Does hotel management matter to overcoming the COVID-19 crisis? The Spanish case

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ABSTRACT

This paper analyses the influence that the initial actions and strategies pursued by hotel managers have on the recovery of occupancy after a crisis such as the COVID-19 pandemic. To do this, a specific survey is carried out on managers of Spanish hotels. The main findings show that labour actions, especially plans for temporary employment regulations, innovation and differentiation strategies, reorientation to closer markets and obtaining information from official sources as a guarantee of their certainty, are the measures that have a greater impact on the possibilities of recovering hotel activity. In addition, government measures that contribute to the improvement of the financial situation of firms can also play a relevant role in hotel recovery.

1. Introduction

Catastrophic events affect the tourism sector by modifying the attractiveness of destinations and discouraging consumers' propensity to travel (Cahyanto et al., 2016). Ritchie (2008) points out that tourism is one of the activities most exposed to global risks and is affected by events of all kinds (Cró & Martins, 2017). Among disasters, epidemic outbreaks have a special importance, since the effects are combined with the sometimes forced closure of tourist activities and restrictions on the mobility of citizens. In this sense, the pandemic caused by COVID-19 (disease caused by the SARS-CoV-2 virus) presents four fundamental differences compared with other catastrophic events that have occurred in recent years that make it more severe: intensity, geographical scope, duration, and degree of uncertainty.

First, the number of people affected by COVID-19 is relatively large. Over the last century, only HIV and the 1918 Spanish flu epidemic have exceeded it in deaths. In addition, because of the form of contagion, numerous measures have been initiated, including mandatory quarantines, which have paralysed an important part of economic and, in particular, tourist activity. The UNWTO (2021) estimates a drop of over

73% in the number of international tourists worldwide throughout 2020. This collapse in tourist flows will have a greater impact on destinations where international tourism is relatively important.

The geographical spread of COVID-19 is not comparable with catastrophes of geological or climatic origin, which are usually limited to smaller geographical areas. For instance, the Indian Ocean tsunami in 2004 affected 18 countries (Sharpley, 2005). Events of a political or terroristic nature, which also have a significant impact on the tourism sector, tend to be limited to smaller geographical areas. Only the Arab Spring, which occurred from the end of 2010–2012, affected nearly 20 countries (Mansfeld & Winckler, 2015).

Although many epidemics become pandemic, most of them tend to be known diseases for which vaccines or highly effective treatments are available. In the last twenty years, phenomena that could be comparable to COVID-19 would be the Zika virus in 2015, the Western African Ebola virus in 2013, Middle East respiratory syndrome coronavirus (MERS-Cov) in 2012, Swine flu (Influenza A virus H1N1) in 2009, and the Severe Acute Respiratory Syndrome (SARS-Cov1) in 2003. Although they were widely covered by the media and spread across several countries, they were controlled effectively and did not reach the geographic range

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of COVID-19.

Third, and although its duration is currently undetermined, it seems that COVID-19 could be globally controlled throughout 2022. This duration is longer than catastrophic events of geological or climatic origin and shorter than those of a political or terroristic nature. The severity of the duration originates from the combination of remaining differential factors.

Finally, its uncertainty derives from both the lack of knowledge about the disease and its manifestation in successive, frequent and intense waves of short duration, which hinders public strategies for its mitigation and prevents medium and long-term business strategies and the reactivation and stabilisation of tourist demand.

Fink (1986) points out that the way in which these crises or disasters should be managed differs between those that are of short duration and those that are long-lasting or even chronic. Regarding the former, it is perhaps where there is actually more evidence in relation to the strategies that managers and even governments should follow for tourist recovery. In fact, Faulkner (2001) suggests up to six phases in all crises where hotel managers must take different types of actions (in times of emergency) and follow planned strategies. In his approach, he implicitly assumes that hotels will remain operational unless the hotel infrastructure is seriously damaged, and all these measures are aimed at its recovery.[1]

On the other hand, when the disaster becomes chronic and strengthens, the survival of hotels may be complex and may initially involve intensifying the strategies aimed simply at avoiding permanent closure. In addition, tourist activity that requires mobility can interfere in the fight against epidemics. In the case of COVID-19, the duration of the epidemic is uncertain, its intensity varies from week to week, there could be restrictions on mobility and establishments may face enforced temporary closure by the authorities to control virus transmissions derived from certain leisure and restaurant activities. This requires a set of strategies that may differ from those used for previous crises.

In addition to all the factors mentioned, the drastic reduction in demand deteriorates the situation further. In this sense, the COVID-19 pandemic has generated an intense perception of risk amongst tourists that has substantially reduced both the frequency of traveling and the distance travelled. Moreover, in the specific case of the hotel sector, tourists may be switching housing alternatives, such as renting apartments, that could be considered safer because they apparently favour social distancing (DuBois & Sanford, 2020). In addition, as Breier et al. (2021) point out, hotel management models that enable social distancing are often introduced. Hence, the business strategies to be followed by hotel managers have to be considered jointly with the demand recovery prospects.

Israeli & Rachel (2003) and Okumus & Karamustafa (2005), among others, try to specify the practices that hotel managers should adopt. Despite the generality of their recommendations, the strategies should be adapted to each of the events analysed, since as Miller & Ritchie (2003) point out, each disaster has its own peculiarities. Again, these valuable guidelines assume that hotels are open, and only in some cases the practices are specific to the different phases of the event. Furthermore, the actions and strategies followed by hotel managers are not linked with the results obtained, so there is no robust evidence on the effectiveness of each of the types of measures proposed.

Therefore, managers' responses to the COVID-19 disaster should be hybrid since the event is between limited in time and chronic. Combined actions and strategies should be taken for the survival of hotels, preparing, during the most critical phases, for the recovery of tourist activity at the time of pandemic control —such as the summer season of

2020 in Europe, when the infection incidence dropped significantly— or once hotel demand is reactivated and stabilised.

Spain is in this respect a suitable destination for studying this impact and for evaluating the response capacity of its hoteliers. It is a country where 53% of tourism is focused on the international market (WTTC, 2020). Among countries it ranks second in income from non-resident tourists and second in entry of international tourists (UNWTO, 2020). In addition, it has been one of the countries most affected in relative terms by COVID-19, with more than two million cases and 50,000 officially registered deaths at the beginning of 2021 (Spanish Ministry of Health, 2021).

Thus, the question posed in this paper is whether the strategies adopted by Spanish hotel managers can contribute to a faster recovery of hotel activity. This research has two main contributions. The first is that, based on the literature on strategies to be followed by hotel managers during crises and disasters, the possible measures to be taken are adapted to the specificities of COVID-19, differentiating between actions in the most acute phase of the first wave and planned strategies once, as it seemed then, the epidemic was under certain control and allowed some hotel activity. Furthermore, a distinction is made between the measures carried out by managers and those that they consider should be carried out by the authorities.

The second relevant contribution consists of determining whether the intensity and the type of strategies carried out by hotel managers have an impact on the results (or at least on their expectations) in terms of hotel occupancy, thus evaluating the effectiveness of the strategies. Much of the existing literature validates the actions and strategies by checking the consistency between preferences and the use made of them. However, this is, to our knowledge, the first time that this question has been raised and analysed in terms of causality.

To achieve this objective, the following section makes a brief review of the literature on the impact that catastrophic phenomena have on tourist activity and the possibilities of managers to manage crises and disasters. The third section reviews the evolution of COVID-19 and the mitigation strategy followed in Spain in the context of the Spanish hotel sector. The fourth section describes the survey carried out with the managers of Spanish hotels. The managers were asked about their expectations for the recovery of the occupancy levels of their establishments, the actions carried out in the initial stage of the pandemic and the strategies they intended to follow. The fifth section presents the results of the estimated econometric models that explain the recovery expectations of hotel managers based on the characteristics of their establishments and the actions and strategies that they declared in the survey. The last section presents the conclusions, implications and limitations of the research.

2. Crisis management and recovery in health crises

The relationship between tourism and diverse negative shocks has focused on the behaviour of tourists' propensity to travel as a result of an increase in their risk perception. Noteworthy among the phenomena studied are political uprisings (Gartner & Shen, 1992; Ioannides & Apostolopoulos, 1999; Mansfeld & Winckler, 2015; Pizan & Mansfeld, 1996), terrorism (Arana & León, 2008; Blake & Sinclair, 2003) and natural disasters (Carlsen & Hughes, 2008; Chandler, 2004; Huang & Min, 2002; Tsai & Chen, 2011).

The impact of epidemics on the tourism sector has also been widely analysed. Among the first studies are those of Miller & Ritchie (2003) and Baxter & Bowen (2004), who focus on the effects of foot-and-mouth disease on British tourism. A great deal of research has been done in relation to the impact of SARS, perhaps the precedent pandemic most similar to COVID-19: Dombey (2003) for China, Pine & McKercher (2004) and Au et al. (2005) for Hong Kong, Cooper (2006) for Japan, Chen, Jang & Kim (2007) for Taiwan and Kuo et al. (2008), who also consider the case of Avian Flu for a set of Asian countries. More recently, the papers of Shi & Li (2017) and Joo et al. (2019) examine the case of

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[1] In the remainder of this paper, strategies imply a coordinated and planned set of measures to attain a certain goal. Actions will refer to business practices carried out in the initial phases of the epidemic, and they do not respond to any planned strategy.

MERS in South Korea.

This literature shares two results with regard to the effects that epidemics have on the tourism sector, with direct implications for the case of COVID-19. The first one is that although the impact is estimated to be severe, once the pandemic ends in a short period of time, no more than two years tourist flows will return to their path of natural evolution. This implies a high level of resilience for all tourist destinations (Fleischer & Pizam, 2002). The second result, and this is the point on which our research focuses, is the relevance of the activities carried out by hotel managers, in both managing the epidemic and contributing to the subsistence of hotels and the recovery of their own establishments and destinations. In this sense, there is a gap in the literature that consists of linking, from a microeconomic perspective, the actions and strategies carried out by hoteliers with the specific and differentiated recovery of the hotel activity.

In fact, there is abundant literature that analyses the possible strategies that hotel managers should adopt to manage the crisis. Table 1 summarises the main publications within this stream of research. Although some specific strategies for certain events may be left out, we can highlight some general features. First, the actions and strategies carried out by hotel managers in the face of a variety of events have been widely analysed, from those generated by the action of nature such as epidemics and natural disasters to those caused by terrorism, political instability, wars or economic crises. There is also plenty of heterogeneity in terms of the duration of the events. A majority of the studies focus on the measures to be taken during or after the event, especially in natural disasters. In general, hotels are open, except when the event itself destroys the infrastructure. Likewise, most of the research focuses on hotel managers' management. Perhaps sources of information, direct or indirect, constitute one of the most heterogeneous issues along with the number of managers consulted. A frequent feature is the design of questionnaires about possible actions and business strategies. This practice is related to the need to adapt the different strategies to each event studied and to the political and economic context, especially with regard to public intervention in support of the hotel sector.

Based on the classifications proposed by some of these authors, we can distinguish between at least seven large groups of strategies or practices: labour force, marketing, innovation, financial, government, planning & information and other.

Labour force strategies tend to reduce companies' labour costs and depend on labour legislation and the corporate culture of linking and identifying workers with their companies. These measures can be classified into four major groups: (i) reduction of the labour force (layoffs, unpaid vacations, reduction in the number of hours worked by each worker, etc.), (ii) wage reductions, (iii) use of excess work time for training, either general or related to the event analysed and, finally, (iv) the way in which outsourcing is used, either by substituting work performed by laid-off workers or by using excess labour as a consequence of the fall in demand in tasks previously carried out by external companies.

A second group of strategies is related to marketing and promotional activities. The reorientation of demand to certain types of customers and the nearest markets stands out amongst alternatives, given that the international market is more sensitive to these catastrophic events. In the same way, reductions in prices are also important, in a generalised manner or through special promotions. Finally, advertising campaigns that focus on self-promotion of a hotel and coordination with other firms and institutions to promote certain destinations are also emphasised.

Innovation strategies are also being proposed in order to make hotels more attractive, face crises, especially those provoked by epidemics, and improve efficiency. Offering new products or services, quality improvements of existing ones, personalisation of experiences and the adoption of new technologies, for instance, to avoid contact between workers and guests, are some examples of the proposed measures related to innovation.

Another key point in the strategies adopted by hotel managers is the reduction of non-labour current costs. In this sense, the practices described range from generic cost cutting in all types of current costs to the reduction of services, including closures of facilities, postponement of renovation investments or any plans involving non-essential expenses, loan applications and the renegotiation of payments with suppliers. In some cases, temporary closure of the hotel has also been adopted.

Coordination and cooperation between the business sector and authorities and institutions with competences in the field of tourism are also considered of vital importance. In this sense, the practices of managers can range from demanding government support through specific programs of public subsidies and the postponement or reduction of taxes to calling for certain protest actions.

Finally, monitoring and evaluating the situation on a regular basis, internal and external communication and information policies, cooperation with the industry and the implementation of integrated contingency plans are also important.

3. The covid-19 pandemic in Spain and the mitigation strategy

The COVID-19 epidemic experienced two "waves" in Spain in 2020: a first between March and the end of June and a second thereafter. Both showed differentiated patterns in the health aspect and with respect to mitigation strategies to reduce the number of people infected. These waves have had different impacts on the hotel business.

During the first wave and given the increase in the number of cases of infection, the government of Spain decided to declare a "State of Alarm" on March 14, 2020, a situation that was extended with different intensities until June 21. People were confined to their homes, and all nonessential commercial activities were shut down. Hotels were able to open in the first phase of the de-escalation (which started between May 11 and 25, depending on the region), but notably restricted the services they could offer, using extreme hygiene and disinfection measures and limiting their capacity in some cases. The territories that were the fastest to restore their activities were the areas with the highest tourist inflows on the coast and islands. The country's two main cities, Madrid and Barcelona, followed a slower process because of the higher incidence of infection. Although the de-escalation process finished in June, there was still a high level of uncertainty derived from the outbreaks.

Internal mobility was fully recovered and borders with EU and associated Schengen countries were reopened on June 21. On June 30, these European countries could decide to rescind restrictions on third parties. The problem for the 2020 Spanish summer season was with the United Kingdom, which is the origin of almost 25% of Spain's international tourists. Free mobility was allowed only during the last three weeks of July. As can be seen in Fig. 1, between March and June, hotel occupancy fell 91% compared with the previous year (88% for residents and 93% for non-residents).

The second wave was less intense but much longer. At the end of 2020, there was still a high degree of incidence, and a third wave is said to have started as a result of family gatherings during the Christmas holidays. During the second wave, and except for some specific regions, hotel activities were able to remain open, although many of the establishments closed because of a shortage of customers. Furthermore, international mobility has been remarkably limited. Among European countries, the free movement of people is allowed, although many of them, including Spain, require tests that certify being free of COVID-19 before entering their territories and, in some cases, quarantines of 10–15 days, thus hindering tourist flows. Within Spain, as of October, perimeter confinements began to be imposed for some municipalities or regions of the country, making internal mobility difficult. At the end of October, a second "State of Alarm" was declared until May 2021, although confinement to one's home was not imposed. Gradually, the perimeter closures spread throughout the country and have been especially intense since the second half of November. In this context, foreign and domestic tourism in Spain has been totally paralysed. The results in terms of hotel occupancy for the summer season represented an

Table 1

Hospitality crisis management studies.

Authors	Country	Event [a]	Duration [b]	Effect [c]	Temporal Analysis [d]	Hotels open	Agent [e]	Sample [f]	Labor force				Marketing			
									Reduce labour force	Reduce wages	Education, Training	Out sourcing	Demand reorientation	Destination promotion	Special Promotions	Price drops
Mansfeld (1999)	ISR	W/T	L&W	D	D	Yes	M&G	Indirect					X	X	X	
Taylor & Enz (2002)	USA	Terrorism 9/11	M	D&I	A	Yes	M	SU, 1033	X				X		X	X
Stafford, Yu & Armoo (2002)	USA	Terrorism 9/11	M	D	D&A	Yes	M&G	Indirect	X	X				X	X	X
Chien & Law (2003)	HKG	SARS	S&M	D	D	Yes	M	Indirect	X	X						
Israeli & Reichel (2003)	ISR	W/T	L&W	D	D	Yes	M	SU, 116	X	X		X		X	X	X
Leung & Lam (2004)	HKG	SARS	S&M	D	D	Yes	M	IN, 1	X	X					X	
Henderson & Ng (2004)	SGP	SARS	S&M	D	D	Yes	M	SU, 9	X	X	X		X	X	X	
Kim, Chun & Lee (2005)	KOR	SARS	S&M	D	D	Yes	M	IN	X	X			X		X	X
Okumus, Altinay & Arasli (2005)	TUR	Economic	M	D	D	Yes	M	SU, 78						X		X
Okumus & Karamustafa (2005)	TUR	Economic	M	D	D	Yes	M	SU, 108	X		X		X			
Lo, Cheung & Law (2006)	HKG	SARS	S&M	D	B,D&A	Yes	M	IN, 6	X	X	X	X	X	X	X	X
Henderson (2007)	THA	IO Tsunami	M&L	D	A	Re/Yes	M	Indirect	X	X				X	X	X
Johson Tew, Lu, Tolomiczenko & Gellatly (2008)	CAN	SARS	M	D	D&A	Yes	M	SU, 16	X	X			X		X	
Israeli, Mohsin & Kumar (2011)	IND	T	L	D&I	D	Yes	M	SU, 145	X	X		X	X		X	X
Alonso-Almeida & Bremser (2013)	ESP	Great Reccesion	L	D&I	D	Yes	M	SU, 134	X	X	X	X				X
AlBattat & MatSom (2014)	MYS	Various	M&L	D&I	D&A	Yes	M&G	IN, 33					X	X	X	X
Bremser, Alonso-Almeida & Llach (2018)	ESP	Great Reccesion	L	D&I	D	Yes	M	SU-IN, 339	X	X	X	X	X		X	X
Pappas (2018)	GRC	Various	L	D	D	Yes	M	SU, 243	X	X	X	X		X	X	X
Rodríguez-Antón & Alonso-Almeida (2020)	ESP	COVID-19	M	D	D	No/Yes	M&G	Indirect	X		X		X		X	
Kaushal & Srivastava (2021)	IND	COVID-19	M	D	D	Yes	M	IN, 15	X	X	X		X			X

aW is War; T is Terrorism.

bL is Long-Term; M is Medium-Term; S is Short-Term & W is Waves.

cD is Direct & I is Indirect.

dD is during the event & A is after the event.

eM is managers & G is government.

fSU is survey & IN is Interviews.

aggregate drop of 72% (42% residents and 87% non-residents). For the autumn, the decline was 83% (67% residents and 92% non-residents).

Spain is one of the most affected European countries. Fig. 2a and b shows how Spain, Italy, France and the United States, four major destinations for international tourism, have been hit particularly hard by the epidemic in terms of the numbers of both infections and deaths attributed to COVID-19. Spain is one of the most economically dependent countries on tourism (Fig. 2c) and on the international tourism market in particular (Fig. 2d).

The collapse of the tourism sector for many economies has raised the need for public support plans. In the case of Spain, horizontal measures that affect all firms have been preferred, although some measures specifically designed for the tourism sector have been taken. Among the horizontal measures are loans for companies endorsed by the state and the Temporary Employment Regulations Plans (TERP), which allow companies to eliminate the cost of their workers while the epidemic lasts, as it is assumed by the public sector. Until December 2020, these measures accounted for approximately 30 billion euros just in the tourism sector, although the renewal of these plans to the end of the pandemic could possibly increase this amount significantly. These measures have brought relief to the financial situation of firms, thus allowing their survival during the most critical phase of the epidemic.

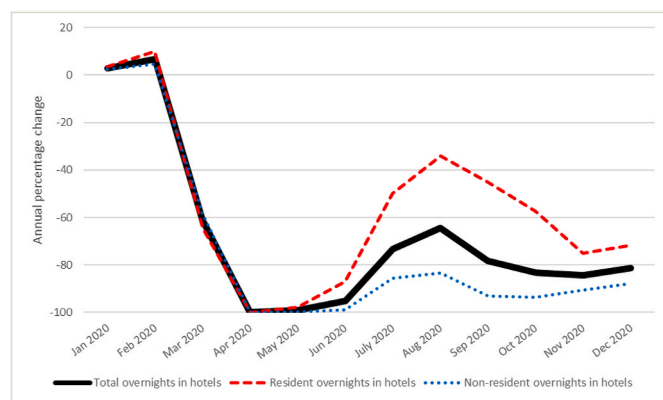| Marketing	Innovation			Financial					Govt.			Other					
Prom. For Foreigners	New products	New markets	Technology adoption	Current cost cut	Reduction of services	Reduction in investments	Credit request/Special credit programme	Postpone payments	Claim government support	Public current subsidies	Deferral of tax payments	Monitoring and evaluation	Inform. & Commun.	Industry cooperation	Differing actions	Temporary closures	Special contingency plan
												X	X	X			
				X		X			X		X				X		
				X	X	X			X		X		X	X	X		X
				X	X	X			X			X			X	X	X
X	X	X			X	X	X	X	X	X	X			X			
	X	X		X	X	X							X				X
	X	X	X	X	X	X	X		X		X		X	X	X		
				X		X			X				X	X			X
X	X		X	X		X	X	X							X		X
X	X	X	X	X		X	X	X	X						X		X
	X	X		X	X	X						X	X	X			X
X				X									X	X	X	X	X
				X	X								X	X			X
X	X	X			X	X	X	X	X	X	X						
	X	X	X	X	X	X	X	X							X	X	X
	X										X	X	X	X			X
	X	X	X	X	X	X	X	X							X		X
X	X	X	X	X	X	X	X	X					X	X			X
X			X				X			X	X		X	X			X
			X	X	X	X		X	X		X		X		X		X

Fig. 1. Evolution of overnights in hotels. Spain 2020.

In June 2020, the government proposed a specific plan to boost Spanish tourism with 4.3 billion euros. The plan is articulated in five different dimensions: (i) confidence recovery of the destination, (ii) reactivation of the sector through the implementation of measures, (iii) improving competitiveness of tourist destinations, (iv) improvement of the knowledge and intelligence tourism model and (v) intensive marketing and promotional campaigns. At the end of 2020, a new state support plan for the modernisation and improvement of tourist competitiveness was launched with a budget of 3.4 billion euros. Additional measures such as postponement of rent payments, state tax reductions and non-refundable subsidies to regional authorities for investments aimed at improving tourist infrastructures have also been applied. In March 2021, a total aid package worth 11 billion euros was approved for the sectors most affected by the pandemic, especially those oriented to the tourism sector. This plan includes up to 7 billion euros of non-refunded subsidies and 4 billion for debt restructuring and recapitalisation of firms. Some of the regions with the highest tourist activity have promoted regional hotel renovation plans, investments in tourism
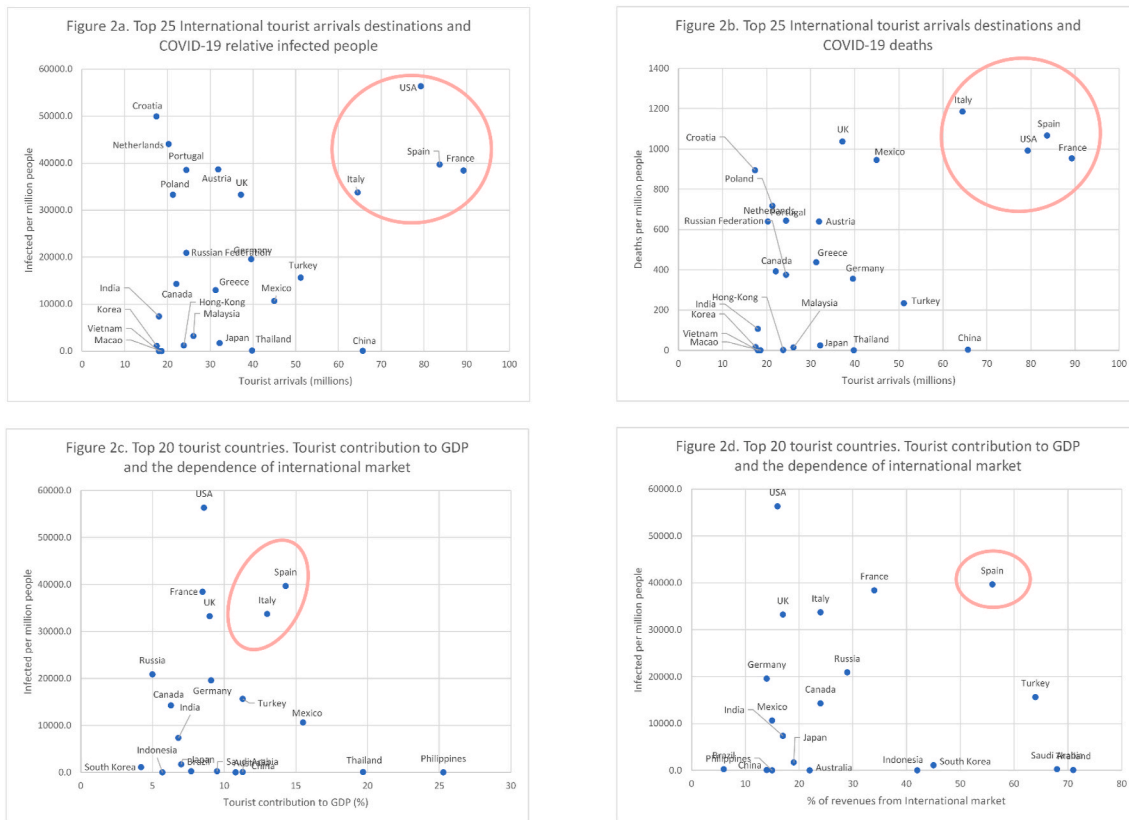
(*) Tourist activity in 2019. Infection numbers are as of January 5, 2021.
Sources: WHO, WTTC, UNWTO and local sources for Hong-Kong and Macao

Fig. 2. COVID-19 and tourist activity (*). (*) Tourist activity in 2019. Infection numbers are as of January 5, 2021.
Sources: WHO, WTTC, UNWTO and local sources for Hong-Kong and Macao

infrastructures, promotional campaigns for tourism and, in some cases, non-reimbursable subsidies specifically targeted at tourism firms.

Aimed at increasing sanitary measures and promoting consumer confidence, sanitary protocols have been created for the hotel sector. The Institute for Spanish Tourist Quality has established practices of guarantees and sanitary measures that hotels must fulfil. In fact, most hotel chains have undertaken specific initiatives and programmes that adopt and even increase these sanitary measures for both workers and customers.[2] Among these measures are cleaning and social distancing conventions that guarantee safe and COVID-free environments, the reduction of contacts between employees and customers, and strategies to improve efficiency and modernisation.

4. Methodology

4.1. Survey design and sample characteristics

Although the COVID-19 pandemic has similarities with catastrophic events and with previous epidemics, it also shows important differences. Thus, it seems appropriate to design a compendium of practices for managers and integrate them into a specific questionnaire adapted to the moment in which the field work was carried out, i.e., at the end of the first wave in Spain, when there was still some optimism about the recovery of hotel activity over the coming summer season. Furthermore, the vast majority of hotel establishments were closed at that moment.

The questionnaire is based on the previous research reviewed in Section 2, redesigning and adapting the measures undertaken by firms. Likewise, we differentiate between the actions carried out during the first State of Alarm, when establishments were totally closed, and the strategies to be implemented once the hotels were allowed to open.

In order to evaluate the effectiveness of these actions and strategies on hotel performance, hotel managers are asked about their occupancy expectations. Although expectations can be greatly influenced by the optimistic or pessimistic nature of each manager, they are the only available behavioural indicator. The questions do not refer to invoicing because it is easier for hoteliers to predict occupancy than billing. However, since working with expectations can induce many distortions, the questions are asked several times and from different perspectives with the aim of evaluating the consistency of the answers. In any case, the managers had some evidence about the future evolution based on reservations made for the closest seasons. In fact, at least in aggregate terms and for the summer season of 2020 —the closest season to the moment in which the field work was carried out— the aggregate occupancy rate predicted by the managers coincided with the one actually fulfilled. Furthermore, in order to control for uncertainty, we included a group of questions on the expectations of occupancy levels once there is an effective remedy against the disease (vaccine or treatment).

The survey is organised in four main sections: (i) general identification data, (ii) occupancy forecasts, (iii) the actions carried out during the State of Alarm and (iv) the strategies to be followed by firms and the public policies considered appropriate by managers. To facilitate the coding of the answers, questions were asked with closed options or ratings on a scale of 1–5 associated with certain statements. The survey questionnaire is available in Appendix C.

The work of collecting information was carried out by sending an

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[2] For instance, the programs "Feel Safe at NH", "We Care About You" of Barceló Hotels, "Stay Safe with Meliá", and "How We Care" of Iberostars Hotels & Resorts.

Table 2
Description of the survey sample.

Type of establishment							
Hotel							395
Hostelries (Hostel)							133

	Total	Hotel	Hostel		Total	Hotel	Hostel
Location				**Category**			
North coast	77	57	20	5 stars	34	34	–
Mediterranean coast	153	117	36	4 stars	119	119	–
South coast	104	81	23	3 stars	155	135	20
Islands	55	47	8	2 stars	142	75	67
Madrid	104	71	33	1 star	78	32	46
Rest of Inland Spain	35	22	13				
Hotel chain membership				**Size (number of rooms)**			
Independent hotel	414	284	130	1–9	76	34	42
Spanish Hotel Chain	70	68	2	10–49	268	185	83
Intl. Hotel Chain	22	21	1	50–149	114	106	8
Assoc. Spanish Chain	7	7		150–299	41	41	
Assoc. Intl. Chain	15	15		300 or more	29	29	
Number of geographical markets				**Tourist market**			
1	3	3		Meeting & Conference	148	132	16
2	17	8	9				
3	36	22	14	Business	159	136	23
4	472	262	110	Cultural & Historical	275	210	65
Most important geographical market				Urban	212	165	47
Regional	60	43	17	Health & Wellness	95	80	15
National	168	125	43				
European	149	119	30	Beach	173	136	37
Non-European	22	21	1	Rural, Environmental & Adventure	215	157	58

Table 3
Coverage of the sample.

	Sample		2019 Population		Coverage (%)	
	Number	Rooms	Number	Rooms	Number	Rooms
	(1)	(2)	(3)	(4)	(1)/(3)	(2)/(4)
Hotels	395	37,316	9674	7,82,399	4.0	4.7
5 stars	34	6603	345	52,302	9.8	13.6
4 stars	119	17,891	2717	3,87,638	4.3	4.6
3 stars	135	9447	3002	2,40,792	4.4	3.8
2 stars	75	2489	2199	70,586	3.4	3.5
1 star	32	886	1411	31,081	2.2	2.9
Hostelries	133	2413	7469	1,03,565	1.7	2.3
3 & 2 stars	87	1563	3354	52,292	2.5	2.9
1 star	46	850	4115	51,273	1.1	1.6
Hotels & Host.	528	39,725	17,143	8,85,964	3	4.4
North coast	77	3816	3460	81,376	2.2	4.6
Medit. Coast	153	14,031	3802	2,24,547	4	6.2
South coast	104	7756	2948	1,48,406	3.5	5.2
Islands	55	7541	1884	2,81,218	2.9	2.6
Madrid	104	2640	3895	57,517	2.6	4.5
Rest of Spain	35	3945	1154	92,900	3	4.2

email to the official address of all Spanish hotels and hostels according to the list offered by the Central Communication Database. We also contacted 1250 managers through LinkedIn, chosen through a stratified random sample of the hotel population from the National Institute of Statistics (INE, 2020), considering the dimensions of the region, the type and category of hotels. The field work was carried out between May 12 and 26, 2020. This period coincides with the first de-escalation phases, when the government insinuated that internal and external mobility within Europe would be recovered on July 1, about ten days before it finally happened. Initially, 540 responses were obtained from hotels and

hostels. However, 12 of them were removed from the sample as they did not contain enough information.[3]

Table 2 presents a summary of the main characteristics of the sample. Table 3 provides coverage indicators that compare the sample with both the hotel population and the number of rooms for 2019, the latest available year. In Appendix A, there is a set of tables (A.1 to A.3) with the descriptive statistics of all the variables of the survey used in this article. Specifically, 395 hotels and 133 hostels responded to the survey, with coverage of 4% of establishments (4.7% of rooms) in the former and 1.7% (2.3%) in the latter. The geographical distribution and the characteristics of the population are quite homogeneous. However, since a small over-representation of certain categories of hotels and some of the geographical areas[4] considered is observed, we have proceeded to calculate expansion factors of the sample to the population (Kish, 1965) based on both the number of establishments and rooms by types, categories and regions. However, as shown later on, the use of these expansion factors does not imply relevant changes in the results obtained, so we decided not to use them in our final econometric estimations.

4.2. Measurement of variables from survey results

The dependent variable of our study corresponds to the expectations that managers have regarding occupancy recovery in their respective establishments. However, based on the survey carried out, these expectations can be measured in different ways. For this reason, we construct different indicators that allow assessment of the robustness of

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[3] The final sample assumes that with a level of heterogeneity of 50%, an error of 4.2% is achieved, with a 95% confidence interval.

[4] Based on tourist similarities, we define six geographical areas: North (includes the regions of Galicia, Asturias, Cantabria and País Vasco), Mediterranean (Cataluña and Valencia), South (Murcia and Andalucía), Islands (Baleares and Canarias), and Madrid and Interior (Castilla y León, Castilla-La Mancha, Extremadura, La Rioja, Navarra and Aragón).
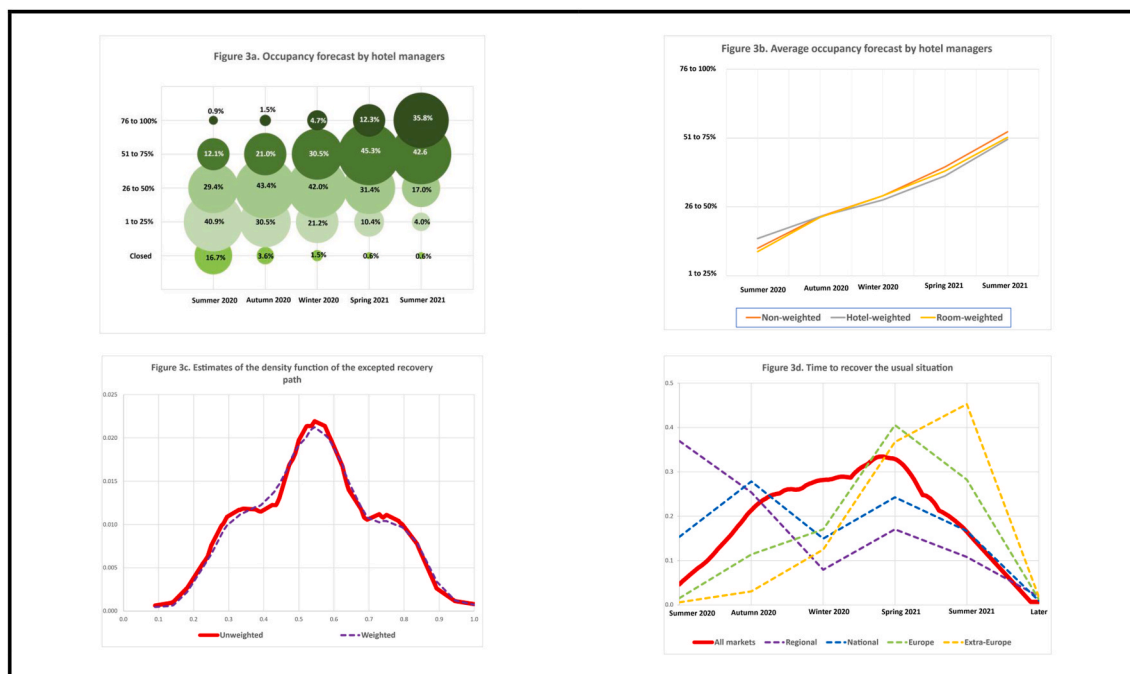
Fig. 3. Occupancy forecast by Spanish hotel managers.

the results obtained and introduce some nuances about them by referring to different time periods or different conditions. The first group of variables is obtained from the question asking about the expected level of occupancy relative to the usual occupancy level during the five following seasons (summer 2020, autumn 2020, winter 2020, spring 2021 and summer 2021). Possible responses are limited to five values: closed, less than 25%, between 26% and 50%, between 51% and 75%, and more than 75%. The descriptive results of this variable are presented in Fig. 3a. This Fig. 3a considers only establishments closed by COVID-19, excluding those that are closed seasonally.

The responses show expectations of recovery that will reach pre-COVID-19 levels after summer 2021. In summer 2020, 16.7% expected to be shut down**.** This value drops to 3.6% for the autumn of 2020 and was only 0.6% for the summer of 2021. At the opposite extreme, only 0.9% of hotel establishments expected occupancy levels above 75% in the summer of 2020, a percentage that rose to 35.8% a year later. For summer of 2021, at least 78% of hoteliers expect that they will have a 50% occupancy of the usual. In addition, the average of this indicator for all establishments and for each of the seasons has been calculated, both unweighted and weighted, using the expansion coefficients defined by hotels and rooms. The results, which are found in Fig. 3b, show a gradual and continuous recovery, attaining an 80% occupancy rate by the summer of 2021.[5]

We develop a joint indicator of the recovery path over five seasons. This indicator is denoted by RP_i, and it is calculated according to expression (1)

$$RP_i = \frac{\sum_{t=1}^{5} OR_{it} w_t \delta^{t-1}}{\sum_{t=1}^{5} 4 w_t \delta^{t-1}} \tag{1}$$

OR is the relative occupancy rate for each of the five seasons (coded

from 0, closed, to 4, occupancy between 76% and 100%), and $\delta < 1$ is a discount factor that indicates the preference for earlier occupancy. It has been assigned a value of 0.95. w_t is the weight of overnight stays in season *t* with respect to the five seasons. The maximum value of the numerator is included in the denominator, so the indicator ranges between 0 and 1. Two versions of the previous indicator are calculated, one including w_t and the other excluding it. The distribution of the two versions of the indicator is depicted in Fig. 3c. They both present a similar profile.

In order to verify the consistency between the different predictions declared by the hotel managers, we additionally ask for the shares that each hotel has in the different markets of origin of its guests (regional, national, European and non-European). In a second question, we also ask about the extent to which tourism from these regions is expected to recover in the next five seasons and after summer 2021. Then, we compute an individual hotel indicator that denotes the moment in which the hoteliers plan to recover the pre-COVID-19 situation**.** The indicator ranges from 1 (recovery of occupancy levels in hotel-relevant markets by summer 2020) to 6 (recovery after summer 2021). Fig. 3d represents the density function of the indicator and those of each market. Managers assume the closest markets (regional and national) would recover sooner (mostly in summer 2020 and autumn 2020, respectively), and that international markets would recover after spring 2021 (European), and summer 2021 (the rest of the world).

Finally, we asked the managers when they would expect to reach 50% and 100% of normal capacity if there were already a solution for COVID-19. This is done in order to eliminate the uncertainty associated with the time persistence of COVID-19 contagion risk. Based on the first set of expectations by season previously discussed, we can construct two similar variables that include the uncertainty derived from the persistence of the infection.

Fig. 4a shows the distributions of these four variables. Almost 90% of managers expect that they will reach 50% occupancy in a maximum of 12 months. This time would be substantially reduced if there were already a solution to the disease. More than a quarter of hoteliers believe that 50% recovery could be attained in the next three months and almost two thirds believe this rate is attainable within the next six months. The same patterns, but augmented, are observed when considering the 100%

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[5] Using the average values of each of the segments for which they are asked for summer 2020, the managers predict an aggregate average occupancy rate between 21% and 26% depending on the weights applied. Of the hoteliers who responded to the survey, 16.7% stated that they would close during that season. The data published by the Hotel Occupancy Survey carried out by the National Institute of Statistics registers an occupancy of 28%, with 26% of the establishments closed in relation to the level of the same season in 2019.

a. Time to reach 50% and 100% of the usual occupancy

b. Uncertainty due to the COVID-19 persistence in terms of time needed to reach some levels of occupancy
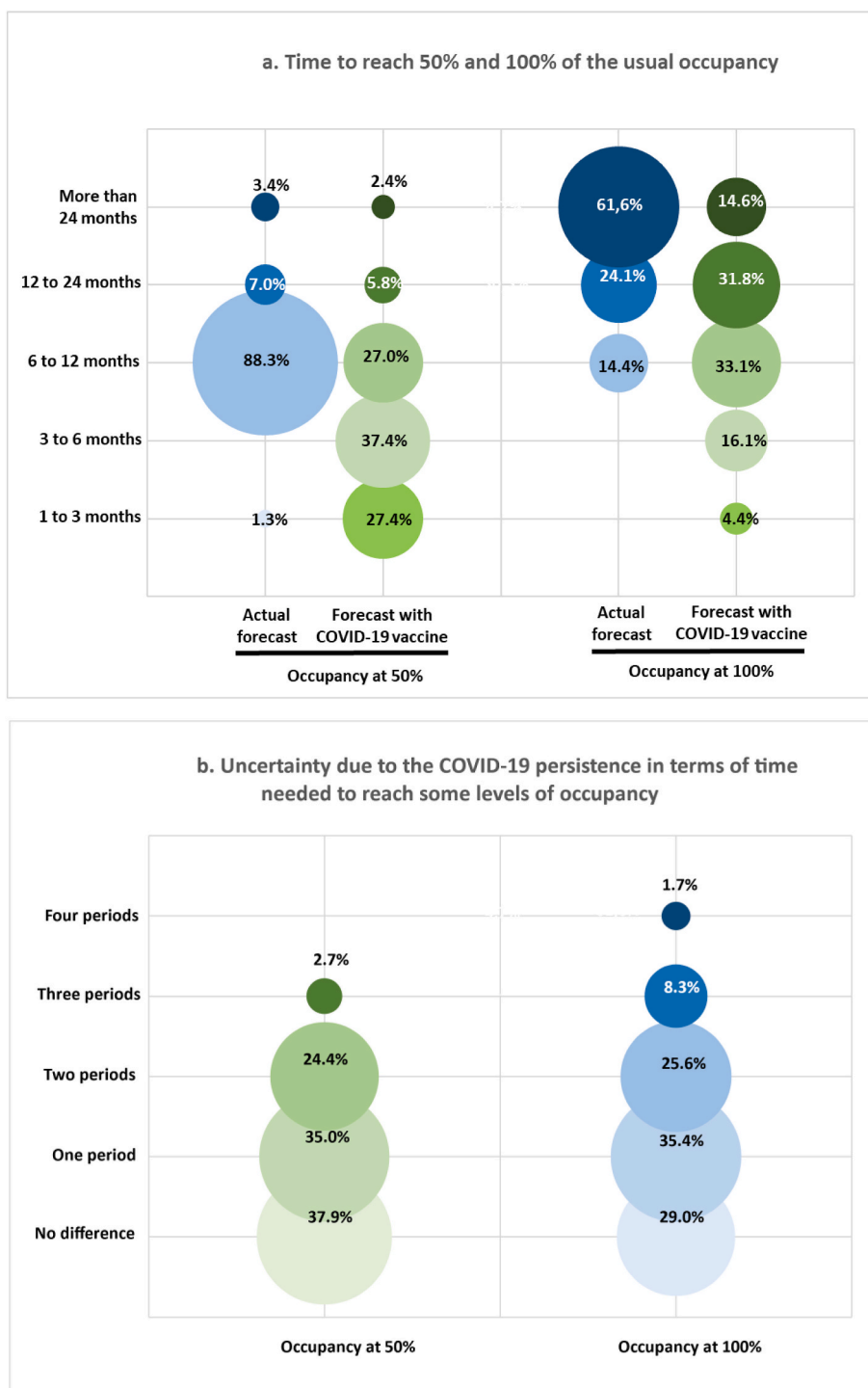
Fig. 4. Time needed to reach certain occupancy rates and uncertainty caused by COVID-19.

rate of recovery. More than 85% of the managers believe that recovery would take more than a year, and over 60% that it would take more than two years. With a solution to the virus, more than 50% of managers declare a 100% recovery rate within a year, and only 15% would expect that recovery could take more than two years. For the same rate of occupancy, the difference between the indicator with COVID-19 and the indicator conditioned to the existence of a solution to the disease would approximately measure the uncertainty generated by the persistence of the virus when attaining considered occupancy rates. Fig. 4b shows the distribution of these two indicators of uncertainty.

The remaining variables included in the survey can be grouped into

four categories: (i) actions carried out during the State of Alarm, (ii) the way in which the manager has been informed, (iii) the adequacy of business strategies for revitalising hotel occupancy and, finally, (iv) the appropriateness of public policies. These primary variables are described in Table 4. Among the actions taken by firms, it is remarkable that almost 78% have carried out sanitary actions and 72% have signed in TERPs. A majority of firms (50%) have applied for some type of loan and it is surprising that only 44% claim to have a contingency plan, with an additional 24% which declare to have a partial one. On the contrary, 77% have not received non-refundable support and a majority of firms have not postponed payments to suppliers (46% and only partially

Table 4
Survey of descriptive statistics on actions and strategies taken by hotels.

Actions taken by hotels	% of survey responses			
	Not applicable	Not	Partially	Yes
Contingency Plan	14.4	17.2	24.4	43.9
Teleworking	34.5	34.1	12.1	19.3
Flexible schedules	40.0	23.3	9.3	27.5
Temporary employment regulations plans (TERP)	7.8	10.4	9.9	72.0
Postponed payments to suppliers	7.0	45.6	13.6	33.7
Clients have postponed payments	13.1	48.3	9.5	29.2
Applied for loans	10.2	39.4	2.7	47.7
Postponed taxes	9.1	41.1	6.1	43.8
Reception of non-refundable aid	9.3	76.5	1.3	12.9
Sanitary actions	7.2	6.1	9.1	77.7

Source of Information on the impact of COVID-19 and actions to take	% of survey responses
Media	62.5
Central Government	58.5
Regional Government	66.1
Local Government	51.3
Social networks	33.3
Other firms	17.8
Business associations	70.8
Consulting firms	31.3

Business Strategies	Average	% of survey responses				
		1	2	3	4	5
Reorientation to close regional markets	3.38	15.2	14.6	18.8	19.7	31.8
Reorientation to the national market	3.82	6.8	10.8	18.9	20.5	43.0
Differentiation strategies against competitors	3.48	10.2	10.8	25.4	27.5	26.1
Hotel service customisation strategies	3.63	7.6	11.4	22.2	28.0	30.9
Provision of new services	2.97	17.4	19.1	26.9	22.0	14.6
Lower prices	2.65	26.6	20.6	25.2	16.9	10.8
Changes in cancellation policies	3.4	18.2	8.5	21.2	19.5	32.6
Sanitary actions	4.48	2.7	3.2	5.7	20.8	67.6
Payment renegotiation	3.12	19.3	13.5	25.4	19.7	22.16
Self-promotional promotional campaigns	3.58	9.3	9.9	24.8	26.0	30.1
COVID-free label	3.22	22.2	10.6	19.7	17.8	29.7

Appropriateness of public policies	Average	% of survey responses				
		1	2	3	4	5
Flexibility in the payment of taxes	3.97	9.1	6.6	15.3	15.9	53.0
Non-refundable subsidies	4.14	8.0	4.6	12.5	15.2	59.9
Access to financing funds	4.05	6.1	5.1	16.3	23.1	49.4
General policies to promote the tourism industry	4.13	6.6	3.6	16.1	17.2	56.4
Destination-specific promotional policies	4.09	7.4	4.0	16.5	16.1	56.1
Labour flexibility policies	3.94	8.5	8.1	16.3	14.8	52.3
Improvement of infrastructures oriented to tourism	3.9	7.0	9.5	16.7	20.6	46.2
Creation of new tourist attraction factors	3.78	9.7	9.7	16.5	21.8	42.4

14%), nor have clients postponed them (48% and 10%). Around half of hoteliers declare to have postponed tax payments. Regarding the source of information used, 71% are informed by business associations, 63% by general media, and in terms of the different levels of public administrations, 59% from the central government, 66% from the regional government and 51% from the local government.

Sanitary plans will be broadly applied among firms once they restore their activities (with an intensity of 4.5 out of 5). It follows reorientation to the national market (3.8), the customisation of hotel services (3.6), the fulfilment of advertising campaigns (3.6), the application of differentiated strategies (3.5) and the adjustments of cancellation procedures (3.4). On the contrary, the least attractive strategy, which nonetheless will be carried out by many hotels, is a drop in prices (2.7), followed by the provision of new services (3.0), the renegotiation of payments (3.1), the use of different types of COVID-free labels (3.2) and reorientation to nearby regional markets (3.4).

Finally, most firms consider all the proposed public policies appropriate. Among them, the ones with the greatest consensus are the non-refundable subsidies (4.1 out of 5), general policies to promote the tourism industry (4.1), destination-specific promotional programs (4.1) and access to financing funds (4.1).

In order to take advantage of the maximum amount of information contained in these four groups of variables, we compute a grouping process within each of the four categories of variables to reduce their number and avoid the problem of multicollinearity when they are introduced in regressions. Given the categorical nature of the variables, the appropriate method is the Categorical Principal Component Analysis (CATPCA), which is included in SPSS software and is similar to the Principal Component Analysis (PCA), but which scales the variables to different units of measurement with metric properties (optimal scaling), and allows non-linear relationships between them (Linting & Van der Kooij, 2012).

In Appendix A presents the results of the procedure described. The set of actions taken by hotels during the State of Alarm are statistically grouped into three components: actions on payments (postponed taxes, reception of non-refundable aid, applications for loans, postponed payments to suppliers and postponed payments from clients), labour actions (TERP, flexible schedules and teleworking) and risk reduction actions (contingency plans and sanitary measures). The source of information on the actions and strategies to be carried out to mitigate the impact of COVID-19 are also grouped into three components: official sources (central, regional and local governments), network sources (media, social networks and other firms) and sources of advice (business associations and consulting firms).

The strategies that firms are going to develop are summarised in four combinations: innovation & differentiation (provision of new services, hotel service customisation strategies, differentiation strategies and self-promotional campaigns), market reorientation (reorientation to regional and national markets), price (lower prices, changes in cancellation policies and payment renegotiation), and sanitary strategies (COVID-free label and sanitary measures). Finally, the appropriateness of public policies is grouped into only two dimensions, those that affect the business environment (infrastructure oriented to tourism, destination promotion, new tourist attraction factors, general promotion of tourism and labour flexibility policies) and those that have a financial impact on the firm (access to financing funds, flexibility in the payment of taxes and non-refundable subsidies).

5. Results

In order to determine the effect of the actions and strategies on managers' expectations, we carry out a broad set of econometric estimations. Given the specific nature of the different dependent variables measured, appropriate econometric procedures have to be used in each case. The possible methodologies are described in detail in Appendix B. This section discusses only the results derived from the most appropriate procedure in each of the cases considered.

For the estimation of the equations in which the dependent variable is ordinal, such as the level of occupancy for each season, the time needed to reach a certain occupancy rate (50% or 100%) with or without COVID-19, and the uncertainty indicators, we use ordered probit models. However, in the case of occupancy, measurement only makes sense if the establishment is open; therefore, a Heckman two-stage model has to be used. In the first stage, the selection equation, we include the variables that influence the opening decision: all variables except the size and appropriateness of public policies. In the second

Table 5
Results of the actions and strategies on recovery prospects.

Variables		Level of occupancy in each season						Recovery Path	
		ORDERED PROBIT						FRACTIONAL LOGIT	
		summer 2020		autumn 2020	winter 2020	spring 2021	summer 2021	Unweighted	Weighted
		Selection Eq.	Quantity Eq.	(2)	(3)	(4)	(5)	(6)	(7)
		(1a)	(1b)						
	Rooms/1000	–	−0.269	−0.269	−0.528	0.612	0.321	−0.005	−0.005
			(0.728)	(0.523)	(0.562)	(0.471)	(0.361)	(0.301)	(0.237)
Zones	Inland Spain	1.554***	−0.055	−0.106	−0.315	−0.059	0.213	0.075	0.141
		(0.455)	(0.470)	(0.263)	(0.243)	(0.210)	(0.221)	(0.131)	(0.127)
	Islands	0.456	−0.07	−0.149	−0.09	0.079	−0.09	−0.115	−0.103
		(0.430)	(0.466)	(0.321)	(0.293)	(0.283)	(0.296)	(0.174)	(0.169)
	Mediterranean Coast	0.744**	0.168	−0.204	−0.382*	−0.100	0.375*	0.042	0.110
		(0.338)	(0.700)	(0.237)	(0.200)	(0.177)	(0.212)	(0.111)	(0.108)
	North Coast	1.259***	0.632	0.091	−0.151	0.082	0.751***	0.289**	0.392***
		(0.403)	(0.596)	(0.268)	(0.248)	(0.206)	(0.240)	(0.137)	(0.135)
	South Coast	1.013***	−0.07	−0.209	−0.533**	−0.152	0.171	0.015	0.076
		(0.359)	(0.547)	(0.254)	(0.218)	(0.187)	(0.205)	(0.121)	(0.117)
Types	1.2 & 3 stars hotels	0.299	−0.309	−0.127	−0.473***	−0.022	−0.074	−0.072	−0.055
		(0.215)	(0.215)	(0.136)	(0.147)	(0.135)	(0.140)	(0.082)	(0.079)
	Hostelries	0.765***	−0.246	−0.112	−0.509***	−0.085	−0.171	−0.048	−0.031
		(0.268)	(0.240)	(0.186)	(0.191)	(0.171)	(0.176)	(0.108)	(0.104)
	Hotel chain	0.0650	−0.253	0.032	0.052	0.178	0.189	0.029	0.018
		(0.209)	(0.173)	(0.156)	(0.161)	(0.140)	(0.156)	(0.088)	(0.085)
Market share	Rest of National market share	−2.125**	−0.297	−0.210	−0.047	0.095	0.242	−0.106	−0.145
		(0.860)	(0.927)	(0.376)	(0.427)	(0.386)	(0.382)	(0.236)	(0.232)
	International market share	−2.582***	−0.578	−0.931***	−0.660*	0.179	0.439	−0.349*	−0.346*
		(0.694)	(0.613)	(0.328)	(0.372)	(0.308)	(0.334)	(0.200)	(0.197)
Market segment	MICE & Business tourism	0.104	−0.128	−0.199*	−0.179	0.034	0.056	0.02	0.027
		(0.210)	(0.209)	(0.118)	(0.127)	(0.117)	(0.123)	(0.068)	(0.066)
	Cultural tourism	−0.192	0.04	−0.061	−0.082	0.114	0.003	0.037	0.03
		(0.180)	(0.131)	(0.112)	(0.116)	(0.112)	(0.115)	(0.066)	(0.065)
	Urban tourism	0.389*	−0.319**	−0.101	−0.009	−0.075	0.081	−0.034	−0.036
		(0.227)	(0.152)	(0.124)	(0.138)	(0.122)	(0.132)	(0.072)	(0.070)
	Health & Wellness tourism	−0.186	0.447**	0.197	0.207	0.149	0.285**	0.157*	0.163*
		(0.234)	(0.186)	(0.145)	(0.161)	(0.144)	(0.143)	(0.090)	(0.088)
	Sun & Beach tourism	0.519**	0.190	0.333**	0.071	−0.300**	0.254*	0.071	0.112
		(0.219)	(0.151)	(0.134)	(0.149)	(0.125)	(0.134)	(0.078)	(0.076)
	Rural & Adventure tourism	0.862***	−0.018	0.029	0.056	−0.047	0.217*	0.110	0.130*
		(0.246)	(0.134)	(0.128)	(0.138)	(0.121)	(0.126)	(0.074)	(0.073)
Accions taken	Actions on payments	0.220***	−0.146**	0.007	−0.039	−0.024	−0.009	0.001	0.005
		(0.078)	(0.074)	(0.056)	(0.049)	(0.054)	(0.059)	(0.033)	(0.033)
	Labor actions	−0.278***	0.155***	0.182***	0.184***	0.144***	0.115**	0.087***	0.075**
		(0.108)	(0.056)	(0.059)	(0.056)	(0.053)	(−0.054)	(0.031)	(0.030)
	Risk reduction actions	0.0279	−0.086	−0.052	−0.016	−0.042	−0.036	−0.021	−0.024
		(0.084)	(0.055)	(0.052)	(0.053)	(0.051)	(0.053)	(0.031)	(0.030)
Business Strategies	Innovation & Differentiation	0.152**	−0.022	0.140**	0.088	0.069	0.075	0.058*	0.059*
		(0.080)	(0.072)	(0.061)	(0.061)	(0.054)	(0.061)	(0.034)	(0.033)
	Market reorientation	0.225***	0.110	0.152***	0.125**	0.158***	0.147***	0.105***	0.111***
		(0.085)	(0.099)	(0.058)	(0.059)	(0.056)	(0.056)	(0.032)	(0.031)
	Price strategies	−0.220**	0.031	−0.048	−0.029	−0.05	−0.037	−0.018	−0.015
		(0.102)	(0.059)	(0.057)	(0.064)	(0.054)	(0.056)	(0.033)	(0.032)
	Sanitary & Health strategies	−0.109	0.009	−0.017	−0.051	0.018	0.102*	0.004	0.012
		(0.093)	(0.086)	(0.057)	(0.058)	(0.053)	(0.057)	(0.032)	(0.032)
Public policies	Business environment policies	–	0.011	−0.056	−0.038	−0.04	−0.019	−0.017	−0.014
			(0.060)	(0.061)	(0.065)	(0.058)	(0.056)	(0.034)	(0.033)
	Financial policies	–	0.053	−0.033	−0.038	0.006	−0.011	−0.006	−0.006
			(0.068)	(0.057)	(0.058)	(0.052)	(0.051)	(0.031)	(0.030)
Information sources	Official sources	0.131	−0.062	0.158***	0.158***	0.149***	0.122**	0.090***	0.082***
		(0.087)	(0.083)	(0.054)	(0.060)	(−0.051)	(0.054)	(0.031)	(0.031)
	Network sources	−0.001	0.075	0.087	0.021	0.096*	0.061	0.048	0.047
		(0.083)	(0.056)	(0.056)	(0.062)	(0.050)	(0.052)	(0.032)	(0.031)
	Advice sources	−0.058	0.012	0.008	0.045	0.037	0.045	0.037	0.033
		(0.082)	(0.070)	(0.053)	(0.058)	(0.049)	(0.051)	(0.030)	(0.029)
	Observations	528	528	477	423	503	513	528	528

		Time to recover	Time to reach an occupancy				Uncertainty	
		FRACTIONAL LOGIT	ORDERED PROBIT				ORDERED PROBIT	
			50% occupancy		100% occupancy		50% occupacy	100% occupancy
		(8)	With COVID19	Without COVID19	With COVID19	Without COVID19	(13)	(14)
Variables			(9)	(10)	(11)	(12)		
	Rooms/1000	0.001	0.272	0.142	−0.303	−0.611	0.148	0.431
		(0.001)	(0.317)	(0.537)	(0.423)	(0.384)	(0.420)	(0.344)
Zones	Inland Spain	0.341**	0.163	0.075	−0.412	0.200	0.017	−0.317
		(0.138)	(0.211)	(0.217)	(0.295)	(0.194)	(0.221)	(0.221)
	Islands	−0.066	0.388	−0.104	−0.569	0.108	0.394	−0.169
		(0.201)	(0.288)	(0.273)	(0.346)	(0.259)	(0.288)	(0.289)
	Mediterranean Coast	0.160	0.102	−0.031	−0.677***	0.133	0.143	−0.369*
		(0.127)	(0.174)	(0.193)	(0.263)	(0.174)	(0.196)	(0.208)
	North Coast	−0.309**	−0.386*	0.139	−0.865***	−0.201	−0.196	−0.244
		(0.152)	(0.231)	(0.234)	(0.289)	(0.212)	(0.241)	(0.235)
	South Coast	0.322**	0.068	0.175	−0.345	0.063	−0.032	−0.190
		(0.141)	(0.200)	(0.215)	(0.279)	(0.193)	(0.218)	(0.225)
Types	1.2 & 3 stars hotels	0.111	−0.035	−0.007	0.085	0.132	−0.051	−0.117
		(0.102)	(0.140)	(0.128)	(0.143)	(0.130)	(0.128)	(0.141)
	Hostelries	−0.010	−0.155	−0.054	0.182	0.132	−0.093	−0.095
		(0.124)	(0.191)	(0.159)	(0.189)	(0.159)	(0.169)	(0.165)
	Hotel chain	0.014	−0.015	−0.233	−0.149	−0.107	0.175	0.04
		(0.105)	(0.135)	(0.146)	(0.165)	(0.140)	(0.148)	(0.151)
Market share	Rest of National market share	0.851***	0.406	−0.346	0.075	−0.210	0.636*	0.153
		(0.280)	(0.476)	(0.365)	(0.395)	(0.354)	(0.376)	(0.350)
	International market share	1.236***	0.090	0.231	−0.063	0.133	−0.146	−0.216
		(0.231)	(0.394)	(0.315)	(0.323)	(0.313)	(0.328)	(0.297)
Market segment	MICE & Business tourism	−0.049	−0.251*	−0.029	−0.028	0.063	−0.085	−0.048
		(0.092)	(0.135)	(0.114)	(0.122)	(0.109)	(0.127)	(0.111)
	Cultural tourism	−0.065	−0.095	−0.018	0.066	0.068	−0.052	−0.027
		(0.082)	(0.124)	(0.104)	(0.120)	(0.104)	(0.113)	(0.109)
	Urban tourism	−0.090	0.412***	−0.010	−0.020	0.023	0.103	−0.078
		(0.094)	(0.140)	(0.124)	(0.135)	(0.120)	(0.127)	(0.123)
	Health & Wellness tourism	0.022	0.227	−0.113	−0.273**	−0.030	0.163	−0.153
		(0.107)	(0.146)	(0.132)	(0.132)	(0.124)	(0.145)	(0.127)
	Sun & Beach tourism	0.180*	−0.147	−0.114	0.038	0.143	−0.057	−0.095
		(0.093)	(0.149)	(0.130)	(0.126)	(0.123)	(0.129)	(0.124)
	Rural & Adventure tourism	−0.083	−0.177	−0.068	−0.197	−0.019	−0.03	−0.079
		(0.087)	(0.147)	(0.115)	(0.139)	(0.115)	(0.121)	(0.111)
Accions taken	Actions on payments	−0.023	−0.029	−0.029	0.075	−0.018	0.021	0.045
		(0.036)	(0.065)	(0.053)	(0.052)	(0.056)	(0.060)	(0.058)
	Labor actions	−0.069*	−0.249***	0.019	−0.122**	−0.062	−0.148***	−0.015
		(0.040)	(0.071)	(0.052)	(0.056)	(0.051)	(0.057)	(0.050)
	Risk reduction actions	0.049	−0.025	−0.041	0.051	−0.056	0.04	0.054
		(0.038)	(0.053)	(0.049)	(0.056)	(0.051)	(0.054)	(0.054)
Business Strategies	Innovation & Differentiation	−0.115***	0.071	0.011	0.051	0.104*	−0.004	−0.108*
		(0.039)	(0.066)	(0.060)	(0.059)	(0.055)	(0.060)	(0.055)
	Market reorientation	−0.027	−0.061	0.006	−0.109*	0.017	−0.033	−0.083
		(0.039)	(0.061)	(0.054)	(0.060)	(0.049)	(0.054)	(0.053)
	Price strategies	−0.062	−0.165***	−0.063	0.116**	0.082*	−0.035	−0.01
		(0.040)	(0.061)	(0.055)	(0.056)	(0.050)	(0.055)	(0.049)
	Sanitary & Health strategies	0.056	0.023	0.009	−0.087	0.073	−0.013	−0.129***
		(0.040)	(0.067)	(0.052)	(0.059)	(0.049)	(0.053)	(0.050)
Public policies	Business environment policies	0.102***	−0.035	−0.029	0.039	−0.028	0.024	0.045
		(0.038)	(0.070)	(0.059)	(0.062)	(0.054)	(0.057)	(0.050)
	Financial policies	−0.001	−0.048	−0.063	0.014	−0.106**	0.071	0.102**
		(0.038)	(0.061)	(0.050)	(0.057)	(0.048)	(0.051)	(0.050)
Information sources	Official sources	−0.112***	0.036	−0.088*	−0.142**	−0.082*	0.097*	0.004
		(0.039)	(0.061)	(0.050)	(0.057)	(0.049)	(0.052)	(0.048)
	Network sources	0.046	−0.106*	−0.061	−0.095*	0.010	−0.016	−0.048
		(0.036)	(0.056)	(0.048)	(0.053)	(0.048)	(0.051)	(0.047)
	Advice sources	0.013	−0.056	0.022	0.018	−0.010	−0.035	−0.002
		(0.038)	(0.057)	(0.050)	(0.054)	(0.049)	(0.049)	(0.048)
	Observations	528	528	528	528	528	528	528

Robust standard errors in parentheses.
***p < 0.01. **p < 0.05. *p < 0.1.

stage, the model explains the level of occupancy through the outcome equation using an ordered probit. We perform Wald tests to determine whether the error terms in the selection and outcome models are correlated. Rejection of the null hypothesis of uncorrelated errors evidences the need for the selection equation. This is the case of the 2020 summer season. In the case of the time needed to recover the normal situation and the recovery path, we use interval estimation procedures.

The results of all these finally selected estimations are presented in Table 5, [6]. Some independent variables have been grouped together

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[6] All estimates have been made using STATA software.

when included in regressions. Specifically, the typology and category of establishments have been grouped into (i) 4- and 5-star hotels (high level of services), (ii) 1-, 2- and 3-star hotels (medium level of services), and (iii) hostels (budget accommodation). Likewise, we have constructed an indicator variable for establishments that belong to a hotel chain. We have also added up the shares in the European and non-European markets to build the share of the international market, and operations in meetings, incentives, conferences and exhibitions (MICE) and in the corporate segment have been consolidated. Furthermore, in the groups of variables that generate perfect collinearity with the constant term, one variable has always been removed. Therefore, in these particular cases, the effects must be considered in relation to the reference (omitted) value: a 4- or 5-star hotel located in Madrid. The market share of the hotel's own region has also been omitted.

Considering the set of results obtained, size and hotel chain membership do not seem to be differential determinants on recovery prospects. This same result is observed in terms of contingency and sanitary plans during the epidemic, probably because most of the hotels were closed and those measures did not have the chance to be undertaken or they all had to abide by the same regulation.

On the contrary, the location of the establishments impacts in a differentiated manner. Those located in Madrid, possibly because of the greater intensity of the epidemic in this region and on the islands due to their specialisation in the international market, are declaring the worst recovery prospects in the short run. This is especially noticeable in the estimation for summer 2020 (estimation 1a). On the contrary, the time required to fully recover turns out to be longer in the interior of the country and in the southern regions (estimation 8), whilst the northern regions expect a much faster recovery (estimations 8, 9 and 11).

In relation to the typology of hotels, the results show that those with a lower category, mostly family-owned, will open earlier (estimation 1a), while those with a higher category expect higher occupancy rates, especially during winter (estimation 3). Likewise, establishments oriented to regional markets will perform better in the short run (estimations 1, 2 and 3), but as time goes on, there are no significant differences in occupancy levels according to their geographical specialisation (estimations 4 and 5). The distance to the guests' markets of origin negatively affects recovery trajectories (estimations 6 and 7), increasing the time required to attain the usual occupancy levels (estimation 8).

The segments of the tourism market in which each of the hotels operates produce better performance in certain seasons. Those who include MICE expected poor results in autumn 2020 (estimation 3) and will suffer to a greater extent if COVID-19 persists (estimation 9). By contrast, those specialised in urban tourism were more likely to open in the summer of 2020 than establishments specialised in other segments. Nonetheless, they will have lower occupancy levels (estimation 1) and will require longer periods to reach half their usual occupancy levels if COVID-19 continues (estimation 9). Those that offer health services seem to perform better during the seasons studied (estimations 6 and 7). The sun and beach and rural segments show higher occupancy rates in the two summer seasons, as they concentrate their activity in that season (estimations 1a and 5). However, the sun and beach hotels seem to take longer to recover their usual situation (estimation 8), possibly because they depend to a greater extent on the recovery of family income.

The actions taken during the State of Alarm that seem to have the greatest impact are the ones related to labour. The establishments that joined TERP were less likely to open in summer 2020 (estimation 1a). However, they show better recoveries in the short, medium and long run (estimations 1b to 5, 6 and 7). The labour-related measures become especially relevant under the persistence of COVID-19 (estimations 9 and 11). The proper functioning and flexibility of TERP probably helped in reducing managers' uncertainty (estimation 13) in relation to excessive labour costs under probable scenarios of very limited demand, allowing them to undertake other actions that require the use of financial resources. For their part, the actions taken in relation to payments favour early opening of establishments (estimation 1a) and seem to

result from lower occupancy rates (estimation 1b). It is possible that these firms are the ones that have the weakest financial structure to deal with the crisis caused by the coronavirus, and appealing to these mechanisms also evidences their limitations in adopting other types of actions that require financial resources.

The business strategies that seem to have the greatest impact on occupancy are, first of all, innovation and differentiation, and, secondly, market reorientation. The former shows a clearly positive effect on the trajectory followed by firms (estimations 6 and 7), reducing the time needed to recover (estimation 8) and easing the uncertainty between the situations with and without COVID-19 (estimation 14). For its part, the reorientation of markets promptly favours reactivation (estimation 1a), positively affects occupancy in all the seasons analysed (estimations 2 to 5), and therefore favours the recovery trajectory (estimations 6 and 7) and reduces the time needed to recover (equation 8). On the other hand, price strategies may have hindered opening in the summer of 2020 (estimation 1a). Although they contribute to short and medium run recovery (estimation 9), they seem to negatively affect the restoration of the usual occupancy levels in the longer run (estimations 11 and 12). Finally, health strategies reduce uncertainty in total recovery (estimation 14), which indicates that they will be an essential tool in the case of virus persistence.

In relation to the perception that managers have about public policies, there is a curious result. Policies that focus on changing the business environment seem to contribute to delaying recovery (estimation 8). In some way, this might indicate that the greater incidence of these policies may be identifying firms with structural competitiveness problems in need of a change in their business model, a problem which was present before COVID-19 and that the pandemic has exposed to a greater extent. On the contrary, as was the case with the strategies carried out by firms, measures that influence their financial situation contribute to the total restoration of the activity (estimation 12), but result in slight increases in uncertainty (estimation 14). That is, as long as COVID-19 persists, they would hinder total recovery, possibly because these establishments have limited financial resources to undertake other types of strategies.

With regard to the means used to obtain information on the evolution of the infection and the mechanisms to mitigate its effects, we observe better occupancy expectations (estimations 2 to 5), improved recovery trajectories (estimations 6 and 7) and shorter times needed to restore the usual situation (estimation 8) when firms rely more on official sources and their associated networks.

6. Conclusions and implications

This article analyses the effectiveness of the strategies followed by hotel managers on the potential achievement that hotels may experience in terms of occupancy in the case of Spain. To do this, we first made a thorough review of the literature on hotel management during crises and catastrophic events. From this review, we came to the conclusion that it was necessary to define a list of actions to be taken at the critical stage of the epidemic, when hotels were closed, and also strategies to be adopted once hotels reinstate their activity. The relationship under study was then integrated into a survey addressed to hotel managers that was carried out at the end of the State of Alarm in spring 2020. Hotel managers were also asked, from different perspectives, about the expectations that they had for the evolution of occupancy levels in coming seasons. From the 528 valid responses obtained and the estimation of a variety of econometric models, we concluded that initial actions taken by management and planned strategies in combination with some specific characteristics of the establishments contribute to having better recovery prospects.

Indeed, the results of the estimations show that at least four measures have a positive impact on expected occupancy: labour actions, innovation and differentiation strategies, market reorientation strategies and information from official sources. Managers also believe necessary

government measures led to alleviating the financial situation of firms.

6.1. Theoretical implications

This article proposes a methodology that, following the literature on crisis and disaster management in the hotel sector, allows the identification of actions, strategies and public policies that could be more appropriate for overcoming these events. In this specific case, the focus is on COVID-19 in Spain. This proposal is based on adapting the list of business practices and public policies to each of the events, considering their specificities and those of the context in which they occur. In addition, to identify the most appropriate strategies, we propose that these actions and strategies should be related to prospective indicators at the firm level, such as the managers' expectations of hotel occupancy. Although these indicators are subject to uncertainty, we propose the measurement of them from different perspectives, based on the opinions of professionals that are familiar with the behaviour of the sector. Thus, the proposed methodology serves to analyse, at least in the short run, the validity of the proposed measures. In this way, a compromise is established between total certainty and the opportunity of the design and evaluation of measures in the event of a crisis or a catastrophe.

6.2. Practical implications

The COVID-19 crisis has shown that TERPs are a basic tool that has allowed many hotels to overcome the economic shutdown and eases uncertainty regarding possible coming financial constraints. Likewise, this measure has kept firms' funds and avoided excessive indebtedness, thus allowing the implementation of alternative strategies so that they may relaunch their activity.

The need for innovation and differentiation strategies suggests that managers understand that the attractiveness of the destination is not enough for a rapid recovery of their activity. Offering new, customised and differentiated services can enhance the attraction of both loyal customers and new ones.

Reorientation to closer markets derives from the knowledge that managers may have about the effects that pandemics have on tourist flows. Tourists that come from more distant origins are more greatly affected. It seems that trying to attract close customers, especially those from the region itself, can help complement the rest of the strategies and accelerate recovery until tourism from remote places returns.

We also find that access to official sources of information generates security guarantees for managers and produces better recovery expectations for them. This result may suggest that public administrations have served as a reference in the measures taken, given that the information that they offer is the most trusted in what has been a context of great uncertainty.

Regarding public policies, managers perceive that the measures that will contribute most to a faster recovery are aimed at improving the financial situation of firms. These policies facilitate the survival of hotels during periods of closure or when demand is insufficient, allowing firms to develop their own specific strategies to restore their activity.

Finally, it is observed how the introduction of a vaccine can modify the perception of this epidemic, specifically, in the impact it will have on its duration and in the generation of more optimistic business expectations along with a much faster recovery. In fact, the announcement of the approval of the first vaccines led to rises in the stock market of tour operators in general and of hospitality companies in particular.

These results show that the policies and strategies carried out by tourist destinations, usually through public authorities, are not sufficient for an effective recovery. The actions and strategies taken by managers will influence the effective and differential recovery of some hotels against others, with real effects on survival first and profitability afterwards. In this sense, the existence of certain structural problems of competitiveness has been manifested in some Spanish destinations and business models. Additionally, some firms seem to have financial constraints that prevent them from changing their business model. These two issues can be combined and jointly addressed with greater cooperation between the industry and the public administrations. More disruptive public support measures should be designed in order to encourage a change of the tourism business model where there are clear symptoms of exhaustion. This will indeed favour sector recovery after COVID-19.

6.3. Limitations and further research

There are two main limitations of this paper. The first is that, as has been pointed out already, the COVID-19 situation is constantly changing. It would be very useful to evaluate how the opinion and expectations of managers change in the different stages of the epidemic. This could help us to understand how expectations, restrictive measures and managers' own experience with this unknown phenomenon are all modifying business strategies. The second limitation refers to the fact that in order to establish contingency plans for future events of a similar nature and evaluate the effectiveness of the different actions and strategies proposed, real data on business results would be preferable to prospective data. The occupancy expectations used here respond to the need for a quick evaluation of potential practices, although they require monitoring and testing with real data. In fact, these are two of the intended future lines of research.

Author contributions

Alberto Hidalgo: Conceptualisation, Methodology, Research, Writing - Original Draft, Writing - Review & Editing, **David Martín-Barroso:** Conceptualisation, Formal analysis, Research, Writing - Review & Editing, **Jaime Turrión:** Conceptualisation, Research, Data Curation, Writing - Original Draft, **Juan A. Núñez-Serrano:** Conceptualisation, Software, Research, Data Curation, Writing - Original Draft, **Francisco J. Velázquez:** Conceptualisation, Methodology, Research, Data Curation, Writing - Original Draft, Writing - Review & Editing, Supervision.

Impact statement

This paper provides evidence of the important role of the initial actions and strategies adopted by hotel managers in the expectations of the evolution of hotel activity after crisis events and, in particular, after the COVID-19 pandemic. Given the uncertainty generated by epidemics, hoteliers' strategies are crucial and will affect the recovery of their establishments in a differentiated manner. Our results confirm the importance of managers' efforts at cost cutting, especially those related to labour, and strategies for innovation, output differentiation and market reorientation for a rapid recovery of occupancy levels.

Data statement

The data used in this article come from a survey carried out among Spanish hoteliers during the period from 12 to May 26, 2020. Following Spanish regulations on data protection and the institutional recommendations to maximise the number of responses, the survey included the following statement, "All data will be processed anonymously. We shall never publish or distribute data from individual responses". Nonetheless, aggregated statistical data and the corresponding summary statistics of each of the variables employed are provided.

Declaration of competing interest

None.

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Appendix D. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.tourman.2021.104395.

APPENDIX A

Table A.1
Summary statistics for occupancy predictions

Variables				Obs.	mean	Standard	Skewness	kurtosis
Occupancy forecast	**0 to 3**		summer 2020	440	0.677	0.761	0.771	2.646
			autumn 2020	477	0.960	0.773	0.287	2.293
			winter 2020	423	1.206	0.819	0.098	2.310
			spring 2021	503	1.634	0.821	−0.251	2.574
			summer 2021	513	2.136	0.806	−0.633	2.790
	interval	**Lower limit**	summer 2020	528	4.714	10.308	2.254	7.325
			autumn 2020	528	7.249	12.096	1.522	4.280
			winter 2020	528	11.135	14.585	1.029	3.040
			spring 2021	528	19.097	16.940	0.376	2.172
			summer 2021	528	30.207	18.417	−0,283	1.895
		Upper limit	summer 2020	528	16.932	19.023	0.771	2.646
			autumn 2020	528	24.004	19.319	0.287	2.292
			winter 2020	528	30.142	20.477	0.098	2.310
			spring 2021	528	40.855	20.535	−0.251	2.574
			summer 2021	528	53.411	20.145	−0.633	2.790
Recovery path		Unweighted		528	0.543	0.178	0.037	2.545
		Weighted		528	0.547	0.175	0.084	2.521
Time needed to recover		Seasonal Unweighted (0/5)		528	2.333	1.071	−0.103	2.187
		Seasonal Weighted (0/1)		528	0.467	0.214	−0.103	2.187
Time to reach an occupancy	**0 to 4**	50% with COVID-19		528	1.987	0.709	−0.621	7.001
		50% without COVID-19		528	1.278	1.076	0.683	2.958
		100% with COVID-19		528	3.462	0.761	−1.178	3.491
		100% without COVID-19		528	2.362	1.053	−0.234	2.468
	interval	**Lower limit**	50% with COVID-19	528	7.580	3.990	2.690	13.211
			50% without COVID-19	528	5.614	5.330	2.224	8.428
			100% with COVID-19	528	19.494	7.225	−0.697	1.792
			100% without COVID-19	528	10.790	6.888	0.959	3.016
		Upper limit	50% with COVID-19	528	12.967	5.913	2.116	9.332
			50% without COVID-19	528	9.472	8.094	1.899	6.198
			100% with COVID-19	528	29.608	8.925	−1.039	2.704
			100% without COVID-19	528	17.960	10.189	0.412	2.027
Uncertainty	**0/3**	50% occupancy		528	0.919	0.851	0.415	2.110
	0/4	100% occupancy		528	1.184	1.000	0.538	2.670
	interval	**Lower**	50% occupancy	528	1.966	5.901	−1.086	7.257
			100% occupancy	528	8.705	8.905	−0.565	3.198
		Upper	50% occupancy	528	4.153	7.599	−0.375	5.290
			100% occupancy	528	11.938	11.417	−0.229	2.602

Table A.2
Summary statistics for actions and business strategies

Variables			Obs.	mean	Standard	Skewness	kurtosis
Actions hotels have taken	On payments	Component	528	0.000	1.000	−2.617	9.199
		Postponed taxes (0/3)	528	1.845	1.091	−0.111	1.446
		Reception of non-refundable aid (0/3)	528	1.178	0.769	1.392	4.618
		Applied for loans (0/3)	528	1.879	1.126	−0.192	1.413
		Postponed payments to suppliers (0/3)	528	1.741	1.004	0.120	1.608
		Clients have postponed payments (0/3)	528	1.547	1.046	0.297	1.756
	Labour	Component	528	0.000	1.000	−1.585	5.860
		Temporary employment regulation plans (0/3)	528	2.460	0.961	−1.554	3.975
		Flexible schedules (0/3)	528	1.242	1.239	0.402	1.535
		Teleworking (0/3)	528	1.163	1.102	0.544	1.967
	Risk reduct.	Component	528	0.000	1.000	−1.363	5.128
		Contingency plan (0/3)	528	1.979	1.091	−0.626	2.018
		Sanitary actions (0/3)	528	2.572	0.894	−1.987	5.585
Source of information	Official	Component	528	0.000	1.000	−0.384	1.819
		Central government (0/1)	528	0.585	0.493	−0.346	1.120
		Regional government (0/1)	528	0.661	0.474	−0.680	1.463

Table A.2 (*continued*)

Variables			Obs.	mean	Standard	Skewness	kurtosis
		Local government (0/1)	528	0.513	0.500	−0.053	1.003
	Network	Component	528	0.000	1.000	0.346	2.166
		Media (0/1)	528	0.625	0.485	−0.516	1.267
		Social Networks (0/1)	528	0.333	0.472	0.707	1.500
		Other firms (0/1)	528	0.178	0.383	1.683	3.834
	Advice	Component	528	0.000	1.000	−0.648	2.301
		Business associations (0/1)	528	0.708	0.455	−0.917	1.840
		Consulting firms (0/1)	528	0.313	0.464	0.809	1.655
Business strategies	Innovation &; Differentiation	Component	528	0.000	1.000	−1.345	4.861
		New services (1/5)	528	2.972	1.301	−0.025	1.931
		Customisation (1/5)	528	3.633	1.239	−0.596	2.373
		Differentiation (1/5)	528	3.485	1.267	−0.496	2.273
		Promotion (1/5)	528	3.578	1.266	−0.562	2.334
	Market reorien.	Component	528	0.000	1.000	−0.387	2.243
		To regional markets (1/5)	528	3.384	1.441	−0.356	1.775
		To national markets (1/5)	528	3.820	1.279	−0.756	2.408
	Price	Component	528	0.000	1.000	−0.827	2.890
		Price moderation (1/5)	528	2.648	1.322	0.257	1.929
		Cancellation policies (1/5)	528	3.398	1.469	−0.434	1.837
		Payment renegotiation (1/5)	528	3.119	1.407	−0.151	1.792
	Sanitary	Component	528	0.000	1.000	0.098	2.125
		COVID-free label (1/5)	528	3.223	1.521	−0.251	1.627
		Sanitary actions (1/5)	528	4.475	0.936	−2.090	7.073
Public policies	Business environment	Component	528	0.000	1.000	−1.549	5.266
		Tourism infrastructures (1/5)	528	3.896	1.277	−0.888	2.622
		Destination promotion (1/5)	528	4.095	1.242	−1.232	3.437
		New attractions (1/5)	528	3.777	1.341	−0.793	2.395
		General promotion (1/5)	528	4.133	1.205	−1.292	3.676
		Labour flexibility (1/5)	528	3.941	1.334	−0.964	2.641
	Financial impact	Component	528	0.000	1.000	−0.549	2.728
		Financing funds (1/5)	528	4.047	1.186	−1.149	3.408
		Flexibility in taxes (1/5)	528	3.972	1.330	−1.047	2.827
		Non-refundable subsidies (1/5)	528	4.144	1.266	−1.349	3.618

Table A.3
Summary statistics for hotel characteristics

Variables		Obs.	mean	Standard	Skewness	kurtosis
	Rooms	528	75.244	135.358	4.987	39.487
Geographical zones	Madrid	528	0.066	0.249	3.487	13.157
	Inland Spain	528	0.197	0.398	1.524	3.322
	Islands	528	0.104	0.306	2.592	7.716
	Mediterranean Coast	528	0.290	0.454	0.927	1.859
	North Coast	528	0.146	0.353	2.007	5.028
	South Coast	528	0.197	0.398	1.524	3.322
Hotel type	4 &; 5 stars hotels	528	0.290	0.454	0.927	1.859
	1, 2 &; 3 stars hotels	528	0.458	0.499	0.167	1.028
	Hostelries	528	0.252	0.435	1.143	2.307
	Hotel Chain	528	0.216	0.412	1.381	2.907
Market shares	Regional market share	528	0.184	0.187	1.329	4.047
	Rest of National market share	528	0.345	0.240	0.570	2.337
	International market share	528	0.471	0.292	0.146	1.650
Market segment	MICE &; Business tourism	528	0.386	0.487	0.467	1.218
	Cultural tourism	528	0.521	0.500	−0.083	1.007
	Urban tourism	528	0.402	0.491	0.402	1.161
	Health &; Wellness tourism	528	0.180	0.384	1.667	3.777
	Sun &; Beach tourism	528	0.328	0.470	0.734	1.539
	Rural &; Adventures tourism	528	0.407	0.492	0.378	1.143

Table A.4
CATPCA results of the variable aggregation procedure [7].

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[7] The number of generated dimensions (different linear combinations) and the amount of information they collect depends on both the optimal scaling procedure and the criteria with which the number of components or combinations is chosen. In this case, all the variables were defined as ordinal, except those resulting from the question regarding the way of reporting, which were better defined as nominal. The most widespread criterion for selecting the number of components is that of Kaiser-Gurrman, which seeks eigenvalues greater than one. This implies that resulting combination explains a larger proportion of the variance than the sum of the original variances. In order to correctly interpret the underlying dimensions, a Varimax rotation is performed.

CATPCA MODELS			COMPONENTS	ORIGINAL VARIABLES	LOADS OF ROTATED COMPONENTS			
Cronbach Alfa	Eigenvalue	% Variance			Dimension 1	Dimension 2	Dimension 3	Dimension 4
0.937	6,392	63,916		**Actions hotels have taken**				
0.779	3,350	33,505	Dimension 1: Actions on payments	Postponed taxes	0.873	-0.046	0.089	
				Reception of non-refundable aid	0.849	-0.055	0.073	
				Applied for loans	0.824	0.081	0.047	
				Postponed payments to suppliers	0.604	0.445	0.102	
				Clients have postponed payments	0.469	0.466	0.272	
0.542	1,951	19,514	Dimension 2: Labour actions	Temporary employment regulations plans	0.070	0.745	-0.236	
				Flexible schedules	-0.020	0.663	0.465	
				Teleworking	-0.070	0.632	0.491	
0.091	1,090	10,898	Dimension 3: Risk reduction	Contingency Plan	0.055	0.165	0.771	
				Sanitary actions	0.218	-0.056	0.725	
0.882	4,387	54,839		**Information on the impact of COVID-19 and actions**				
0.588	2,028	25,349	Dimension 1: Official sources	Central Government	0.814	0.048	-0.018	
				Regional Government	0.824	0.003	-0.139	
				Local Government	0.648	0.197	0.162	
0.319	1,338	16,729	Dimension 2: Network sources	Media	0.120	0.647	0.019	
				Social Networks	-0.177	0.787	0.080	
				Other firms	0.240	0.508	-0.052	
0.036	1,021	12,761	Dimension 3: Advice sources	Business associations	0.285	0.028	0.855	
				Consulting firms	0.285	0.030	-0.484	
0.959	7,819	71,084		**Business Strategies**				
0.847	1,295	11,775	Dimension 1: Innovation & Differentiation Strategies	Provision of new services	0.834	0.065	0.178	-0.070
				Hotel service customisation strategies	0.804	0.329	0.108	0.182
				Differentiation strategies	0.732	0.415	0.090	0.176
				Self-promotional campaigns	0.718	0.062	0.158	0.258
0.251	1,295	11,775	Dimension 2: Market	Reorientation to regional markets	0.205	0.871	0.112	0.127
				Reorientation to the national market	0.209	0.870	0.129	0.151
0.158	1,168	10,619	Dimension 3: Price Strategies	No price increases, lower prices	-0.010	0.062	0.856	0.055
				Changes in cancellation policies	0.249	0.042	0.671	0.378
				Payment renegotiation	0.295	0.192	0.632	-0.035
0.001	1,001	9,103	Dimension 4: Sanitary Strategies	COVID-free label	0.057	0.069	0.047	0.836
				Sanitary actions	0.203	0.217	0.138	0.719
0.948	5,855	73,183		**Appropriateness of public policies**				
0.908	4,860	60,749	Dimension 1: Business Environment Policies	Infrastructures oriented to tourism	0.866	0.270		
				Destination promotion	0.858	0.271		
				New tourist attraction factors	0.836	0.209		
				General promotion of tourism	0.796	0.390		
				Labour flexibility policies	0.637	0.342		
-0.007	0.995	12,434	Dimension 2: Financial Impact Policies	Access to financing funds	0.240	0.840		
				Flexibility in the payment of taxes	0.247	0.824		
				Non-refundable subsidies	0.380	0.723		

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[7] The number of generated dimensions (different linear combinations) and the amount of information they collect depends on both the optimal scaling procedure and the criteria with which the number of components or combinations is chosen. In this case, all the variables were defined as ordinal, except those resulting from the question regarding the way of reporting, which were better defined as nominal. The most widespread criterion for selecting the number of components is that of Kaiser-Gurrman, which seeks eigenvalues greater than one. This implies that that resulting combination explains a larger proportion of the variance than the sum of the original variances. In order to correctly interpret the underlying dimensions, a Varimax rotation is performed.

APPENDIX B

In order to determine the effect on managers' declared expectations of the characteristics of hotels, the actions already carried out and the strategies they intend to follow, we carry out a comprehensive set of econometric estimations. Given the specific nature of the different dependent variables measured, appropriate econometric procedures have to be used in each case. The methodologies adopted are described next and are summarised in Table B1. For purposes of robustness, we opt for including the same set of independent variables in all estimated regressions.

For the estimation of the equations in which the dependent variable is ordinal, such as the level of occupancy for each season, the time needed to reach a certain occupancy with or without COVID-19, and the uncertainty indicators, we use multinomial ordered probit models. However, in the case of occupancy, measurement only makes sense if the establishment is open; therefore, a Heckman two-stage model has to be used (De Lucca & Perotti, 2011). In the first stage, the selection equation, we include the variables that influence the opening decision. We select all variables except the size and appropriateness of public policies. In the second stage, the model explains the level of occupancy through the outcome equation using an ordered probit. To find out whether the two-stage model is better than simply using only the information from the hotels that open, we must check the non-existence of selection. We perform Wald tests to determine whether the error terms in the selection and outcome models are correlated. Rejection of the null hypothesis of uncorrelated errors evidences the need for the selection equation.

Some of these responses have been answered by selecting censored intervals. In the case of occupancy, intervals are of equal length, while in those that refer to the time necessary to achieve a certain level of occupancy, unequal intervals of time in months have been used. In the case of variables calculated from others that were obtained from intervals (time needed to recover the normal situation and the uncertainty indicators), it is also possible to construct the lower and upper values of the final variables by applying the calculation expressions to the extremes of the original intervals. In all these cases, it would be appropriate to use interval estimation procedures. These types of procedures are a generalisation of censored regressions (Cameron & Trivedi, 2010).

Table B1
Econometric Models for each of the dependent variables.

Dependent variable			Econometric models			
			Ordered Probit	Ordered Probit	Interval Estimation	Fractional Logit
			H_0: rho = 0 $\chi 2$ (1)	Log Likelihood	Log Likelihood	Log Likelihood
Level of occupancy	summer 2020	(1)	4.909**	-414.731	-1020.855	
	autumn 2020	(2)	0.002	-497.824	-879.954	
	winter 2020	(3)	1.006	-473.145	-707.848	
	spring 2021	(4)	0.078	-571.072	-704.643	
	summer 2021	(5)	No convergence	-542.655	-628.695	
Recovery Path	Unweighted	(6)				-248.544
	Weighted	(7)				-247.334
Time needed to recover		(8)			-843.210	-253.824
Time needed to reach	50% occupancy	With COVID-19	(9)		-340.021	-669.591	
		Without COVID-19	(10)		-729.209	-1106.276	
	100% occupancy	With COVID-19	(11)		-471.299	-627.870	
		Without COVID-19	(12)		-744.078	-916.017	
Uncertainty	50% occupancy	(13)		-603.303	-1340.203	
	100% occupancy	(14)		-699.539	-1472.597	

*** p<0.01, ** p<0.05, * p<0.1

Finally, in variables that are continuous but bounded from above and below (as occurs with the recovery trajectories and the time to recover the normal situation), the OLS estimation does not guarantee that data predictions respect corresponding bounds. Papke and Wooldridge (1996) argue that when the limits of the intervals are also included, a beta transformation cannot be applied, so a fractional logit should be used once the variables have been transformed within the closed interval between 0 and 1.

Table B.1 provides a summary of the possible estimation procedures that can be used for each of the different dependent variables. Once we estimated all possible expressions, we compared derived results. In all cases, the interval estimations show lower values for the likelihood function, so we discard this estimation procedure. In the cases of occupancy levels for each season considered, the two-stage model is necessary only for summer 2020, when there are a significant number of closed hotels. In summer 2021, there are only 15 establishments shut down. When trying to estimate the two-stage model, convergence is not achieved after 16,000 iterations, so it seems sensible to estimate the ordered probit model without selection and include only open establishments. In the remaining seasons, the existence of selection is rejected, so we estimate the ordered probit models without selection, using only the data from open establishments. The influence of the regressors is expected to be reversed when the dependent variable refers to occupancy levels (the first two) if compared with expected recovery time (the last three) since a longer recovery time would imply a lower

occupancy for each of the seasons.

APPENDIX C

A survey of the COVID-19 impact on companies in the tourism industry in Spain.

This survey is aimed at directors or managers in charge of hotel business strategies, including those responsible for hotel chains. The survey is part of a study. The objective of this survey is threefold. Its first objective is to determine the present and future impact of COVID-19 on the industry. The second is to identify the management strategies that hotel managers are planning to follow. The third is to determine the public policies that should be implemented to alleviate the effects.

All data will be processed anonymously. We shall never publish or distribute data from individual responses. Please fill in a survey for each establishment. Thank you very much for your attention. The estimated time to complete this form is between 5 and 10 min.

A. HOTEL CHARACTERISTICS

1. Name of the hotel or establishment
2. Name of the firm
3. VAT number of the firm
4. Province where the hotel or establishment is located
5. Municipality where the hotel or establishment is located
6. Postal code
7. Type of establishment. Please check just one entry
Hotel.
Residential hotel.
Aparthotel
Hostel.
Guesthouse
Rural tourism accommodation.
Spanish Parador (luxury hotel accommodation).
Singular accommodation.
Tourist apartment.
Spa.
Camping.
8. Category. Please check just one entry
Five stars or equivalent.
Four stars or equivalent.
Three stars or equivalent.
Two stars or equivalent.
One star or equivalent.
Other, please specify.
9. Number of rooms in the hotel or establishment
10. Does it belong to a hotel chain? Please check just one entry
It is an independent Spanish establishment.
It belongs to a Spanish chain.
It belongs to an international chain.
It is an independent establishment associated with a Spanish chain.
It is an independent establishment associated with an international chain.
Other (please specify).
11. What was the situation of the hotel or establishment when the State of Alarm was declared? Please check just one entry
Totally closed.
Closed to the public but working for the opening of this season.
Partially open.
Fully operational.
Other (please specify).
12. To what extent do you receive clients from the following locations?

	≥ 76%	51%–75%	26%–50%	11%–25%	≤ 10%
Own region					
Other Spanish regions					
Europe					
Rest of the world					

13. Please select the tourist markets in which you operate (multiple responses allowed)
MICE.
Corporate traveling.
Cultural tourism.
City tourism.

Health and wellness.
Sun and beach.
Rural and nature.
Other (please specify).

B. Tourism prospects for the next seasons

14. What do you expect your level of occupancy to be RELATIVE TO YOUR USUAL OCCUPANCY LEVELS during the following seasons? Please check just one entry in each row

	Closed	0%–25%	26%–50%	51%–75%	76%–100%
Summer 2020					
Autumn 2020					
Winter 2020					
Spring 2021					
Summer 2021					

15. Suppose there was already a vaccine for COVID-19. How long would it take your business to recover the following occupancy levels relative to the original ones?

	1–3 months	3–6 months	6–12 months	12–24 months	More than 24 months	Never
50%						
100%						

C. Actions taken during the state of alarm

16. Actions you have taken. Please check just one entry in each row

	Yes	No	Partially	Not applicable
You have a contingency plan				
Some workers teleworking				
More flexible work schedules				
Workers under temporary employment regulation plans				
You have postponed payments to suppliers				
Clients have postponed payments				
You have applied for loans to cover payments				
You have postponed the payment of taxes				
You have received non-refundable aid				
You have taken sanitary actions				

17. How are you learning about the impact of COVID-19 on your business and the possible actions that you might take? (Multiple responses allowed)
Media.
Official offices of the central government.
Official offices of the regional government.
Official offices of the local government.
Social networks.
Other firms.
Business associations.
Consulting firms.
Other (please specify).

D. Business strategies and public policies

18. Please assess the degree of appropriateness of the following business strategies to revitalize your hotel business. (1 = not appropriate, 5 = very suitable). Please check just one entry in each row

	1	2	3	4	5
Reorientation to nearby regional markets					
Reorientation to the national market					
Differentiation strategies against competitors					
Hotel service customisation strategies					

(continued)

	1	2	3	4	5
Provision of new services					
No price increases, lower prices					
Changes in cancellation policies					
Sanitary measures					
Payment renegotiation					
Self-promotional campaigns					
COVID-free label					

19. Do you consider the following public policies appropriate for the recovery of the tourism sector? (1 = not appropriate, 5 = very suitable). Please check just one entry in each row.

	1	2	3	4	5
Flexibility in the payment of taxes					
Non-refundable subsidies					
Access to financing funds					
General policies to promote the tourism industry					
Destination-specific promotional policies					
Labour flexibility policies					
Public policies to improve infrastructures oriented to tourism					
Creation of new tourist attraction factors					

20. Please indicate other business strategies to be implemented or policies that you consider appropriate for the sector

21. When do you think tourism from the following locations will recover? Please check just one entry in each row

	Summer 2020	Autumn 2020	Winter 2020	Spring 2021	Summer 2021
Own region					
Rest of Spain					
Europe					
Rest of the world					

Finally, in order to send you a copy of the study carried out and to be able to contact you again in the future, we would ask you to send us, if you consider it appropriate, your name, title and contact email.

22. Name

23. Position at the hotel or hotel chain

24. E-mail

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