Can online travel agencies contribute to the recovery of the tourism activity after a health crisis?

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Abstract

Purpose – Online travel agencies (OTAs) have an important role to play in reactivating tourism activity following a health crisis by providing information about the health conditions of tourist destinations. Once developed, it is necessary to analyze the effectiveness of the information provided and ascertain whether the provision of such information effects the understanding of the value of using OTAs and, in turn, the intention to do so.

Design/methodology/approach – This paper, based on an empirical case study conducted during the COVID-19 pandemic, examines whether following a health crisis, the quality of information provided by OTAs on the health conditions of tourist destinations and the perceived value of their offer generate a greater OTA services reuse intention, and signals, therefore, a return to travel.

Findings – The results show the quality of the information positively influences the perceived value, but not the OTA services reuse intention. Rather, the perceived value positively influences the OTA services reuse intention.

Practical implications – Overall, it can be suggested that providing quality health information for a destination is a necessary strategy because it contributes to increasing the perceived value of OTAs. To incentivize the intention for repeated use of OTA services, it is necessary to consider the perceived value that influences the intention to make repeat OTA reservations.

Originality/value – This research offers a novel perspective about the OTAs' contribution to the recovery of the activity of the tourism industry after a health crisis. This contributes to achieving a more resilient sector in the face of future health crises.

Keywords Health crisis, COVID-19, Online travel agencies, OTAs, Information quality, Perceived value, Reservation intention, Intention to travel

Paper type Research paper

Introduction

The COVID-19 pandemic was a stark reminder of the way in which tourism supply and demand is sensitive to both natural and anthropogenic crises. As future pandemics, which may have similar devastating effects on the tourism industry, cannot be ruled out (Ivanova *et al.*, 2021; Magno and Cassia, 2022), it is important to identify strategies and mechanisms that contribute towards the sector's recovery (Sampaio *et al.*, 2022).

Studies that show the evolution of the extensive literature specializing in the study of crises in the tourism and hospitality industry identify a need to understand more about the impacts on consumer behaviour of market mechanisms and strategies (e.g. Berbekova *et al.*, 2021; Li *et al.*, 2022; Wut *et al.*, 2021). Although these works have focused on the perspective of the company (managers or employees), there is a gap in the literature regarding the effect that the adoption of these strategies exerts from the perspective of the market. The study of the effect that response measures to health crises adopted by companies have on consumer behaviour is key to moving forward in the face of potential future health crises. In a crisis context, and from the perspective of the consumer, the psychometric or "revealed preference approach" (Fischhoff *et al.*, 1978; Slovic, 1987) is used to identify and test factors that help to mitigate tourists' perceived risk and restimulate the desire to travel.

Online travel agencies (OTAs) are the leading tourist intermediary in the distribution of tourist services as an instrument for managing trips and searching for information pre-stay (Cortés Bello and Vargas Martínez, 2018). OTAs have enough potential to generate consumer participation in the purchase choice process and during the search for information (Harrigan *et al.*, 2017). In addition, consumers appreciate information provided by OTAs. This is because OTAs facilitate the reduction of the perceived risk about if one should travel and to where that occurs as part of the travel decision-making process. This is even more pertinent during periods of crises and the resulting greater uncertainty (Gössling *et al.*, 2020; Menchero Sánchez, 2020).

Considering the capacity and potential of OTAs to offer value to the customer, it is worth analyzing whether offering a higher perceived value contributes to generating a greater intention to book a trip and therefore to travel again following a crisis. Among the different elements that OTAs can face to provide a service with high perceived value is time saved in the search for information about choices available (Sarmiento Guede, 2017), affordable prices (Rodríguez *et al.*, 2015), ease of usage (Dwikesumasari and Ervianty, 2017) and service quality (Talwar *et al.*, 2020). In addition, using an OTA at the height of the pandemic, and in its immediate aftermath, negated the need for an in-person visit to high street travel agencies, which afforded a greater sense of safety because it allowed social distancing.

Considering the need for information in accordance with the new trends of responsibility in public health (De la Puente Pacheco, 2015), tourists are concerned about obtaining health information during trip planning. Accordingly, OTAs can adopt communication strategies based on the health information at a destination (Wang and Lopez, 2020). At the same time, there is evidence that providing information about a destination's sanitary conditions has a positive influence on the behaviour of potential tourists. This is especially during public health crises, when the perception of risk and concern for safety are most pronounced (Jiang and Wen, 2020; Wang and Lopez, 2020).

The implications of variables, such as the quality of information in purchasing decisions within the online context, have been studied as an instrument to measure the quality of service and as an antecedent of the repurchase intentions (Matute Vallejo *et al.*, 2015). The quality of information is also recognized as an important factor in the adoption of information by the electronic user (Cheung *et al.*, 2008). There is, however, a lack of research that analyzes the influence of the quality of the information provided about the sanitary conditions of a destination during a health crisis and the impact on the perceived value and the intention to make travel reservations.

The lack of understanding about the influence of the quality of information about the sanitary conditions of a destination during a health crisis will be addressed in this paper. The overall aim of this study focuses in a novel way on identifying whether the provision of quality information about the health conditions of tourist destinations and the offer provided by OTAs (collected with the variable of perceived value) constitutes actions capable of prompting potential tourists to make reservations again, and therefore to travel in the context of a health crisis, such as that generated by COVID-19. More specifically, the research objectives are (1) to analyze whether the perceived value provided by OTAs has a positive influence on the OTA services reuse intention in the context of a health crisis, (2) to determine whether providing quality information about the sanitary conditions of the tourist destination has a positive influence on the perceived value of the offer provided by OTAs and (3) to examine whether providing quality information about the health conditions of the tourist destination has a positive influence on the OTA services reuse intention in the context of a health crisis.

Given the aim and objectives of this research it was necessary to conduct the research aims in a country that has been deeply affected by the global health emergency caused by COVID-19. Thus, Spain was selected for study because it was among one of the most badly impacted countries in terms of tourism during the crisis. This was due to the widespread restrictions placed on both domestic and international travel and government-imposed lockdowns around the world (Gursoy and Chi, 2020). In addition, the tourism industry is a major economic driver in Spain (Garrido-Moreno et al., 2018).

Literature review
Online travel agencies, crisis management and the recovery of tourist activity in health crises situations
The tourism industry is inherently vulnerable to disaster and external crises, from natural to anthropogenic incidents (Ritchie, 2004). Despite some recent studies of crisis management in tourism, the field lacks research about both the impact of such events on specific organizations and responses to such events (Faulkner, 2001; Ritchie, 2004). This section reviews existing literature on crisis management in the tourism industry. It, firstly, defines the main concepts. Secondly, it summarizes relevant studies of crisis management and recovery plans in the tourism industry.

There has been extensive discussion in the literature describing and conceptualizing what a crisis and/or disaster is. This is especially so in the context of the tourism industry (Faulkner, 2001; Lo et al., 2006; Ritchie, 2004). Faulkner (2001) conceptualizes disasters as unpredictable, catastrophic changes that originate outside an organization and over which it has very little control. As Kim et al. (2005) highlight, a disaster involves unexpected changes to which one can normally respond only after the event happens, by implementing contingency plans or responding reactively. A crisis is defined as any action or failure to act that interferes with an organization's ongoing functions, achievement of objectives, viability or survival; or that has a detrimental personal effect on its main stakeholders (Ritchie, 2004). It is argued that crises arise due to a lack of planning and proper management and could thus have been anticipated, whereas one can only respond to a disaster after the fact (Kim et al., 2005).

The COVID-19 pandemic was unique in nature, scale and complexity, combining a natural disaster with sociopolitical, economic and hospitality demand crises (Zenker and Kock, 2020). To address this complex situation properly, tourism industry research must help managers implement crisis recovery and response strategies, with a view to providing valuable knowledge to inform and foster crisis-enabled transformations in the industry (e.g. Garrido-Moreno et al., 2021; Romao, 2020; Sigala, 2020).

Development and implementation of crisis guidelines are essential to facilitate tourism's recovery from negative events (Kim et al., 2005). The importance of post-crisis recovery in

terms of a health issue has been discussed in the academic literature, and in terms of the COVID-19 pandemic, there is a greater emphasis on how to respond to such situations (e.g. Garrido-Moreno *et al.*, 2021). Table 1 summarizes the main results of studies on health crisis management in major tourism journals (ordered chronologically), and recent studies of crisis management in the COVID-19 scenario.

The contributions collated in Table 1 are focused on the study of strategies and actions from the perspective of companies. What is missing is a consideration of the behaviour of customers. It is essential to consider the perspective of customers about the effect that measures adopted by hotels have in the recovery of tourist activity to understand the degree to which procedures are successful (Sigala, 2020; Polo-Peña *et al.*, 2023). There is little research that consider the client's point of view during a crisis (e.g. Peco-Torres *et al.*, 2021).

Indeed, Gursoy and Chi (2020) underline the need for research that provides answers to critical questions such as, for example, what are the factors that will influence consumers' intentions to resume their consumption of tourism services (Wang *et al.*, 2020). In crises contexts, perceived risk is a key variable affecting the changes in consumer behaviour. Perceived risk "refers to the combined measurement of 'perceived probability' and 'perceived consequences' of a certain event or activity" (Bubeck *et al.*, 2012, p. 1483). The psychometric or "revealed preference approach" is the most influential paradigm in modelling and forecasting risk perceptions and acceptance (Fischhoff *et al.*, 1978; Slovic, 1987). Following on from Volgger *et al.* (2021), the key insights of this risk perception/acceptance framework have been used in this research to identify and test factors that help to mitigate tourists' perceived risk and encourage them to travel again.

The psychometric model asserts that informed awareness of a risk and how prepared someone is can increase acceptance of the risk. In general, preparedness and awareness are usually associated with increased notions of control over the risk and increased trust in the managers of the risk (Fischhoff *et al.*, 1978; Slovic, 1992). This also applies in the tourism context (Volgger *et al.*, 2021). One important method of increasing perceived control over risks is the provision of information related to the sanitary conditions of the tourist destinations that they wish to visit.

In relation to the process of tourists searching for information, an essential link in the chain of the tourism sector with the ability to influence the decision-making process of tourists are OTAs (Ku and Fan, 2009). OTAs have visibility in the global market. Their use is part of the information search process that potential tourists usually carry out before travelling. This makes OTAs, therefore, ideal for providing information on the health conditions of tourist destinations that reaches the entire market (Wang and Lopez, 2020). Additionally, after a health crisis, OTAs need tourists to start to reuse their accommodation services again. For this to happen, they require the use of effective strategies to guarantee the safety of potential tourists (Niewiadomski, 2020; Wang and Lopez, 2020). In periods of crisis, intermediaries, such as OTAs, must face episodes of greater uncertainty that contribute to potential tourists perceiving a more attractive offer (Rodríguez *et al.*, 2015) and a reduction in the perceived risk of travelling to affected areas (Menchero Sánchez, 2020).

Despite the fact that much has been written about OTAs, the value they offered and the effect on consumer behaviour in times of health crises (such as COVID-19) have not, however, been previously analyzed. In addition, the role of OTAs and their use in contributing to the recovery of the tourism sector – by offering a higher perceived value and generating a greater intention to return to tourist accommodation services – have also not been assessed.

The effect of perceived value of the offer provided by online tourist intermediaries
The conceptual proposal made by Zeithaml (1988, p. 14) defines perceived value as "the overall assessment of the utility of a product based on the perceptions of what is received and what is given". As the perceived value construct reflects customers' evaluations of the offer,

Authors (year)	Topic	Main findings
SARS or Ebola outbreak Chien and Law (2003), Kim *et al.* (2005), Leung and Lam (2004), Lo *et al.* (2006), Novelli *et al.* (2018), Tew *et al.* (2008)		SARS outbreak - To cope with the situation, firms had to develop contingency plans and introduce some measures to restore guest confidence - Main measure: enforcing environmental hygiene and cleaning policies - Market measures: intensify promotions and comunication actions towards the market, and to develop attractive packages and marketing campaigns in collaboration with other agents in the sector - Staff measures: lay-offs and unpaid leave (to reduce costs), specific employee training, enhance internal communication to maintain employee morale Ebola outbreak - Highlights the importance of proactively formulating strategies to facilitate rapid response to crisis - Strategic measures developed: cost-cutting strategies, control of communications and media, flexible policies to stop cancellations, incentives and discounts, and joint marketing with other agents
COVID-19 health crisis Hao *et al.* (2020)	Exploratory review of overall impacts of COVID-19 pandemic on China's tourism industry. Proposes COVID-19 management framework to address anti-pandemic phases, principles and strategies	
Lai and Wong (2020)	In the initial stage, priority strategies should be applied in all epidemic prevention, pricing and maintenance practices and in two governmental assistance and human resources practices. In the pandemic stage, all epidemic prevention practices remain priority, but two pricing practices are downgraded. Firms tended to force labour into unpaid vacations (furlough) and postpone office and system maintenance. Governmental assistance should be low priority	
Sigala (2020)	Describes types of measures hospitality firms are implementing: redesign of experiences, adoption of new standards and cleaning procedures, implementation of mobile apps (for check-in, room keys), in-room technologies, robots (to minimize personal contact)	
Garrido-Moreno *et al.* (2021)	Recovery measures were statistically examined to identify which ranked as most significant in helping hospitality managers. The final battery of items encompasses diverse strategic measures, such as for technology and collaboration among internal and external agents, organization and human resources, marketing, service provision, healthcare, and flexibility and cancellation management to offer safe, flexible services	
Herédia-Colaço and Rodrigues (2021)	Most firms analyzed had implemented extraordinary recovery measures to face the current situation. The most significant strategic measures included special health and safety protocols, and marketing initiatives such as long-term vouchers to increase sales	
Liu *et al.* (2021)	This case study (Macao, China) highlights local government and hospitality industry responses to a real-time crisis, and it examines Macao's two orientations – intra- and post-coronavirus – which are shown to be instrumental in the city's future tourism	
McCartney *et al.* (2021)	The paper showed consequences of recovery measures, an important reference to global cities looking to exit COVID-19 Using the case of Macao (China) during a real-time pandemic crisis, a conceptual framework was developed based on economic resilience and tourism recovery	

(continued)

Authors (year)	Topic	Main findings
Xue *et al.* (2021)		First, the authors explored the interactions of the affective events from the cross-level perspectives, i.e. both team level and individual level. Second, the authors conducted this research on the mental health of frontline hospitality staff in the context of the COVID-19 pandemic
Waller and Abbasian (2022)		Results determined that crises broadly economically impacted destinations in similar ways because of the loss of travellers and thus revenue. However, with a more intricate and specific assessment, destinations are impacted differently; thus, crisis management techniques must alter. Findings show many crisis management techniques can be implemented to reduce crises' economic impacts. The literature review and empirical results allude to many previous and current crisis management techniques, although these must be relevant and specific to the crisis, hotel and/or destination

Table 1. **Source(s):** Adapted from Garrido-Moreno *et al.* (2021) and Polo-Peña *et al.* (2023)

it is considered to be the greatest indicator of key variables of customer behaviour (e.g. Gallarza and Gil, 2006; Polo-Peña *et al.*, 2012).

There are numerous articles that have studied the effects of perceived value on consumer behaviour. In relation to the tourist context, the empirical studies carried out show the effect of perceived value on variables such as satisfaction (Choe and Kim, 2019), trust (Bonsón *et al.*, 2015), repurchase intention (Choe and Kim, 2019) or consumer loyalty (Chang and Wang, 2011). While in the online context, there is also evidence of the positive effects of perceived value on web user satisfaction (Chen and Lin, 2019; Chang and Wang, 2011), trust (Kim *et al.*, 2011), intention to use (Li and Shang, 2020), the intention to continue using (Yang *et al.*, 2018), the intention to purchase (Talwar *et al.*, 2020), or repurchase (Bonsón *et al.*, 2015; Droguett *et al.*, 2010), or consumer loyalty (Karjaluoto *et al.*, 2019; Sabiote-Ortiz *et al.*, 2014). In addition, Talwar *et al.* (2020) found a positive relationship between functional value (perceived value dimension) and the intention to book accommodation through OTAs (Talwar *et al.*, 2020).

There is prior empirical evidence about the ability of perceived value to influence repurchase intentions, or loyalty, in the tourism sector and in the online sphere. However, there are no studies that have provided empirical evidence about whether, under the same mechanisms, perceived value could influence the intention to reuse OTA services, and therefore the intention to travel, in the context of a health crisis. Thus, given the importance of testing market-oriented strategies that can contribute to the recovery of the tourism sector in a situation of health crisis, the following hypothesis is proposed:

H1. The perceived value of OTAs in a health crisis situation has a positive and significant effect on the intention to reuse their services.

Effects of the quality of information about a destination's health situation offered by online travel agencies

The new trends in the search for well-being and greater commitment to public health, in addition to the increase in tourists' knowledge and the information available to them (De la Puente Pacheco, 2015), materialize in the search for health information as a planning action prior to embarking on a trip. In exceptional situations, like a health crisis, tourists consider that it is necessary to spend time searching for security information as an antecedent to the decision of choosing a destination (Wang and Lopez, 2020). This means that tourist intermediary agents must develop communication based on messages that provide effective reassurance to those who are willing to travel (Liu-Lastres *et al.*, 2019).

In accordance with previous crises faced by the tourism sector in recent years, the development of appropriate messaging is crucial to develop travellers' positive perceptions about travel and destinations. This, in turn, can influence behaviour during trips, or in the phase prior to the purchase decision. When it comes to public health, the content of the messages promoted is educational in an effort to protect the public from diseases (Liu-Lastres *et al.*, 2019), and it is well-established that the said information must be of good quality. Cheung *et al.* (2008) describe the quality of information within the online context. They emphasize its effectiveness as a factor to be taken into account in the adoption of information by the electronic user. In turn, the quality of the information is also part of the advantageous features offered by virtual communities (Mellinas *et al.*, 2016).

Research that has analyzed how information quality can affect consumer behaviour in the online environment has drawn three main conclusions. Firstly, the quality of the information will facilitate the success of the tourist intermediary (Matute Vallejo *et al.*, 2015). Secondly, this will serve to evaluate its potential (Cheung *et al.*, 2008), and, by corollary, thirdly, the information quality would positively affect the value of purchases online, both for the functional and affective components (Kim *et al.*, 2012).

Cheung *et al.* (2008) and Matute Vallejo *et al.* (2015) analyzed the influence of the quality of the information, within the electronic context, on the perceived usefulness of the user. The research thus far, however, has not found any empirical evidence that analyzes the effect of the quality of information on the perceived value (understood to be as a construct that integrates a functional and an affective value). The research for this paper, therefore, contributes to the literature addressing this gap. In addition to not having previously analyzed the effect that the quality of information provided by the OTAs about the health conditions of the tourist destination has on important consumer variables, e.g. perceived value in a health crisis (such as that generated after the COVID-19 pandemic). This situation shows the need to provide empirical evidence that makes it possible to verify whether the quality of the information about the health situation of the destination provided by the OTAs in a health crisis situation is capable of influencing the perceived value offered by the OTA. Thus, the following research hypothesis is proposed:

H2. The quality of the information about the health situation of the destination provided by the OTAs in a health crisis situation has a positive and significant effect on the perceived value.

However, studies by, for example, Matute Vallejo *et al.* (2015) provide empirical evidence of the effect of the quality of information as an antecedent to intention to repurchase online (through the perceived usefulness of the web), so that when the client perceives quality in the information that the online seller displays on its website, the client would be predisposed to continue acquiring the services of the same seller. This leads to the study of the effect that the quality of the information provided by the OTAs, related to the sanitary conditions of the destination, can have on a consumer's intention to reuse OTA services during a health crisis.

So, in this work, and in order to provide empirical evidence and advance knowledge of whether providing quality information on the sanitary conditions of the destination influences the customer's reuse of OTAs intentions in a health crisis, the following hypothesis is proposed:

H3. The quality of information about the health situation of the destination provided by the OTAs in a health crisis situation has a positive and significant effect on the intention to reuse their services.

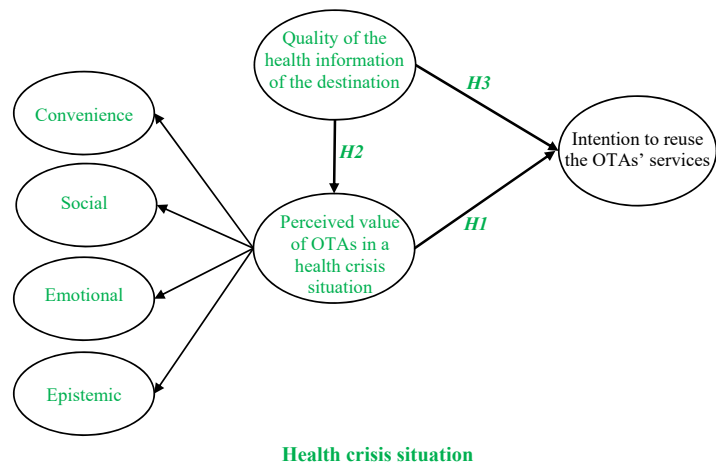Figure 1 shows the proposed research model.

Source(s): The authors

Methodology

Research population and sample

The research was conducted in 2020 in Spain, at a time when there was still a heightened awareness and concern about the risks related to COVID-19. The study of the effect of the quality of the information on COVID-19 provided by OTAs required that a representative OTA of the sector be selected, and, in addition, provide information about the sanitary conditions of the tourist destinations. This led to Booking.com being selected as the OTA of reference for the development of the research. Booking.com has been the leading OTA in the market for several years (Balagué *et al.*, 2016; Lorenzo Padilla, 2017). It has also incorporated, as part of its services, information regarding the sanitary conditions of tourist destinations for its users. As in the cases of Liu *et al.* (2020) and Sánchez-Cañizares *et al.* (2021), a convenience sample was obtained, with data collected for the empirical analysis by means of a self-administered questionnaire. The sample population consists of residents in Spain, who may potentially be travellers in the short/medium term within the environment created by the virus and with previous experience in the use of OTAs. The link to the survey was shared on social networks and travel forums for Spaniards.

A total of 394 responses were received. The distribution of the sample is similar to the structure of the population of domestic tourists in Spain (e.g. Sánchez-Cañizares *et al.*, 2021) in terms of gender (49.6% men and 50.4% women) and age (16% aged 18 and 24 years; 53.6% aged 25 and 39 years, and 30.4% from 40 years).

Questionnaire and measurement scales

The questionnaire consisted of two different parts: the first includes filter questions about information regarding the health situation of the tourist destination given by an OTA (Booking.com). The second part included the measurement scales of variables used in the research model and the sociodemographic and psychographic profiles of the respondent.

Given that Booking.com users may not have recently used the information that this OTA provides in relation to the sanitary conditions of tourist destinations generated from COVID-19, the following procedure was included in the questionnaire to ensure that all respondents had the same information in this regard:

(1) First, the respondent was consulted about the place within Spain they would like to visit.

(2) Second, the respondent is informed that they are to be provided with information from the OTA referring to the destination that the respondent had indicated that they wished to travel to and that this would be displayed for at least 80 s.

(3) The information provided adopted a format like the one used by Booking.com in Spain. This information included two images with information about the sanitary conditions of the tourist destination to which they wanted to travel.

The second part of the questionnaire included the measurement scales of the variables collected in the research model (Appendix). Specifically, the "perceived value of OTAs in a health crisis situation" variable is measured based on the scales proposed in the literature such as, for example, by Choe and Kim (2019), Lee *et al.* (2015), Lin and Huang (2012), Mohd Suki (2016) and Talwar *et al.* (2020). The Quality of the health information of the destination variable is made up of four items adapted from Bailey and Pearson (1983) and Hur *et al.* (2017), both are examples of applied research in the field of social networks and online media. The intention to reuse the OTAs' services variable is made up of three items adapted from Matute Vallejo *et al.*'s (2015), study that analyzes the characteristics of word of mouth in the electronic context and its impact on online repurchase intention.

In addition, the variable previous image of the OTA (Drolet *et al.*, 2007; Keppel, 1991), which although is not part of the research model, is included as a control variable that corrects the possible bias that can be introduced in the assessment of the relationships established between the variables analyzed.

The items of the measurement scales included Likert-type items from 1 to 7 points, with 1 being "totally disagree" and 7 "totally agree", except for the previous image of the OTA scale that was a semantic differential.

Finally, the sociodemographic and psychographic variables of the respondents were collected.

Analysis strategy
The research model used (Figure 1) shows the relationships included in the hypotheses. It is suggested that destination-related health information influences perceived value and intention to reuse OTA services, and that perceived value influences intention to reuse OTA services. Additionally, the "previous image of the OTA" variable was included as a control variable that acts on the "perceived value of OTAs in a health crisis situation" and the "intention to reuse the OTAs' services" as a mechanism to correct the possible bias that can be introduced in the assessment of the relationships established between the variables analyzed based on the previous image of Booking.com held by the respondents in the study.

The structural equation modelling (SEM) methodology was deemed the most appropriate, given that the research model includes latent variables that are not directly observable (Hair *et al.*, 2018, pp. 541–591). SEM is a multivariate analysis technique widely used for this type of test, and it brings together methodological techniques that have been perfected over time and developed in various disciplines (Hair *et al.*, 2018, pp. 541–591). SPSS 21 and AMOS 21 data analysis software were therefore used to examine descriptive statistics and the factor structure of the proposed scales, and the hypotheses were tested using SEM. SEM allowed us to perform validation tests on the measurement scales (which requires adequate reliability and validity of the scales) and then test the relationships between the variables of the research model (to provide empirical evidence in relation to the research hypotheses proposed).

First, the psychometric properties of the proposed model were estimated and evaluated. Since the multivariate normality test of the variables included in the proposed model proved

significant, the estimation was conducted using the maximum likelihood model combined with the bootstrap methodology (Yuan and Hayashi, 2003). Even applying this technique, the Chi-square value remained significant. The fact that the results of the Chi-square were significant was due to its being sensitive to sample size. In this case, a valid reference was the value of Normed Chi-square, which gave a value of 1.86 – within the limits recommended in the literature. As for the overall fit of the model, the RMSEA value was (0.07). The incremental fit measures of CFI (0.91), IFI (0.92) and TLI (0.91) were also found to be adequate. Thus, the model fit can be said to be acceptable in line with the recommendations of Hair *et al.* (2018).

Results
Evaluating scale reliability and validity
The dimensions included in the research variables ("perceived value of OTAs in a health crisis situation", "quality of the health information of the destination", "intention to reuse the OTAs' services" and "previous image of the OTA") reflect the composition of the scales when their validity and reliability can be confirmed (Devlin *et al.*, 1993). To achieve this, the standardized charges, the individual reliability coefficient (R^2), the confidence interval and the significance of each one of the items included must be analyzed (Table 2). The reliability indicators show a value greater or close to the minimum acceptable limit which is 0.50 (Hair *et al.*, 2018). The next step is to verify the internal consistency of each one of the dimensions on the first-order and second-order scales. Consistency can be measured with composite reliability and variance extracted. In both cases, the values obtained are acceptable, as they are close to or above the reference value of 0.70 for composite reliability and 0.50 in the case of variance extracted (Hair *et al.*, 2018) (Table 2). The results obtained to date lead to the conclusion that the set of first-order dimensions proposed to measure perceived value – quality information, OTA services reuse intention and previous image is valid – given that it allows the existence of adequate validity and reliability to be confirmed.

As regards second-order construct, Table 2 shows the standardized charges, individual reliability, confidence intervals, and the level of significance for each of the first-order dimensions included, as well as for the composite reliability and variance extracted for second-order construct. It can be seen that the scale for perceived value offers individual reliability levels above or close to 0.50. That is, with the exception of the social dimension which show a value lower than the recommended levels are not removed from the model. This is because their removal does not significantly improve the overall fit of the model and can adversely affect the validity of the content (Hair *et al.*, 2018). Similarly, overall these results contribute to determining that the second-order scale referring to perceived value has a high level of internal consistency.

Finally, the discriminant validity was assessed among the different variables and dimensions included in the research model. For this, the method proposed by Anderson and Gerbing (1988) is used according to which, for there to be adequate discriminant validity, the confidence interval of the estimated correlation coefficient must not include the value "1". The results achieved in relation to the measurement scales used in the study indicate that the scales are adequate for measuring each of the variables included in the research model (Table 3).

Taken together, the results show that the measurement scales used for the variables of perceived value, quality information, OTA services reuse intention and previous image provide adequate convergent and discriminant validity.

Evaluating the research model
Returning to the proposed research model, it is necessary to consider the effect that the previous image of the OTA exerts as a control variable. The previous image of the OTA does

Factor	Standardized coefficients and confidence interval	Individual reliability (R^2) and confidence interval
First-order confirmatory factor model		
Convenience: Composite reliability = 0.90; Variance extracted = 0.57		
PV1	0.69 (0.55; 0.80) p = 0.00	0.48 (0.31; 0.65) p = 0.00
PV2	0.75 (0.63; 0.85) p = 0.00	0.56 (0.40; 0.72) p = 0.00
PV3	0.83 (0.76; 0.88) p = 0.00	0.69 (0.58; 0.77) p = 0.00
PV4	0.85 (0.77; 0.91) p = 0.00	0.72 (0.60; 0.82) p = 0.00
PV5	0.73 (0.62; 0.82) p = 0.00	0.53 (0.39; 0.67) p = 0.00
PV6	0.78 (0.69; 0.84) p = 0.00	0.60 (0.48; 0.71) p = 0.00
PV7	0.66 (0.56; 0.74) p = 0.00	0.43 (0.31; 0.55) p = 0.00
Social: Composite reliability = 0.92; Variance extracted = 0.80		
PV8	0.83 (0.69; 0.91) p = 0.00	0.68 (0.47; 0.83) p = 0.00
PV9	0.97 (0.94; 1) p = 0.00	0.95 (0.88; 1) p = 0.00
PV10	0.88 (0.82; 0.93) p = 0.00	0.78 (0.67; 0.86) p = 0.00
Emotional: Composite reliability = 0.92; Variance extracted = 0.78		
PV11	0.85 (0.78; 0.90) p = 0.00	0.72 (0.61; 0.80) p = 0.00
PV12	0.87 (0.81; 0.92) p = 0.00	0.76 (0.65; 0.84) p = 0.00
PV13	0.94 (0.89; 0.97) p = 0.00	0.87 (0.79; 0.94) p = 0.00
Epistemic: Composite reliability = 0.91; Variance extracted = 0.72		
PV14	0.85 (0.76; 0.90) p = 0.00	0.72 (0.58; 0.80) p = 0.00
PV15	0.93 (0.88; 0.96) p = 0.00	0.86 (0.77; 0.92) p = 0.00
PV16	0.85 (0.78; 0.90) p = 0.00	0.72 (0.60; 0.81) p = 0.00
PV17	0.76 (0.66; 0.84) p = 0.00	0.57 (0.43; 0.70) p = 0.00
Quality of the health information of the destination: Composite reliability = 0.93, Variance extracted = 0.76		
QUALITY1	0.85 (0.77; 0.91) p = 0.00	0.72 (0.59; 0.82) p = 0.00
QUALITY2	0.83 (0.71; 0.91) p = 0.00	0.69 (0.50; 0.83) p = 0.00
QUALITY3	0.90 (0.85; 0.94) p = 0.00	0.81 (0.72; 0.89) p = 0.00
QUALITY4	0.90 (0.84; 0.94) p = 0.00	0.80 (0.71; 0.88) p = 0.00
Intention to reuse the OTAs' services: Composite reliability = 0.92; Variance extracted = 0.80		
INT1	0.79 (0.70; 0.86) p = 0.00	0.63 (0.49; 0.75) p = 0.00
INT2	0.95 (0.91; 0.97) p = 0.00	0.90 (0.82; 0.95) p = 0.00
INT3	0.93 (0.88; 0.96) p = 0.00	0.87 (0.77; 0.93) p = 0.00
Previous image of the OTA: Composite reliability = 0.97; Variance extracted = 0.90		
IMAGE1	0.99 (0.98; 1) p = 0.00	0.98 (0.96; 0.99) p = 0.00
IMAGE2	0.98 (0.96; 0.99) p = 0.00	0.96 (0.92; 0.98) p = 0.00
IMAGE3	0.92 (0.80; 0.98) p = 0.00	0.85 (0.63; 0.95) p = 0.00
IMAGE4	0.89 (0.77; 0.97) p = 0.00	0.79 (0.59; 0.94) p = 0.00
Second-order confirmatory factor model		
Perceived value of OTAs in a health crisis situation: Composite reliability = 0.85; Variance extracted = 0.60		
Convenience	0.73 (0.56; 0.84) p = 0.00	0.53 (0.31; 0.71) p = 0.00
Social	0.48 (0.28; 0.64) p = 0.00	0.23 (0.08; 0.40) p = 0.00
Emotional	0.89 (0.80; 0.96) p = 0.00	0.80 (0.65; 0.92) p = 0.00
Epistemic	0.92 (0.83; 0.99) p = 0.00	0.85 (0.69; 0.98) p = 0.00
Source(s): The authors		

Table 2.
Indicators of
convergent validity
and internal
consistency scales

not have a significant effect on the perceived value (since the standardized load is 0.14, with a p-value ≥ 0.05). It does, however, on the intention to reuse the OTAs' services with a p-value $\leq 1\%$ (with a standardized load of 0.29). These results show the adequacy of having considered the previous image of the OTA variable as a control variable, since it has allowed bias correction introduced in the research model.

Next, the relationships between information quality, perceived value of OTAs and OTA services reuse intention with the current health crisis conditions were analyzed (Figure 2):

Variables	Confidence interval	p-value
Convenience – Social	(0.02; 0.44)	0.07
Convenience – Emotional	(0.50; 0.78)	0.00
Convenience – Epistemic	(0.52; 0.81)	0.00
Emotional – Social	(0.16; 0.53)	0.00
Epistemic – Social	(0.31; 0.63)	0.00
Emotional – Epistemic	(0.73; 0.90)	0.00
Quality information – Intention to reuse the OTAs' services	(0.26; 0.58)	0.00
Convenience – Quality information	(0.21; 0.55)	0.00
Quality of the health information of the destination – Social	(0.16; 0.47)	0.00
Emotional – Quality of the health information of the destination	(0.31; 0.63)	0.00
Epistemic – Quality of the health information of the destination	(0.30; 0.62)	0.00
Convenience – Intention to reuse the OTAs' services	(0.22; 0.62)	0.00
Intention to reuse the OTAs' services – Social	(0.28; 0.65)	0.00
Emotional – Intention to reuse the OTAs' services	(0.51; 0.76)	0.00
Epistemic – Intention to reuse the OTAs' services	(0.47; 0.74)	0.00
Quality of the health information of the destination – Previous image of the OTA	(−0.03; 0.31)	0.17
Condicional – Previous image of the OTA	(0.09; 0.44)	0.02
Emotional – Previous image of the OTA	(0.07; 0.44)	0.02
Epistemic – Previous image of the OTA	(0.08; 0.49)	0.02
Previous image of the OTA – Convenience	(0.23; 0.57)	0.00
Intention to reuse the OTAs' services – Previous image of the OTA	(0.17; 0.53)	0.00

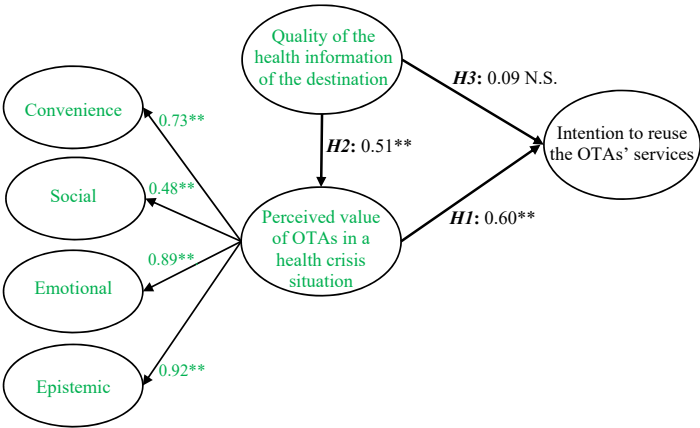**Table 3.**
Discriminant validity

Source(s): The authors

Figure 2.
Outline of results from the proposed research model

Note(s): Value: standardized coefficient; ** = Significant, p-value ≤ 0.01; N.S. = Not significant

Source(s): The authors

Hypothesis 1 proposed that perceived value of OTAs in a health crisis situation has a positive and significant effect on OTA services reuse intention with the conditions of the health crisis. The results showed a statistically significant relationship between the two variables (p-value≤ 0.01). The direct effect was 0.60, with a confidence interval of between 0.39 and 0.77. Thus, there is empirical support for this hypothesis.

Hypothesis 2 proposes that quality of the health information of the destination has a positive and significant influence on perceived value of OTAs in a health crisis situation. The results showed a statistically significant relationship (p-value ≤ 0.01), with a direct effect of 0.51 and a confidence interval of between 0.33 and 0.65. Therefore, this hypothesis also finds empirical support.

Hypothesis 3 proposed that quality of the health information of the destination has a positive and significant effect on the OTA services reuse intention with the conditions of the health crisis. The results showed a non-statistically significant relationship between the two variables (p-value = 0.37). The standardized coefficient was 0.09, with a confidence interval of between -0.07 and 0.26. Thus, there is no empirical support for this hypothesis.

Discussion, conclusions and implications

The COVID-19 global pandemic had profound impacts on the travel and tourism industry. Similarly, future scenarios cannot be discounted (Ivanova *et al.*, 2021; Li *et al.*, 2022; Magno and Cassia, 2022). Further, the COVID-19 pandemic generated conditions that allowed the sector to identify actions and strategies that can contribute to achieving greater resilience (Kumar *et al.*, 2022; Li *et al.*, 2022).

In this paper, we have considered the development of the study of crisis management before and during the pandemic. The systematic review made it possible to identify an interest in obtaining greater knowledge about the use of market mechanisms and strategies, and their effects on consumer behaviour (e.g. Berbekova *et al.*, 2021; Li *et al.*, 2022; Wut *et al.*, 2021). Chen *et al.* (2022) found that although previous epidemic research has foregrounded consumers' perceptions of risk and associated changes to their travel behaviour, potential strategies for ameliorating such behavioural changes while maintaining safety and security have mainly been ignored. Such strategies should not simply be applied, but preferably carefully measured by researchers for their impacts on consumers' behaviour. This paper addresses this concern by offering original insights into whether providing quality information about the sanitary conditions of the destination influences the perceived value offered by OTAs and the reuse intention. It provides empirical evidence indicating that (1) providing quality information on the sanitary conditions of the destination influences the perceived value of the OTAs, but not the reuse intention; although, (2) the perceived value offered by the OTAs positively influences the OTA services reuse intention.

In accordance with emerging trends, such as a greater commitment to public health and a search for well-being (De la Puente Pacheco, 2015), in times of crises and situations of uncertainty, tourists are increasingly searching for quality information that guarantees their safety during a trip (Félix Mendoza *et al.*, 2020). The quality of the information must be present in the context of social networks and, even more so, in the offer of OTAs (Mellinas *et al.*, 2016). In the research for this paper, a strategy based on risk communication and guidelines has been proposed as prevention and protection instruments for tourists that can be implemented by tourist intermediaries. For this study, this information was explicitly included through the information quality variable (Cheung *et al.*, 2008).

More knowledge is needed regarding the effect that the adoption of this type of action generates from the market perspective in key variables of consumer behaviour (e.g. Volgger *et al.*, 2021). From the "revealed preference approach" (Fischhoff *et al.*, 1978; Slovic, 1987), this research gives empirical evidence about the effect of factors that affect the risk perception and the perceived control tourists exert on perceived value and the intention to resume using OTA services.

The findings of this research make several contributions to knowledge. Firstly, specialized literature on crisis management in the tourism and hospitality industry shows interest in

knowing more about the use of market-oriented actions and their impacts on consumer behaviour (e.g. Wut *et al.*, 2021; Li *et al.*, 2022). Also, Chen *et al.* (2022) recognize that it is necessary to develop a greater knowledge about consumers' perceptions of risk and associated changes to their travel behaviour and how taking action can contribute to ameliorating the reuse and value of services when travelling while maintaining safety and security.

Specifically, the findings make several contributions to knowledge. There is previous literature examining the quality of health information about a destination and the subsequent effects on the perceived value in the online tourism context. For example, Cheung *et al.* (2008) test the influence of the quality of the information on the perceived usefulness of the user in the electronic field and Kim *et al.* (2012) show how information quality would positively affect the value of online purchases, on utilitarian and hedonic dimensions. The first contribution to knowledge is that the results achieved in this work mainly concur with the findings of previous research, showing that the quality of the health information of the destination has a positive influence on the perceived value of the OTA. This corroborates that when the tourist receives quality information about the situation of a health crisis at tourist destinations this, in turn, attributes a greater value to the offer proposed by the OTA.

Previous studies have identified the influence of information quality as an antecedent of the intention to repurchase online, through the influence of the perceived usefulness of the website (e.g. Matute Vallejo *et al.*, 2015), but the direct relationship between the quality of the health information of the destination and the intention to repurchase from the same OTA has not been analyzed. In this work, this relationship has been tested empirically, reaching a result according to which there is no direct significant relationship between the quality of the information related to the health situation of the destination and the OTA services reuse intention. It can be deduced from this that an improvement in the quality of information perceived by tourists would not directly influence their desire to book through the OTA's platform. The second contribution to knowledge is that these results indicate that in situations of high uncertainty, such as a health crisis, providing quality information about the health conditions of the tourist destination is not enough to encourage potential tourists to book again through OTAs.

Lastly, it has been found that perceived value of OTAs in a health crisis situation positively and significantly influences the OTA services reuse intention in the context of a health crisis. This result is consistent with the empirical evidence of previous research, and shows that an improvement in the value perceived by the tourist of the OTAs offer would have a positive and significant impact on a tourist's desire to travel, even in the context of a health crisis.

Considering all the results about the relationships established between the variables of quality of the health information of the destination, perceived value of OTAs in a health crisis situation and OTA services reuse intention, it can be suggested that providing quality health information about the destination is a necessary strategy because it contributes to the higher value potential tourists attribute to the offer provided by OTAs. This is not enough, however, to arouse the OTA services reuse intention (and consequently to travel). In order to incentivize the OTA services reuse intention, it is necessary to consider quality health information together with the perceived value of its offer, which does influence the intention to make repeat reservations with the OTAs.

Implications for practitioners
Some of the results of this research have practical and professional applications for tourist and hospitality intermediaries that operate online.

Recommendations can be made about the application of strategic measures appropriate to the development of the offer presented by OTAs and other tourist intermediaries. As an

appropriate measure that OTAs can take advantage of to deal with tourism crises, the development and implementation of a risk and crisis communication strategy aimed at potential tourists stand out with the conviction that the perceived risk of travelling will be reduced and the security perceived by the individual in the tourist destination will be increased. At the same time, this measure must be based on quality information. In other words, it is suggested that providing quality information regarding the health situation of the tourist destination is essential information that should be incorporated into the portals of OTAs and other tourist intermediaries. To this end, in the preparation of the said information, OTAs should consult specialized organizations dedicated to studying the health crisis situation, and government institutions to provide reliable and consistent information.

The results from the research model support the idea that the actions of OTAs could contribute to awakening the desire to travel. In view of the fact that intermediary agents have the opportunity to play a relevant role in the recovery of tourist activity, these intermediaries, in addition to providing their own information and that of official government guidelines, also provide official and verified information on their web portals.

However, it has been shown that without an increase in the value of the OTAs' offer to their users, the strategy based on the provision of quality information on the health situation of the destination is not enough to encourage the intention of the reuse of the OTAs' services and make reservations for accommodation. In this sense, the results identify that transmitting offer of high perceived value – in which a convenience, social, emotional and epistemic value is contemplated – is key to encouraging the intention to make reservations again through the OTAs.

Taken together, the results show that the adoption of an adequate strategy by OTAs can influence the reuse intention and book accommodation, and therefore, return to travel in a pandemic context. For this, the incorporation of quality information on the sanitary conditions of the destination and transmitting offer of high perceived value is relevant.

Limitations and future research directions
Like all empirical research, this work has limitations that must be considered and, in turn, contribute to recommendations for future research. The first limitation relates to the study context. The study was carried out in the immediate aftermath of the COVID-19 pandemic in the Spanish domestic market. In this respect, it can only act as a "snapshot", small case study about the unfolding situation. Thus, the first recommendation for further research is to replicate this study in other geographical contexts, and the second is to extend the sample to the international market.

A second limitation is the choice of variables. Although variables relevant to consumer behaviour were selected, there are other relevant variables in contexts of high uncertainty and market strategies. Future research should consider other relevant variables for consumer behaviour, such as risk or perceived safety or the value of user-generated content provided by OTAs. It is also interesting that for future research, more complex research models are tested in which a greater number of variables typical of consumer behaviour and the relationships between them are included. Despite these limitations, if, as predicted, the world faces health emergencies in the future, any knowledge about how the market can respond to support the tourism sector's recovery is of value.

Another potential line of scholarly inquiry would be to include in the research model other characteristics, or qualities, about the individual respondents that may influence their perceived risk, such as self-efficacy, in addition to considering alternative business strategies that may influence the consumer to perceive a lower risk and decide to return to using an OTA's services.

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Appendix

Variable	Dimensions	Items
Quality information (Bailey and Pearson, 1983; Hur *et al.*, 2017)		The health information of the destination displayed by this online travel agency is . . . QUALITY1. . . . precise QUALITY2. . . . adequate QUALITY3. . . . complete QUALITY4. . . . consistent
Perceived value (Choe and Kim, 2019; Lee *et al.*, 2015; Mohd Suki, 2016; Talwar *et al.*, 2020)	Convenience	PV1. This online travel agency offers quality PV2. This online travel agency offers convenience PV3. This online travel agency constantly offers various benefits PV4. This online travel agency maintains a high level of profits PV5. This online travel agency charge a reasonable price PV6. This online travel agency offers good value for my money PV8. This online travel agency allows to take advantage of promotional offers
	Social	PV8. This online travel agency helps me make a positive impression on other people PV9. This online travel agency has influenced the way others perceive me PV10. This online travel agency helps me stand out among my family and friends
	Emotional	PV11. I choose to book with this online travel agency because I like it PV12. I choose to book with this online travel agency because I feel relaxed booking here PV13. Booking with this online travel agency is pleasant for me
	Epistemic	PV14. This online travel agency makes it easy for you to obtain substantial information about the various services and accommodations before booking PV15. This online travel agency makes it easy for you to access a wealth of information about the various services and accommodations before booking PV16. This online travel agency makes it easier for me to find new information PV17. This online travel agency makes it easy for me to look for something new and different

(*continued*)

Variable	Dimensions	Items
OTA services reuse intention (Matute Vallejo *et al.*, 2015)		Regarding my next trip, even with the current health crisis . . . INT1. . . . I would like to book through this online travel agency INT2. . . . I plan to use this online travel agency to make reservations INT3. . . . likely to book through this online travel agency
Previous image (Drolet *et al.*, 2007; Keppel, 1991)		In general, your opinion about this online travel agency is IMAGE1. . . . Bad – Good IMAGE2. . . Unfavourable – Favourable IMAGE3. . . Negative – Positive IMAGE4. . . I do not like – I like

Table A1.   **Source(s):** Own elaboration from literature review

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