The Quality of Services in Medical Tourism and the use of TIC

By Janet Garcia Gonza

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Keywords: medical tourism, quality of service, information and communication technologies.

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The Quality of Services in Medical Tourism and the use of TIC

Janet Garcia González

Abstract - Offering quality services has become a great advantage to attract customers, mainly service companies that operate in dynamic and competitive environments such as medical tourism, which is why it is important that they adapt to current changes and trends, each it is increasingly necessary to incorporate new technological tools to be at the forefront. This is an applied research with a qualitative, descriptive approach, and its purpose is to identify the variables that affect the quality of the service and the use of Information and Communication Technologies (ICT) by companies dedicated to medical tourism. The Servper Model instrument was adapted, and through a factor analysis, the variables of tangibility, reliability, responsibility, security and empathy were analyzed to identify which ones affect the perception of quality of services and determine if there is a correlation between them. The findings indicated that ICT play a relevant role in the quality of service since they generate a competitive advantage, more and more customers use technologies in their daily activities, therefore, they are more informed and more demanding with the services they expect to obtain.

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I. Introduction

Though the years, tourism has had enormous growth, its diversification has made it the most important economic sector in many countries. Medical tourism is defined as traveling to a foreign country in order to undergo a clinical procedure (Metrovic, 2014). The potential that health tourism has is based specifically on the achievements of the health sector (Tuyo, 2020). More and more tourists in recent years have moved from their usual place to another in search of medical services, being increasingly demanding in off better care and provision of services, asking that hospital, clinics and medical and support staff offer a certain degree of reliability in treatment performance. In this sense, the quality of service and the use of Information and Communication Technologies (ICT) are of great importance in all companies, due to the main fact that the customer expects and demands the best.

When a quality service is provided, the perception that clients have is positive, which allows having favorable consequences of loyalty and long-term relationships. Therefore, getting medical entrepreneurs to pay more attention to the continuous improvement of the quality of services and incorporating ICTs, will allow companies to be more competitive and achieve a greater influx of tourism. In this sense, this research aims to measure the quality of health services and the use of ICTs in medical tourism service companies in the perception of users. It is important to mention that this study was carried out in the city of Mexicali, Baja California, Mexico, which is considered one of the main destinations for medical tourism in the state.

Baja California has great tourist potential since it borders two of the richest states in the United States: California and Arizona, whose residents practice tourism on a daily basis. The tourism industry of the state of Baja California has different types of tourist activities, focused on meetings and business, medical and wellness, nature and adventure, nautical and cruises; and the culinary and oenological. The medical tourism that comes to Baja California finds a highly valuable proposition in terms of the medical services offered, the factors that benefit the development of health services being: experience in caring for foreign patients, the privileged geographic location, and the existence of infrastructure such as hospitals and clinics that have international accreditations; Likewise, there are other external elements that favor the tourism industry, among which is the devaluation of the peso-dollar, the high costs of medical and surgical treatments in the place of origin, the lack of medical coverage and long waiting lists.; All of this has made the state of Baja California be seen as a favorable destination for thousands of travelers seeking to improve their health and well-being (Baja California Tourism Observatory, 2013).

Among the border cities that offer health services for medical tourism is the city of Mexicali, Baja California, which has professionally recognized medical, hospital and surgical services, with great state-of-the-art technological advances; as well as medical services made up of 19 general hospitals, 249 general medical offices, 241 specialty medical offices, and 418 dental offices, and generate an income of 800 million dollars a year that positively impact accommodation, food and transportation services (Council of Economic Development of Mexicali, AC, 2017).

II. Towards Quality Construction

Since ancient times up until the present day, the evolution of the concept of quality has changed, the current demands on quality management require changes in mentality and organizational culture appropriate to each company. When talking about
quality, endless interpretations are contemplated, since everything will depend on the level of satisfaction or compliance of the client. Zeithaml (1981) defines quality as superiority or excellence; Perceived quality can be understood as the consumer's point of view about the total excellence or superiority of a product or service. Crosby (1994), affirms that quality occurs when there are no misunderstandings, this is when there is conformity with the requirements and that these must be clearly defined; the non-conformity detected is a lack of quality. In this sense, the interest in measuring the quality of health services in medical tourism arose from the need to obtain information that allows companies in this service sector to be more competitive and thus increase the influx of medical tourism in cities.

The incorporation of ICT to organizations has allowed improvements in administration systems, obtaining faster decision-making and greater control in administrative activities, which allows accurate and timely information. The use of technologies has increased within the tourism field, becoming a fundamental tool, mainly based on the internet to attract increased within the tourism field, becoming a timely information. The use of technologies has generated great utility for companies that include companies to adapt to technological innovations and the particular to the use of the internet, to promote their products and services. Using new technologies has allowed people to quickly check prices and obtain information on different tourist services. The ability of obtaining faster decision-making and greater control in communications, email, and internet (Seng, 2015). In digital telephone networks, smart cards, mobile systems, airlines, electronic funds transfer systems, reservation systems, teleconferencing, video brochures, electronic information management information systems, and be able to survive in an increasingly competitive world (Moros, 2017).

According to Buhalis & Law (2008) client’s satisfaction is an important factor that has a positive impact for the company, taking care of the answer time and quick internet data transmission has a positive impact on client satisfaction, information Speed has become an essential factor for the success of small and medium businesses in tourism. The use of technologies has an important part for tourist medical services companies because it allows the tourist servers to expand their audience, which means more clients, with personalized information and web services, such as messaging, mail, blogs, social media, forums; sharing games, photos and videos, etc.

Client satisfaction is an important subject when making research about quality, for they’re closely related concepts; service quality is background of service satisfaction. Gale, Dean and Janet (2005) mention that for executives and researchers, client satisfaction has always had a high interest because of the positive results that exist between satisfaction and retention, especially considering that satisfaction is a prediction of future intentions to purchase a service or producto again. Kotler and Armstrong (2013), mention that quality is linked to value and customer satisfaction, that quality is defined as the totality of aspects and characteristics of a product or service that are related to its ability to satisfy customer needs. On the other hand, they mention that quality goes beyond quality or having defects, it begins with the customer's need (what is expected) and ends with their satisfaction (perceived value).

There are quality models that have a direct relationship with health services, one of the first is, the health care model of Donabedian (1966) that investigates medical services, the Kano model (1984) which is a useful tool for quality management and customer satisfaction, the Servqual model by Zeithaml Berry and Parasuraman (1988), as one of the most used models and with the greatest contributions to the measurement of functional quality for a wide range of services among which the health service is located.

Another model that relates quality to corporate image is the Grönroos model (1984), and finally the Servperf model by the authors Cronin and Taylor (1992), which measures the performance appraisal and the service quality evaluation. It is important to note that the methodology used by the Servperf model is made up of the same items and dimensions that the Servqual model uses, the only difference is that it eliminates the part that refers to customer expectations. The Servperf model...
only uses perception as a good approximation to customer satisfaction, which is defined as “the mood of a person that results from comparing the perceived performance of a product or service with their expectations” (Kotler, 2006).

It is important to mention that the works started by Zeithaml and Parasuraman that validated the Servqual model, which is used as the most widely disseminated and applied model for measuring the quality of services; However, it is considered that Cronin and Taylor, who proposed the Servperf model through empirical studies in different service organizations, came to the conclusion that the Servqual model, proposed by Zeithaml and Parasuraman, is not the most appropriate to evaluate the quality of the service. What sustains the Servperf model is related to the problems of interpretation of the concept of expectation, in its variability in the provision of the service, and in the perceptions of the service received. For Cronin and Taylor (1992) the Servperf model is an alternative to the Servqual model, it is made up of 22 items used exclusively to measure service perceptions.

Morillo (2017) mentions that the quality of the service is a dynamic concept, it fluctuates according to the current experiences that will conceive the future expectations of the user; Therefore, one way to obtain the necessary information to increase and maintain the quality of the service provided by tourists is through its constant measurement, therefore the quality of the service needs to be measured quantitatively through the application of instruments that allow evaluating the quality of the tourist. service provided, and subsequently implement actions to improve quality.

### III. Methodology

An exploratory research was carried out with quantitative data analysis, since an instrument was applied to obtain data and perform the corresponding statistical analyzes. The data collection technique was used through the standardized 22-item questionnaire of the model that measures the quality of the services perceived by the client through five variables: Tangibility, reliability, responsibility, security and empathy. The response options were on a Likert scale, through five levels: from very satisfied to very dissatisfied, as well as the quality of services in relation to the use of Information and Communication Technologies was measured.

The study was conducted in the city of Mexicali, Baja California, Mexico, which is considered one of the main destinations for medical tourism in the state of Baja California. Probability sampling by clusters was used, which consisted of selecting hospital establishments and specialty medical centers, located in the Mexicali medical district, considered the site where the largest number of medical establishments are concentrated; A total of 195 surveys were applied. The data capture was carried out in the Statistical Package for the Social Sciences (SPSS) version 18, feeding values manually, following the order of the questions described in the questionnaire, assigning a consecutive number to each questionnaire carried out. Statistical tests were carried out to measure the reliability and validity of the instrument and subsequently a factor analysis was carried out to identify the variables that affect the perception of quality of health services in medical tourism and determine the correlation between them. A descriptive analysis of the results was carried out and ANOVA tests were carried out to detect significant differences in perceived quality according to the characteristics of the respondents.

### IV. Results

a) Descriptive Analysis

A descriptive analysis of the 39 items included in the instrument applied to medical tourists who attended the Mexicali medical district for a health service was carried out, the most relevant results are presented for the purposes of this research. It was identified that the profile of the visitors are people of productive ages with an interest in taking advantage of the medical benefits that their jobs provide them and who choose to be treated in Mexicali derived from the geographical proximity, since they consider that their expectations will be met, mainly of quality. The sample was made up of men and women in a similar proportion, the population structure was made up mostly of people under 55 years of age (73.3%) and in a lesser proportion of people aged 55 to 64 years and 65 or over (14.9 and 11.8% respectively).

The results of the survey indicate that the majority of visitors come from cities relatively close to the southern border of the United States, on the other hand, it was detected that a significant part of the respondents were not interested in the existence of bilingual attention, therefore it is possible to assume that users have ties of some kind with our country (family, social, birth, upbringing, etc.).

With the information collected, it was possible to demonstrate the existence of a statistically significantly positive correlation between the days of stay and the expenditure incurred. This indicates the importance of medical tourism as a generator of economic income in the area due to the provision of lodging, food, recreational activities and additional services. In relation to the reasons for visiting the medical district of Mexicali, it was found that the main motivator is the existence of quality health services, which indicates that despite the fact that consumers are attracted by the proximity to the border, low costs in services, or acceptance of your health insurance; it is the expectation of a quality service, the factor that attracts the most to consumers.
In addition to the above, it is important to point out that approximately 30% of the respondents were visitors who came for the first time, which indicates favorable results for the promotion policies that have been carried out and justifies the monitoring of the satisfaction levels of users to ensure that these new visitors become repeat visitors.

According to the results of the survey, it is necessary to pay close attention to security, since it shows that 85.1% of those surveyed perceive poor security, as well as improving the city's infrastructure, streets and signs, since a 52.8% of those surveyed indicated this is as an important service in Mexicali. In addition, relevant results were obtained in the options to improve access for people with disabilities and parking with 37.4% in both cases.

Regarding the advertising mechanisms used, the results of the survey say that recommendations represent the main source of customers since this advertising mechanism attracted 70.8% of respondents, 38.5% indicated that they were attracted by generic recommendation and 32.6% by the recommendation of a doctor, this is considered an aspect highly correlated with empathy because, when this is the case, it is be more likely that clients feel satisfied with medical services and recommend them. It should be noted that the internet also represented a relevant advertising medium, representing 17.6% of the responses, see figure I.

When measuring the perception of quality of service, technological variables must be considered, it is important to consider that today customers increasingly have ICT integrated into their daily activities, which generates more informed and demanding customers with the services they hope to get. Regarding customer satisfaction for the use of ICT in medical tourism companies, the data was as follows: 68% of those surveyed are satisfied to very satisfied with having free internet and free access to it in the establishment, on the contrary, 20% are dissatisfied to very dissatisfied for not having free internet. 56% of customers are satisfied to very satisfied with the fast internet in the establishment, although 24% are dissatisfied to very dissatisfied with the slowness of the internet. 82% of those surveyed expressed being satisfied or very satisfied with the company's internet portal and only 13% said they were dissatisfied. The quality of the service is also measured by the speed of the information provided, where 73% of the respondents are satisfied to very satisfied to receive information through email. See figure II.
The incorporation of ICT to medical tourism service companies has allowed improvements to be made in administration systems, by obtaining greater control and faster information, the incorporation of the internet as a means to promote their products and services, communication fast and timely with customers, and have free internet service in the establishment. This has allowed to have satisfied clients with the service and a growth in the companies. Zairi (2000) notes that a satisfied client is prone to share the experience with five or six people, but a dissatisfied client shares it with ten people; in this way, if you are satisfied, you will be more likely to buy or use it again, hence the importance of always having customers satisfied with the service.

b) Statistic Analysis

The statistical analysis carried out using the Statistical Package for the Social Sciences (SPSS) allowed a deep, fast and effective analysis that greatly helped to achieve the current results. The reliability of the Servperf instrument was analyzed and the most representative variables were identified for this research, subsequently a factor analysis was carried out through the main components, to 22 questions that are part of the incident variables in the perception of quality for identify those that affect the perception of quality of health services in medical tourism, and determine the correlation between them, in addition, a latent component was identified among the variables that affect the perception of quality.

First, the composite reliability was performed and a Cronbach's Alpha of .917 was determined, which means that the instrument used is acceptable and therefore reliable, in the same way it indicates that it has a high degree of reliability, validating its use for the data collection, its use for data collection validated, as well as Pearson's correlation analysis for the dependent variable "quality of service" with each of the five dimensions. According to the correlation matrix, there is a high level of correlation between all the 22 variables studied, making them candidates to be summarized by means of a factor analysis.

The ANOVA test was carried out to detect significant differences in perceived quality according to the characteristics of the respondents, which resulted in the level of customer satisfaction being very similar regardless of their gender, age, source of income, availability of medical insurance or frequency of visit, only in the case of the reason for the visit, evidence was found that indicates that clients who came to the Mexicali medical district seeking quality medical services showed a higher level of quality received, than those who performed a visit looking for low costs in their treatments; which indicates that the level of satisfaction is high among customers who come in search of quality service.

The principal component extraction method was carried out, which allowed determining a latent component within the established variables, capable of eliminating (or minimizing to the maximum) the parallel variation between the reagents. The quality of the service provided by health services in medical tourism, according to the factor analysis of the main components, is based on five dimensions that represent 32% of the overall variance explained. Following these analyzes, the variables of tangibility, reliability, responsibility, security and empathy were analyzed, to identify which influence the perception of quality, through factor analysis it was possible to determine if there is a correlation between the variables that affect the perception of the quality of the service and which variables are the most representative in the medical tourism environment. With the extracted component, it was possible to develop an index of perceived quality and it was determined that the reliability and empathy variables are those with the highest percentage 24% and 23% respectively and can be considered more representative for medical tourists, see table 1.

Table 1: Component and Punctuation Matrix

<table>
<thead>
<tr>
<th>Reactive</th>
<th>Component</th>
<th>Punctuation</th>
<th>Percentage weight</th>
<th>Dimension</th>
<th>Dimension’s percentage weight</th>
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<tr>
<td>R18</td>
<td>.485</td>
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<td>R19</td>
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<td>R20</td>
<td>.489</td>
<td>.068</td>
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<tr>
<td>R21</td>
<td>.307</td>
<td>.043</td>
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<tr>
<td>R22</td>
<td>.655</td>
<td>.092</td>
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<td>Tangibility</td>
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<td>R23</td>
<td>.561</td>
<td>.079</td>
<td>5%</td>
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<td>15%</td>
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<tr>
<td>R24</td>
<td>.493</td>
<td>.069</td>
<td>4%</td>
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<td>Reliability</td>
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<tr>
<td>R25</td>
<td>.622</td>
<td>.087</td>
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<td>24%</td>
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<tr>
<td>R26</td>
<td>.691</td>
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<tbody>
<tr>
<td>R27</td>
<td>.597</td>
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<td>R28</td>
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<td>R35</td>
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<td>R36</td>
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<td>R37</td>
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Responsability 19%  
Security 18%  
Empathy 23%

Source: Own elaboration from the data collected and processed in the statistical program SPSS, v 18.

With the identification of these variables, it is affirmed that there are variables (reliability and empathy) that affect the perception of quality and are more representative for medical tourists. Therefore, it is recommended that health service providers become more aware of these variables.

V. Conclusion

Today, efficiency and effectiveness have become more important when delivering the products and offering services. One of the most important service sectors is tourism. In this sector, the client evaluates a series of variables when making their choice, which is why the perception of quality is decisive and it is impossible to ignore technology in this process. If a service company wishes to maintain an adequate level of competitiveness, it must use formal analysis and decision procedures to systematize and coordinate administration, aimed at achieving maximum efficiency in its actions. Medical services companies operate in a dynamic and competitive environment and the quality of service is becoming a strong strategic advantage in the conquest of clients.

The tourism sector is a very perceptive service sector, therefore, when measuring the quality of the service, technological variables are considered, since customers increasingly use ICTs in their daily activities, taking into account the opinion of other consumers, which generates more informed clients and more demanding with the services they expect to obtain. With the development of this research, it was possible to show that the quality of service is a determining factor in the tourism sector, which is why it is important to carry out periodic analyzes of the perception that customers have of it and their degree of satisfaction. Furthermore, incorporating ICTs into the service generates an advantage over competitors. It is also important to mention that customers are increasingly demanding, they are not only looking for price and quality, but also a good, pleasant environment, they seek comfort, personalized treatment and speed of service.

The results obtained are representative with high levels of validity and reliability for each job variable, which exceeds .917. The results of the factorial analysis through the principal components extraction method will determine that there is a correlation between the variables that affect the perception of the service and that the reliability and empathy variables are the most representative in the medical tourism environment. The reliability that is related to the provision of the service in an accurate and careful way, that is, the results show that there is non-compliance in the provision of scheduled services, so that the staff shows a lack of knowledge in the registration of user information, there is disinterest in problem solving and there is no continuity and logical order of care.

On the other hand, empathy that refers to individualized attention, easy access, good communications and understanding, that is, that the doctor and contact personnel know the name of their patient, since it is important that the client knows feel recognized by the staff who treat you, that there is a registration system that allows you to have complete information on patients and that staff are trained. The effects that can be observed by not addressing these problems are: decrease in customers, reduction in perceived quality and a decrease in the rate of recommendations.

The present research shows that information and communication technologies are a determining factor, that medical tourism servers must be updated since current clients are changing regarding their needs and desires, which through these technologies can be satisfied effectively and timely, it is for this reason to mention that ICT play a relevant role in the quality of service offered in the tourism sector, due to the amount...
of advantages obtained from its application. There is still a long way to go for entrepreneurs to implement adequate marketing strategies, due to the recent nature of the sector, ignorance of the potential of ICT and deficient research and innovation (Lopéz, 2018).

Finally, to improve the quality of the services, firstly, it is necessary to bear in mind the importance of providing a quality service, then it is necessary to quantitatively measure the quality levels perceived by the client, in order to identify the positive and negative aspects of the service. Afterwards, the positives must be enhanced and the negatives diminished, and this process must be repeated constantly, always aiming for a better result.

REFERENCES RÉFÉRENCES REFERENCIAS