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Antecedents of Patient Satisfaction and Patient Loyalty in the Medical Tourism sector in Kerala, India.

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Abstract

Purpose- The present study aims to validate the measurement scale for assessing the antecedents of Patient Satisfaction and Patient Loyalty in the Medical Tourism sector in Kerala, India.

Design/ Methodology/ approach: The paper includes item development, data collection reliability and validity tests and validation of measurement model using Structural Equation Modelling with Partial Least Squares Path Modelling. For Service Quality, the SERVPERF Model suggested by (Cronin & Taylor, 1992) was adopted. For other constructs, variables were identified through extant literature review and Focus Group Discussions.

Findings: In order to validate the measurement model, some variables are removed from the proposed model that has lower path loading than the threshold limit 0.4. Then the validated measurement model that indicates the relationship between the latent variables and the manifest variables is brought out through this analysis. This study gives a validated scale that carries 4 antecedents of Patient Satisfaction such as Treatment Quality (TQ), Service Quality (SQ), Cost Attractiveness (CA) and Destination Image(DI).

Practical implications: The Government in the destination country and other stakeholders in the medical tourism sector are very much interested in understanding the information regarding medical tourism. It gives them the power to sustain in this flourishing tourism sector. Present study provides insights to make medical tourists more satisfied and to generate patient loyalty towards service provider. Hence, the service providers can understand the antecedents of patient satisfaction in the medical tourism sector and can formulate policies accordingly.

Originality/ Value: The study brings new insights to the existing body of knowledge by developing a measurement scale for assessing antecedents of Patient Satisfaction and Patient Loyalty in the Medical Tourism sector in Kerala, India.

Keywords: Medical Tourism, Measurement Model, Structural Model, Treatment Quality, Service Quality, Destination Image, Cost Attractiveness, Patient Satisfaction, Patient Loyalty.

Introduction

Medical tourism is characterised by international competition employing various innovative and creative approaches to medical services (Debata et al., 2011; Veerasoontorn et al., 2011). It ultimately resulted in the economic growth and strategic development of the destination countries (Hopkins et al., 2010). Comparatively, MT sector is a large industry and involves international travelling to get medical services (Ediansyah et al., 2022). According to Lubowiecki-Vikuk & Dryglas (2019, p.1257), "There are four requisites for medical tourism services such as a medical specialist to consult with, to approve and to perform medical procedure, qualified medical staff to perform services, medical and health care and the patient

paying for the total expenses of the services". The hospitals that provide medical tourism services emphasise on the international standards of the services and treatments in terms of modernised technology and equipment, trained professionals and other manpower, infrastructure, specialist, and special services to the medical tourists (Bhagyanadh, 2007).

The terms 'health tourism'(Hopkins, Labonté, Runnels, & Packer, 2010; Mohamad et al., 2012), 'medical tourism' (Hopkins et al., 2010; Cherukara & Manalel, 2008; Crooks, Kingsbury, Snyder, & Johnston, 2010; Crooks, Turner, Snyder, Johnston, & Kingsbury, 2011; Heung, Kucukusta, & Song, 2010; Sultana et al., 2014), 'medical travel' (J. M. Cherukara & Manalel, 2008; Hopkins et al 2010), and 'health services outsourcing' (Manaf, Hussin, Kassim, Alavi, & Dahari, 2015) are used interchangeably in previous studies. Though it is clear from the review that most of them have used the term 'Medical Tourism' (Toni et al., 2023). Crooks et al. (2010) stated that none of the medical tourism definitions gained wider acceptance till date. In the words of Crooks et al. (2010, p.1), "medical tourism is understood as travel abroad with the intention of obtaining non-emergency medical services".

Now India, a developing nation has emerged as an important medical tourism hub (Malhotra& Dave, 2022). The Indian healthcare federation is working along with different industry chambers to promote medical tourism in the country (Vitthal et al., 2015). India has a competitive advantage in the medical tourism sector in terms of high standard medical care at reasonable cost, skilled professionals, availability of modern and up to date technology, ease of visa and considerable success rates (Debata et al., 2011). Kerala, a state in India has also been well established as a hub of medical tourism not only as a supplementary tourism destination with its scenic beauty but as a world class treatment destination with its high quality medical care. The outstanding medical facilities, hospital amenities, pre- treatment care and follow up, pleasant weather and climate and above all recovery and success rate in Kerala provides a positive experience (Prasad, 2018).

Ediansyah et al., (2022) has revealed that the researches in medical tourism industry provides a positive sign for the industry. In the academic field, most of the research concentrates on the western context with little attention being given to emerging MT destinations (Li et al., 2022). Even in the available literature there is little attention being given by researchers to bring a cohesive view of what makes up the antecedents of patient satisfaction in Medical Tourism sector. The following sections present the review of literature, scale development and validation.

Literature Review

Literature review was done in line with methodology suggested by Jahan et al., (2016) and Tranfield et al., (2003). The review process involved 3 phases namely Planning the Review, Conducting the review and Reporting and Dissemination. In the planning phase, after identifying the purpose and scope of the review, review protocols were set specifying appropriate inclusion and exclusion criteria to minimize the possibility of bias in the selection process. Only studies that meet all the inclusion and exclusion measures are incorporated in the review (Toni et al., 2023). Suring the conduct of review, the combination of the keywords like 'medical tourism', 'health tourism', 'wellness tourism', 'tourism', 'service quality', 'treatment quality', 'cost attractiveness', 'patient satisfaction', 'customer satisfaction', 'customer loyalty' were used to search out the related past studies. The research papers were accessed from the digital data sources like JSTOR (http://www.jstor.com), Elsevier

(http://www.elsevier.com/journals), EBSCO- http://search.ebscohost.com/), British Library Online Journals (http://www.library.britishcouncil.org.in/), Sage Online Journals (http://online.sagepub.com/), Wiley Online Journals (http://onlinelibrary.wiley.com/), Inderscience (http://www.inderscience.com /) and Taylor & Francis Online (http://www.tandfonline.com) (Toni et al., 2023).
Of the 102 research papers that were identified for literature review from the databases searched, 71 sources were ultimately included in this review. Only sources in the English-language were considered. The decision regarding the selection and rejection was also done with the help of a two-member expert review panel in order to ensure the unbiased review (Tranfield et al., 2003). For the present study, review on the antecedents of Patient Satisfaction such as Treatment quality, Service quality, Destination image and Cost attractiveness and these factors are discussed in the section (Toni et al., 2023).

Service Quality
According to Prasad (2018), services is the act of an organisation that increases and develops the welfare and well-being of people. Quality is the degree of fineness or zero defects (Shewfelt, 1999). By combining these two, we get the term 'service quality' that is dependent on expected and perceived service where expectations means the customers' needs or requests about a service (Akdere, Top, & Tekingündüz, 2018) and perceived quality is the end result of comparison between his expectation and actual service he has received (Gronroos, 1984). In the extremely competitive environment, the service quality evaluation by customers is vital for service firms (Omar, Ariffin, & Ahmad, 2016).
The initial attempts to conceptualise service quality were in the 1980s from the Nordic (European) (Gronroos, 1984) and American (Parasuraman et al., 1985, 1988) school of thoughts (Polyakova & Mirza, 2015) and the basis for this conceptualisation was the comparison of expected service with the actual service received (Gronroos, 1984; Parasuraman et al., 1988; Polyakova & Mirza, 2015). Grönroos (1988) put forward 'the five rule of services' and they are;

Rule1: The General Approach: *People develop and maintain good and enduring customer contacts. Employees ought to act as consultants, who are prepared to do their duty when the customer needs them and in a way the customer wants. The firm which manages to do this best strengthens its customer relations and achieves greater profitability.*
Rule 2: Demand Analysis: *the contact persons will have to do their own analysis of the needs and wants of the customer at the point and time of service production and consumption.*
Rule 3: Quality Control: *The contact person will have to control the quality of the service himself/ herself at the same time as he or she produces the service.*
Rule 4: Marketing: *The contact person will have to be a marketer of the service he or she simultaneously produces.*
Rule 5: Organisational Support: *Appropriate organisational structure, technology and management is needed to support, encourage and motivate contact persons to give good service in customer relationships.*
Parasuraman et al. (1985) propounded 10 service quality determinants such as Reliability, Responsiveness, Tangibles, Access, Competence, Courtesy, Communication, Security, Credibility and Understanding or Knowing the customer based on focus group sessions. Later, they modified these determinants and developed the 'Five dimension model of Service Quality'. In this model they used the term 'Perceived Service Quality' in order to measure the service quality (Akdere et al., 2018).

Among the service quality models, SERVQUAL as well as SERVPERF is the most commonly advocated and applied scales of service quality (Jain & Gupta, 2004). The customer gap, the difference between expectations and perceptions of customers was measured using a multiple item instrument called SERVQUAL. It represents the service quality dimensions namely, tangibles, reliability, responsiveness, assurance and empathy (Parasuraman, Berry, & Zeithaml, 1991). According to (Parasuraman et al. (1988) the construct 'Tangibility, comprises the appearance of personnel, physical facilities and equipment. Likewise, the ability of personnel to perform the promised service comes under the dimension called 'Reliability'. Another dimension called 'Responsiveness' is their willingness to provide prompt service and to help customers. 'Assurance' comprises employees' courtesy and knowledge as well as the ability to ensure trust and confidence. The fifth and final dimension 'Empathy' includes individual attention and caring. The SERVPERF is a performance- only index that provides a more construct-valid clarification of service quality because of their discriminant validity as well as content validity (Cronin & Taylor, 1992). For the present study, authors adapted SERVPERF model. Figure 1 presents the SERVPERF Model.

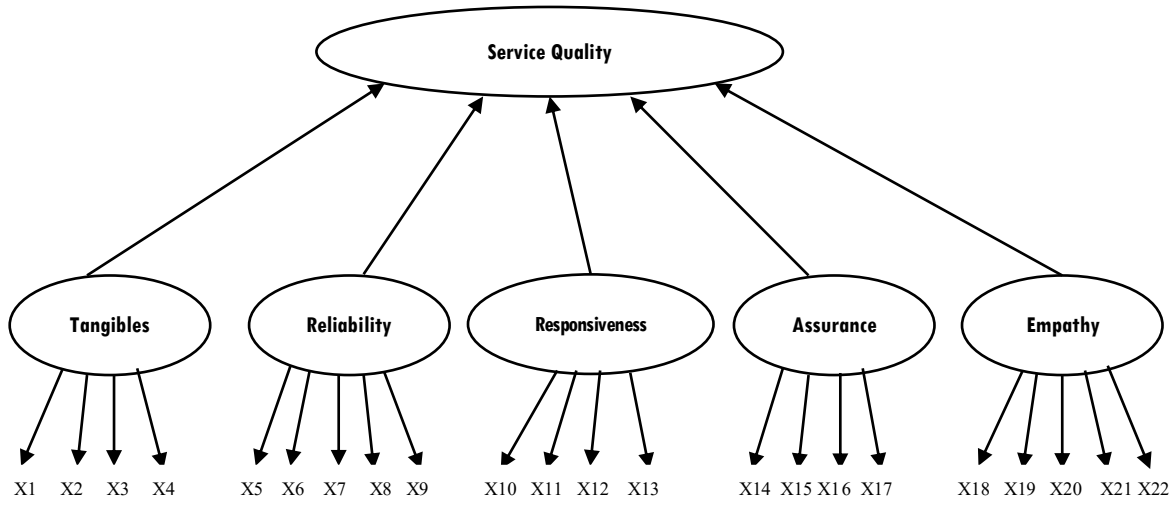

Figure 1: SERVPERF Model

Adapted from (Cronin & Taylor, 1992)

As far as concerned to the healthcare sector, the consumers choose the hospitals based on the quality of services they are providing (Rashid & Jusoff, 2009). The growing competition in the medical tourism sector has emphasized the need for superior service quality (Anish et al., 2018). SERVPERF Model would be helpful to the management of health care sector for continuous improvement of their services and its quality (Akdere et al., 2018).

Treatment Quality

Apart from the general idea of service quality, this study contributes one more antecedent of patient satisfaction called treatment quality. It is more connected with medical treatment given by doctors and other practitioners (Toni et al, 2023). There are some prior studies that discussed the treatment quality aspects such as modern and up to date medical treatment (Musa et al., 2011) as well as quality (Fetscherin & Stephano, 2016; Saiprasert, 2011) and effectiveness (Ghosh & Mandal, 2019) of such treatment. According to Veerasoontorn et al. (2011), hospitals need to concentrate on their medical care quality, and it must match the standards prevailing in the developed countries to attract more medical tourists.

More capable (Han & Hyun, 2015) and high standard (Fetscherin & Stephano, 2016; Heung et al., 2010; Saiprasert, 2011) medical professionals help a country to evolve in medical tourism. Doctors' important characteristics in relation to medical tourism are differently explained in previous studies such as doctors' expertise (Fetscherin & Stephano, 2016; Heung et al., 2010), highly qualified (Debata et al., 2011), internationally educated and certified (Fetscherin & Stephano, 2016), highly skilled (Lee, et al., 2012; Swenson et al., 2004), well experienced (Fetscherin & Stephano, 2016) or western experienced (Saiprasert, 2011), globally trained (Debata et al., 2011), trained physicians (Fetscherin & Stephano, 2016; Heung et al., 2010; Lee et al., 2012; Saiprasert, 2011), recognized reputation of physicians (Fetscherin & Stephano, 2016; Saiprasert, 2011), doctors credentials (Henson, Guy, & Dotson, 2015), etc. Moreover, Akdu & Gulmez (2017) remarked that medical tourists give emphasise on correct diagnoses and appropriate treatments.

High level of safety measures by hospitals during treatment are also essential factor for a medical tourist (Debata et al., 2011; Jyothis & Janardhanan, 2009). The safety indicator may include low rate of treatment failure (Musa et al., 2011), less medical accidents (Lee et al., 2012), acceptable protection against medical malpractice and liability (Manaf et al., 2015), success rate (Henson et al., 2015), low infection rate (Fetscherin & Stephano, 2016) etc.

Cost Attractiveness

Most of the patients who seek treatment abroad choose the available medical treatment facility due to the cost related factors (Fetscherin & Stephano, 2016; Heung et al., 2010; Jyothis & Janardhanan, 2009; Seow et al., 2017; Sultana et al., 2014). High expense in their country (Cherukara & Manalel, 2008) persuade them to go abroad where affordable (Ghosh & Mandal, 2019; Hudson & Li, 2012; Musa et al., 2011) and cheaper medical care (Ghosh & Mandal, 2019; Henson et al., 2015; Heydari et al., 2019; John & Larke, 2016; Martin et al., 2011; Saiprasert, 2011) than home country is available. Reasonable price (Manaf et al., 2015; Saiprasert, 2011) and significant amount of money savings ((Lim, Cham & Sia, 2017; Saiprasert, 2011) are other important cost factors. Above all, medical tourists would be more interested if they get benefit more than their spending (Martin et al., 2011; Mechinda et al., 2010) i.e., medical treatment with good value for money (Debata et al., 2011; Manaf et al., 2015). Besides, low cost of accommodation (Fetscherin & Stephano, 2016; Ghosh & Mandal, 2019; Nguyen Viet et al., 2020a; Sultana et al., 2014), food (Ghosh & Mandal, 2019; Nguyen Viet et al., 2020a; Sultana et al., 2014) and travel (Fetscherin & Stephano, 2016; Ghosh & Mandal, 2019; Henson et al., 2015) also come under the category of cost factor (Toni et al., 2023).

Destination Image

It is quite easy for service provider to attract medical tourists if the destination is an attractive and popular tourism destination (Fetscherin & Stephano, 2016; Saiprasert, 2011) i.e. a tourism brand (Hudson & Li, 2012), and has many restful and relaxing places (Mechinda et al., 2010) as well as opportunity for interesting tourism experience (Jyothis & Janardhanan, 2009; Lee & Li, 2019; Lee et al., 2012; Musa et al., 2011), and entertainment (Henson et al., 2014; Martin et al., 2011; Nguyen Viet et al., 2020). Specifically, the tourism attractions of destination include geographical features (Kumar & Hussian, 2016) or physical location (Henson et al., 2015) including attractive landscape (Ghosh & Mandal, 2019), natural scenic beauty (Mechinda et al., 2010; Nguyen Viet et al., 2020), and historical relics (Nguyen Viet et al.,

2020). Besides, previous studies also put forward that the medical tourists look for popular medical treatment destination (Musa et al., 2011) that can possibly combine treatment with other leisure and relaxation activities (Cherukara & Manalel, 2008; Hudson & Li, 2012; Saiprasert, 2011). Generally, some of the destinations have an overall positive medical tourism image (Fetscherin & Stephano, 2016), its own attractions (Kumar & Hussian, 2016), and facilities (Mahdavi et al., 2013). Accreditation (Heung et al., 2010; Hudson & Li, 2012; John & Larke, 2016; Saiprasert, 2011) and certification (Heung et al., 2010) as well as medical reputation (Fetscherin & Stephano, 2016; Heung et al., 2010; John & Larke, 2016; Saiprasert, 2011) attracts the medical tourists. The branding (Mahdavi et al., 2013) that may be generated due to excellent track record of medical service (Musa et al., 2011) or medical care (Lee & Li, 2019) also attracts the medical tourists.

The safety (Henson et al., 2015; Mechinda et al., 2010; Lim et al., 2017; Musa et al., 2011) and security (Huete Alcocer & López Ruiz, 2020; Kumar & Hussian, 2016; Mechinda et al., 2010; Lim et al., 2017; Musa et al., 2011) in the provider country is one of the prime concerns of medical tourists while visiting a particular country. They would prefer a foreign country for treatment if it were safe from crime and terrorist attacks (Debata et al., 2011; Saiprasert, 2011). Besides, low corruption and safety for travelling (Fetscherin & Stephano, 2016) help to generate destination image.

The friendliness (Huete Alcocer & López Ruiz, 2020; Jyothis & Janardhanan, 2009; Mechinda et al., 2010; Saiprasert, 2011), helpfulness (Saiprasert, 2011), honesty and courtesy (Mechinda et al., 2010), hospitality (Huete Alcocer & López Ruiz, 2020; Mechinda et al., 2010), compassion (Cherukara & Manalel, 2008), and excellent attitude (Debata et al., 2011) of local residents at the tourism destination contribute towards the image creation. Besides, the medical tourists would be pleased if local people are open to welcome them (Ghosh & Mandal, 2019; Jyothis & Janardhanan, 2009; Musa et al., 2011).Political systems (Hudson & Li, 2012), political conditions (Heung et al., 2010), and political stability (Fetscherin & Stephano, 2016; Hudson & Li, 2012; Saiprasert, 2011) of provider country are determinants of the image of the medical tourism countries. Accessibility (Ghosh & Mandal, 2019; Heydari et al., 2019; Hudson & Li, 2012; Lim et al., 2017), especially ease of accessibility from one's own country (Saiprasert, 2011) is one of the principal criteria in destination selection. It includes ease of travel arrangement (Musa et al., 2011; Saiprasert, 2011), and ease of visa and immigration procedures (Jyothis & Janardhanan, 2009; Musa et al., 2011; Saiprasert, 2011). Sometimes medical tourists would already have an international medical visa (Mahdavi et al., 2013) or at times hospitals provide assistance in obtaining medical visa (Debata et al., 2011).

Clean and hygienic physical environment (Debata et al., 2011; Heydari et al., 2019; Huete Alcocer & López Ruiz, 2020; Jyothis & Janardhanan, 2009; Mechinda et al., 2010; Musa et al., 2011) generally attracts foreign patients. Apart from these, pleasant weather (Fetscherin & Stephano, 2016; Huete Alcocer & López Ruiz, 2020; Mechinda et al., 2010) and climate (Lee & Li, 2019; Sultana et al., 2014) are also important.

Patient Satisfaction

According to Chou et al., (2012), Satisfaction of medical tourist is the negative or positive conformation of their expectations. They are satisfied when positive confirmation occurs and vice versa. Customer satisfaction involves the subjective evaluation of performance by the customer who is related with the consumption experience. Hence it is very crucial to evaluate the same (Cronin & Taylor, 1992). Numerous studies are undertaken to study customer

satisfaction (Yu et al., 2011) and it is amusing to notice that the patient satisfaction can also be seen as customer satisfaction in previous studies. The previous studies examine the satisfaction of medical tourists with the hospital services (Akdu & Gulmez, 2017; Manaf et al., 2015; Mechinda et al., 2010; Saiprasert, 2011), whether their expectations are completely fulfilled (Akdu & Gulmez, 2017), i.e., medical trip (Manaf et al., 2015; Saiprasert, 2011), medical treatment (Chou et al., 2012; Manaf et al., 2015; Saiprasert, 2011), treatment procedures, medical care quality, medical staff professionalism, entertainment programs, outside activities (Dunets et al., 2020), medical services, culture, safety, and cleanliness (Ghosh & Mandal, 2019). Some authors examine the overall satisfaction with medical tourism service (Mechinda et al., 2010) and the decision to visit the destination country for medical care (Chou et al., 2012; Nguyen Viet et al., 2020). Nguyen Viet et al., (2020) also examines whether the medical tourists have positive feelings and really enjoyed the visit.

Patient Loyalty

The survival of every business organisation depends upon the repeated purchase and revisit intention of customers and it is also really applicable in the healthcare set up in the medical tourism industry (Mee et al., 2017). In some previous studies, loyalty is indicated by the term 'behavioural intention' (Cham et al., 2020; Saiprasert, 2011). For the present study, the recommendations by the patients (Akdu & Gulmez, 2017; Debata et al., 2011; Gholipour Soleimani & Einolahzadeh, 2018; Ghosh & Mandal, 2019b; Manaf et al., 2015; Mechinda et al., 2010; Mee et al., 2017; Nguyen Viet et al., 2020a; Saiprasert, 2011; Swenson et al., 2004), their revisit intention (Chou et al., 2012; Debata et al., 2011; Gholipour Soleimani & Einolahzadeh, 2018; Ghosh & Mandal, 2019b; Han & Hyun, 2015; Manaf et al., 2015; Mechinda et al., 2010; Mee et al., 2017; Nguyen Viet et al., 2020a; Saiprasert, 2011) and considering the destination which has already visited as their first choices for future medical tourism activities (Akdu & Gulmez, 2017; Gholipour Soleimani & Einolahzadeh, 2018) are treated as items loyalty of patients in the medical tourism sector.Saiprasert (2011) revealed that the patients in the medical tourism sector recommend the medical services only if it has value rather than its quality. Both the authority and hospitals need to take strategic approaches in appealing to the international patients (Mee et al., 2017).

Methodology

The study is based on both primary and secondary data. The primary data was collected by using the questionnaire. Google form was used extensively to collect data from patients who were in the home country after undergoing treatment here. The data was collected from 402 sample respondents and most of the responses were collected through the Google forms. The questionnaire carries 86 questions/ items which is subdivided into 5 sub sections such as socio economic characteristics of medical tourists visiting Ernakulam district, Kerala for treatment, Health profile, economic dimension, treatment quality, service quality, destination image, cost attractiveness, patient satisfaction and patient loyalty. An interview schedule was also used to collect data from hospitals in Ernakulam district regarding the number of medical tourists and pattern of treatment. Out of the hospitals identified only few were ready to share such information as they consider them highly sensitive. Secondary data was collected from various secondary sources such as research journals, dissertations, magazines, government and industry records, websites, etc. The collected data was coded in SPSS 20 and conducted the analysis. In order to undertake Structural Equation Modelling, SmartPLS 3.0 was employed.

For the present study, 3 stage process was undertaken to develop a scale in medical tourism sector in Kerala, India. The first stage is item development stage. In this stage, various

constructs were identified. For Service Quality, the SERVPERF Model suggested by (Cronin & Taylor, 1992) was adopted. For other constructs, variables were identified through extant literature review and Focus Group Discussions.

Results And Discussion

The socio- economic characteristics of medical tourists is presented in Table 1 which includes the classification of medical tourists on the basis of gender, age, educational qualification, annual income and their country of origin along with the frequency and respective percentage.

Table 1: **Socio- economic characteristics of Medical Tourists**

Particulars	**Frequency**	**Percentage**
Gender		
Male	209	52
Female	193	48
Age (Average age- 39)		
Less than 30	56	13.9
30-45	266	66.2
45 and more	80	19.9
Educational Qualification		
Primary School	80	19.9
Secondary School	48	11.9
Under Graduation	112	27.9
Post- Graduation	98	24.4
Professional Qualification	64	15.9
Origin		
Europe	96	23.9
Middle East	211	52.4
Americas	11	2.8
Asia and the Pacific	76	18.9
Africa	8	2

Source: Primary Data N= 402

The results show that though the male medical tourists are more in number, there is a slight difference between male and female respondents (52% and 48% respectively). Majority of the sample respondents fall under the category 30- 45 years old and more specifically, their average age is 39 years. 13.9% of respondents are less than 30 years old and 19.9% are more than 45 years old. Medical tourists visiting Kerala are of different educational backgrounds. 27.9% of respondents are Graduates and 24.4% are Post Graduates. 19.9% of respondents have primary school education, 15.9% have professional qualifications and 11.9% have secondary school education.

Based on the country of origin, the respondents are classified into five such as Europe, Middle East, Americas, Asia and the Pacific and Africa which is in accordance with the UNWTO classification. Among the sample respondents, 52.4% are from Middle East countries. 23.9% of respondents are from European countries 18.9% are from Asia and the Pacific countries. Hence, Majority of sample respondents are from the Middle East, Europe and Asia- Pacific countries. The remaining medical tourists are from the Americas (2.8%) and Africa (2%).

Reliability of the scale instrument

The overall reliability score (Alpha value - α), which shows the internal consistency of the measurement scale was 0.951. It satisfies the threshold limit of 0.7 as suggested by Nunnally (1978). The reliability score obtained for different constructs measured in this study is given in Table 2.

Table 2: Measurement Scale: Reliability (Cronbach's Alpha:α)

Constructs	Cronbach's Alpha
Treatment Quality (4)	0.754
Cost Attractiveness (3)	0.852
Destination Image (5)	0.859
Service Quality (13)	0.948
Tangibles (2)	0.954
Reliability (3)	0.812
Responsiveness (3)	0.906
Assurance (3)	0.888
Empathy (2)	0.862
Patient Satisfaction (4)	0.890
Patient Loyalty (3)	0.748
Overall (45)	0.951

Source: Primary data

Validity of the Scale Instrument

The development of measurement model was based on the extant review of literature and validated using Structural Equation Modelling with Partial Least Squares Path Modelling where path models are the diagrams used to demonstrate the hypotheses and the relation between variables that are observed when SEM is applied. SEM is among the most useful advanced statistical analysis techniques that have emerged in the social sciences in recent decades. SEM is a class of multivariate techniques that combines aspects of factor analysis and regression, enabling the researcher to simultaneously examine relationships among measured variables and latent variables (assessment of measurement theory) as well as between latent variables (assessment of structural theory). PLS- SEM, an alternative to the popular CB- SEM method, has achieved much interest among the academic community especially in the social science disciplines. (Hair, Hult, Ringle, & Sarstedt, 2017).

Measurement model or outer model is the model that explains the relationship between the latent variables and the relative manifest variables (Memon & Rahman, 2014). Manifest variables are the observed variables or the indicators. In this study the Higher Order Component

model (HCM) is employed and the reflective- formative path model is developed on a theoretical basis. The reflective-formative HCM type indicates (formative) relationships between the LOCs and the HOC, and all first-order constructs are measured by reflective indicators (Hair et al., 2017).

The PLS simulation of the model is carried out by calculating and assessing various parameters which includes item loading, reliability and validity tests (Memon & Rahman, 2014). The assessment of the strength of Measurement Model involves evaluation of convergent validity and discriminant validity of the Measurement Model (Rajan & Baral, 2015). The convergent validity was assessed by three criteria; the first one is the path loadings, which are indicators of the degree of association between the underlying latent factor and each item. The standardized path loadings should be greater than 0.7 and statistically significant (Gefen, Straub& Boundrew, 2000). The loadings of the value 0.4 and greater are also acceptable (Hulland, 1999). Second is the composite reliability (CR), and it must be greater than 0.7 (Hair et al., 1998). The value of Composite Reliability varies from 0 to 1, with 1 being perfect estimated reliability. In a model adequate for exploratory purposes, composite reliabilities should be equal to or more than 0.6 (Chin, 1998; Hock et al 2010; Bagozzi, & Yi, 1988); equal to or more than 0.7 for an adequate model for confirmatory purposes (Henseler, et al., 2015); and equal to or more than 0.8 is considered good for confirmatory research (Daskalakis & Mantas, 2008) (Rouf & Akhtaruddin, 2018). Thirdly, Average Variance Extracted for each factor should exceed 0.5 (Bagozzi, & Yi, 1988; Fornell & Larcker, 1981). AVE may be used as a test of both convergent and divergent validity. AVE reflects the average communality for each latent factor in a reflective model. In an adequate model, AVE should be greater than 0.5 (Chin, 1998; Hock & Ringle, 2006) (Rouf & Akhtaruddin, 2018)

Figure 2 shows the proposed measurement model with 22 manifest variables including 3 Patient Loyalty indicators (PL1- PL3), 4 Patient Satisfaction indicators (PS1- PS4), 4 Treatment Quality indicators (TQ1- TQ4), 3 Cost Attractiveness indicators (CA1- CA3), 8 Destination Image indicators (DI1- DI8) and 22 Service Quality indicators (TN1- TN4, RL1- RL5, RS1-RS4, AS1-AS4 and EM1- EM5). The 22 variables indicating Service Quality are adapted from the SERVPERF model developed by Cronin & Taylor (1992). The Service Quality variables are presented with 5 dimensions such as Tangibles (4 indicators), Reliability (5 indicators), Responsiveness (4 indicators), Assurance (4 indicators) and Empathy (5 indicators).

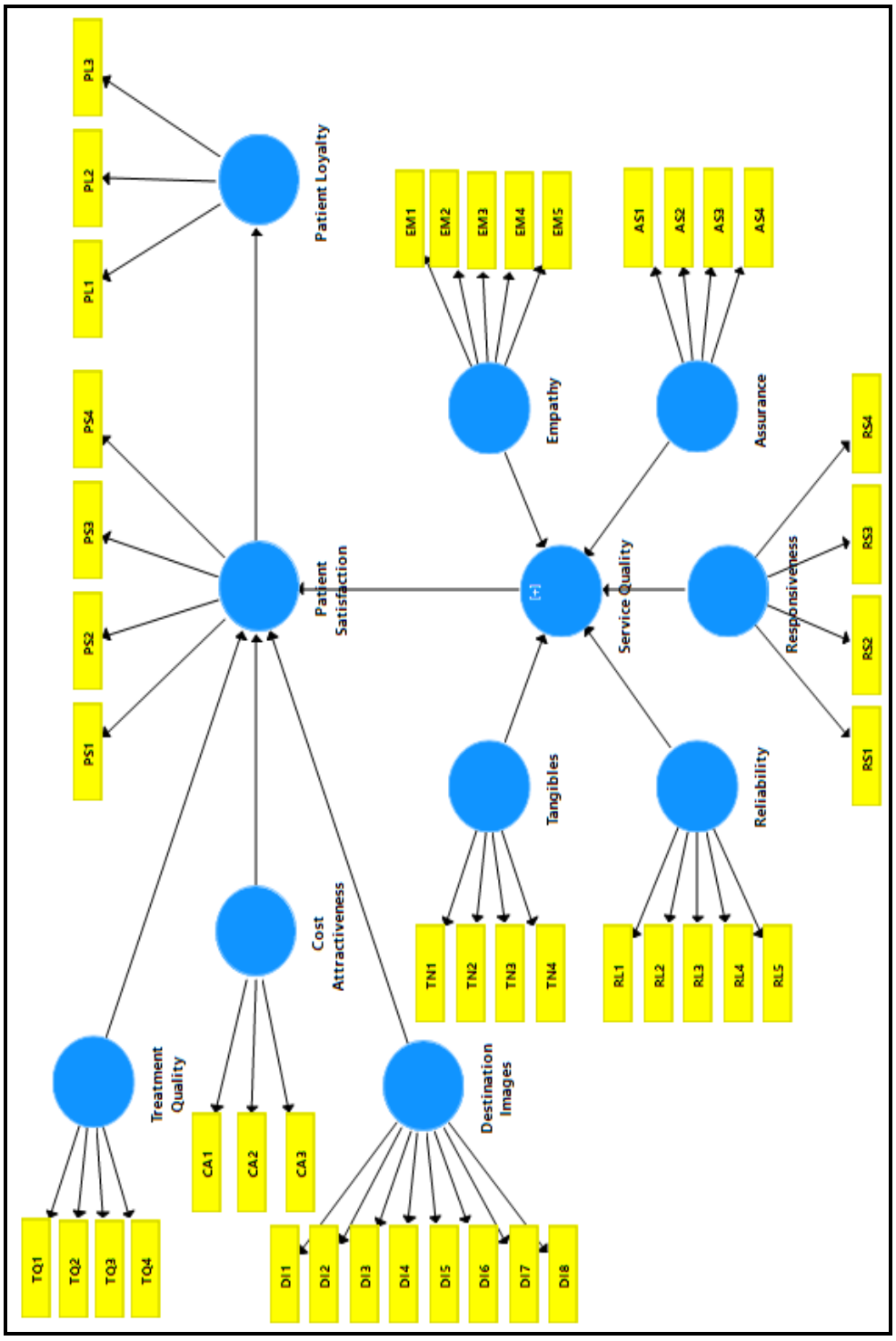

Figure 2: Proposed Measurement Model- Factors determining Patient Satisfaction and Patient Loyalty in the Medical Tourism Sector

The proposed measurement model showing the factors determining Patient Satisfaction and Patient Loyalty in the Medical Tourism sector are tested and analysed with the PLS- SEM procedure using SmartPLS software in order to ensure quality and validity of the model. Table 3 is presented with the results of model validation along with LVs and its individual indicators including the omitted ones, path loadings, Cronbach's Alpha (α), Composite Reliability (CR) and Average Variance Extracted (AVE).

Table 3: Validity of Measurement model- Antecedents of Patient Satisfaction, Patient satisfaction and Patient Loyalty

Latent Variables	Code	Indicators	Loading	α	CR	AVE
Treatment Quality	TQ1	Expertise of doctor	0.647	0.754	0.836	0.563
	TQ2	Clear communication by doctor	0.691			
	TQ3	Effective medicines	0.850			
	TQ4	Treatment safety principle	0.796			
Cost Attractiveness	CA1	Less expensive medical treatment	0.882	0.852	0.910	0.771
	CA2	Affordable accommodation, food and beverages	0.937			
	CA3	Money savings	0.811			
Destination Image	DI 1	Medical Tourism image	0.810	0.859	0.899	0.646
	DI 2	Attractive tourism destination	0.911			
	DI 3	Hospitality of local people	0.682			
	DI4	Pleasant climate	Omitted			
	DI 5	Tourists' Safety	0.932			
	DI6	Political stability	Omitted			
	DI7	Clean and hygienic place	Omitted			
	DI8	Accessibility/ Ease of visa	0.641			
Service Quality						
Tangibles	TN1	Modern and up to date equipment	0.978	0.954	0.978	0.956
	TN2	Visually appealing medical facilities	Omitted			
	TN3	Neat and well-dressed personnel	0.977			
	TN4	Appropriate resources	Omitted			
Reliability	RL1	Dependable hospital	0.747			

	RL2	Service at the time promised	Omitted	0.812	0.890	0.731
	RL3	Keeping records accurately	0.920			
	RL4	Prior communication regarding service rendering	0.888			
	RL5	Sympathetic staffs	Omitted			
Responsiveness	RS1	Prompt service	0.911	0.906	0.941	0.841
	RS2	Continuous willingness to help	Omitted			
	RS3	Transparent complaint process and responsiveness	0.919			
	RS4	Sincere interest	0.921			
Assurance	AS1	Politeness	0.855	0.888	0.931	0.818
	AS2	Feeling of security	0.945			
	AS3	Employers' adequate support to employees	Omitted			
	AS4	Confidentiality	0.912			
Empathy	EM1	Individual attention	0.947	0.862	0.935	0.878
	EM2	Understanding needs	Omitted			
	EM3	Caring	Omitted			
	EM4	Appropriate working hours	0.927			
	EM5	Interest at heart	Omitted			
Patient Satisfaction	PS1	Satisfied with medical treatment	0.88	0.890	0.923	0.751
	PS2	Satisfied with hospital services	0.879			
	PS3	Satisfied with leisure activities	0.841			
	PS4	Satisfied with accommodation, food and beverages	0.865			
Patient Loyalty	PL1	Recommendations	0.861	0.748	0.854	0.662
	PL2	Revisit intention	0.805			
	PL3	Kerala- the first choice of medical tourism	0.772			

Source: Primary Data

It is observed from the results that all the constructs under study viz.Treatment quality, Cost Attractiveness, Destination Image, Service Quality, Tangibles, Reliability, Responsiveness, Assurance, Empathy, Patient Satisfaction and Patient Loyalty meet the criteria for validation. Specifically, Cronbach's Alpha (α) values for all constructs are above 0.7, Composite

Reliability (CR) values are above 0.8 and AVE values are above 0.6. In order to validate the proposed measurement model, the indicators that are not satisfying the prescribed minimum threshold limit of path loading were omitted.

Table 4 shows the result regarding Discriminant Validity that shows to what extent a specific construct is different from other constructs, the constructs which measure the correlation among dissimilar latent variables (Azeema, Jayaraman, & Kiumarsi, 2016). The diagonal elements represent the square root of the average variance extracted. The square root of AVE exceeds the correlation between other constructs. These results imply satisfactory discriminant validity. After testing the measurement model with all the parameters such as path loadings, CR, AVE and Discriminant Validity, the model is confirmed reliable and valid (Rajan & Baral, 2015). The final model is presented in Figure 3 along with its calculated values.

Table 4: Discriminant Validity: Fornell Larcker Criterion

	AS	CA	DI	EM	PL	RL	RS	PS	SQ	TN	TQ
Assurance	**0.905**										
Cost Attractiveness	0.368	**0.878**									
Destination Images	0.665	0.374	**0.804**								
Empathy	0.732	0.297	0.633	**0.937**							
Loyalty	0.234	0.389	0.547	0.208	**0.814**						
Reliability	0.652	0.567	0.633	0.607	0.416	**0.855**					
Responsiveness	0.832	0.342	0.731	0.74	0.347	0.718	**0.917**				
Satisfaction	0.481	0.555	0.762	0.454	0.804	0.625	0.546	**0.866**			
Service Quality	0.899	0.48	0.74	0.855	0.367	0.846	0.911	0.629	**0.788**		
Tangibles	0.594	0.493	0.482	0.673	0.359	0.634	0.554	0.593	0.78	**0.978**	
Treatment Quality	0.565	0.493	0.42	0.498	0.34	0.589	0.607	0.579	0.655	0.53	**0.75**

Note: AS= Assurance, CA= Cost Attractiveness, DI= Destination Images, EM= Empathy, PL= Patient Loyalty, RL= Reliability, RS= Responsiveness, PS= Patient Satisfaction, SQ= Service Quality, TN= Tangibles
Source: Primary Data

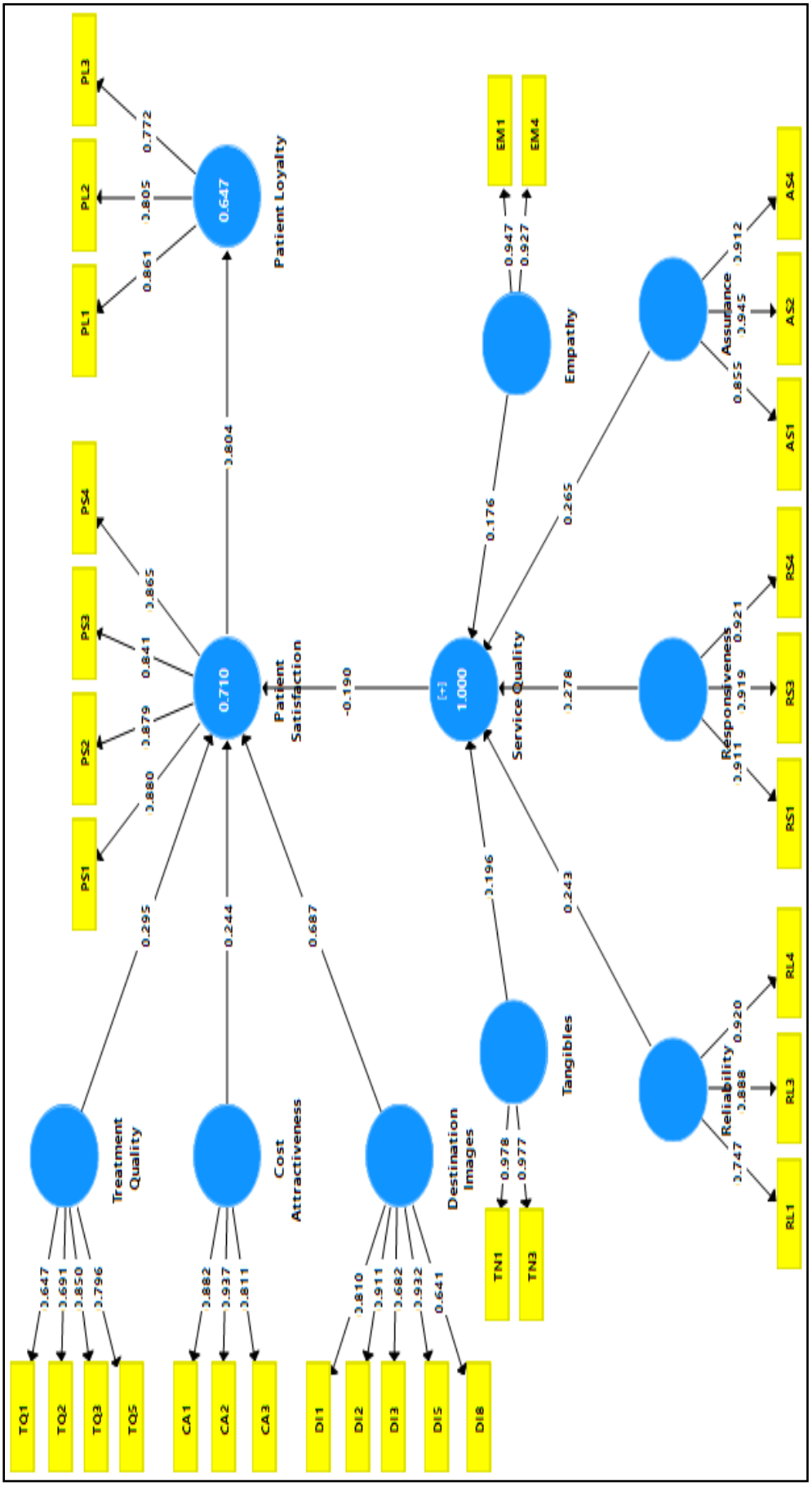

Figure 3 : Measurement Model- Factors determining Patient Satisfaction and Patient Loyalty in the Medical Tourism Sector

In the foregoing analysis using PLS-SEM, the proposed model is validated after removing variables having values below threshold limit and Figure 3 is the validated model that shows the antecedents of Patient Satisfaction and Patient Loyalty in the Medical Tourism sector.

Implications

Practical implications

In order to develop Medical tourism, destination countries and interested health service providers are making great efforts to improve their health care systems including infrastructural facilities (Akdu & Gulmez, 2017). The present study attempts to develop a measurement scale for assessing *antecedents of Patient Satisfaction and Patient Loyalty in the Medical Tourism sector in Kerala, India.* As the importance and growth of the medical tourism sector increases at a rapid pace, the stakeholders involved in this industry need to focus much more on the improvement of the medical tourism experience of the visitors in order to ensure their survival in this highly competitive but lucrative market (Toni, et al., 2023). The study is envisioned to provide information regarding this industry and most importantly encourage the stakeholders including government, service providers, medical tourists, employees at the hospital where the treatment is arranged for the medical tourists and even the local people, to build a better supportive environment for the growth and development of the industry, and thereby, make a remarkable contribution to both health care and tourism industry. The present study provides insights to service providers to improve the quality or standard of their services by understanding the experience of medical tourists regarding the antecedents of the Patient Satisfaction such as Treatment Quality, Destination Image, Cost Attractiveness and Service Quality. Besides, it will provide immense understanding to employees and the doctors about the medical tourism as a whole and the perception of medical tourists regarding the factors determining the Patient Satisfaction and Patient Loyalty in particular.

The practice of medical tourism depends on successfully informing potential patients about procedure options, treatment facilities, tourism opportunities, travel arrangements, and destination countries (Crooks, Turner, Snyder, Johnston, & Kingsbury, 2011) and so, the medical tourism destination countries are very much interested to know the facts about existing medical tourism practices in order to capture the market through conveying appropriate and valid messages. Moreover, the industry provides the scope for further growth and development either directly or indirectly. The government rules and regulations are really meaningful in the promotion of medical tourism and so, it is very essential to understand the antecedents of the Patient Satisfaction and Patient Loyalty in the Medical Tourism Sector as well as their cost aspects. The general understanding about medical tourism through the fresh findings of the present study would be beneficial to the government and policy makers of the medical tourism destination countries all over the world for devising appropriate measures for the further development of medical tourism.

Theoretical implications

Along with the growing pace of the medical tourism industry, the academic research aspirants also show interest to go in line with that trend by adding new insights into the existing literature. That is, medical tourism has developed as one of the hot topics of interest among the scholarly field in both tourism and health studies (Crooks, Kingsbury, Snyder, & Johnston, 2010; Hopkins et al., 2010). Though some studies have been undertaken to make out the importance and present status of medical tourism practices, more possibilities are yet to be explored. In fact, studies that enhance the knowledge regarding medical tourism and explore new findings

about the differences in medical tourists' experiences as well as the role of socio- economic and other factors are highly needed in the present situation (Crooks et al., 2010). The present study fills the research gap by contributing new knowledge that was found missing in the existing literature, by exploring different aspects of Medical Tourism.

Conclusions

Medical tourism opens up new opportunities on a global basis and its positive impact attracts more and more investment in this sector (Guntawongwan, 2017). These travels, which have a high international demand, have also contributed significantly towards the tourism incomes and hence the country's economy. As a result, the government and the medical service providers are trying to involve more in medical tourism by reducing and shortening the period for treatment, availing treatment alternatives, providing a chance to choose doctors and treatment, etc. in order to increase their market share (Akdu & Gulmez, 2017). In the Indian economy, the medical tourism sector is considered as one of the biggest booming sectors which is driven by economic, medical and social factors. The government as well as service providers in India show great interest in improvements in medical tourism which would gradually contribute towards the growth and developments of the destination country, healthcare industry and above all, the success of the service provider. The research community has been paying increasing attention to the issue and the studies envisioned to provide new insights regarding medical tourism would be encouraged by the service providers as well as government so that they can devise and implement appropriate strategies to boost their revenue.

The study covers the various antecedents of Patient Satisfaction such as Treatment Quality, Cost Attractiveness, Destination Image, and Service Quality and also its influence on Patient Loyalty in the Medical Tourism Sector. As a result of this study, the researchers have developed a standardised scale in the medical tourism sector. The confirmatory factor analysis ensures that the values are within the threshold limit and hence, the validity of the measurement model.

Limitations And Suggestions For Future Research

Despite the relevant findings, the present study has certain limitations. One of the main indicators of service quality is ensuring privacy of medical tourists and hence, it was quite difficult to collect the email addresses of medical tourists. The researcher had to convince the service provider that the data is meant for academic purposes only. Some limitations are due to the boundaries set by the researcher(s). The geographical scope is confined to Ernakulam district, Kerala. Moreover, it considers only the foreign nationals engaged in Medical Tourism. There are other patients coming to Kerala who are NRIs or domestic tourists. For the present study, only foreign nationals were considered as respondents. Hence, the future aspirants can conduct a study on medical tourism including NRIs and domestic medical tourists. A comparative study is also possible between Kerala and other Indian states. They can also concentrate on individual medical systems like Ayurveda, Modern Medicine, etc. Likewise there is a further scope for studying medical tourism in individual branches of medicine such as oncology, cardiology, etc.

Future research can focus on medical tourism centres or service providers, specifically their strategies to attract medical tourists, problems faced by them etc. Further, they also can focus on third parties (Medical Intermediaries) involved in the Medical Tourism sector as this sector has gained popularity and involves an increasing number of third parties like travel agencies.

Besides patient satisfaction and patient loyalty in medical tourism sector and their antecedents, other dimensions of medical tourism such as risk involved in medical tourism, challenges, role of stakeholders in medical tourism, etc. are still there to explore.

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