, **p<0.01, ***p<0.001 (One-tail)

Discussion

The Effects of Service Quality Dimension on Perceived Value
In this study the statistical finding for all the service quality dimension (tangible, reliability, assurance, responsiveness, empathy) associated to medical tourist perceived value are positive and significant. The dimensions that were identified with the highest T-value is tangible (β = 0.511, t = 11.702, p < 0.001), followed by responsiveness (β = 0.174, t = 6.694, p < 0.001). Perceived value can be described as the relative difference between money paid and sacrifices made for the service that one receives (Zeithaml & Bitner, 2000). Similarly, it means, positive value that is experienced by the medical tourist when less effort is sacrificed, and less money is spent for a higher quality services or product. Thus, this study is congruent with past study that corelates perceived value with service quality dimension (Haque et al., 2018; Cronin et al., 2000; Hu et al., 2010; Malik, 2012). Therefore, the finding from this study shows that service quality indeed plays a crucial role in influencing the level of value perception among the medical tourists who visited Malaysia for medical purposes (Manaf et al., 2015). Moreover, as there is an increasing competition in the medical tourism industry especially in Penang, medical tourists 'perception of value is seen to be an important component by hospitals to move a step ahead in the competition and to reap long-term benefits. Hence, in order to ensure the medical tourists continues to value Penang as medical destination in a positive manner, hospitals in this industry should work together in striving to improve the

level of service quality, while ensuring all the effort, money, and time that medical tourists sacrificed for their medical trip are worthwhile.

The Effects of Service Quality Dimension on Medical Tourist Satisfaction
This study reveals of the main predictors of service quality dimension patient's satisfaction in context of health tourism. Based on the table above we can conclude that the directs effect of service quality towards patient satisfaction, only 3 out of 5 dimensions which is (tangible, assurance and responsiveness) show positive and significant association towards patients' satisfaction. On the other hand, reliability and assurance do not have any significant effect on patient's satisfaction directly. This result supports previous study such as Tomes & Ng (1995) that not all dimension of service quality must be directly affected patients' satisfaction. Hence, past research concluded that not all dimension of service quality is relevant in healthcare setting to asses patient's satisfaction. In healthcare setting, when a patient receives treatment, they are not only concerned about the physical treatment but also psychologically disturbed as they have fears about side effect of treatments, disability or even death. Hence not all service quality dimension is able to reflects on medical tourist satisfaction directly

The mediator effect of perceived value on medical tourists' satisfaction
In studies that examined the direct relationship between service quality and customer satisfaction disclosed that the relationship between both variables does not seem to be significant always (Manaf et al., 2017; Azman, 2015; Finn, 2011). This is because direct relationship between service quality and customer satisfaction is inadequate, and this would provide an imperfect and unclear picture of what drives customer satisfaction because the roles of other concepts such as customer trust and sacrifices that are incorporated in perceived value, were virtually neglected. (Kim et al., 2009; McDougall & Levesque, 2000). Studies of Malik (2012); Yunus et al (2009) have incorporated the variable perceived value linking service quality and customer satisfaction independently, had positive effect on customer satisfaction in research field such as telecommunication and banking in Pakistan and India. Therefore, the association of service quality and patient satisfaction is not entirely linear but mediated by perceived value of patient, as the role of perceived value describes the value customers or patients receive based on their money and time they spend in the hospital.

Thus, in this study the inclusion of the variable perceived value demonstrates a very crucial role explaining and depicting a clearer picture of patients' satisfaction in medical tourism context. Hence hospitals that are involved with medical tourism should not only depend on service quality alone but must also consider the impact of perceived value as (mediating factor) on relating on medical tourist satisfaction.

Theoretical and Managerial Implications
The purpose of this study is to demonstrate how hospitals that are involved in medical tourism can improve their business and services by understanding the relationship among their medical tourist perceived service quality, perceived value and satisfaction. Previously there were few researches that has been conducted to identify the relative importance of service quality in influencing the level of medical tourist satisfaction by using the service quality as predictors (Manaf et al., 2017; Haque et al., 2018). Hence this research was carried

out to close the gap that was presented in previous research. Thus, this study puts forward several theoretical and managerial implications as follows.

Firstly, this study does not consider that all the SERVQUAL dimensions represents a comprehensive evaluation on medical tourists' satisfaction directly. Tough the empirical study aims to find out the direct effect of service quality to medical tourist satisfaction, only tangible, responsiveness and assurance have significant direct effect on the satisfaction of medical tourist, however the introduction of perceived value as a mediator between service quality and medical tourist satisfaction, shows positive and significant association of all the dimension of service quality (tangible, assurance, responsiveness, reliability and empathy) and medical tourist satisfaction indirectly. Thus, perceived value is a crucial and prominent mediator in the evaluation medical tourist satisfaction. In addition, this research found that the 'tangible' dimension is the strongest variable reflecting on medical tourist perceived value and satisfaction as well.

Besides theoretical implications, this study provides several managerial implications. This research framework can be applied as strategic planning process for hospital management to develop an effective strategies and resources allocation based on the market needs of medical tourist. Continuous focus and enhancement on all dimension of service quality, mainly 'tangible' will have positive impact on the perceived value and satisfaction of medical tourist.

Areas that management of hospitals can perpetually explore on are the physical appearance of buildings and medical staff, the decoration of wards and clinics, lighting, ambience, background music, improvement of latest medical technologies, emphasise on the neatness of buildings, and the cleanliness of the overall environment. This is because tangible aspects are something easily accessed and experienced by medical tourist who visit the service providers and have a direct effect on their responses, impression, and perceptions (e.g., Baker & Collier, 2005). However, service providers very often have difficulty to control and set a standard for measurement for satisfaction because different customers have different needs, wants and perceptions on service features. Hence a regular market research and focus group interviews is needed in order to understand the medical tourists' requirements and expectations better in addition to improve performance of the hospitals. Thus, the result of this study provides hospital management and policy makers with a clear understanding of the significance of perceived value and service quality in medical tourist's satisfaction level, which can aid them in good decision-making process.

Limitations and Directions for Future Research
Future study can embark on wider representation of data collection and include varied and diversified samples (e.g., broader geographical perimeters and comprising tourist from numerous states). In addition to that other consideration might be widening the time frame for data collection process, due to the fact, medical tourist visitation to Malaysia is seasonal hence highly likely to obtain data from variety of respondents on different time of the year. Since this study was using quantitative research approach which requires respondents to answer closed end questions thus there is no qualitative inputs (focus group or interviews) form the respondents. Thus, respondents are unable to give subjective response, opinions or suggestion on the area of investigation, which would have complimented this study very

much. Therefore, it is recommended that future research consider the triangulation methods (e.g., combination of both qualitative and quantitative approaches) in order to enhance findings of the study and to improve generalisability of the findings that are pertinent to the medical tourism industry.

Conclusion

The overall purpose of this study was to build up an understanding of the effect of perceived service quality, perceived value on medical tourist satisfaction. The results prove the hypothesized relationship in the research framework. All the dimension of perceived service quality affects positively on customer satisfaction mediated by perceived value. However only tangible, assurance and responsiveness have direct association with medical tourist satisfaction. Hence this research can contribute to healthcare service provider, policy makers and even government in strategic decision making especially focusing on the enrichments of service quality, providing value and further increasing the satisfaction of medical tourist, which in return will bring positive and beneficial impact on our tourism industry not only in Penang but as Malaysia as a whole.

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