New Index Proposal for Hotel Online Reputation Management

Propuesta de un nuevo índice para la gestión de la reputación online de hoteles

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ABSTRACT

Aim: To develop a procedure for the calculation of a new online reputation index, in relation to TripAdvisor user ratings, which helps create a hotel ranking, and improve strategic marketing guidelines.

Methods and techniques: Analysis and synthesis, induction-deduction, and historical-logic. The second group of methods included expert opinion, survey, Spearman correlation coefficient, and Kendall Tau-b coefficient. SPSS, 22 was used for statistical data processing.

Main results: The new procedure proposal is based on calculation of the online reputation index during the period studied, which overcomes previously existing limitations, and assigns a value to every hotel scoring received according to hotel size. The methodological proposal makes the establishment of a hotel ranking possible, according to hotel typology, and also permits to enhance strategic marketing guidelines.

Conclusions: The procedure meets the objectives set, by implementing its phases properly, which shows the capacity of responding to the characteristics needed in this scenario. The new ranking is regarded as valid, based on the analysis of statistical data. The findings of this study will permit to make decisions in order to improve strategic processes, and implement policies to optimize critical processes in the hotel sector.

Key words: hotels; index; ranking; online reputation.

RESUMEN

Objetivo: Desarrollar un procedimiento para el cálculo de un nuevo índice de reputación *online* asociado a las puntuaciones de los usuarios en TripAdvisor, que permita la confección del *ranking* de hoteles, así como la mejora de las directrices estratégicas de la comercialización.

Métodos y técnicas: Análisis-síntesis, inducción-deducción y el histórico lógico; además del criterio de expertos, la encuesta, el coeficiente de correlación de Spearman y el coeficiente Tau-b de Kendall. Para el procesamiento de los datos se utilizó el software estadístico SPSS vs- 22.

Principales resultados: El procedimiento propone calcular un nuevo Índice de reputación *online* del período, que supera las limitaciones existentes y asigna valor a cada puntuación recibida por un hotel, tomando en consideración su tamaño. La propuesta metodológica permite comprobar que es posible la confección del *ranking* de hoteles según su tipología y perfeccionar las directrices estratégicas de la comercialización.

Conclusiones: El procedimiento cumple con los objetivos propuestos, implementa de forma adecuada las fases que lo componen y tiene la capacidad de responder a las características necesarias para el contexto. El nuevo *ranking* es considerado válido según los datos estadísticos alcanzados. Los resultados obtenidos permitirán tomar decisiones en función de mejorar los procesos estratégicos y desarrollar políticas para perfeccionar procesos claves de la empresa hotelera.

Palabras clave: hoteles; índice; *ranking*; reputación *online.*

INTRODUCTION

Business management trends are focusing on the utilization of information technologies as a key factor for organizational success, which have led to the concept of online reputation (Vaquero, 2012). The organizations unable to manage this concept efficaciously are exposed to price-based competition only, thus limiting distinctive possibilities (Diana-Jens and Ruibal, 2015).

Additionally, in face of the dramatic sanitary crisis caused by COVID-19, these types of variables become more important because the drastic changes taking place will set a new bearing to the hospitality business (Gössling, Scott & Hall, 2020); which is even more influenced by the virtual scenario. From the current sanitary context, another type of touristic offer has emerged with an online form, through virtual trips that promote pre-sales and bookings from real travelers that will engage in tourist activities in the near future (Sharma & Nicolau, 2020).

The development of online offers has been promoted mainly by commercial social networks and travel agencies. Among the services offered in these platforms, are rankings of hotels, destinations, and attractions, with a high impact on traveler communities, and may determine the success or failure of the touristic business. Several studies of these platforms have focused on the analysis and detection of deficiencies of methodologies (Baka, 2016; Fritsch, and Sigmund, 2016; Mellinas, Martínez, & Bernal, 2016; Mellinas & Reino, 2019; Raguseo, Neirotti & Paolucci, 2017). Particularly, TripAdvisor, one of the leading commercial social media (Gil, Barandalla, and Idoeta, 2016), has shown some flaws, regarding the calculations to establish the ranking of facilities. The index used by the company does not consider the reliability of opinions or scoring offered by customers of hotels for a period of time, depending on hotel size. Instead, it considers the ones generated at resort hotels with the largest

number of rooms, as the most reliable, putting aside smaller hotels (Balagué, Martin, and Gómez, 2016; Mellinas, Bernal, and Martínez, 2015).

In the context of these studies, there is a need to develop a new instrument that allows for the creation of a hotel online reputation ranking, depending on hotel typology or size. This methodology —which pursues continuous improvement of results of online reputation— is set in order to meet the demands of travelers, and competition (Ramos, 2018), meanwhile, the opinions or scoring given by users taken from the total number of customers in each hotel, for a period of time, and depending on their capacity, are taken into consideration.

The outcome will help make a new hotel ranking based on a general proposal that can be used to establish the online reputation index in the period (PORI), of all the destination or resort, in particular.

DEVELOPMENT

Hotel online reputation

One of the first antecedents of the concept of hotel online reputation was Word of Mouth (WOM), which thanks to the development of online platforms, has drastically changed its scope into the Electronic Word of Mouth (e-WOM). It is understood as an opinion, scoring, or positive or negative comments made by outside individuals on a brand, product, service or organization, which can be available to a group of people and institutions on the Internet (Salvi and Serra, 2013).

From the perspective of a lodging business, a hotel exposed to online opinions or scoring, increases its reputation. Hence, the potential customers can be included when booking, and become less susceptible to undergo possible price changes (Filieri & McLeay, 2014). The potential customers will also be willing to pay more, and return to the hotels with a positive e-WOM (Berezina, Cobanoglu, Miller & Kwansa, 2012; Yacouel & Fleischer, 2012). Therefore, e-WOM may influence the lodging decision, confidence, credibility, and consequently, online reputation.

This reputation is regarded as the social evaluation which is maintained publicly by an entity, based on its previous performance, both virtually and offline. It is also conditioned by what had been posted by the entity, and what third parties share about it on the Internet (Portmann, Meier, Cudré-Mauroux & Pedrycz, 2015). This social construction is not totally controllable, since it is created and recreated by the perceptions formed with the opinions, considerations, and assessment (Fresno, Daly & Sánchez, 2016).

In the present context of permanent interconnectivity, managing efforts can be affected quickly, because information flows faster (Perez, Vallespín & Molinillo, 2019). In that sense, the social media play an outstanding role as primary channels of acquiring and spreading information about all kinds of experiences, which causes unprecedented impacts on the touristic demand and supply (Gutiérrez, Sánchez & Galiano, 2018).

Consequently, the so called Internet society is increasingly more critical in terms of business decisions, demanding more transparency from organizations. In that sense, it is essential to have the greatest possible coherence between what the company says in the virtual environment, and what is done in practice. Online reputation is also determined by the company's offline performance, so it must deal strategically with the two scenarios (Gavilan, Martínez, and Fernández, 2017; Gil *et al.*, 2016; Vaquero, 2012).

From the perspective of a hospitality business, the intangible nature of its product, and the total absence of standardization in this sector, increase the likelihood of a gap between the customer's expectations, and their perception. That is why, touristic organizations, and hospitality, in particular, may be more vulnerable to the risks of online reputation than others (Pappas, 2016). In that sense, there are a series of factors that condition the importance of online reputation in the touristic sector. First, the intangible nature of products increases the value of interpersonal influences. Second, the touristic product is perceived as high risk purchases, a condition that determines the decision process of purchasing or lodging. Third, touristic products are season-dependent and perishable, raising the levels of marketing stress of hotels (Diana Jens and Ruibal, 2015). Therefore, the benefits of having a good online reputation generate a chain effect on the hotel business that embodies goals, strategies, and results. It also

intervenes in the creation of a favorable behavior toward investment, loyalty, and market recommendations (Aureli & Supino, 2017).

These reasons have conditioned the proliferation of research and online platforms that try to evaluate and measure the performance of an organization in relation to others (Villafañe, 2005). Hence, the indexes of online reputation have become, due to their capacity to establish rankings, a powerful tool for purchasing or lodging decisions (Gavilan, Avello & Martinez, 2018; Portmann *et al.*, 2015). Besides, they represent a method of strategic value for hotel business management. Proper design will permit to evaluate the configuration of e-WOM, measure and control the state of online reputation, make strategic business decisions, and sales actions intended to attract new customers, convey trust to the public, record market sensations toward the brand, and establish a commitment link in face of conflicts (Ximénez de Sandoval, Fernández & Guevara, 2018).

The effects on business results lie on three strategic benefits: cost reduction, price increase, and the creation of income barriers to the competition, which means that the company will be able to operate with a higher profit from product and service sales, reducing the costs of transactions, and the coordination of relationships with different agents. It will also enable price setting based on the value of the brand, with preferences in hiring, and with the possibility of broadening the target public (Zanfrillo, Artola, and Morettini, 2016).

From the perspective of the potential customer, the index of online reputation offers easy to process data that speed up decision-making. The information expressed in the form of numbers also helps compare the existing supply, and/or to determine alternatives. Besides, it offers reliable hints about the reality of each option, facilitating a peripheral persuasion process (Sparks & Browning, 2011).

Methodologies for the calculation of the online reputation index

The proposals related to the calculation of the online reputation have been developed by social commercial media, and online travel agencies through Web 2.0. Their goal is to establish touristic product rankings that condition the process of purchasing decision

by users, as one of the main variables of online reputation management. To achieve that goal, three methodologies used in the social media or online travel agencies are used, which according to their scope, method, and mediation power in the lodging decision-making processes, are internationally recognized (Fresno, 2011).

The methodology used by online travel agency Booking uses a numbered scoring scale, between 1 and 10. However, the evidence suggests that this is actually a 2.5-10 scale, since no scoring given so far is below that figure. Consequently, this methodology shows a tendency to stay in values above seven, where 99% of facilities achieve the nice or higher qualification, and 93% is equal to or higher than seven (Mellinas *et al.*, 2016).

In turn, Trivago online travel agency sums all the scoring received from the users of 34 travel platforms to the scores published in their portal. The results are processed through an algorithm that includes hotels with only one source available for assessment, compared to others that have several sources, and adapts calculations accordingly. However, it only considers the number of opinions, provided they are greater than ten, with no value attributed to the size of the hotel of the period of time in which they were generated (Fritsch & Sigmund, 2016; Raguseo *et al.*, 2017).

Moreover, commercial social media TripAdvisor uses a system that allows distinctive scoring, based on a Likert scale, from 1 to 5. Its algorithm distinguishes recent over older scores. The calculation of online reputation index (ORI) multiplies the value of each scoring category by the number of points gathered by each. Lastly, it is divided by the total of scores received in all the categories (Ayeh, Au & Law, 2013). This equation does not consider that a score of four out of ten is not the same as a four out of fifty. Likewise, it does not consider the fact that the size of each hotel has an effect on the possible quantity of points generated by the users. Its algorithm chooses a roundup of 0.5 from ORI, which limits the accuracy of results (Mellinas *et al.*, 2015). The direct effect of these aspects is reflected in the rankings given by this influential travel website, which tends to favor some over others (Mellinas & Martin, 2019). However, —given the strength of this methodology, and due to the scope— the present study takes the positive of this procedure, and the data compiled, as a referent to achieve the goals set

(Ramos, 2018).

Materials and Methods

The study is based on applied natural administrative research, considering its end and context. Besides, it is descriptive, considering the cognitive objective, since it is used as the dialectic materialistic method as a universal method, and combining theoretical and empirical methods. Among the theoretical methods used are analysis-synthesis, induction-deduction, and historical-logic. In the second group, with a quantitative approach, the techniques used are expert opinion, survey, Spearman correlation coefficient, and Kendall Tau-b coefficient. SPSS 22 was used for statistical processing. First, the expert opinion technique was intended to demonstrate that the phases of the proposal presented fit the goals defined. The method of individual aggregates was used as well to select the experts that will participate in the study. Equation (1) was used to calculate the optimum number (Cyert, March, and Clarkso, 1965):

$$ n \ = \frac{N\left(\frac{i^2}{k}\right) + N(p - p^2)}{N\left(\frac{i^2}{k}\right) + p - p^2} \qquad (1) $$

Being n: the optimum number of experts to select; i: the accuracy level that expresses the discrepancy or variety in the group of experts, estimated in 0.12; p: error proportion, which is 0.05; k: with 99% confidence, and a value of 6.656 4; the expert population is selected, N = 15.

Then the structured survey was applied vie email, and information was gathered using the same method (Ramos, 2018). The results were determined according to the values of central tendency of the population, fashion, mean, and relative frequency, in order to know the evaluation of the procedure in relation to each goal. The Kendal W concordance coefficient was calculated to determine the level of expert opinion coincidence. It contrasted with the determination of significant differences between what the expert think, according to their occupation for every feature evaluated, considering a 5% significance (Lawshe, 1975). Additionally, the Kruskal Wallis test was performed to determine the existence or absence of contradictions in the opinions of experts, and lastly, the reliability or lack of reliability of the survey applied was demonstrated,

according to the results provided by the Cronbach Alpha test.

Moreover, the analysis of the resulting ranking was done through SPSS v22. Two nonparametric tests were made: Spearman correlation coefficient, and Kendall range correlation coefficient, or Kendal Tau, to determine the level of similarity or difference between the online reputation index ranking (ORI) used by TripAdvisor, and the period online reputation index (PORI).

The correlation between rankings is a statistical test that measures the relation between classifications of different ordinal variables, or different classifications of the same variable (Croux & Dehon, 2010). Accordingly, a ranking correlation coefficient measures the level of similarity between two classifications, and can be used to evaluate the importance of the relationship between them (Bonett & Wright, 2000; Puth, Neuhäuser & Ruxton, 2015).

Results

The following proposal is aimed to calculate the hotel online reputation index to design suitable marketing strategies, assuming the strengths of the methodologies evaluated, and overcoming their flaws. The procedure considers the size of hotels, and the period of time used in the TripAdvisor scoring method, to then calculate the online reputation index accurately.

It embodied a series of characteristics, first, the systemic character, by integrating a set of aspects that permit to manage online reputation with a comprehensive vision. Secondly, logical consistency should be considered by means of the phases and steps that make it. Furthermore, the principle of flexibility is determinant, since it ensures that the methodology used fits the specificities of each hotel in which it is implemented, so it can be generalized. Also, the methodological value offers tools, techniques, and analytical resources to measure and use online reputation as a variable to manage e-WOM of resort hotels. The methodology presented also comprises the viability of implementing a complex problem in a relatively easy way. Another principle used is structuring, by containing logical consistency in the sequence of activities performed. Lastly, it assumes rationality as another basic premise, since critical and objective analysis of the reality allows for proactive decision-making that implies no extra

expenses of material, labor or time.

The methodological proposal requires the implementation of a four-phase cyclical process including: analysis, arithmetic, ranking compilation, and interpretation, also made of different steps, as shown in Fig. 1.
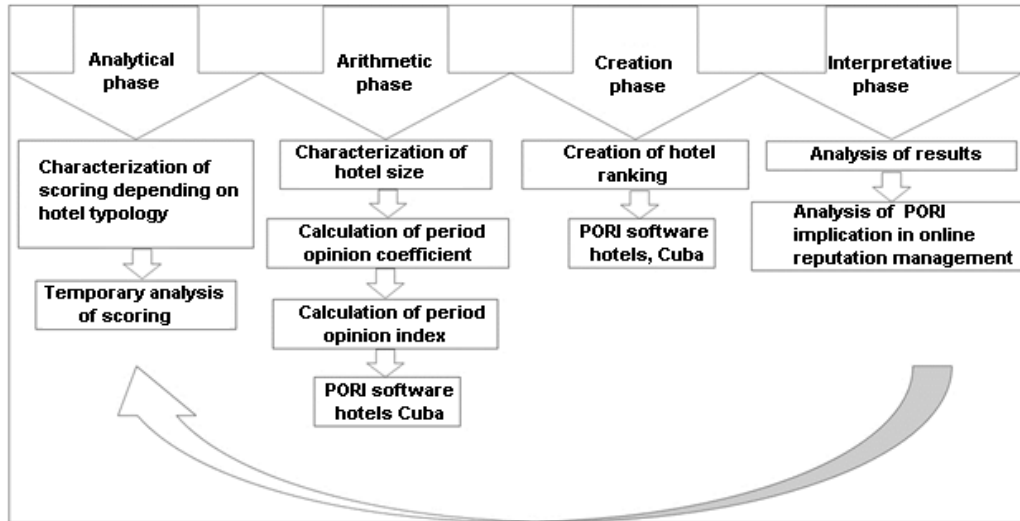

Fig. 1. Procedure for calculation of online reputation index

Following the analytical phase, which comprises characterization and temporary analysis, the first step of the arithmetic phase is taken. It compiles information dealing with hotel size. The second step consists of calculating what has been termed as period opinion coefficient (POC), according to the authors. It considers the room capacity of a touristic destination, the size of a hotel during the lapse in which the online reputation index was calculated, and it is expressed in equation (2):

$$POC = \frac{Total\ of\ opinions}{RM\ CAP\ *\ days(period\ studied)} \quad (2)$$

Being RM CAP: room capacity of the touristic destination evaluated, and days (the time lapse studied), a function that returns the number of days within the lapse studied.

That way, RM CAP expression * days (period studied) shows a higher value of the maximum scoring amount that a touristic destination or hotel can receive for a period of time. For instance, if a hotel studied has a lodging capacity for 50 guests for a week, then the scoring expected would be 350. The POC coefficient takes values from zero to

one. POC = 1, when the scoring total coincides with the RM CAP * days (period studied). This coefficient is interpreted as the real scoring of the hotel period. That way, different from TripAdvisor, the scoring made in a period of time is not one hundred percent reliable, but it is an estimate of the period in which they were generated. As a result, the coefficient assigns a weight to every opinion, which may be interpreted as the strength of the opinion in the group of all guests that visited the touristic destination or stayed in the hotel.

That way, each scoring is reflected within a limited perspective through the POC, avoiding undesirable PORI behaviors. For instance, if only one guest qualifies a hotel as excellent in a month, then the online reputation will be excellent, regardless of the representativeness of the sample (Ramos, 2018).

Finally, the third step is taken, which includes calculation of the studied period online reputation (PORI). In that sense, the equation based on data offered by TripAdvisor, and elimination of restrictions, are suggested. The commercial social media TripAdvisor uses equation (3) to calculate ORI. It multiplies the value of each scoring category defined by the platform, the number of scores in each category, which are received by the hotel. Lastly, it is divided by the total scoring received in all the categories (Mellinas, 2015).

$$\text{ORI} = \frac{\sum E * 5 + \sum MB * 4 + \sum N * 3 + \sum M * 2 + \sum P}{Total\ of\ opinions} \quad (3)$$

Being: E: Excellent, MB: Very good, N: Normal, M: Bad, P: Terrible.

In this way, the index takes values in the interval [1,5]. The best case is when all the scoring is excellent, and $\sum E * 5/\sum E = 5$ is obtained. On the other hand, the worst case is verified when all the scoring is terrible, resulting in $\sum P/\sum P = 1$. However, as previously mentioned, this equation does not consider that a score of four out of ten is not the same as four out of fifty. Besides, it does not consider that the size of hotels has an effect on the possible amount of scoring generated by the guests (Ramos, 2018). For example, a ten-room hotel should not be given the same scoring as a 20-room hotel. Both cases show a current limitation of calculation of online reputation by this travel platform. Including these limitations for ORI calculation, equation (4) would be left,

which after a reduction, is rendered through equation (5), making an online reputation index through the period online reputation coefficient (PORI):

$$PORI = \frac{\sum E*5*POC+\sum MB*4*POC+\sum N*3*POC+\sum M*2*POC+\sum P*POC}{Total\ of\ opinions} \quad (4)$$

Then,

$$PORI = \frac{(\sum E*5+\sum MB*4+\sum N*3+\sum M*2+\sum P)}{RM\ CAP\ *days(period\ studied)} \quad (5)$$

The equation proposed is established as the main result of this paper; it overcomes the flaws of other methodologies, and it is established as a more reliable method to calculate this index. Using the period opinion coefficient, each criterion has a real value in relation to the group of guests that stayed in the resort hotel in general.

This measurement instrument will also help after the end of the pandemic of COVID-19, which has dramatically hit the touristic sector. Accordingly, it will show the scoring given by guests more effectively, using the new hotel indicators for sanitary management of resort hotels.

Finally, the interpretation phase takes place, which guarantees process closure through analysis of e-WOM ties to online reputation management. The outcome will help in decision-making, in terms of strategic processes, and new policies will be implemented to improve major company processes, such as customer service, lodging, and food and recreational services.

Several ranges in PORI performance are set to enable decision-making. Excellent includes hotels and destinations whose PORI results were over 0.16 points, which evidences that their marketing strategies had a positive influence on e-WOM, and consequently, on online reputation. Good comprises 0.16-0.12, indicating that further actions should be taken to improve the strategies adopted, and review possible flaws in key processes, as well as in the actions of online and offline marketing strategies. In the third place is Normal, within 0.12-0.08, which points to the need of diagnosing flaws in the online and offline marketing strategy, and the implementation of key processes. Then Normal, which includes hotels and destinations that received 0.08-0.04; and finally, Bad, whose PORI is 0.04-0. In such cases, it is important to diagnose key processes, and redesign online and offline marketing strategies comprehensively, to

have an effect on e-WOM, and therefore, on hotel or touristic destination online reputation.

Validation of the process proposed through expert opinion

Expert opinion was used to validate the adjustment of phases of the procedure to their goals, due to the absence of prior reference data about its operation. That way, the validity of the methodological proposal is checked, depending on the following characteristics: systemic character, logical consistency, flexibility, methodological value, rationality, viability, and proper structuring.

The expert population considered initially was reduced, based on the fact that they must comply with the following requisites at the same time, and to the greater possible extent: having broad knowledge on online reputation scoring, and the willingness to collaborate with the research. Of the 39 possible experts that met the requisites, 15 responded positively. According to the parameters described, the optimum sample was nine experts. Then, to choose the most appropriate members of the population considered, a survey was applied to determine their level of competence, which demonstrated the validity and feasibility of their results through the Cronbach Alpha (0.902) test. Finally, the expertise coefficient of the experts accepted was above 0.7. The outcome was interpreted according to the central tendency values of the population, fashion, and mean, in addition to the fact that it is a relative frequency. The Kendall W concordance coefficient, Kruskal Wallis, and Cronbach Alpha were calculated, as shown in Table 1.

Table 1 Outcome of expert opinion in relation to the methodological proposal

Characteristics of the procedure	Mean	Fashion	Relative frequency (%)			Kruskal Wallis
			Mean adjustment level	Appropriate	Very appropriate	
Systemic character	4.22	4	-	77.8	22.2	0.565
Logical consistency	3.88	4	22.2	67.7	11.1	0.048
Flexible	4.00	4	11.1	77.8	11.1	1.000
Methodological value	4.11	4	11.1	66.7	22.2	0.950
Viability	4.56	5	-	44.4	55.6	0.497

Structuring	4.67	5	-	33.3	66.7	0.264
Rationality	4.56	5	-	44.4	55.6	0.497
Analytical phase	4.11	4	11.1	66.7	22.2	0.898
Arithmetic phase	4.56	5	-	44.4	55.6	0.670
Elaborative phase	4.22	4	-	77.8	22.2	0.565
Interpretative phase	4.22	4	-	77.8	22.2	0.565
Goal accomplishment	4.22	4	-	77.8	22.2	0.156

Kendall coefficient = 0.725, Kendal W significance: 0.000 Cronbach Alpha = 0.764

Source: (Ramos, 2018)

The data presented led to the rationale that the proposal has a systemic character, logical consistency, flexibility, and methodological value. Besides, among the predominant opinions expressed in relation to fashion are, viability, structuring, and rationality. All the phases were evaluated as favorable, so this proposal thoroughly implements the phases in it, and it is capable of complying with the goals set. Although the methodology received a favorable evaluation by the experts, in general sense, it must be continuously reviewed, as it is possible to improve the analytical phase, the ranking creation phase, and the interpretative phase.

It can be assured that the survey applied by the experts to validate the procedure is internally consistent, according to the data provided by the Cronbach Alpha test (0.764), making the results reliable. It can also be concluded that, according to the degree of significance shown by the Kendall W coefficient (0.000), there is high concordance among the opinions given by the experts. Corroborating these results, according to the significance of the Kruskal Wallis test, no contradictions were observed among the arguments provided by the experts regarding the presence of the characteristics evaluated. There were only differences among the opinions given by the experts in relation to logical consistency.

Validation of the ranking proposed

The sun and beach resort hotels in the province of Villa Clara, Cuba were chosen for the analysis during this stage of the research, based on the data collected from TripAdvisor (Ramos, 2018). That way, the requirement for nonparametric tests to have

a sample greater than 6, was met, with the largest resorts in the destination. The validation of the ranking proposed contrasts the following statistical hypothesis (H1): proposed index (PORI) alters the online reputation ranking, comparing it to the TripAdvisor index (ORI). The outcome from both nonparametric tests are shown in Table 2.

Table 2 Results from the Kendal range coefficient and Spearman correlation

Nonparametric correlations			ORI	PORI
Tau_b Kendall	ORI	Correlation coefficient	1.000	0.279
		Significance	0.000	0.118
		N	17.000	17.000
	PORI	Correlation coefficient	0.279	1.000
		Significance	0.118	0.000
		N	17.000	17.000
Spearman	ORI	Correlation coefficient	1.000	0.355
		Significance	0.000	0.162
		N	17.000	17.000
	PORI	Correlation coefficient	0.355	1.000
		Significance	0.162	0.000
		N	17.000	17.000

Source: (Ramos, 2018)

The results are between 0.2 and 0.4, thus showing a low correlation. Specifically, the Kendall range correlation coefficient shows a low correlation level (0.279). Meanwhile, the Spearman correlation coefficient corroborates the previous result, demonstrating a low correlation level (0.355). Accordingly, the H1 hypothesis is corroborated, due to the low correlation between the resulting ORI ranking and the resulting PORI ranking in the resort hotels in Villa Clara.

Further implementation of this methodology in practical studies is recommended to contrast results. It would also be convenient to continue studies to improve the goals already met, based on the following research lines: overall indicators to calculate online reputation and determination of key factors to achieve positive online reputation.

Finally, following the COVID-19 crisis, this instrument will help represent the scoring granted by every guest, under the new indicators for sanitary management of resort hotels and touristic destinations.

CONCLUSIONS

The online reputation index associated to scores provided by guests is a valuable tool that permits to evaluate the configuration of e-WOM, measure and control, attract new customers, transmit confidence, and record the market feel for the business.

A critical analysis of the major methodologies to calculate the online reputation index allows for the detection of flaws associated to the reliability of the scoring provided by all the guests of a hotel, for a period of time, and depending on the hotel size.

The procedure proposed permits to calculate PORI by means of an equation that overcomes the existing constraints, and assigns a value to every score received by a hotel, considering its capacity.

The findings of this study will help make decisions concerning strategic guidelines of marketing in relation to strategic processes, and to adopt policies to improve key processes of the hospitality business.

The procedure meets the objectives set; it implements the integrating phases properly, and has the capacity to respond to the characteristics needed for this scenario.

The new ranking achieved for PORI is considered valid, based on statistical data provided by the Spearman correlation coefficient, and the Kendall range correlation coefficient.

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Conflicts of interest and conflict of ethics statement

The authors declare that this manuscript is original, and it has not been submitted to another journal. The authors are responsible for the contents of this article, adding that it contains no plagiarism, conflicts of interest or conflicts of ethics.

Author contribution statement

Yadira Ramos Pozo. Research development, outline of article structure, redaction of original draft (equal participation).

Alain Pérez Alonso. Statistical data processing and analysis, redaction of the original draft (equal participation).

Dayana Duffus Miranda. Theoretical rationale of processes, redaction of the original draft (equal participation).