EVALUATION OF THE QUALITY OF THE TOURIST SERVICE OFFERED TO FOREIGN TOURISTS IN THE CITY OF CARTAGENA DE INDIAS, COLOMBIA

Juan Carlos Vergara-Schmalbach
Francisco Javier Maza-Avila
Orlando Martinez-Nagle
Carlos Andrés Girado-Guzmán

Original scientific paper
Received 11 November 2020
Revised 16 March 2021
15 May 2021
Accepted 27 May 2021
https://doi.org/10.20867/thm.27.2.4

Abstract
Purpose – The objective of this article is to evaluate the quality of tourism services in the city of Cartagena de Indias, Colombia, from the perspective of foreign tourists arriving there, and to identify the elements that have the greatest influence on satisfaction and future behaviour, the latter expressed in the desire to return to enjoy the destination and/or recommend the city to third parties.
Design – The paper proposes a Formative Type Model, where observable variables affect latent or structural variables. Five factors have been considered in this valuation: Tangibility, Reliability, Responsiveness, Security and Empathy.
Methodology – The multivariate Partial Least Squares Regression technique is used, belonging to the set of methods of Structural Equation Systems. 390 surveys were applied to Spanish, English, and Italian-speaking international tourists, with a confidence level of 95% and a margin of error of 5%, assuming an infinite population.
Findings – The results show that international tourists intend to return to the destination and overall satisfaction was positive.
Originality – The results of this study contribute to the scientific literature on new methods for evaluating the quality of tourism services, using analysis techniques that place the customer at the center of decision-making.
Keywords Service Quality, Satisfaction, Foreign tourists, Future behaviour, Structural Equations model, Colombia

1. INTRODUCTION

Cartagena de Indias is a tourist city, located in the Caribbean region of Colombia, adjacent to the Atlantic Ocean. Thanks to its geographical characteristics, its natural and cultural attractions, its historical wealth and its hotel facilities and ports, among others, the city has become one of the main summers and business destinations in the Caribbean Sea. In fact, a high proportion of national tourists converge - surpassed only by the cities of Bogotá and Medellín; Likewise, in recent years it has maintained a constant growth in international tourist arrivals, thanks to the greater confluence of cruises to the country (Corpoturismo 2017). In this sense, in Cartagena de Indias, accommodation and restaurant services correspond to the third economic activity with the largest number of companies and it is the productive commitment that generates the greatest number of jobs in the city (Ramos, García and Villadiego 2017).

Despite its capacities and potential in tourism, Cartagena de Indias experiences a complex situation, with high levels of poverty and informality, which affect its competitiveness as a tourist destination. Against the above, in 2014 the tourist vocation of the city was emphasized as a generator of income, sources of employment and promoter of its development (Alcaldía Mayor de Cartagena de Indias 2004). At the same time, several sustainability and competitive improvement challenges were raised in front of similar tourist destinations, which have greater investment in infrastructure, better prices and human capital trained to serve tourists (Botero, Zuluaga, Camacho and Bermúdez 2010), challenges that remain valid. To the inconveniences of infrastructure, customer service, offer of services, mobility, environment, and insecurity (Caracol Radio 2019; Olivares 2011), new problems are added due to the growth in the number of annual visitors, such as overload in beaches (Razón Pública 2015; Ávila Romero 2015) and illegality (Vergara-Schmalbach, Cortez-Cantero and Martínez-Correa 2019), elements reflected in the quality of service that materialize in the conformity and satisfaction experienced by tourists (El Universal 2018).

Faced with the above, and to increase this volume of tourists and, consequently, the level of income, the quality of the service offered by Cartagena de Indias should become the central theme of any analysis (Prabaharan, Arulraj and Rajagopal 2008). Therefore, this article aims to assess the quality of service and the levels of satisfaction of international tourists arriving in the city of Cartagena de Indias, which allows identifying the elements with the highest incidence of satisfaction, as a basis for making recommendations aimed at improving future behaviour in users of the tourist service, thereby increasing the possibility that they have an intention to enjoy the destination again and, in turn, can recommend the city to third parties. With the understanding of the factors that affect the satisfaction of tourists, recommendations can also be generated addressed to both service providers, as well as government entities and tourism investors (Song, Li, Van Der Veen and Chen 2011), of Thus, this information constitutes an input for the formulation and implementation of policies and strategies aimed at the consolidation of Cartagena de Indias as a tourist destination (Salleh, Zarul, Othman and Idris 2014).

2. LITERATURE REVIEW

Assessing or measuring the quality of a service is a complex task, due to the characteristics of the services - difficulty in standardization, intangibility, production, and consumption at the time - (Zeithaml 1981). Therefore, the service should be interpreted as a process, with a stage of prior planning of resources, a stage of development and results that will be evaluated by the client (Grönroos 2001). These efforts to characterize the quality of the service are fundamental when you want to improve customer satisfaction, retention, and future behaviour (Gronroos 1982; Cronin and Taylor 1992; Fornell 1992).

Against this, authors such as Oliver (1981), Grönroos (1982), Parasuraman, Zeithalm and Berry (1985) established a general characterization applicable to any service, based on the definition of a series of dimensions or stages that facilitate measurement of its quality, a benchmark widely adopted in the industrial and commercial area. These models are usually represented through tables or diagrams with two fundamental

components related to each other: the assessment of perception and an analysis of the results, the latter represented by the satisfaction and future behaviour of customers or users (Dodds and Monroe 1985). These components suggest the identification of hypothetical relationships between key factors that characterize the service, and that can be analyzed through quantitative methods, determining the causal effects between perceptions -including perceived quality-, satisfaction and future behaviour.

The discussion on how to evaluate the quality of the service, access to quantitative methods and computer applications, have "(...) motivated researchers to propose new causal schemes focused on understanding the behaviour of consumers, focusing more on assessing their perceptions" (Vergara-Schmalbach and Quesada 2013). Mathematical models such as Structural Equation Models (or SEM), allow measuring the causal relationships between the factors or variables that characterize the service (Casas 2001) and that could facilitate the identification of the elements that affect the user satisfaction (Vergara-Schmalbach and Quesada 2011).

2.1. Satisfaction, quality, and future behaviours of the tourist destination

The construction of the tourist satisfaction indexes is based on the assessment of the quality of the tourist service, being satisfaction one of several available elements that allow it to be measured. The generic characterization in dimensions applied to services, proposed by Oliver (1981), Grönroos (1982), Parasuraman, Zeithalm and Berry (1985), have a place in the characterization of tourist services (Al-ababneh 2013). In this sense, Middleton and Clarke (2012) suggest 5 dimensions or key components to assess this type of products: the attractions of the destination and the environment, facilities and services offered, accessibility to the destination, image of the destination and price charged to the tourist. In turn, each of these dimensions will consist of its own elements. For example, the attractions of the destination may be natural, buildings, cultural or social. This magnitude of variables that make up a tourist service makes it difficult to establish a single or universal index, leading researchers to propose the development of indexes and models specific to the characteristics of the destination and strengths of the services offered.

Authors of studies like the one proposed -between 1999 and 2019 - applied in the sector, demonstrate the existence of a variety of theoretical models -contextualized to the place of impact-. These studies tend to be dominated by latent or structural variables related to price (or cost paid), tourist loyalty, demographic characteristics, perceived quality, and overall satisfaction (Table 1). In this review, common aspects can be concluded, highlighting significant relationships between perceptions, satisfaction, and future behaviours of tourists, such as loyalty, image and repurchase intention.

Table 1. **Characterization of similar studies carried out in the tourism sector**

Authors	Latent Variables	Number of variables oserved	Size of the sample	Parameters used for the validation of the model	Software used	Results
Suhartanto and Kusdibyo (2019)	4* Quality of experience, perceived value, satisfaction, and image of the destination	18	400	AVE, R^2, t-student, GoF	Does not define	The results indicate that there are significant effects among the variables, except for the effect of perceived value on destination image.
Rojulai, Aminudin, Asmalina and Anuar (2018)	3* Perceived impact of tourism (Economic, social, cultural, and environmental), Quality of life, Development in the sector	27	400	AVE, t-student	SmartPLS	Validate the relationship between economic, social, cultural and environmental aspects on the quality of life.
Van Ryzin, Muzzio, Immerwahr, Gulick and Martinez (2004)	5* Perceived quality, Expectations, Satisfaction, Move Out, Trust Government.,	25	2000	$\chi 2$, $\chi 2$/df, NFI, IFI, TLI, CFI, RMSEA	AMOS	Satisfaction affect the trust in local government officials and the intentions to move out of the city
Ghanian, Ghoochani and Crotts (2014)	6* Image, Infrastructure, Perceived quality, Perceived value, Satisfaction, Commitment	25	134	$\chi 2$, $\chi 2$/df, NFI, IFI, TLI, CFI, RMSEA	AMOS	They determine as predetermining factors that influence the commitment to tourism and on which future tourism development will probably depend.

Authors	Latent Variables	Number of variables oserved	Size of the sample	Parameters used for the validation of the model	Software used	Results
Salleh et al. (2014)	5* Diversity of services offered, Infrastructure, Logistics, Security, Satisfaction	19	193	RMSEA, RMR, GFI, CFI	AMOS	They identify support services, the level of security, the overall trip and the diversity of tourism products as key factors affecting tourist satisfaction.
Al-ababneh (2013)	4* Infrastructure (Restaurants, shops, tourist guides), Accessibility (maps, parking, and bathrooms) and Attractions (museums), tourist satisfaction	34	180	t-student	SPSS v. 18	The results show a positive relationship between the characteristics of the tourism product and tourist satisfaction.
Li, Song, Chen and Wu (2012)	8* Hotels, restaurants, shopping, attractions, transportation, tour operators, immigration, and satisfaction	24	230	t-student	SMART PLS v 2.0	They recommend including tourism services with an intercultural approach for an international tourist destination.
Song, van der Veen, Li and Chen (2012)	6* Perceived value, perceived performance, expectations, satisfaction, complaints, and loyalty	15	2760	t-student	Does not define	The results conclude that aggregate service satisfaction positively influences overall tourist satisfaction.

Authors	Latent Variables	Number of variables oserved	Size of the sample	Parameters used for the validation of the model	Software used	Results
Untong, Kaosa-ard, Ramos, Sangkakorn, and Rey-Maquieira (2010)	5* potential destination, economic impact, social and cultural impact, environmental impact, local resident support for tourism development in their communities	15	1367	$\chi 2$, GFI, AGFI, RMSR	LISREL	The results indicate that local residents consider the relationship with the private sector to be an important factor in boosting local tourism.
Martínez, Novello and Murias (2009)	3* Loyalty, Global Satisfaction, Attribute Satisfaction	11	1441	$\chi 2$, CFI, TLI, IFI, RMSEA	AMOS	The results show that tourist satisfaction positively affects tourist loyalty.
Liang, Corbitt and Peszynski (2008)	7* Personnel Service Quality; Order accuracy and quality; Order efficiency, discrepancy, and flexibility; Information service quality and product availability; Perceived service value; Overall tourists' satisfaction; Tourists' loyalty	23	425	$\chi 2$, $\chi 2$/df, GFI, NFI, CFI, CN, RMSEA, SRMR	SPSS	The results show that logistics service performance affect the tourist satisfaction and loyalty,

Authors	Latent Variables	Number of variables oserved	Size of the sample	Parameters used for the validation of the model	Software used	Results
Chaitip, Chaiboonsri, Kovács and Balogh (2008)	5* Travel Cost Satisfaction, Tourist Demographic, Tourism Product, Tourism Product Attribute, Tourism Product Management	20	300	$\chi 2$, NFI, GFI, AGFI, CFI, NNFI, RMSR	LISREL	This study concludes that tourist demographics positively affect the tourism product and its attributes.
Alen (2006)	4* 2nd Order Model, Reliability, Convergent Validity, Discriminant Validity	22	545	$\chi 2$, $\chi 2$/df, GFI, CFI, IFI, RMSEA	AMOS	They made a comparison between scales, concluding that SERVQUAL offers greater diagnostic possibilities while SERVPERF has better psychometric properties.
Yoon and Uysal (2005)	4* Push Travel Motivation, Pull Travel Motivation, Tourists' Satisfaction, Destination Loyalty	11	248	$\chi 2$, GFI, RMSR, RMSEA, NULL $\chi 2$, AGFI, NNFI, PNFI, CFI, IFI, RFI	LISREL	The authors establish a positive causal relationship between satisfaction and future behaviours.
Furutani and Fujita (2005)	3* Degree of satisfaction for tourism resources, Convenience and availability of services, Comprehensibility, and appropriateness of sign in public spaces	12	341	$\chi 2$, CFI, AGFI	LISREL	Results show a relationship between service performance on foreign tourists' satisfaction.

Authors	Latent Variables	Number of variables oserved	Size of the sample	Parameters used for the validation of the model	Software used	Results
Simó (2002)	8* Discomfort, satisfaction, loyalty, williness to pay more for the service offered, intensification of the experience lived, desire to come back again in another trip	27	200	$\chi 2$, GFI, RMSEA, NFI, NNFI, CFI, AGFI, AlC	EQS	The study demonstrates a positive effect of satisfaction on loyalty, and of pleasure on loyalty.
Gandhi-Arora and Shaw (2002)	9*Satisfaction with the event, Revisit Intention, Sex, Age, Marital Status, Education, Income, Number of Children, Employment	10	500	$\chi 2$	LISREL	The study demonstrates a positive effect of satisfaction on loyalty, and of pleasure on loyalty.
Ko and Stewart (2002)	5* Personal Benefit from Tourism Development, Perceived Positive Tourism Impacts, Perceived Negative Tourism Impacts, Overall Community Satisfaction, Attitudes for Additional Tourism Development	26	732	$\chi 2$, GFI, RMSEA, RMR	AMOS	The results indicate that resident satisfaction was related to both positive and negative perceptions.

Authors	Latent Variables	Number of variables oserved	Size of the sample	Parameters used for the validation of the model	Software used	Results
Yoon , Gursoy and Chen (2001)	6* Economic Impact, Social Impact, Cultural Impact, Environment Impact, Total Impact, Support Tourism	29	321	$\chi 2$, $\chi 2/df$, AGFI, GFI, IFI, CFI, NNFI, PNFI, RMSEA, SRSR, RFI	LISREL	Demonstrate a relationship between motivations, satisfaction and tourist loyalty
Oh (1999)	8*Actual price, perceived price, perceived service quality, perceptions, perceived customer value, customer satisfaction, repurchase intention, word of mouth	16	3451	$\chi 2$, GFI, AGFI, CFI, TLI, RMSEA, t-value	LISREL	Results indicate a positive relationship between satisfaction, intention to repurchase and intention to communicate by word of mouth.

Source: authors' own

2.2. Theoretical model

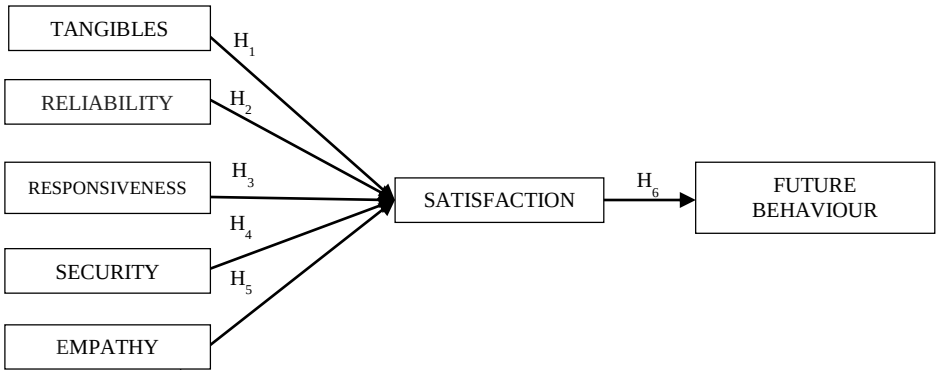
The construction of the theoretical scheme was adapted to a formative type of model, where observable variables affect latent or structural variables (Hair, Hult, Ringle and Sarstedt 2016). This model allows explaining the constructs from the indicators evaluated in the instrument. It consists of six (6) hypotheses based on possible causal relationships between the latent or structural variables present. The objective of this model is to evaluated the level of correlation that exists between the dimensions of quality used in the study and its direct effect on the satisfaction and future behaviours of the international tourist.

H_1: There is a significant direct causal effect between tangibility variables and international tourist satisfaction.
H_2: There is a significant direct causal effect between the variables of reliability and the satisfaction of international tourists.
H_3: There is a significant direct causal effect between the responsiveness variables and international tourist satisfaction.
H_4: There is a significant direct causal effect between security variables and international tourist satisfaction.

H_5: There is a significant direct causal effect between the empathy variables and the satisfaction of the international tourist.
H_6: There is a significant direct causal effect between the satisfaction variables and future behaviours of the international tourist.

Under the previous premises, which start from the theoretical assumptions referenced, a conceptual model or scheme is proposed to assess the quality of the service of the tourism sector of the city of Cartagena de Indias, whose dimensions are expressed through constructs that, first measure, characterize the service (tangibility, reliability, responsiveness, security, and empathy), and evaluate the levels of satisfaction and future behaviour (Figure 1). Each dimension or construct (known as latent variables in the model) was assessed through observed variables, synthesized in a questionnaire.

Figure 1. **Structural model applied to tourism sector of Cartagena**



Source: authors' own

3. METHODOLOGY

For the interpretation of the model data of the present study, a Structural Equation Model (SEM) was applied, a technique that combines both multiple regression and factor analysis. This method allows not only to assess the complexity of dependency relationships, but also to incorporate the effects of measurement error on structural coefficients at the same time (Hair, Anderson, Tatham and Black 1999). Of the main postulates of the SEM, it is highlighted that it allows to evaluate or test theoretical models, becoming a relevant tool for the study of causal relationships over non-experimental data when these relationships are linear. It is for the above that, for the present article, the application of the model allowed to examine all the relevant variables in parallel, as well as contrast the theoretical model of the research and evaluate the significance of the hypotheses.

3.1. Materials and method

For the solution of the proposed model, the SEM-PLS technique (based on variances) was used, which can be used for the development of explanatory and predictive projects (Sarstedt, Ringle, Henseler and Hair 2014), using small samples, whose data are not based on normal behaviour (Cassel, Hackl, and Westlund 1999; Chin and Newsted 1999; Henseler 2010). The solution of the model was based on the weighted relationships scheme, a scheme that provides the highest values for R2 for the endogenous latent variables (Monecke and Leisch 2012), and they conform to explanatory type investigations, which are aimed at establishing relationships between a phenomenon and the theory that sustains it.

The software used during this study was SmartPLS 3.1.8, developed by Ringle, Wende and Becker (2005). This software allows for the establishment of an SEM estimation and analysis model (Barroso, Carrión and Roldán 2010), which evaluates the measurement model and the structural model (Hair, Sarstedt, Hopkins and Kuppelwieser 2014; Wan Afthanorhan 2013), to establish relationships between indicators and constructs (Roldán and Sánchez-Franco 2012). The structural model was estimated, through the path coefficients, its significance level (R^2 Coefficent of determination) and cross-validated redundancy (Q^2 Crossvalidated redundancy) (Hair, Black, Babin and Anderson 2014).

For the development of the final model of valuation of the quality of the tourist service, a backward elimination analysis was chosen, starting with an initial model considering all the variables, to later eliminate the elements (latent and observable variables) not significant. In this way, it was concluded in a reduced final model, considering only the variables that have significant relationships (Diez, Barr and Cetinkaya-Rundel 2014; Kline 2011; Wang, Wright, Brownlee and Buswell 2016).

3.2. Questionnaire and measurement scale

To evaluate the model, an instrument was designed to assess the perceptions of the international tourists surveyed. This questionnaire was made up of 40 questions about tourism service perception and 6 questions about socio-demographic aspects. Table 2 shows the observable variables grouped by dimension evaluated. The observable variables included were adapted according to the scale and dimensions proposed in the SERVQUAL model (Parasuraman, Zeithalm and Berry 1985).

Table 2. **List of observable variables by dimension assessed**

VARIABLES	DESCRIPTION
SOCIO-DEMOGRAPHIC ASPECTS	
SD1	Age
SD2	Gender
SD3	Marital Status
SD4	Country of Residence
SD5	Number of visits to Cartagena de Indias
SD6	Number of accompanying persons

VARIABLES	DESCRIPTION
TANGIBLES	
P1	State of the infrastructure Sidewalks, Street, constructions
P2	Conditions of the street about cleaning conditions
P3	Preservation and care conditions of the touristic attractions
P4	Buildings and installations quality
P5	Conditions of cleaning in the place you stayed
P6	Variety and quantity of restaurants in the city
P7	Quality of the restaurants
P8	Cleaning conditions of the restaurants
P9	Cleaning conditions of the beaches
P10	Touristic infrastructure of the Beaches
P11	Cleaning conditions of the city
RELIABILITY	
P12	Value for money of products bought from informal vendors
P13	Value for money of the place you stayed at
P14	Value for money of the restaurants
P15	Value for money of the services
P16	Value of taxi fares in the city
P17	Pedestrian-friendly mobility
P18	Ease of mobility and transport in the city
RESPONSIVENESS	
P19	Prompt access to tourist attractions
P20	Prompt access to touristic places for walking challenged people
P21	Timely resolution of doubts about the history of the city by tour guides
P22	Timely access to information about the touristic attractions
SECURITY	
P23	Security in the old city streets
P24	Security in the beach area
P25	Security perception of the city
EMPATHY	
P26	Street vendors treatment and kindness towards tourists
P27	Quality of the service offered in the place's tourists visit
P28	Kindness, politeness, good treatment given by the tourist guides
P29	Tourist guides dressing code
P30	Quality of the service offered to clients in the place he stayed
P31	Quality of the restaurants service offered
P32	Street vendors kind of treatment, kindness and respect shown and offered to tourists
P33	Satisfaction and experiences when visiting the beaches
P34	Hospitality of the Cartagena local people
P35	Service offered by Cartagena to tourists
P36	Taxi driver's treatment to tourists

VARIABLES	DESCRIPTION
SATISFACTION	
S1	Grade of satisfaction perceived by tourists during their stay
S2	Level of general satisfaction of the tourist stay in the city
FUTURE BEHAVIOURS	
IF1	Level of eagerness and desire to recommend others to visit Cartagena
IF2	Level of interest about visiting Cartagena again in the future.

Source: authors' own

To obtain relevant research information, a Likert scale of 1 to 5 points was adopted. This scale is the most used in the methods of measuring perceptions (Vergara-Schmalbach and Quesada 2013), using one of several positions on the five-point scale (Hernández, Fernández and Baptista 2010).

For the perception of attributes, products and services of the city, a scoring scale was established with values from 0 to 5, being 0 = Does not know; 1 = Minimum qualification and 5 = Maximum qualification. Also, for the satisfaction of the experience, a Likert scale of 1 to 5 points was proposed, adjusted to the information that is desired to be collected from the respondents, such as:

- A scale of 1 to 5, which reflects the degree of satisfaction that is perceived from the services received during the stay in the city of Cartagena de Indias, being 1 = Much worse than expected and 5 = Much better than expected.
- A scale of 1 to 5, which expresses the level of general satisfaction with respect to your stay in the city of Cartagena de Indias, being 1 = Very dissatisfied and 5 = Very satisfied.

Finally, to measure future behaviour, the same measurement scale used in satisfaction was raised, ranging from 1 to 5 points, referring to how willing the respondent would be to recommend to a family member, friend, or partner, visiting Cartagena de Indias, being 1 = Unwilling and 5 = Very willing.

3.3. Population and sample

For the development of the research, 390 surveys were applied to Spanish, English, and Italian-speaking international tourists (the most recurrent languages of foreign tourists visiting the city), during the mid-year holiday season, between the months of June of 2018 and August 2018, with a confidence level of 95% and a margin of error of 5%, assuming an infinite population.

4. RESULTS

Of the 390 surveys applied, 386 records were accepted (for missing data and values that did not fit the measurement scale), indicating an approximate rate of 99% instrument application effectiveness. Of the total international tourists surveyed, 54.6% belonged to the male gender, from Europe (47.2%), Latin America (28.8%) and North America

(22%). Likewise, tourists who visited Cartagena de Indias were accompanied by friends (37.9%), family members (35.7%), members of a sports team (11.9%), or members of a cruise ship (11.2%). On the other hand, most of the subjects surveyed indicated that it was the first time they visited the city of Cartagena de Indias (81.9%). The most frequent ages of tourists were in the ranges of 20-29 years (34.2%) and 30-39 years (29.3%).

4.1. Model solution

40 questions related to the assessment of the perception, satisfaction and future behaviour of international tourists were evaluated, based on the proposed causal scheme or models. Table 3 summarizes the main statistical indicators by variable observed. It should be noted that 15 missing data were found, which were treated as of their replacement by the most frequent or mode value of the variable (O'Loughlin and Coenders, 2004). The variables associated with satisfaction (S1 and S2) and future behaviour (IF1 and IF2) obtained the highest scores. On the other hand, the variables with the lowest scores were those associated with empathy (P32 and P33).

Table 3. **Statistical indicators per question evaluated**

Variables	Mínimum	Máximum	Mode	Mean	Standard deviation
P1	1.00	5.00	4.00	3.91	0.79
P2	1.00	5.00	4.00	3.83	0.83
P3	1.00	5.00	4.00	3.93	0.87
P4	1.00	5.00	4.00	3.86	0.95
P5	1.00	5.00	4.00	3.91	0.95
P6	1.00	5.00	4.00	3.79	1.10
P7	1.00	5.00	5.00	3.82	1.16
P8	1.00	5.00	4.00	3.74	1.12
P9	1.00	5.00	4.00	3.66	1.05
P10	1.00	5.00	4.00	3.73	0.94
P11	1.00	5.00	4.00	3.77	0.88
P12	1.00	5.00	4.00	3.89	1.03
P13	1.00	5.00	4.00	3.79	0.95
P14	1.00	5.00	4.00	3.68	1.08
P15	1.00	5.00	4.00	3.67	0.98
P16	1.00	5.00	4.00	3.76	0.86
P17	1.00	5.00	4.00	3.90	0.88
P18	1.00	5.00	4.00	3.85	0.84
P19	1.00	5.00	4.00	3.91	0.87
P20	1.00	5.00	4.00	3.76	1.04
P21	1.00	5.00	4.00	3.84	0.99
P22	1.00	5.00	4.00	3.75	0.92
P23	1.00	5.00	4.00	3.99	0.84
P24	1.00	5.00	4.00	3.62	0.90
P25	1.00	5.00	4.00	3.76	0.84
P26	1.00	5.00	4.00	3.85	0.92
P27	1.00	5.00	4.00	3.99	0.90

Variables	Mínimum	Máximum	Mode	Mean	Standard deviation
P28	1.00	5.00	4.00	3.80	0.99
P29	1.00	5.00	4.00	3.74	0.99
P30	1.00	5.00	4.00	3.97	0.98
P31	1.00	5.00	4.00	3.85	1.14
P32	1.00	5.00	4.00	3.60	0.98
P33	1.00	5.00	3.00	3.60	0.96
P34	1.00	5.00	4.00	3.69	0.93
P35	1.00	5.00	4.00	3.85	0.84
P36	1.00	5.00	4.00	3.80	0.88
S1	1.00	5.00	4.00	4.09	0.74
S2	1.00	5.00	4.00	4.12	0.66
IF1	1.00	5.00	4.00	4.10	0.67
IF2	1.00	5.00	4.00	4.22	0.67

Source: authors' own

The model was validated through the bootstrap method, simulating 1000 subsamples to determine, in the first measure, the significance of the correlations between the dimensions (for a t> I1.96 I product of a two-tailed test and confidence level of 95 %) (Table 4).

Table 4. **Results of the initial model solved by bootstrap method (1000 samples)**

Variables	Average correlation	t student
Tangibility-> Satisfaction	0.113	0.763
Reliability-> Satisfaction	-0.047	0.332
Security-> Satisfaction	0.042	0.280
Responsiveness-> Satisfaction	0.150	1.331
Empathy -> Satisfaction	0.200	1.389
Satisfaction-> Future behaviours	0.719	12.900*

Source: authors' own
* Significant at 0.01 level

The final model proposes two significant relationships between empathy, satisfaction, and future behaviours. Non-significant relationships were eliminated step by step through the Backward Elimination technique. Applying the PLS technique confirms the correlations between empathy and satisfaction (0.357), and satisfaction and future behaviours (0.719). In this case, the variation in satisfaction scores is explained in 12.7% (R^2) by empathy. In turn, the variation in the score of future behaviours is explained, to a large extent, by 51.7% satisfaction (Figure 2).

Figure 2. **Model solved through the PLS Technique (own compilation)**

Source: authors' own

4.2. Model validity

The validity of the model is demonstrated through the Average Extract Variance (AVE) with values greater than 0.5 (Henseler, Ringle and Sinkovics 2009), indicating that more than 50% of the data is explained by each of the constructs. On the other hand, Cronbach's Alpha and Composite Reliability, with values greater than 0.7, demonstrate its internal consistency (Hair et al. 2014).

Table 5. **Reliability and Validity of the Construct**

Dimensión	Cronbach's Alpha	Compound Reliability	Average Extraction Variance
Empathy	0.89	0.91	0.50
Future behaviour	0.77	0.90	0.81
Satisfaction	0.79	0.90	0.82

Source: authors' own

The results of the Variance Inflation Factor (VIF) applied to the relationships between the observed variables show values below 10, indicating non-presence of multicollinearity (Henseler, Ringle and Sinkovics 2009) (Table 6).

Table 6. **VIF Calculated by observed variable**

Observed variables	Variance Inflation Factor (VIF)
F1	1.624
F2	1.624
P27	2.626
P28	2.190
P29	2.606
P30	1.742

Observed variables	Variance Inflation Factor (VIF)
P31	1.339
P32	2.454
P33	2.429
P34	2.605
P35	2.243
P36	2.041
S1	1.720
S2	1.720

Source: authors' own

5. DISCUSSION AND CONCLUSIONS

The purpose of this study was to assess the quality of the tourist service of Cartagena de Indias from the products and services offered by the destination evaluated from the perspective of international tourists, through the identification of latent and observable variables, the design of an instrument , the approach of six hypotheses based on a causal model solved by the technique of Partial Minimum Squares, establishing the significant relationships between attributes and identifying the key elements that affect satisfaction. The model was successfully applied in the context of the city's tourism service, demonstrating the high relationship between empathy (a construct representing the perceived quality dimension), satisfaction and future behaviour of international visitors to the city of Cartagena de Indias, providing a solution to the research problem posed.

After the application of the causal model, empathy and satisfaction were found to be decisive for the future behaviours of the international tourist regarding Cartagena as a sustainable tourist destination. Empathy has a high correlation with satisfaction, shown in the model as a significant motivator of tourist satisfaction levels. The above results are consistent with the findings of Ghanian, Ghoochani and Crotts (2014); Al-ababneh (2013); Song, van der Veen, Li and Chen (2012), and Hamsanandini et al. (2017). The other dimensions, (tangible, reliability, responsiveness, and security) seem to have no significant impact on satisfaction, concluding that, of the six hypotheses presented, the two statements (H_5 and H_6) were accepted.

It should be noted that satisfaction had a positive evaluation globally. The surveyed tourists were generally very satisfied with the destination, as well as with the services received during their stay, which continues to position Cartagena as one of the main tourist destinations in the country, given that they find different products such as sun and beach, heritage, gastronomic and a good hotel offer of accommodation and lodging.

Despite the previous results, at present, there is great uncertainty about the evolution of the Covid-19 pandemic and its economic impact on the tourism sector in Cartagena de Indias. Faced with this scenario, the prompt formulation of strategies is required to enable the recovery of tourist confidence. For this reason, and in accordance with the results of this study, it is recommended that the authorities in charge of strengthening the city's tourism sector include, as part of their strategy, the periodic assessment of the perception of the quality of service and the satisfaction of international tourists. This assessment

should also include the level of compliance with biosecurity measures by service providers.

The above measures are of great importance, as they will serve as a basis for the development of new tourism services that are in line with the expectations of tourists. The measures are also in line with the current conditions imposed by Covid-19, which require all actors in the sector to provide sustainable, responsible and safe services for both themselves and the tourists.

Finally, the limitations of this research lie in the estimation methods used (PLS-SEM), the population under study (international tourists), the variables defined and the specific context in which it was applied (tourism sector of Cartagena de Indias). In future research, it would be worthwhile to analyze the effect of the inclusion of other variables in the model, such as socio-demographic variables. The inclusion of domestic tourists in the sample may also be considered.

ACKNOWLEDGEMENTS

The article is the result of the research project "Estudio comparativo de la calidad del servicio turístico entre las ciudades de Cartagena de Indias, Colombia y Cádiz, España" (Res N° 114-2019) and Sustainability plan funds for the "GIDER" and "Métodos Cuantitativos de Gestión" research group, year 2020-2021 (Res N° 01430-2019) both financed by the Universidad de Cartagena, Colombia. The authors are thankful to the University of Cartagena for the financial support to carry out this research. The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

REFERENCES

Al-ababneh, M. (2013), "Service Quality and its Impact on Tourist Satisfaction", *Interdisciplinary Journal of Contemporary Research in Business*, Vol. 4, No. 12, pp. 164-177.

Alcaldía Mayor de Cartagena de Indias (2004), *Plan Sectorial de Turismo de Cartagena de Indias*, Cartagena de Indias.

Alen, M.E. (2006), "Comparación de escalas para la medición de la calidad percibida en establecimientos termales", *Revista Galega de Economía*, Vol. 15, No. 2, pp. 1-19.

Ávila Romero, A. (2015), "Análisis del Turismo alternativo en comunidades indígenas de Chiapas, México", *Études Caribeennes*, Vol. 1, pp. 31-32. https://doi.org/10.4000/etudescaribeennes.7601

Barroso C., Carrión G.C., Roldán J.L. (2010), "Applying Maximum Likelihood and PLS on Different Sample Sizes: Studies on SERVQUAL Model and Employee Behavior Model", in Esposito Vinzi, V., Chin, W., Henseler, J. and Wang H. (eds) *Handbook of Partial Least Squares*, Springer Handbooks of Computational Statistics. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-540-32827-8_20

Botero, J., Zuluaga, S., Camacho, C., and Bermúdez, W. (2010), *Estudio de prospectiva para la industria dela hotelería*. Fedesarrollo, Bogotá D.C.

Caracol Radio (2015), *Concejo advierte que el medio ambiente en Cartagena es deplorable,* viewed 17 May 2015, https://caracol.com.co/emisora/2019/03/17/cartagena/1552826398_033482.html

Casas, M. (2001), "Los modelos de ecuaciones estructurales y su aplicación en el Índice Europeo de Satisfacción del Cliente", In *X Jornadas Madrid 2002 – ASEPUMA*, Vol. 1, pp. 1-11.

Cassel, C., Hackl, P. and Westlund, A.H. (1999), "Robustness of partial least-squares method for estimating latent variable quality structures", *Journal of Applied Statistics*, Vol. 26, No. 4, pp. 435-446. https://doi.org/10.1080/02664769922322

Chaitip, P., Chaiboonsri, C., Kovács, S. and Balogh, P. (2008), "A Structural Equation Model: Greece's Tourism Demand for Tourist Destination", *Applied Studies in Agribusiness and Commerce*, Vol. 4, No. 1-2, pp. 75-83. https://doi.org/10.19041/Apstract/2010/1-2/11

Chin, W. W. and Newsted, P.R. (1999), "Structural Equation Modeling Analysis with Small Samples Using Partial Least Square", in Hoyle, R. (Ed.) *Statistics Strategies For Small Sample Research*, SAGE Publications New York, pp. 307-341.

Corpoturismo (2017), *Sistema De Información Turística De Cartagena –SITCAR-, año 2017*, Cartagena de Indias.

Cronin, J.J. and Taylor, S.A. (1992), "Measuring quality: a reexamination and extension". *Journal of Marketing*, Vol. 56, No. 3, pp. 55–68. https://doi.org/10.2307/1252296

Diez, D.M., Barr, C.D. and Cetinkaya-Rundel, M. (2014). *OpenIntro Statistics* (2nd edition), OpenIntro.org, New York.

Dodds, W.B. and Monroe, K.B. (1985), "The Effect of Brand and Price Information on Subjetive Product Evaluations". *Advances in Consumer Research*, Vol. 12, No. 1, pp. 85-90.

El Universal (2018), *Turistas en Cartagena no tienen suficiente información para denunciar abusos,* viewed 15 July 2018, https://www.eluniversal.com.co/cartagena/turistas-en-cartagena-no-tienen-suficiente-informacion-para-denunciar-abusos-282701-OBEU399061

Fornell, C. (1992), "A National Customer Satisfaction Barometer: The Swedish Experience", *Journal of Marketing*, Vol. 56, No. 1, pp. 6-21. https://doi.org/10.2307/1252129

Furutani, T. and Fujita, A. (2005), "A Study on Foreing Tourists' Behavior and Consumer Satisfaction in Kamakura", *Journal of the Eastern Asia Society for Transportation Studies*, Vol. 6, No. 1, pp. 2154-2169.

Gandhi-Arora, R. and Shaw, R.N. (2002), "Customer Characteristics, Satisfaction and Repurchase Intention", in Shaw, R.N., Adam, S. and McDonald, H. (eds.), *Proceedings of the Australian and New Zealand Marketing Academy Conference ANZMAC 2002*, Victoria University of Wellington, Melbourne, pp. 3321-3326.

Ghanian, M., Ghoochani, O.M. and Crotts, J.C. (2014), "An application of European Performance Satisfaction Index towards rural tourism: The case of western Iran", *Tourism Management Perspectives*, Vol. 11, pp. 77-82. https://doi.org/10.1016/j.tmp.2014.04.005

Grönroos, C. (1982), *Strategic Management and Marketing in the Service Sector*, Swedish School of Economics and Business Administration, Helsingfors.

Grönroos, C. (2001), "The perceived service quality concept–a mistake?", *Managing Service Quality: An International Journal*, Vol. 11, No. 3, pp. 150-152. https://doi.org/10.1108/09604520110393386

Hair Jr, J.F., Anderson, R.E., Tatham, R.L. and Black, W. (1999), *Análisis Multivariante,* Prentice Hall, Madrid.

Hair Jr, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2014), *Multivariate Data Analysis* (7th Edition), Pearson Education Limited, Edinburg Gate.

Hair Jr, J.F., Hult, G.T.M., Ringle, C. and Sarstedt, M. (2016), *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (2nd Edition), SAGE Publications, New York.

Hair Jr, J.F., Sarstedt, M., Hopkins, L. and G. Kuppelwieser, V. (2014), "Partial least squares structural equation modeling (PLS-SEM)", *European Business Review*, Vol. 26, No. 2, pp. 106-121. https://doi.org/10.1108/EBR-10-2013-0128

Hamsanandini, U., Umasuthan, H., Park, O.-J. and Ryu, J.-H. (2017), "Influence of empathy on hotel guests' emotional service experience", *Journal of Services Marketing*, Vol. 31, No. 6, pp. 618-635. https://doi.org/10.1108/JSM-06-2016-0220

Henseler, J. (2010), "On the convergence of the partial least squares path modeling algorithm", *Computational Statistics*, Vol. 25, No. 1, pp. 107-120. https://doi.org/10.1007/s00180-009-0164-x

Henseler, J., Ringle, C.M. and Sinkovics, R.R. (2009), "The use of partial least squares path modeling in international marketing", in Sinkovics, R. R. and Ghauri, P. N. (eds.), *New Challenges to International Marketing* (*Advances in International Marketing, Vol. 20*), Emerald Group Publishing Limited, Bingley, pp. 277-319. https://doi.org/10.1108/S1474-7979(2009)0000020014

Hernández-Sampieri, R., Fernández-Collado, C. and Baptista-Lucio, P. (2010), Metodología de la Investigación, McGraw-Hill, Ciudad de México.

Kline, R.B. (2011). *Principles and Practice of Structural Equation Modeling*. The Guilford Press, New York, New York.

Ko, D. and Stewart, W.P. (2002), "A structural equation model of residents' attitudes for tourism development", *Tourism Management*, Vol. 23, No. 5, pp. 521-530. https://doi.org/10.1016/S0261-5177(02)00006-7

Li, G., Song, H., Chen, J.L. and Wu, D.C. (2012), "Comparing Mainland Chinese Tourists' Satisfaction With Hong Kong and the UK Using Tourist Satisfaction Index", *Journal of China Tourism Research*, Vol. 8, No. 4, pp. 373-394. https://doi.org/10.1080/19388160.2012.729402

Liang, H., Corbitt, B. and Peszynski, K. (2008), "Impacts of Logistics Service Performance Through it on Overall Tourist Satisfaction and Loyalty", *European Conference on Information Systems (ECIS)*, Information systems and Innovation Group, Galway, pp. 1-12.

Martínez, F., Novello, S. and Murias, P. (2009), "Análisis de la lealtad de los turistas que visitan la ciudad de santiago de compostela", *Revista Galega de Economía*, Vol. 18, No. 2, pp. 1-15.

Middleton, V.T.C. and Clarke, J. R. (2012), *Marketing in Travel and Tourism* (3rd edition). Butterworth-Heinemann, London. https://doi.org/10.4324/9780080511108

Monecke, A. and Leisch, F. (2012), "SemPLS: Structural Equation Modeling Using Partial Least Squares", *Journal of Statistical Software*, Vol. 48, No. 3, pp. 1-32. https://doi.org/10.18637/jss.v048.i03

O'Loughlin, C. and Coenders, G. (2004), "Estimation of the European Customer Satisfaction Index: Maximum Likelihood versus Partial Least Squares. Application to Postal Services", *Total Quality Management and Business Excellence*, Vol. 15, No. 9–10, pp. 1231-1255. https://doi.org/10.1080/1478336042000255604

Oh, H. (1999), "Service quality, customer satisfaction, and customer value: A holistic perspective", *International Journal of Hospitality Management*, Vol. 18, No. 1, pp. 67-82. https://doi.org/10.1016/S0278-4319(98)00047-4

Olivares, D.L. (2011), "Una aproximación al estado ambiental de carácter integrado de las playas turísticas del Caribe Medio Colombiano", *Invesigaciones Turisticas*, Vol. 1, No. 1, pp. 51-68. https://doi.org/10.14198/INTURI2011.1.04

Oliver, R.L. (1981), "Measurement and evaluation of satisfaction processes in retail settings", *Journal of Retailing*, Vol. 57, No. 3, pp. 25-48. http://doi.apa.org/psycinfo/1984-10995-001

Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1985), "A Conceptual Model of Service Quality and Its Implications for Future Research", *Journal of Marketing*, Vol. 49, No. 4, pp. 41-50. https://doi.org/10.2307/1251430

Prabaharan, B., Arulraj, A. and Rajagopal, V. (2008), "Service Quality on Tourism: Application of Structural Equation Modeling", in *Conference on Tourism in India – Challenges Ahead*. Kerala Tourism and ICRT, Kerala.

Ramos, G., García, Y. and Villadiego, A. (2017), *Cartagena en cifras*, Cámara de Comercio de Cartagena, Cartagena de Indias.

Razón Pública (2015), *¿Están sobrecargadas las playas de Colombia?,* viewed 27 April 2015, https://razonpublica.com/estan-sobrecargadas-las-playas-de-colombia/

Ringle, C. M., Wende, S. and Will, A. (2005), *Smart PLS 2.0 M3*. University of Hamburg, Hamburg. http://www.smartpls.de

Rojulai, N., Aminudin, N., Asmalina, N. and Anuar, M. (2018), "A Conceptual Framework of Tourism Development Perceived Impact, Quality of Life and Support for Tourism Further Development: A Case of Malaysia Homestay Experience Programme (MHEP)", *International Journal of Academic Research in Business and Social Science*, Vol. 8, No. 16, pp. 339-355.

Roldán, J.L. and Sánchez-Franco, M. J. (2012), "Variance-based structural equation modeling: guidelines for using partial least squares in information systems research", in Mora, M., Gelman, O., Steenkamp, A. and Raisinghani, M. (eds.), *Research Methodologies, Innovations and Philosophies in Software Systems Engineering and Information Systems*, IGI Global, pp. 193-221. http://doi:10.4018/978-1-4666-0179-6.ch010

Salleh, N.H., Zarul, A.N., Othman, R. and Idris, S.H.M. (2014), "Advances in Natural and Applied Sciences Determinant Factors and Tourist Satisfaction Index: A Case Study at the Pulau Kapas Marine Park", *Advances in Natural and Applied Sciences*, Vol. 8, No. 1, pp. 5-11.

Sarstedt, M., Ringle, C.M., Henseler, J., and Hair Jr, J.F. (2014), "On the Emancipation of PLS-SEM: A Commentary on Rigdon (2012)", *Long Range Planning*, Vol. 47, No. 3, pp. 154-160. https://doi.org/10.1016/j.lrp.2014.02.007

Simó, A. (2002), "Análisis de la satisfacción en la experiencia del consumidor: Una aplicación en empresas de servicios de ocio y turismo", *Investigaciones Europeas de Dirección y Economía de La Empresa*, Vol. 8, No. 3, pp. 199–214.

Song, H., Li, G., van der Veen, R. and Chen, J.L. (2011), "Assessing mainland Chinese tourists' satisfaction with Hong Kong using tourist satisfaction index", *International Journal of Tourism Research*, Vol. 13, No. 1, pp. 82-96. https://doi.org/10.1002/jtr.801

Song, H., van der Veen, R., Li, G. and Chen, J.L. (2012), "The Hong Kong tourist satisfaction index", *Annals of Tourism Research*, Vol. 39, No. 1, pp. 459-479. https://doi.org/10.1016/j.annals.2011.06.001

Suhartanto, D. and Kusdibyo, L. (2019), "Predicting Destination Image in Creative Tourism: A Comparative between Tourists and Residents", *International Journal of Applied Business Research*, Vol. 1, No. 1, pp. 1-15. https://doi.org/10.35313/ijabr.v1i01.36

Untong, A., Kaosa-ard, M. and Ramos, V. (2010), "Factors Influencing Local Resident Support for Tourism Development: A Structural Equation Model", in *APTA Conference 2010* (pp. 1-20), APTA Conference, China.

Van Ryzin, G. G., Muzzio, D., Immerwahr, S., Gulick, L. and Martinez, E. (2004), "Drivers and Consequences of Citizen Satisfaction: An Application of the American Customer Satisfaction Index Model to New York City", *Public Administration Review*, Vol. 64, No. 3, pp. 331-341. https://doi.org/10.1111/j.1540-6210.2004.00377.x

Vergara-Schmalbach, J.C., Cortez-Cantero, M.C. and Martínez-Correa, M.F. (2019), "Valoración de la calidad del servicio turístico de Cartagena de Indias, Colombia", *Panorama Económico*, Vol. 27, No. 2, pp. 544-558. https://doi.org/10.32997/2463-0470-vol.27-num.2-2019-2641

Vergara-Schmalbach, J.C. and Quesada, V.M. (2011). " Análisis de la calidad en el servicio y satisfacción de los estudiantes de Ciencias Económicas de la Universidad de Cartagena mediante un modelo de ecuaciones estructurales", *Redie*, Vol. 13, No. 1, pp 108-122.

Vergara-Schmalbach, J.C. and Quesada, V.M. (2013), *Valoración de la Calidad del Servicio Mediante Modelos de Ecuaciones Estructurales* (No. 1), Universidad de Cartagena, Cartagena de Indias.

Wan Afthanorhan, W.M.A. (2013), "A Comparison Of Partial Least Square Structural Equation Modeling (PLS-SEM) and Covariance Based Structural Equation Modeling (CB-SEM) for Confirmatory Factor Analysis", *International Journal of Engineering Science and Innovative Technology (IJESIT)*, Vol. 2, No. 5, pp. 198-205.

Wang, M., Wright, J., Brownlee, A. and Buswell, R. (2016), "A comparison of approaches to stepwise regression on variables sensitivities in building simulation and analysis", *Energy and Buildings*, Vol. 127, No. 1, pp. 313-326. https://doi.org/10.1016/j.enbuild.2016.05.065

Yoon, Y., Gursoy, D., and Chen, J.S. (2001), "Validating a tourism development theory with structural equation modeling", *Tourism Management*, Vol. 22, No. 1, pp. 363-372. https://doi.org/10.1016/S0261-5177(00)00062-5

Yoon, Y., and Uysal, M. (2005), "An examination of the effects of motivation and satisfaction on destination loyalty: a structural model", *Tourism Management*, Vol. 26, No. 1, pp. 45-56. https://doi.org/10.1016/j.tourman.2003.08.016

Zeithaml, V.A. (1981), "How Consumer Evaluation Processes Differ Between Goods and Service", *Marketing of Service*, Vol. 9, No. 1, pp. 186-190.

Juan Carlos Vergara-Schmalbach, PhD, Associate Professor
University of Cartagena, Faculty of Economic Sciences
Industrial Management Program
Piedra de Bolívar Campus, Cartagena de Indias, Colombia
Phone: +57-3014307668
E-mail: javergaras@unicartagena.edu.co

Francisco Javier Maza-Avila, PhD, Associate Professor (Corresponding Author)
University of Cartagena, Faculty of Economic Sciences
Industrial Management Program
Piedra de Bolívar Campus, Cartagena de Indias, Colombia
Phone: +57-3008094843
E-mail: fmazaa@unicartagena.edu.co

Orlando Martinez-Nagle, Msc
University of Cartagena, Faculty of Economic Sciences
Master in Organization Management
Piedra de Bolívar Campus, Cartagena de Indias, Colombia
Phone: +57-3014684910
E-mail: orlyeko@hotmail.com

Carlos Andrés Girado-Guzmán, Msc
University of Cartagena, Faculty of Economic Sciences
Master in Organization Management
Piedra de Bolívar Campus, Cartagena de Indias, Colombia
Phone: +57-3145928425
E-mail: proyectos.pipevalves@gmail.com

Please cite this article as:
Vergara-Schmalbach, J.C., Maza-Avila, F.J., Martinez-Nagle, O., Girado-Guzmán, C.A. (2021), Evaluation of the Quality of the Tourist Service Offered to Foreign Tourists in the City of Cartagena de Indias, Colombia, Tourism and Hospitality Management, Vol. 27, No. 2, pp. 293-314, https://doi.org/10.20867/thm.27.2.4