MASKANA
Artículo científico / 2025, Vol. 16, No. 1, páginas 139 - 155

Effective measures to adapt hotels to future health crises

Medidas efectivas para adaptar los hoteles a futuras crisis sanitarias

Autores:

Mercedes Alonso-García*
Maribel Rodríguez
Leonor M. Pérez
Universidad de Córdoba, España

Autor de correspondencia:

Mercedes Alonso-García
mercedes.alonso@uco.es

Recepción: 20 - enero - 2025
Aprobación: 14 - abril - 2025
Publicación online: 30 - June - 2025

Citación: Alonso-García, M., Rodríguez, M. y Pérez, L. (2025). Medidas efectivas para adaptar los hoteles a futuras crisis sanitarias. *Maskana*, *16*(1), 139 - 155. https://doi.org/10.18537/mskn.16.01.09

doi: 10.18537/mskn.16.01.09

VOL 16, NRO 1
doi: 10.18537/mskn.16.01.09

Effective measures to adapt hotels to future health crises

Medidas efectivas para adaptar los hoteles a futuras crisis sanitarias

Abstract

The COVID-19 pandemic has deeply affected the tourism accommodation sector, reducing mobility and closing international borders. Hotels have adapted by implementing sanitary measures to meet mandated guidelines, addressing growing health security concerns. This study, based on Stakeholder Theory, analyzes differences in perceptions of COVID-19 measures between 521 tourists and 14 hotel managers in Córdoba, Spain. Using a contrast of means and a Mann-Whitney test, it identifies significant disparities in the importance assigned to these measures, particularly when both groups view them as less critical. There is consensus on the value of cleanliness protocols, but technology-related measures reveal contrasting opinions. These findings provide practical insights for industry professionals guiding prioritization of investments that enhance preparedness for future pandemics, enabling hotels to better align with customer expectations and foster trust during crises.

Palabras clave: health risk control, consumers, managers, stakeholders, crisis

Resumen

La pandemia de COVID-19 impactó profundamente al sector de alojamiento turístico, condicionado por la reducción de la movilidad y el cierre de fronteras. Los hoteles se adaptaron para cumplir con las directrices sanitarias. Este estudio, analiza las diferencias en las percepciones de turistas y gerentes sobre las medidas adoptadas, a partir de una encuesta a 521 turistas y 14 gerentes de hoteles en Córdoba, España. Utilizando un contraste de medias y una prueba de Mann-Whitney, se identifican discrepancias significativas cuando las medidas consideradas son menos críticas para ambos grupos. Existe consenso en cuanto a los protocolos de limpieza, pero las medidas tecnológicas muestran opiniones divergentes. Estos hallazgos proporcionan información útil para los profesionales del sector, permitiéndoles priorizar inversiones para garantizar la seguridad de los clientes, mejorar la preparación ante futuras pandemias y alinearse mejor con las expectativas de los clientes durante las crisis.

Keywords: control de riesgos sanitarios, consumidores, gerentes, grupos de interés, crisis

1. Introduction

Although various epidemics had already affected tourism in certain areas of the world during the 21st century, none had caused such devastating effects as the emergence of SARS-CoV-2 in early 2020. The recent health crisis has altered people's behaviors and generated greater safety concerns, particularly regarding health security. Society and governments have become aware of the need to establish measures to prevent and control the spread of diseases. Recommendations to prevent COVID-19 transmission include maintaining a safe distance, wearing masks, frequent hand washing, and disinfecting shared spaces, among other measures.

The tourism sector has been severely impacted by the emergence of SARS-CoV-2. Mobility restrictions, border closures, and geographic isolation led to an unprecedented decline in travel. Global international tourist arrivals dropped by 73% in 2020 (UNWTO, 2021), while in Spain, the decline was even greater, with an 80.7% decrease in tourist numbers (INE, 2021). Tourism, which contributes over 12% to Spain's Gross Domestic Product (GDP), faced significant losses. Hotel accommodations saw an average monthly decline of 82% in overnight stays, in contrast to the 1.5% growth recorded before the pandemic.

Beyond the economic impact, the sector had to implement extensive health measures to ensure safe travel. Authorities imposed regulations such as social distancing, mask mandates, hand hygiene, and disinfection of shared spaces (ICTE, 2020).

The hospitality industry responded by temporarily closing establishments, investing in sanitary adaptations, and diversifying services. Some hotels repurposed their spaces to accommodate teleworkers or collaborated with authorities to host healthcare employees and individuals needing isolation (Hoang et al., 2021). In Spain, government agreements facilitated the use of hotel accommodations for essential workers (HOSTELTUR, 2020). Hotels were not prepared for such a crisis, and the urgent implementation of measures during the COVID-19 pandemic did not allow for prior assessment of their impact on the perception of safety for customers or managers.

This literature review highlights the lack of studies analyzing the differences between hotel managers and clients regarding the importance of measures to prevent contagion and ensure a safe stay. The aim of this study is to address this gap, providing valuable insights for industry professionals by identifying measures that can improve customers' perception of safety and increase occupancy. Using Stakeholder Theory (Freeman, 1994), the research seeks to explore the differences and similarities between the perspectives of customers and managers.

It is essential to determine any differences. If they exist, managers will be able to develop more effective operational and marketing strategies. With this objective, the following questions are raised:

RQ1: Regarding the measures implemented in hotels to address COVID-19, are there differences between customers and managers in their perception of these measures' importance?

During the COVID-19 pandemic, authorities have instructed hotel establishments on the measures they should implement to prevent the transmission of the virus. These measures were primarily related to cleanliness, hygiene, and maintaining a safe distance between customers and employees (Del Chiappa et al., 2022). Additionally, hotels have introduced some measures related to the use of technology, also aimed at minimizing contact between customers and employees. Considering the characteristics of these measures, the following question is also proposed:

RQ2: Considering that the measures can be grouped into ensuring social distancing, promoting cleanliness, and utilizing technology, are there differences between customers and managers in the importance they attribute to these three dimensions?

VOL 16, NRO 1
doi: 10.18537/mskn.16.01.09

Understanding the disparities between managers and clients on the perceived importance of measures implemented to avoid contagion can guide effective investment decisions, ultimately improving client satisfaction, loyalty, and profitability. When the interests of managers and customers coincide, overall customer satisfaction is positively affected, resulting in increased loyalty and profitability (Kwok & Huang, 2019). Therefore, understanding the differences in the perceived importance of the measures provides valuable information for making investment decisions and ensuring the success of the establishment.

2. Literature review

As a highly infectious disease that can spread rapidly among humans, the pandemic triggers intense fear and panic among the public. Neither the tourism sector nor governments were prepared for a crisis of the magnitude of the COVID-19 pandemic.

Early in the pandemic, research focused on the effect of infection control measures such as physical distance, isolation, and contact tracing (Kucharski et al., 2020; Chang et al., 2021; Hsiang et al., 2020). As the pandemic progressed, studies focused on analyzing its effects on the tourism sector and the strategies companies should implement to recover and strengthen their business after the crisis (Garrido-Moreno et al., 2021; Su, 2022). Given the frequent epidemics caused by respiratory viruses in this century—SARS (2002), influenza A (H1N1) (2009), MERS (2012), and SARS-CoV-2 (2019)—it is essential to be prepared for future outbreaks to mitigate their effects on the sector and sustain hotel occupancy.

Zhang and Lu (2022) provide recommended strategies for managing the health crisis, while Garrido-Moreno et al. (2021) analyze the opinion of managers on the measures necessary for the recovery of activity after COVID-19. Davras & Durgun (2022) examine customer satisfaction and dissatisfaction with the measures implemented in hotels in response to COVID-19.

Executives, particularly SME managers, do not typically consider crisis preparedness an essential element of their business (Mikušová & Horváthová, 2022). However, the literature on crisis management emphasizes the importance of having a plan to manage such situations (Ritchie & Jiang, 2019; Fink and American Management Association, 1986; Hidalgo et al., 2022)

Since the end of the 20th century, companies have been operating in an increasingly dynamic and unstable environment, requiring them to adapt to changes that affect their activities and relationships with external groups. Stakeholder Theory aims to reconcile the interests of all stakeholders, defined as “groups and individuals who can influence or are influenced by an organization's objectives" (Freeman, 1994, p. 25). In this definition, Freeman moves away from the traditional concept of benefits and introduces the idea of groups that may be affected by the company's activities, even if they are not directly involved.

In the tourism sector, several authors have explored the management of tourist destinations and establishments, considering the interests of the various stakeholders involved in the tourism supply and emphasizing the value they contribute (Stewart & Cole, 2017; Yang & Wall, 2009; Douglas & Lubbe, 2006). Currie et al. (2009) extend the analysis of project feasibility by incorporating the interests of third parties, alongside those of managers. Their findings suggest that systematic stakeholder analysis is both beneficial and valuable in the context of feasibility assessments.

Specifically, in the tourism accommodation sector, Chang & Lam (2013) examine the divergence between guests' opinions and security managers' perspectives on hotel security facilities, a crucial factor in hotel selection. Wang et al. (2014) focus

their research on identifying factors that influence the formation of trust among stakeholders in hotel establishments.

The decision to travel involves uncertainty, as it often requires visiting unfamiliar places (Yang et al., 2017). Risk perception and tourism are closely linked, influencing tourist behavior, particularly in post-disaster travel (Cró & Martins, 2017; Floyd et al., 2004; Zheng et al., 2021). Factors such as motivation, safety concerns, and perceived risk play a crucial role in travel decision-making (Rittichainuwat, 2008).

A high level of perceived risk reduces traveler satisfaction and negatively impacts the likelihood of repeat visits (Hasan et al., 2017). Thus, understanding perceived risk is essential for sustaining tourism demand. Various researchers have explored risk in tourism (Sheng-Hshiung et al., 1997; Fuchs & Reichel, 2011), showing how perceived risks influence attitudes, decisions, and behaviors, even when actual risks are minimal (Reichel et al., 2007). Andreu et al. (2020) define perceived risk as a traveler's assessment of a potential danger exceeding their acceptable threshold, which can impact their destination choice more than actual conditions.

Valencia and Crouch (2008) point out an inverse relationship between consumer confidence and its influence on the decision to visit a destination. They state that consumers would decline to travel to the area in the event of SARS cases, and this rejection is even greater than that caused by a terrorist act. However, the study confirms that consumer confidence moderates this negative effect. This decision to travel is associated, among other factors, with the high risk of contracting a virus (such as SARS or HIV) or a dangerous disease (such as malaria, cholera, or dengue), as well as potential difficulties in accessing healthcare at the destination (Andreu et al., 2020).

Identifying the measures that tourists value for reducing the risk of contracting the disease provides insight into the factors influencing their intention to travel and choose specific accommodations. This information could help the sector introduce improvements to establishments that address the interests of all stakeholders, thereby contributing to demand recovery.

3. Methodology

To gather client and manager assessments of health safety measures, two questionnaires were administered in January 2021. The questionnaires focused on measures that could be implemented in hotels to address the recent pandemic. The first questionnaire targeted hotel clients over 18 years old who were residents in Spain and had stayed in a hotel establishment in the past two years. The second questionnaire targeted managers of hotel establishments in Spain.

An initial set of 40 measures was developed based on prior studies relevant to the study's objective (Gursoy et al., 2021; Yu et al., 2021) and considering the characteristics of the establishments along with the specificities of the epidemic in Spain.

Subsequently, a panel of experts was assembled, consisting of two hotel managers and two customers who had stayed in these establishments during the COVID-19 pandemic. Through deliberation among the experts, the list was condensed to 28 items, which were used in this study (Table 2).

Participants were then asked to assess the significance of these measures using a 5-point Likert scale, where 1 represented "not at all important" and 5 indicated "very important." A pre-test involving 30 potential hotel customers was conducted to refine and appropriately design the questions.

VOL 16, NRO 1
doi: 10.18537/mskn.16.01.09

The questionnaire aimed at clients was administered online. This method facilitated data collection, especially given the pandemic context in which it was conducted, and it had lower costs (Jennings, 2001). Given the national and international health crisis, mobility restrictions, and recurring lockdowns, convenience sampling was employed. Convenience sampling is the most commonly used type of non-probabilistic sampling among social scientists. In a study by Clark (2017) on the type of non-probabilistic sampling employed in 1,812 studies, convenience sampling was used in 70% of them, a frequency much higher than other non-probabilistic methods.

Specifically, the questionnaire was distributed through travel forums and social media in January 2021. At that time, the COVID-19 vaccination process had just begun in Spain, a third wave of infections was occurring nationwide, and a new variant of the virus, known as Alpha or B.1.1.7, had emerged in the United Kingdom. Ultimately, 568 questionnaires were collected, and after a data cleansing process, 521 were deemed valid, which is the sample upon which this study is based.

In terms of representativeness, a sample size of at least 385 was needed to achieve a 95% confidence level and a 5% sampling error (p=0.50 and q=0.50). The 521 valid client questionnaires allow us to consider the survey results accurate, with a sampling error of 4.29% and a 95% confidence level (Table 1).

Simultaneously, we contacted 14 hotel managers in the city of Córdoba, 70% of whom oversaw a three-star establishment or higher. In Córdoba, hotels in these categories represent 49% of the total establishments and account for 77% of the available bed supply (Junta de Andalucía, 2022). Comparing their opinions with those of the surveyed clients is appropriate, given that 64% of the clients reported staying in hotels of this category.

A mean comparison analysis was conducted to identify the measures with the greatest discrepancies in perceived importance between customers and managers. The Mann-Whitney test was applied to detect significant differences in the response distributions of the two groups of interest. This test is a non-parametric alternative to the t-test for independent samples (Ruxton, 2006) and is recommended for small sample sizes, such as those in this study.

To categorize the measures into dimensions according to their intended objectives, a Confirmatory Factor Analysis (CFA) was performed to evaluate the reliability of the grouping.

Table 1. Description of the sample of clients
Source: Own

Population	Population: Potential hotel customers residing in Spain, over 18 years old, who have stayed in a hotel in the last 2 years.
Sample	521
Confidence level	95.0%; p = q = 0.5
Sampling error	± 4.29
Procedure	Convenience sampling
Research period	1st week January. 2020

4. Results

Regarding the sociodemographic characteristics of the sample, it is noteworthy that the distribution between men and women is balanced. Most respondents reside in Andalusia (83%), are over 35 years old (83%), have higher education (82%), and earn more than €1,500 per month (64%). Regarding their travel habits, 56% of respondents travel more than once a year, primarily for leisure purposes (94%), although 35% also travel for work.

Thirty-seven percent of those surveyed indicated that they would only travel when there is some certainty that infections are under control, with 36% stating that they belong to or could be part of an at-risk group. These results confirm the importance for guests of measures that ensure their safety in accommodations.

Turning to the demographic characteristics of the manager sample used, all oversee establishments in Andalusia, and the majority are men (78.6%). 71.4% of respondents were between 35 and 49 years old, while the remainder fell within the age range of 50 to 69. Additionally, 78.6% of the respondents have a university degree or higher education.

4.1. Average importance of the measures

To compare the importance assigned by clients and managers to measures aimed at increasing hotel stay safety, the means observed in each group are compared. Both groups consider the measures important, with clients assigning them a slightly higher rating—an average of 4.04 (on a scale of 1 to 5)—which is 0.18 points higher than the managers' average rating of 3.86. On average, customers rate more than 18 of the measures and more frequently assign them the maximum score. In 20 of the items, the mode is 5 for customers, while in the manager group, this occurs in 13 items (Table 2).

It is worth noting that the measure z_Service Robots is the least valued by both groups. Managers assign it an average importance rating of only 2.21. Consequently, its implementation would not significantly enhance the establishment's perceived security, as suggested by previous studies (Chiang & Trimi, 2020). Therefore, it is a measure that can be deferred, thereby avoiding substantial expenses on an unproven measure at this stage.

Overall, the analyzed measures hold greater significance for customers, and as the importance assigned by both groups increases, the disparity in their evaluations decreases (Figure 1).

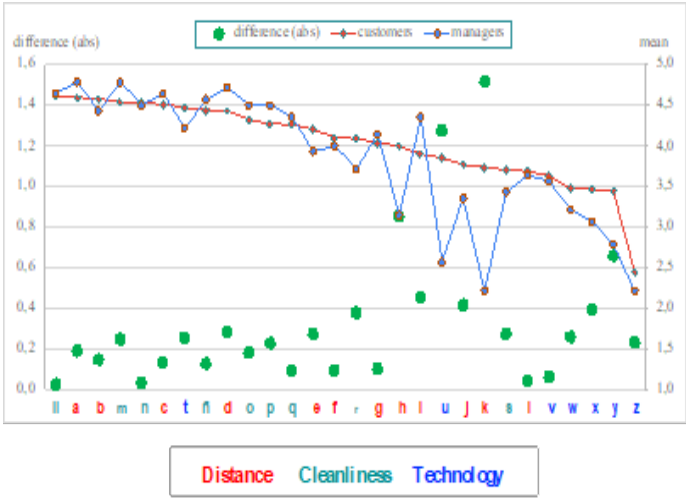

Figure 1: Average Importance ranked by Customer Rating.

Source: Own

VOL 16, NRO 1
doi: 10.18537/mskn.16.01.09

	Customers			
	rk	**mean**	**SD**	**mode**
Average DISTANCE	**4.13**			
a Employees always wear masks.	2	4.60	0.90	5
b Separate tables and seating in common areas, restaurants, bars	3	4.58	0.86	5
c Employees are aware of health and safety protocols.	6	4051	0.91	5
d Promote the use of masks by clients	9	4.43	1.02	5
e Limits on the number of clients served	13	4.20	1.00	5
f Temperature checks of employees upon arrival at work	14	4.10	1.19	5
g Employees to maintain a minimum distance from their coworkers	16	4.04	1.06	5
h Monthly Covid-19 screening of employees	17	4.00	1.16	5
i Methacrylate protection screen on countertop	18	3.90	1.04	4
Temperature control for customers at the entrance	20	3.78	1.25	5
k Keep the rooms empty one night after the client's departure	21	3.73	1.24	5
l Signage on the ground to remind of minimum physical distance	23	3.69	1.09	4
Average CLEANLINESS		**4.31**		
ll More rigorous and frequent cleaning of surfaces in common areas	1	4.62	0.85	5
m Employees are meticulous in washing and disinfecting hands.	4	4.54	0.91	5
n Clean the restaurant facilities (tables and chairs) with disinfectants.	5	4.53	0.86	5
ñ Sufficient cleaning and disinfection in the rooms	8	4.44	0.95	5
o Cleaning with disinfectants of staff work areas (desks and tables)	10	4.32	0.98	5
p Cleaning with disinfectants of work equipment	11	4.27	0.99	5
q Hand sanitizer stations throughout the facility	12	4.26	1.04	5
r Periodic management by professional hygiene companies	15	4.09	1.07	5
s Optional daily maid service: no cleaning if towels outside the door	22	3.70	1.15	4
Average TECHNOLOGY		**3.54**		
t Heating. ventilation. air conditioning system. air quality controls	7	4.47	0.92	5
u Rooms equipped with special air purifiers	19	3.85	1.15	5
v Contactless payment, mobile application, or contactless bank cards	24	3.64	1.20	4
w Non-contact elevator use	25	3.48	1.15	4
x Auto check-in and auto check-out	26	3.46	1.23	4
y Keyless entry or digital room keys	27	3.45	1.19	4
z Service robots	28	2.45	1.14	3
Total average		**4.04**	**1.05**	

rk= Ranking; SD= Standard deviation

Sig.* There are differences in the distribution of the variables for both groups of interest at a significance level of 0.10. The null hypo

4.2. Relevant differences between customer and manager ratings

To address RQ1, a Mann-Whitney test for mean comparison was conducted with a 90% confidence interval. The results revealed significant differences between the two groups for several variables (p-value < 0.10), indicating disparities in the sample distributions and leading to the rejection of the null hypothesis (Figure 2).

The measure with the largest disparity in mean ratings between the two groups is k_*Keeping rooms vacant for at least one night after the guest's departure.* A lack of association between the two distributions is evident (p-value = 0.00). Although

Table 2. Health measures. Comparison of average importance of the evaluation given by Clients and Managers
Source: Own

	Managers				Mann-Whitney U test	Reliability
rk	**mean**	**SD**	**mode**	**Mean difference**	**Sig.**	**Cronbach's alpha**
	3.95			0.18		**0.94**
1	4.79	0.43	5	-0.19	0.76	
10	4.43	0.51	4	0.15	0.04*	
4	4.64	0.63	5	-0.13	0.80	
3	4.71	0.47	5	-0.28	0.61	
16	3.93	1.00	4	0.27	0.19	
15	4.00	1.24	5	0.10	0.65	
14	4.14	0.86	4	-0.10	0.92	
23	3.14	1.29	3	0.86	0.01*	
11	4.36	0.93	5	-0.46	0.07*	
21	3.36	1.34	5	0.42	0.21	
27	2.21	1.05	2	1.52	0.00*	
18	3.64	1.55	5	0.04	0.70	
	4.33			**-0.02**		**0.94**
5	4.64	0.50	5	-0.02	0.43	
2	4.49	0.43	5	-0.25	0.47	
7	4.50	0.51	4	0.03	0.26	
6	4.57	0.51	5	-0.13	0.83	
8	4.50	0.52	5	-0.18	0.96	
9	4.50	0.52	5	-0.23	0075	
12	4.36	0.50	4	-0.09	0.48	
17	3.71	1.38	4	0.38	0.28	
20	3.43	1.22	3	0.28	0.36	
	3.09			**0.45**		**0.89**
13	4.21	4.21	4	0.26	0.04*	
26	2.57	2.57	2	1.28	0.00*	
19	3.57	3.57	3	0.07	0.79	
22	3.21	3.21	4	0.26	0.60	
24	3.07	3.07	5	0.39	0.40	
25	2.79	2.79	3	0.66	0.04*	
28	2.21	2.21	2	0.23	0.47	
	3.86	**0.92**		**0.18**		

thesis is rejected

it is not among the most valued measures by customers (mean rating of 3.73), it holds the least importance for managers (2.21), resulting in a substantial difference of 1.52.

The second-largest difference is observed in the measure *u_Rooms equipped* with air purifiers (p-value = 0.00), with customers assigning it an average importance rating of 3.85, while managers rate it at 2.79.

Significant differences were also identified in the distributions of the following measures: *h_Monthly COVID-19 testing for employees, b_Separate tables and seating in common areas, restaurants, and bars, t_Heating, ventilation, and*

VOL 16, NRO 1
doi: 10.18537/mskn.16.01.09

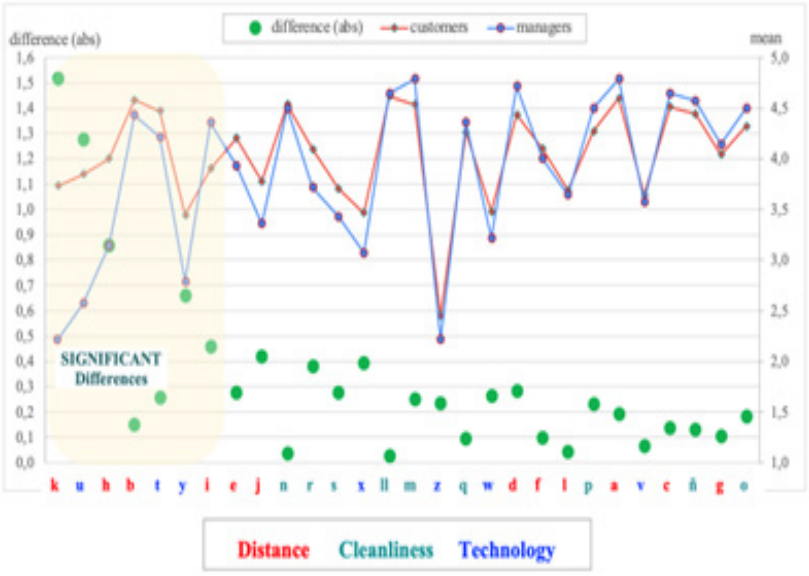

Figure 2: Significant differences Sorted by p-value (Mann-Whitney ascending)

Source: Own

air conditioning system and air quality control, y_Keyless entry or digital keys for rooms, and i_ Methacrylate protection screen on the front desk.

Regarding measures b and t, managers should consider the high importance attributed by customers to these measures (mean ratings of 4.58 and 4.47, respectively). Their implementation can contribute to enhancing the perception of safety and potentially influence customers' selection of accommodations.

Notably, the measure *i_Methacrylate protection screen on the front desk* stands out as the only one rated as more important by managers, with a score of 4.36 compared to 3.90 by customers. This measure aligns with the guidelines and recommendations issued by the Secretaría de Estado de Turismo (ICTE, 2020) and specifically aims to protect employees, which explains the managers' heightened concern.

4.3. Differences in valuation grouped by dimensions.

The 28 measures were categorized based on their relevance to maintaining social distancing (Distance), ensuring facility cleanliness and personal hygiene (Cleanliness), or utilizing technology to implement safety protocols (Technology).

The validity of these groupings was assessed through Confirmatory Factor Analysis (CFA), and their internal consistency was evaluated using Cronbach's alpha. The results exceeded 0.7 for all categories, confirming the suitability of the groupings and indicating a relatively high internal consistency among the items (eigenvalue > 1). Table 2 presents the measures included in each category along with their corresponding Cronbach's alpha values.

The measures related to Cleanliness were considered the most important, receiving similar mean ratings from customers (4.31) and managers (4.33) (Figure 3). No significant differences were observed in the distribution of responses between the two groups for any of the measures in this category, as all p-values exceeded 0.10.

The measures associated with Distance were also deemed important by both groups, although customers assigned them slightly higher importance ratings, with a mean score of 4.13, 0.18 points higher than the managers' ratings (Figure 3).

Significant differences were identified in four measures within this category. One such measure, *k_Keeping rooms vacant for at least one night after the guest's departure,* exhibited not only

significant differences in the distribution of responses (p-value = 0.000) but also the largest discrepancy in mean importance ratings between customers and managers (1.52 points). This measure was among the least valued by managers, with an average rating of 2.21.

Additionally, three other measures within this category displayed significant differences: i_ Methacrylate protection screen on the front desk, b_Separate tables and seating in common areas, restaurants, and bars, and *h_Monthly COVID-19 testing for employees.* Regarding the latter, the limited availability and high cost of diagnostic tests at the time of the survey (January 2021) may have contributed to managers' reluctance to prioritize this measure, resulting in a lower rating (ranking 23rd out of the 28 measures in the managers' assessment).

The largest discrepancies in importance ratings were observed in measures related to the use of Technology, which, on average, were the least valued by both groups. These findings are consistent with previous research (Garrido-Moreno et al., 2021). However, due to their role in facilitating social distancing, hotels have increasingly incorporated information and communication technology (ICT)-based service models during the pandemic (Su, 2022).

Within this category, three measures exhibited significant differences in response distribution between the two groups. One of the most notable was *u_Rooms equipped with air purifiers*, which showed a substantial discrepancy in mean importance ratings (1.28 points). Managers assigned this measure a mean rating of only 2.57, ranking it 26th. Additionally, significant differences were observed in the distributions of *y_Keyless entry or digital keys for rooms and t_ Heating, ventilation, air conditioning system, and air quality controls.* The first of these measures (y) not only displayed differences in response distribution but was also rated as relatively unimportant by both groups, ranking 27th among customers and 25th among managers.

Regarding RQ2, which examines the differences in the importance attributed by customers and managers to measures ensuring social distancing, promoting cleanliness, and incorporating technology, the following findings can be highlighted:

Measures related to facility CLEANLINESS are considered the most important by both customers and managers. Moreover, there is a high level of agreement between the two groups, with no significant differences observed for any of the measures within this category.

Regarding measures associated with social DISTANCING, while they are also deemed important, four measures exhibit significant differences in their distribution between the two groups.

Finally, measures involving the use of TECHNOLOGY for infection control are the least valued by both groups, with significant differences identified in three of these measures.

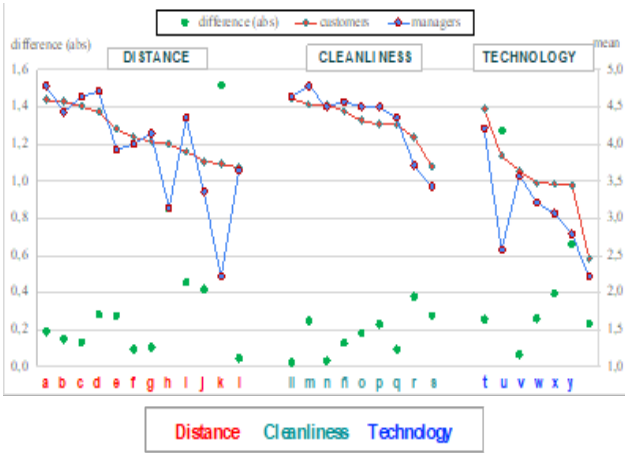

Figure 3: Average importance. Ranking according to dimensions

Source: Own

VOL 16, NRO 1
doi: 10.18537/mskn.16.01.09

5. Discussion and Conclusions

Since the beginning of the 21st century, several epidemics have emerged, including SARS (2002), Influenza A (H1N1) (2009), MERS (2012), and SARS-CoV-2 (2019) (Škare et al., 2021). The COVID-19 outbreak had a profound impact on the tourism sector due to mobility restrictions and fear of contagion, resulting in a global decline of more than 70% in tourist numbers. In Spain, this reduction reached 87% in February and March 2021 (INE, 2021). These circumstances underscore the need for research that aims to help the industry prepare for future health crises and mitigate similarly devastating consequences.

This study provides valuable insights for hospitality professionals regarding key measures that enhance customer safety and sustain hotel occupancy during a health crisis. While authorities have issued health guidelines, many establishments have implemented additional measures without prior assessment of customer and management perspectives. Given the high operational costs in the hospitality sector, maintaining demand is critical to its survival. This study analyzes 28 health and safety measures that influence accommodation choices.

Using the framework of Stakeholder Theory (Freeman, 1994), this research is the first to compare customer and managerial perspectives on hotel health measures. Long-term value creation depends on collaboration and mutual understanding among stakeholders (Kujala, 2016). Thus, investments in safety measures are justified if they add value for customers while aligning with managerial priorities. Such alignment enhances customer satisfaction, fosters loyalty, and improves profitability, enabling strategic investments for long-term success. Song et al. (2022) emphasize the importance of considering customer perspectives, given that service quality is a key factor in the hospitality industry.

According to our survey, 37% of customers indicated they would only travel when assured that infections were under control. Beyond the previously mentioned factors, these responses reinforce the need for ongoing research into strategies that enhance traveler safety and overall customer experience.

The implementation of infection prevention measures can positively influence guests' willingness to stay at hotels, highlighting the importance of identifying both common interests and potential divergences between guests and managers, as noted by various scholars (Chang & Lam, 2013; Wang et al., 2014; Pérez & Rodríguez, 2014).

Practical Implications

This study identifies differences between the opinions of customers and managers, which can assist hotel administrators in designing effective strategies to address health crises. Overall, customers tend to assign greater importance to the analyzed measures. Notably, when both groups prioritize a particular measure highly, the discrepancy in their perspectives diminishes. A consensus exists regarding the most critical measures, including rigorous cleaning of common areas, mask-wearing, and frequent handwashing.

The findings reveal significant differences in perceptions of seven measures, which managers should carefully evaluate, considering both costs and benefits. The measures have been grouped into three dimensions: facility CLEANLINESS and hygiene standards; social distancing (DISTANCE) maintenance, as mandated by authorities to control COVID-19; and the use of TECHNOLOGY adopted by establishments during the pandemic to prevent infections.

A strong agreement was observed between both groups regarding cleanliness and hygiene measures. None of the measures in this category showed significant differences in perception, and this dimension received the highest overall rating (average score: 4.3). Hung et al. (2018) found that hygiene control in hotels helped mitigate the

impact of infectious diseases, aligning with the objectives of the measures examined in this study.

In contrast, significant differences emerged in four social distancing measures. For example, *k_Keeping rooms vacant for at least one night after guest departure,* ranked among the least valued by managers (27th out of 28 in perceived importance). Rather than following this approach, hotels could provide guests with detailed information on room disinfection procedures to alleviate concerns about infection risks.

Another measure with notable differences was *i_Methacrylate protection screen on front desk, as well as the b_Separate tables and seating in common areas, restaurants, bars.* Although widely implemented following official recommendations, these barriers hinder communication, affect guests' first impressions, and may lead to misunderstandings in staff interactions. Managers exhibited a strong preference for this measure (+0.46), assigning it an average importance score of 4.36, whereas customers ranked it 18th in importance. Despite being mandated during the pandemic, the actual effectiveness of these barriers in infection prevention should be reevaluated, considering their negative impact on the guest experience.

The requirement for *h_Monthly COVID-19 testing for employees* also revealed significant differences between customer and managerial evaluations. Previous research indicates that mask-wearing by employees positively influences customers' perceptions of an establishment's health safety and overall quality (Liang & Wu, 2022). Therefore, regular testing may be reconsidered if employees consistently wear masks.

Among the three dimensions, technological measures received the lowest overall ratings from both groups and exhibited the largest discrepancies. The five least valued measures in the study fell under this category. Of the seven technological measures analyzed, three showed substantial differences between customer and managerial perspectives: *u_Rooms equipped with air purifiers, y_Keyless entry or digital keys for rooms, and t_Heating, ventilation, air conditioning system, and air quality control.*

Managers should evaluate the cost–benefit trade-offs carefully, given the significant divergence between the two groups and the overall low level of perceived importance, except for air quality control, which was rated higher.

Certain technological measures also contribute to cleanliness (e.g., air purifiers, ventilation systems) and social distancing (e.g., automated check-in/check-out, contactless payments). It is advisable for hotel managers to assess the potential impact of these technologies on guests' perception of safety while considering expert recommendations on their effectiveness in preventing infections.

To conclude, assessing the economic cost and impact on service quality is essential to determine the effectiveness of each measure and its influence on customers' perception of safety. These findings provide valuable guidance for industry professionals in making informed security investments and preparing their facilities for future health crises. This approach enables the hospitality sector to mitigate the adverse effects of the COVID-19 pandemic while strengthening its long-term resilience.

6. Limitations and future studies

The study was conducted during the third wave of the pandemic, amid strict mobility restrictions, resulting in a convenience sample, which may introduce biases. Therefore, the results should be interpreted with caution.

Future research should incorporate perspectives from other stakeholders, such as employees, health authorities, and tourism providers, to gain a broader understanding of hotel-related health measures. Additionally, exploring the reasons behind the perceived importance of these

VOL 16, NRO 1
doi: 10.18537/mskn.16.01.09

measures and their role in promoting sustainable tourism would be valuable.

The effects of the COVID-19 crisis on the tourism sector were particularly significant in countries with a high incidence of the pandemic and where tourism constitutes a major source of revenue, such as Spain, which is the focus of this study. The pandemic impacted all economies (WTTC, 2021), leading to declines in annual GDP in 2021 across all regions of the world, including a 58% decrease in the Caribbean, 56% in Northeast Asia, and 41% in Latin America.

Many of the measures analyzed align with the WTTC (2020) recommendations regarding the protocols that hotel establishments should implement to ensure a safe stay. This study focused on customers and managers in Spain; however, future research could compare these findings with the perspectives of managers and customers from other countries, incorporating the geographical location of the establishment as a variable. This would help determine whether cultural, social, and political differences yield distinct results or, conversely, whether the findings can be generalized to other countries.

Future studies could also examine the long-term relevance of these measures after the health crisis and assess whether the perspectives of customers and managers remain aligned or have shifted. Another line of research could explore the regulatory impact on hotel establishments by comparing the measures implemented across different regions of the world.

7. Bibliography

Andreu, L., Palomo, J., & Stojanovic, I. (2020). Recuperar la confianza de los turistas: Medidas a implementar por el COVID-19. *Turismo Post-Covid. El turismo después de la pandemia global. Análisis, perspectivas y vías de recuperación* (1a). Universidad de Salamanca, Ed.

Chang, E., & Lam, D. (2013). Hotel safety and security systems: Bridging the gap between managers and guests. *International Journal of Hospitality Management, 32,* 202-216. https://doi.org/10.1016/j.ijhm.2012.05.010.

Chang, S., Pierson, E., K. P., Redbird, B., Grusky, D., & Jure Leskovec, J. (2021). Mobility network models of COVID-19 explain inequities and inform reopening. *Nature, 589*, 82-87. https://doi.org/10.1038/s41586-020-2923-3.

Chiang, AH., & Trimi, S. (2020) Impacts of service robots on service quality. *Service Business, 14,* 439–459. https://doi.org/10.1007/s11628-020-00423-8.

Clark, R. (2017). Convenience Sample. *The Blackwell Encyclopedia of Sociology* (pp. 1-2). https://doi.org/10.1002/9781405165518.wbeosc131.pub2.

Cró, S., & Martins, A. M. (2017). Structural breaks in international tourism demand: Are they caused by crises or disasters? *Tourism Management, 63,* 3-9. https://doi.org/10.1016/j.tourman.2017.05.009.

Currie, R. S. (2009). Determining stakeholders for feasibility analysis. *Annals of Tourism Research, 36*(1), 41-63. https://doi.org/10.1016/j.annals.2008.10.002.

Davras, Ö., & Durgun, S. (2022). Evaluation of precautionary measures taken for COVID-19 in the hospitality industry during pandemic. *Journal of Quality Assurance in Hospitality & Tourism, 23*(4), 960-982. https://doi.org/10.1080/1528008X.2021.1932013.

Del Chiappa, G., Pung, J. M., & Atzeni, M. (2022). Factors influencing choice of accommodation during Covid-19: A mixed-methods study of Italian consumers. *Journal of Quality Assurance in Hospitality & Tourism, 23*(4), 1037-1063. https://doi.org/10.1080/1528008X.2021.1943599.

Douglas, A., & Lubbe, B. (2006). Identifying value conflicts between stakeholders in corporate travel management by applying the soft value management model: A survey in South Africa. *Tourism Management, 27*(6), 1130-1140. https://doi.org/10.1016/j.tourman.2005.11.007.

Fink, S., & American Management Association. (1986). *Crisis management: planning for the inevitable Amacom*, iUniverse

Floyd, M. F., Gibson, H., Pennington-Gray, L., & Thapa, B. (2004). The Effect of Risk Perceptions on Intentions to Travel in the Aftermath of September 11, 2001. *Journal of Travel & Tourism Marketing, 15*(2-3), 19-38. https://doi.org/10.1300/J073v15n02_02.

Fuchs, G., & Reichel, A. (2011). An exploratory inquiry into destination risk perceptions and risk reduction strategies of first time vs. repeat visitors to a highly volatile destination. T*ourism Management, 32*(2), 266-276. https://doi.org/10.1016/j.tourman.2010.01.012.

Freeman, R. (1994). *Strategic Management: A Stakeholder Approach.* Pitman, Ed.

Garrido-Moreno, A., García-Morales, V.J., & Martín-Rojas, R. (2021). Going beyond the curve: Strategic measures to recover hotel activity in times of COVID-19. *International Journal of Hospitality Management, 96,* 102928. https://doi.org/10.1016/j.ijhm.2021.102928.

Gursoy, D., & Chi, C. G. (2020). Effects of COVID-19 pandemic on hospitality industry: review of the current situations and a research agenda. *Journal of Hospitality Marketing & Management, 29*(5), 527-529. https://doi.org/10.1080/19368623.2020.1788231.

Hasan, M. K., Ismail, A. R., & Islam, M. F. (2017). Tourist risk perceptions and revisit intention: A critical review of literature. *Cogent Business & Management, 4*(1), 1412874. https://doi.org/10.1080/23311975.2017.1412874.

Hidalgo, A., Martín-Barroso, D., Núñez-Serrano, J., Turrión, J., & Velázquez, F. (2022). Does hotel management matter to overcoming the COVID-19 crisis? The Spanish case. *Tourism Management, 88*, 104395. https://doi.org/10.1016/j.tourman.2021.104395.

Hoang, T. G., Truong, N. T., & Nguyen, T. M. (2021). The survival of hotels during the COVID-19 pandemic: a critical case study in Vietnam. *Service Business, 15*(2), 209-229. https://doi.org/10.1007/s11628-021-00441-0.

HOSTELTUR. (2025). *Hoteles hospital y hoteles de guardia, la aportación del sector a la lucha.* https://www.hosteltur.com/135592_hoteles-hospital-y-hoteles-de-guardia-la-aportacion-del-sector-a-la-lucha.html.

Hsiang, S., Allen, D., Annan-Phan, S., Bell, K., Bolliger, I., Chong, T., . . . Wu, T. (2020). The effect of large-scale anti-contagion policies on the COVID-19 pandemic. *Nature, 584,* 262-267. https://doi.org/10.1038/s41586-020-2404-8.

Hung, K. M. (2018). The role of the hotel industry in the response to emerging epidemics: a case study of SARS in 2003 and H1N1 swine flu in 2009 in Hong Kong. *Globalization and Health, 14,* 117. https://doi.org/10.1186/s12992-018-0438-6.

Instituto para la Calidad Turística Española. (2025). Medidas para la reducción del contagio por el coronavirus SARS-CoV-2. *Hoteles Apartamentos turísticos. Directrices y recomendaciones*. https://www.mincotur.gob.es/es-es/COVID-19/turismo/GuiasSectorTurismo/Hoteles.pdf.

Instituto Nacional de Estadística. (2025). *Encuesta de ocupación hotelera. Viajeros y pernoctaciones por categorías.* https://www.ine.es.

Jang, Y., Zhen, T., & Bosselman, R. (2017). Top managers' environmental values, leadership, and stakeholder engagement in promoting environmental sustainability in the restaurant industry. *International Journal of Hospitality Management, 63*, 101-111. https://doi.org/10.1016/j.ijhm.2017.03.005.

Jennings, G. (2001). *Tourism research*. John Wiley and sons Australia, Ltd.

Junta de Andalucía. (2025). *Registro de Establecimientos y Servicios Turísticos.* https://www.juntadeandalucia.es/organismos/turismoculturaydeporte/servicios/app/informe-oferta-turistica.html

Kucharski, A., Klepac, P., Conlan, A., Kissler, S., Tang, M., Fry, H., Gog, J. & Edmunds, J. (2020). Effectiveness of isolation, testing, contact tracing, and physical distancing on reducing transmission of SARS-CoV-2 in different settings: a mathematical modelling study. *The Lancet Infectious Diseases, 20*(10), 1151-1160. https://doi.org/10.1016/S1473-3099(20)30457-6.

Kujala, J. L. (2016). Toward a Relational Stakeholder Theory: Attributes of Value-creating Stakeholder Relationships. *Academy of Management Annual Meeting Proceedings.* https://doi.org/10.5465/ambpp.2016.13609abstract.

Kwok, L., & Huang, Y. (2019). Green attributes of restaurants: Do consumers, owners, and managers think alike? *International Journal of Hospitality Management, 83*, 28-32. https://doi.org/10.1016/j.ijhm.2019.03.011.

Liang, L.; & Wu, G. (2022). Effects of COVID-19 on customer service experience: Can employees wearing facemasks enhance customer-perceived service quality?. *Journal of Hospitality and Tourism Management, 50*, 10-22. https://doi.org/10.1016/j.jhtm.2021.12.004.

Mikušová, M., & Horváthová, P. (2022). Are small businesses better prepared for crises? Czech case. *Journal of Contingencies and Crisis Management,* 31, 61-76. https://doi.org/10.1111/1468-5973.12406.

Pérez, A., & Rodríguez del Bosque, I. (2014). Sustainable development and stakeholder relations management: Exploring sustainability reporting in the hospitality industry from a SD-SRM approach. *International Journal of Hospitality Management, 42*, 174-187. https://doi.org/10.1016/j.ijhm.2014.07.003.

Reichel, A., Fuchs, G., & Uriely, N. (2007). Perceived Risk and the Non-Institutionalized Tourist Role: The Case of Israeli Student Ex-Backpackers. *Journal of Travel Research, 46*(2), 217-226. https://doi.org/10.1177/0047287507299580.

Ritchie, B. W., & Jiang, Y. (2019). A review of research on tourism risk, crisis and disaster management: Launching the annals of tourism research curated collection on tourism risk, crisis and disaster management. *Annals of Tourism Research, 79,* 102812. https://doi.org/10.1016/j.annals.2019.102812.

Rittichainuwat, B. N. (2008). Responding to disaster: Thai and Scandinavian tourists' motivation to visit Phuket, Thailand. *Journal of Travel Research, 46*(4), 422-432. https://doi.org/10.1177/0047287507308323.

Ruxton, G. D. (2006). The unequal variance t-test is an underused alternative to Student's t-test and the Mann–Whitney U test. *Behavioral Ecology, 17*(4), 688–690.

Sheng-Hshiung, T., Gwo-Hshiung, T., & Kuo-Ching, W. (1997). Evaluating tourist risks from fuzzy perspectives. *Annals of Tourism Research, 24*(4), 796-812. https://doi.org/https://doi.org/10.1016/S0160-7383(97)00059-5.

Škare, M., Soriano, D. R., & Porada-Rochoń, M. (2021). Impact of COVID-19 on the travel and tourism industry. *Technological Forecasting and Social Change, 163,* 120469. https://doi.org/https://doi.org/10.1016/j.techfore.2020.120469

Song, Y; Liu, K; Guo, L; Yang, Z.; & Jin, M. (2022) Does hotel customer satisfaction change during the COVID-19? A perspective from online reviews. *Journal of Hospitality and Tourism Management, 51*, 132-138. https://doi.org/10.1016/j.jhtm.2022.02.027

Su, CH (2022). Post-pandemic studies in tourism and hospitality. *Service Business, 16*, 413–416. https://doi.org/10.1007/s11628-022-00496-7

Stewart, W., & Cole, D. (2017). On the Prescriptive Utility of Visitor Survey Research: A Rejoinder to Manning. *Journal of Leisure Research, 35*(1), 119-121. https://doi.org/10.18666/jlr-2003-v35-i1-613

World Tourism Organization of the United Nations. (2024). *International Tourism and Covid. Tourism Dashboard.* https://www.unwto.org/international-tourism-and-covid-19.

Valencia, J., & Crouch, G. I. (2008). Travel Behavior in Troubled Times: The Role of Consumer Self-Confidence. *Journal of Travel & Tourism Marketing, 25*(1), 25-42. https://doi.org/10.1080/10548400802164871

Wang, L., Law, R., Hung, K., & Denizci Guillet, B. (2014). Trust in the tourism and hospitality industries: a stakeholder perspective. *Journal of Hospitality and Tourism, 12*(2), 16-29. ISSN: 2322-0198

Wen, H., & Liu-Lastres, B. (2022). Consumers' dining behaviors during the COVID-19 pandemic: An application of the Protection Motivation Theory and the safety signal framework. *Journal of Hospitality and Tourism Management, 51*, 187-195. https://doi.org/10.1016/j.jhtm.2022.03.009

World Travel & Tourism Council (2025). *Travel & Tourism: Economic impact 2021*. https://wttc.org/Portals/0/Documents/EIR/EIR2021%20Global%20Infographic.pdf?ver=2021-04-06-170951-897%5BAccessed

World Travel & Tourism Council (2025). *Leading global protocols for the new normal. Hospitality.* https://wttc.org/Portals/0/Documents/Reports/2020/Global%20Protocols%20for%20the%20New%20Normal%20-%20Hospitality.pdf?ver=2021-02-25-183105-457

Yang, C. L., Khoo-Lattimore, C., & Arcodia, C. (2017). A systematic literature review of risk and gender research in tourism. *Tourism Management, 58,* 89-100. https://doi.org/10.1016/j.tourman.2016.10.011

Yang, L., & Wall, G. (2009). Ethnic tourism: A framework and an application. *Tourism Management, 30*(4), 559-570. https://doi.org/10.1016/j.tourman.2008.09.008

Yen, H.R., Thi, H.P., & Li, E.L. (2021). Understanding customer-centric socialization in tourism services. *Service Business, 15*, 695-723. https://doi.org/10.1007/s11628-021-00463-8

Yu, J., Seo, J., & Hyun, S. (2021). Perceived hygiene attributes in the hotel industry: customer retention amid the COVID-19 crisis. International Journal of Hospitality Management, 93, 102768. doi: 10.1016/j.ijhm.2020.102768

Zhang H, & Lu J. (2022). Forecasting hotel room demand amid COVID-19. *Tourism Economics, 28*(1), 200-221. doi:10.1177/13548166211035569

Zheng, D., Luo, Q., & Ritchie, B. W. (2021). Afraid to travel after COVID-19? Self-protection, coping and resilience against pandemic 'travel fear'. *Tourism Management, 83,* 104261. https://doi.org/10.1016/j.tourman.2020.104261