The impact of the COVID-19 health crisis on tourist evaluation and behavioural intentions in Spain: Implications for market segmentation analysis

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This research aims to examine consumers' evaluation and expected behaviour changes that may arise in the wake of COVID-19 and to develop a market segmentation. Rooted in the prospect theory, after reviewing health crises, data were collected from a Spanish sample (n=1,000) relating to changes in consumers' evaluations of tourism products due to COVID-19 and their subsequent behavioural intentions. Findings indicate that conventional tourism may be undergoing a downturn as component of the leisure basket. Beyond a heterogeneous repercussion on tourism types and products, changes in relevance of purchase stages together with a reorganization of consumer planning are expected, with more local and individual holidays, more convenient dates, less use of vendors, more insurance contracting, and lower use of public transport and shared services. Moreover, the study provides evidence of the need of linking health risk and tourist behaviour as another behavioural segmentation base, identifying three different response behaviours. Finally, we outline improvements to hospitality and tourism management to face up to this situation.

Keywords: Evaluation; behavioural intentions; COVID-19; health crisis; behavioural segmentation; Spain

Introduction

Throughout the world tourism industry is currently suffering the effects of the SARS-CoV-2 outbreak. Although previous health-related crises, such as 2003 SARS and 2014 Ebola had an impact, none of those caused so much harm as COVID-19 (OECD, 2020). In this way, COVID-19 will mark a kind of reboot of the tourism activity since this sector is seen as most sensitive to different types of crises (Jin et al., 2019), including health-related ones (Jonas et al., 2011). In this vein, COVID 19 will bring about changes in tourism consumer behaviour that have to be identified and analysed (Sigala, 2020).

It should be noted that Spain has been one of the countries most affected by SARS-CoV-2 (Johns Hopkins University, 2020) and because of the paralysis of the tourism industry. With 83.7 million international tourists in 2019, Spain, together with the United States and France, leads the tourism market with a 6% share of arrivals, second by share of receipts (UNWTO, 2020), and a total expenditure of €92.28 M in 2019 (Tourspain, 2020). With tourism accounting for 12% of the GDP and 50% of international guests, Spain's tourism industry is highly competitive, leading the ranking of 140 countries published by the World Economic Forum (2019).

Extant research on the impact of crises on tourism is dominated by studies focusing on terrorist activities and wars (e.g., Walters et al., 2019), followed by those of natural cataclysm (e.g., Park and Reisinger, 2010), environmental disasters (e.g., Park & Reisinger, 2010), economic and financial crises (e.g., Jin et al., 2019), and political instability (e.g., Liu et al., 2016). By contrast, only a minority of studies (e.g., Jonas et al. 2011; Mizrachi & Fuchs, 2016; Promsivapallop & Kannaovakun, 2018) have dealt with health-related crises on tourism activity, with the main focus on confidence at destination (Kozak et al., 2007), risk perceptions (Rittichainuwat & Chakraborty, 2009), and tourist expenditure (Senbeto & Hon, 2020).

60   In this regard, extant literature fails to consider the impact on preference and product

61   choice and in the end in the changes in consumer behaviour in times of health-related crisis.

62   As an only exception, Kozak et al. (2007) analyse the impact of a health crisis on future

63   consumer behaviour. Thus, it is necessary to have evidence to understand how a health-

64   related crisis influences different aspects and stages of consumer decisions. Furthermore,

65   since it has been suggested that the perception of risk derived from a crisis can materialize

66   differently among tourists (Isaac, 2020) and that it is convenient to identify segments of

67   consumers with different levels of affectation in the face of a crisis (Campiranon & Arcodia,

68   2008), it is relevant to unravel and define consumer segments according to the impact of

69   health crises.

70   Then, the objective of this study is to analyse tourist consumer behaviour changes in

71   evaluation and product use due to COVID-19. Specifically, to answer diverse research

72   questions that appear as relevant such as, what relevance will tourism have for the consumer

73   in the face of a health crisis? What consequences can be derived from a health crisis on the

74   role of tourism for consumers? How can the consumption of different tourism products be

75   affected? What changes can be produced in consumption habits? Do consumers have

76   heterogeneous response behaviour? These research questions are assessed by carrying out an

77   empirical study based on a sample of the Spanish general population (n=1,000) since it is an

78   ideal setting to study changes in tourist consumer behaviour deriving from COVID-19 based

79   on the Spanish tourism characteristics mentioned above.

80   This research aims to make several contributions about the effects of COVID-19 on

81   hospitality and tourism. Firstly, as tourism is conceived as a necessity, rather than a luxury

82   (McCabe & Diekmann, 2015) and a determinant of quality-of-life (Uysal et al., 2016), it is

83   worth considering if COVID-19 can modify the role played by tourism in people's lives.

84   Secondly, as perceived risks and fear can modify consumer decision-making (Lerner &

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85   Keltner, 2001), and since a global health crisis such as COVID-19 prompts health risk

86   perceptions (Jonas et al., 2011), quarantines, and travel restrictions, we aim to find out how

87   tourist behaviour and consumption of actual hospitality and tourism products can be altered.

88   Thirdly, we aim to provide insights into consumers' adoption of new hospitality and tourism

89   services that are new trends such as virtual technologies (Tussyadiah et al., 2017) or home-

90   sharing (Hossain, 2020). Fourthly, the literature on crises has found it useful to group

91   travellers according to their level of risk perception (Isaac & Velden, 2018); therefore, this

92   work extends segmentation analysis by developing a tourist grouping arising from the

93   heterogeneous behaviour elicited by COVID-19. Finally, we provide indications to improve

94   hospitality and tourism management to adapt to this context.

95   **Literature review**

96   *The interrelation between crisis events and tourist behaviour*

97   Crisis events are unexpected disruptive incidents that can affect the tourist in various ways.

98   Their impact has been verified on tourist flows (Jin et al., 2019), perceived risk

99   (Promsivapallop & Kannaovakun, 2018), tourist behaviour (Kozak et al., 2007), tourist

100 expenditure (Senbeto & Hon, 2020), on travel choice (Kozak et al., 2007; Walters et al.,

101 2019) or indirectly through the emotional states of pleasure (Lehto et al., 2007). Risk

102 perceptions and safety concerns have relevant implications for any hospitality or tourist

103 product (Kim et al., 2016). In particular, credible communications are essential to reduce risk

104 perceptions (Seabra et al., 2014), and promotions should improve the feeling of safety among

105 tourists.

106   Based on the information-processing approach, that emphasizes the understanding of

107 decision processes (Payne & Bettman, 2004), the impact of crises on tourist's perceived risk

108 is a relevant issue since a high level of perceived risk and safety concerns play a central role

4

109 in tourists' decision-making processes (Kozak et al., 2007). Also, prospect theory holds that

110 individuals become more risk-averse as the loss probabilities increase (Kahneman & Tversky,

111 1979). Thus, risk perceptions of destination's attributes (i.e., facilitators and inhibitors)

112 increase tourist involvement in the tourist buying process through information seeking before

113 and during the trip. Involvement, as an individual process where tourist search information

114 from both contents and channels, has proven to affect safety concerns in travel (Seabra et al.,

115 2014). Since tourists make their travel decisions based on perceptions and not solely on

116 reality (Rittichainuwat & Chakraborty, 2009), perceptions about risk and uncertainty may

117 even weigh most for the formation of tourist decisions. Then, if a destination is perceived as

118 unsafe, its appeal and any intentions to revisit can be affected, and make tourist change their

119 travel plans (Isaac, 2020; Kozak et al., 2007). Evidence of health-related crisis studies due to

120 Covid-19 supports the negative impact on the intention to travel (Sánchez-Cañizares et al.,

121 2020).

122   This impact of crises on perceived risk can be affected by the exposure of tourists to

123 media (Seabra et al., 2014), or by factors such as gender (Adam, 2015), geographical origin

124 (Kozak et al., 2007), travel experience (Floyd et al., 2004), and age (Kim et al., 2016). Other

125 factors, however, can reduce the perceived risk of tourism, such as previous experience

126 (Rittichainuwat & Chakraborty, 2009), or security perception, since, under a crisis, safety is

127 the most important travel determinant (Zenker et al., 2019).

128   Indeed, tourist behaviour experiences far-reaching differentiation due to multiple

129 objective and subjective factors related to perceived risk (Isaac, 2020; Kozak et al., 2007).

130 Thus, increasing attention has been paid to the tourists' segmentation based on the main

131 premise that, among the broad spectrum of tourist behaviours, there are large groups of

132 individuals who share similar characteristics that are vital to understanding their behaviour in

133 crisis events (Campiranon & Arcodia, 2008; Isaac & Velden, 2018). However, researchers do

134 not have addressed how health-related crises could lead to the formation of different groups of

135 tourists, being it a relevant issue to be investigated. In particular, since COVID-19 will bring

136 heterogeneous changes in tourist behaviour and priorities (Sigala, 2020) it is especially

137 relevant to study the different tourist segments that will emerge as a consequence of this

138 pandemic.

139 *Health-related crisis events in hospitality and tourism*

140 Health-related crises are a major concern for both tourists and tourism service providers since

141 they influence tourist behaviour in numerous ways, from their traveling decisions to their

142 activities at the destination before, during, and after the crisis (Senbeto & Hon, 2020). Table 1

143 contains a review of studies on health-related crises in hospitality and tourism.

144   In the last two decades, *several health-related crises* such as Ebola, SARS outbreaks,

145 the swine flu pandemic, or bird flu have highlighted the vulnerability and fragility of the

146 tourism industry (Jonas et al., 2011; Mizrachi & Fuchs, 2016; Senbeto & Hon, 2020). For

147 example, Taiwan suffered a 71.54% decrease in arrival numbers in the second quarter of 2003

148 due to the outbreak of the SARS epidemic (Mao et al., 2010). Moreover, according to Kozak

149 et al. (2007) and Mizrachi and Fuchs (2016), the occurrence of serious infectious diseases in a

150 destination leads to a decrease in tourist arrivals, even in danger-free zones.

Table 1. Selected publications on health-related crisis effects on hospitality and tourism.

Author/s (Year)	Event under study	Setting	Concepts studied	Principal findings
Mizrachi & Fuchs (2016)	Ebola	200 posts from TripAdvisor about 11 African countries	Risk handling	Tourists handle the risk through social media posts when visiting countries with health-related crises.
Mao et al. (2010)	SARS	Inbound arrivals from Japan, Hong Kong, and the USA in Taiwan.	The recovery of tourism industry after an infectious disease outbreak	Differences in recovery patterns according to the tourist's home country.
Jonas et al. (2011)	SARS outbreaks and swine flu epidemic	232 potential tourists in Haifa, Israel	Personal background, travel behaviour, information use, general risk perception, health risk perception	Health risk perception ranks relatively high against other types of risk perception. Environmentally induced factors contribute greater overall perception of health risk than any others.
Rittichainuwat & Chakraborty (2009)	SARS and bird flu in Thailand.	570 questionnaires with inbound leisure travellers to Thailand.	Tourists' risk perception	Perceived disease risk is mitigated by travellers' prior experience with the foreign country.
Senbeto & Hon (2020)	SARS, 2008 recession, and bird flu	Secondary data from tourists visiting Hong Kong	Tourist behaviour expenditure	Tourism expenditure is reduced during and after crises.
Kozak et al. (2007)	SARS outbreaks	1180 travellers visiting Hong Kong	Types of risks, probability of occurrence, media efficacy, probability of changing the travel destination, confidence-building measures for travel	High probability of change in travel plans due to risk in the destination. Risk perceptions and types of confidence-building measures for travel differ between geographical regions.
Promsivapallop & Kannaovakun (2018)	The travel risk dimensions, including health-risk,	323 German university students, intentions to visit Thailand	Dimensions of travel risk perception: health, safety, crime, false practice, mass, communication, and political risk	In health risk, familiarity seekers possess higher risk perceptions than novelty seekers. Respondents who have previous visit experience to Thailand perceived lower health risk levels

1   Regarding tourist profiles, Lepp & Gibson (2003) assert that women show a higher

2 sensitivity to potential health-related risks than men. Similarly, Promsivapallop &

3 Kannaovakun (2018) detected that young adults with prior visit experience have lower

4 perceptions of health risk than those who have no prior visit experience and familiarity

5 seekers tend to perceive higher levels of health risk than those with more novelty-seeking

6 characteristics. Finally, with respect to risk control, Jonas et al. (2011) observed that risk

7 associated with environmental aspects beyond the control of traveller behaviour contributes

8 more to the overall perception of risk to traveller health.

9   The literature review also highlights the importance of a comprehensive *understanding*

10 *of the behaviour of tourists during different* stages. Senbeto and Hon (2020) found that the

11 nature and phases of crises do not equally influence tourists in terms of age, the purpose of

12 visit, and expenditure patterns in tourists.

13 **Consequences of COVID-19 in Spanish tourism industry**

14 In response to COVID-19 the Spanish National Government activated a state of alarm and

15 emergency which has been prolonged for 99 days, with the imposition of a strict lockdown

16 that has closed frontiers, limited inland movements, and forbidden tourism travel (Spanish

17 Government, 2020). The number of international tourist arrivals to Spain in April 2020 was

18 zero (UNWTO, 2020), and the forecasted revenue losses in the tourism industry during the

19 lockdown reaches about €43.46 billion (Statista, 2020). Specifically, hotel reservations fell to

20 a historical 0% in April and 1% in May 2020 (Spanish National Statistics Institute, 2020).

21   Regarding transport, it is estimated that there will have been a 55% reduction in air

22 traffic in Spain by the end of 2020, and a loss of 114 million passengers (IATA, 2020). The

23 air sector has resumed its flights immersed in a price war (La Vanguardia, 2020). The

24 reduction in air traffic, closely linked to tourism, has generated air revenue losses estimated at

25   €15,000 M in Spain (ALA, 2020). By contrast, trains have increased their prices after the

26   resumption of the service (El País, 2020), once the lockdown had been eased through a

27   progressive de-escalation process (Spanish Health Ministry, 2020).

28   It should also be said that Spain offers travellers different types of tourism according

29   to trip goals (e.g. leisure tourism, cultural tourism, sports tourism) (Albaladejo & González-

30   Martínez, 2019), and destinations (e.g., coast tourism, urban tourism, rural tourism)

31   (Rodríguez-Pérez de Arenaza et al., 2019). As it has happened in previous crisis events in

32   Spain, COVID-19 is expected to impact differently on the diverse types of tourism. Thus, for

33   example, Spain's mass tourism destinations, mainly linked to holiday tourism in urban and

34   coastal destinations, have been recognized as the most affected types of tourism in previous

35   crises (cf. Garau-Vadell et al., 2018).

36   **Methodology**

37   *Data collection and sample*

38   A structured, self-administered online questionnaire method and convenience sampling

39   technique has been used to obtain quantitative data. This research method is considered useful

40   to reach a large target sample (Isaac, 2020). The questions and statements in the questionnaire

41   were extracted and adapted from English sources, translated into Spanish for the collection of

42   data from a Spanish sample, and then translated back into English. No problems were

43   encountered during the double translation process or in a prior content analysis. The

44   questionnaire was developed with Google Forms and responses were further analysed with

45   SPSS. Data collection was carried out from the period of 30 April – 12 May 2020. During this

46   period, 1,000 valid responses were obtained. The sample consists of Spanish residents over 18

47   years old. Following previous articles (e.g., Isaac, 2020), the survey was conducted through

48   various channels (Facebook, LinkedIn, Whatsapp, email), and also forwarded by the

49   individuals that were primary recipients, i.e. following the so-called snowball strategy.

50   *Measurement*

51   The questionnaire is divided into four sections[1]. The first section aims to obtain information

52   about the role of tourism in people's lives and the effect profile derived from COVID-19. To

53   detect if tourism is essential in people's lives, if it is part of their well-being, or if it is

54   considered as a leisure activity, is relevant when studying travel behaviour since this could

55   influence tourist behaviour (Uysal et al., 2016). Furthermore, understanding who will be the

56   most affected is relevant, since each segment of consumers has a relevant share within the

57   tourism market.

58   The second section collects information about the range of the effect and the expected

59   impact on products and prices, including alternatives such as virtual technologies. Using

60   established classifications of types of tourism by destination and by reason for the trip

61   (Goeldner & Ritchie, 2012), products that comprise the tourist offer from the customer's point

62   of view (Medlik & Middleton, 1973), and using virtual technologies according to the different

63   destination 'environments' (Tussyyadiah et al., 2017), we address these issues. A weighted

64   index was created by scoring the 5 levels of response (1 = none to 5 = much) and considering

65   the total sample of respondents. Considering *s* as the sample size, the index can be calculated

66   as:

67
$$\sum_{1}^{5} \frac{I_i}{5 \times s}$$

68   The third section gathers information about the changes in tourist behaviour patterns,

69   i.e. indicate future behaviour and future tourism after COVID-19. Accordingly, several

[1] The complete survey instrument can be obtained by accessing the supplementary material of this study.

70 questions considering the possible changes in tourist behaviour were included in the

71 questionnaire. These questions were created/adapted based on previous work that has

72 investigated changes in tourism consumer behaviour when facing various types of crisis

73 events. Some example questions that arise are about traveling more locally or internationally

74 (Reisinger & Mavondo, 2005), purchasing more or less travel insurance (Sarman et al., 2020),

75 traveling more individually or collectively (Meng, 2010), or using home-sharing services

76 more or less frequently (Hossain, 2020).

77   Finally, information on socio-demographic factors were gathered, including gender,

78 age, educational level, and home province (in Spain), since previous literature has shown that

79 personal factors influence tourist behaviour (Isaac, 2020).

80 *Demographic profile of the respondents*

81 Of the 1,000 respondents who participated in this study, considering gender, 44.3% were male

82 (n = 443) and 55.7% were female (n = 557). Most of the participants were aged between 41

83 and 54 years old (38.3%) closely followed by those between 25-40 years old (37.2%). The

84 other categories, 55-65 years old (13.6%), 18-24 (5.9%), and 65 or more (5.0%) complete the

85 sample. Regarding educational level, the majority of respondents (68.7%) held a university

86 degree, while 25.7% had completed secondary studies and 5.6% primary studies. Finally,

87 looking at the home province, our study encompasses 37 out of the 52 provinces of Spain.
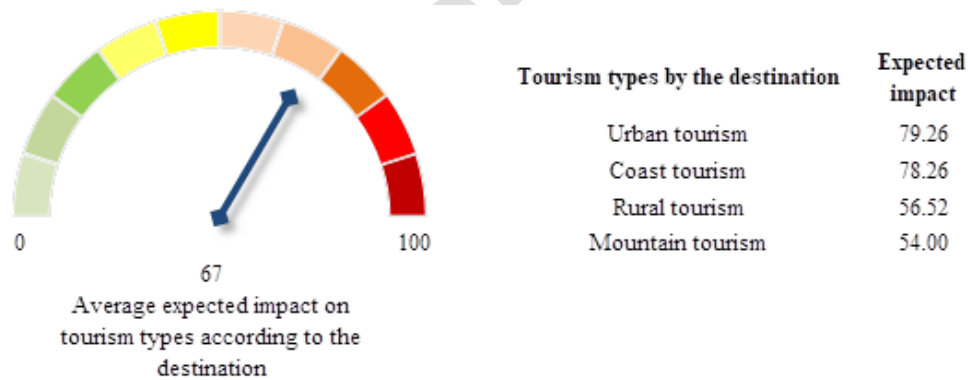
88 **Results**

89 *The importance of tourism and the effect profile derived from COVID-19*

90 Concerning the *importance of tourism in people's lives*, only a minority of the respondents,

91 4.2% and 4.6% considered that tourism was not essential or is not part of their well-being

92 respectively. On the contrary, 59.5% consider that tourism is quite or very essential in their

93 lives (37.5% quite and 22.0% very) and 53.1% conceive tourism as part of its well-being

94 (34.8% quite and 18.3% very). Besides, it is remarkable that more than half of respondents

95 (51.6%) consider that after COVID-19 *traveling as a leisure activity* will be less highly

96 considered, while 13.2% thinks it will be equally well considered, 9.7% that it will be higher,

97 and a quarter (25.5%) that it will depend on the chosen destination. Our findings also reveal

98 that 41.3% of respondents consider that the elderly will be the most affected group with

99 regard to travel after COVID-19, followed by adults (30.2%), and, to a lesser extent, young

100 people (15.5%) and children (13.0%).

101 *Scope of the impact of COVID-19 on tourism types and products*

102 Regarding the effect on *tourism types by destination*, Figure 1 shows that the average

103 expected impact on the four destinations is 67 over 100. By disaggregating this according to

104 type, we find that urban tourism is expected to be the most affected (79.26), closely followed

105 by coastal tourism with 78.26.

Tourism types by the destination	Expected impact
Urban tourism	79.26
Coast tourism	78.26
Rural tourism	56.52
Mountain tourism	54.00

106

107 Figure 1. Expected negative impact on consumption of tourism types by destination (0–100)

108

109   To further understand the impact of COVID-19 on tourism, we also asked respondents

110 for their perception of how *tourism types according to the reason for the trip* will be affected.

111 In this case, it can be seen that leisure tourism will be the most affected (74.20) and that

112 nature tourism will be the least (32.90), while the other four types of tourism are very close to

113 the average effect (54.00) (see Figure 2).

Tourism types by trip' goals	Expected impact
Leisure tourism	74.20
Cultural tourism	56.80
Sports tourism	55.95
Health tourism	52.95
Business tourism	50.20
Nature tourism	32.90

Average expected impact on tourism types by trip' goals

Figure 2. Expected negative impact on consumption of tourism types by trip' goals (0–100).

Respondents were also consulted whether they believe that COVID-19 will influence the *prices of different tourism products* (see Figure 3). The results obtained reveal that of the four categories of hospitality and tourism products that make up the tourist offer, a greater increase in the price of transportation (22.65%), and food (22.20%) is foreseen than for the activities at the destination or the accommodation.
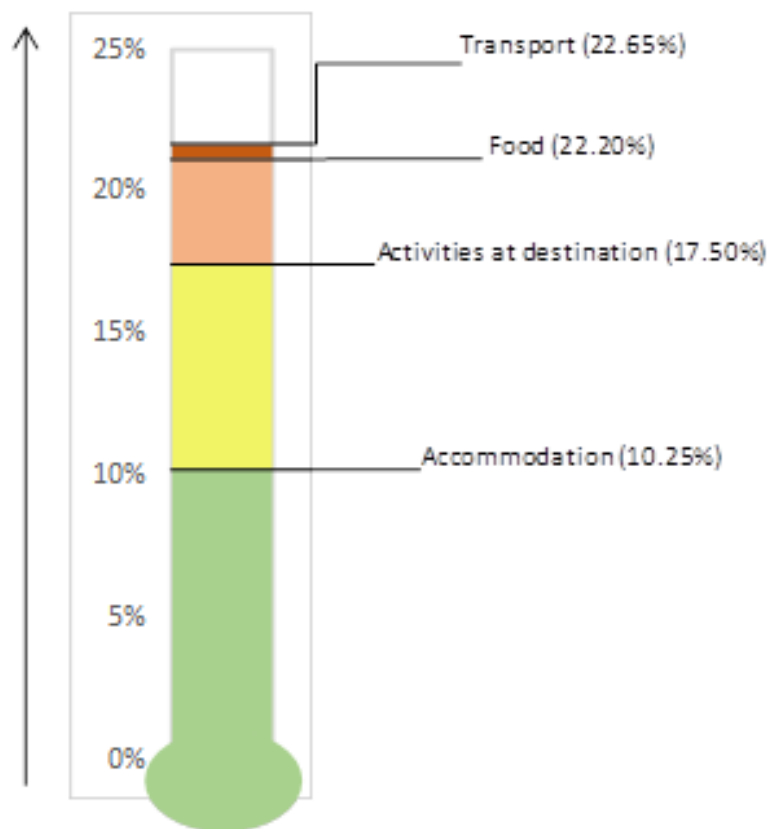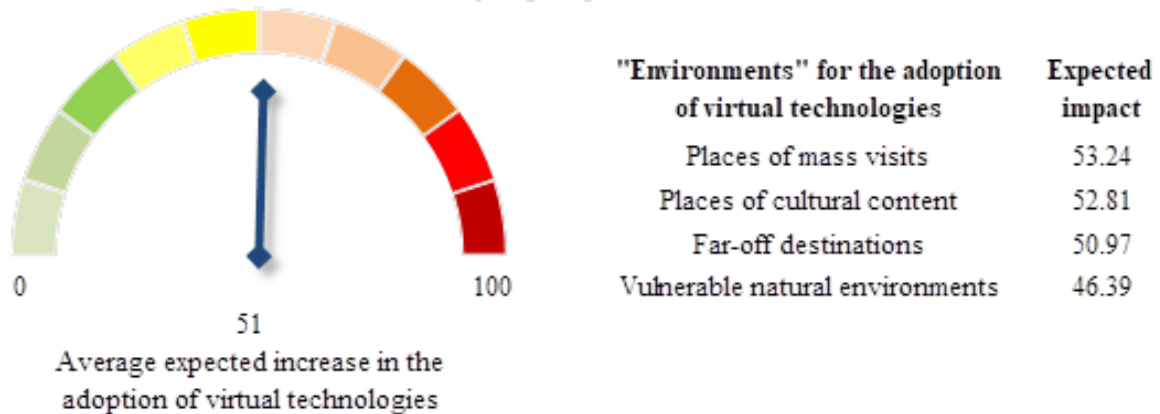

Figure 3. The expected increase in the prices of travel-related expenses (%).

123 *Impact on the adoption of virtual technologies*

124   Another issue that appears to be relevant when studying the impact of COVID-19 on

125 tourism has to do with *virtual technologies*. It can be seen that an increase, albeit modest in

126 the use of these technologies is expected, (see Figure 4). The average increase is 51, which

127 does not differ too much according to the type of 'environment'. Although it is expected that

128 their use will grow mostly in places of mass tourism (53.24), similar growth is expected in

129 places of cultural content (52.81) and far-off destinations (50.97).

130   Additionally, results show a positive relationship between expected price increases

131 and the use of virtual technologies (prices and places of massive visit ($r = .071$, $p = .025$), prices

132 and places of cultural content ($r = .097$; $p = .002$), prices and far-off destinations ($r = .099$,

133 $p = .002$), and prices and vulnerable natural environments ($r = .082$; $p = 0.009$). In other words,

134 the greater the expected price increase the greater the tendency to use virtual technologies.

135

"Environments" for the adoption of virtual technologies	Expected impact
Places of mass visits	53.24
Places of cultural content	52.81
Far-off destinations	50.97
Vulnerable natural environments	46.39

51
Average expected increase in the adoption of virtual technologies

136

137 Figure 4. The expected increase in the adoption of virtual technologies (0–100).

138 *Changes in tourist behaviour patterns*

139 An immediate issue to be considered concerns the changes in the *geographical distance of*

140 *travel* as a result of COVID-19. In this sense, 70.0% of those surveyed expressed their desire

141 to travel more domestically, while 29.1% plan to continue traveling as before and only a

14

142 marginal 1% express their desire to travel more internationally. Regarding *traveling*

143 *individually or collectively*, findings reveal that 23.1% of people increase their interest in

144 traveling individually, with this trend being somewhat greater among women (25.0%) than

145 men (20.8%). Furthermore, regarding the organization of the trip, most respondents (68.7%)

146 opt to continue using *tourist intermediaries* as before, while 19.8% will reduce their use and

147 11.5% will increase it.

148   Additionally, when asked about *contracting insurance*, the majority of those surveyed

149 (47.7%) said that they would continue to contract the same insurance as before COVID-19,

150 although it should be borne in mind that 34.4% of people said that they would contract greater

151 insurance, as opposed to 17.9% who thought that they would contract less insurance. It should

152 also be noted that the tendency to contract more insurance is greater among women (38.0%)

153 than for men (31.6%).

154   In terms of *length of holidays*, although the majority of respondent's holidays (71.4%)

155 will be of the same length as before, a significant number (27.0%) plan to shorten their

156 vacations. Furthermore, 38.3% of respondents will choose to modify their *usual travel dates*.

157

158 Table 2. Changes in usual travel dates according to sex and age (%)

Age	I would modify my usual travel date		I would travel on the usual date		Total
	Male	**Female**	**Male**	**Female**	
18-24	6.8%	10.1%	2.7%	5.3%	5.9%
25-40	28.8%	42.2%	37.0%	37.5%	37.2%
41-54	45.9%	30.0%	39.4%	40.0%	38.3%
55-65	14.3%	13.5%	14.1%	12.8%	13.6%
>65	4.2%	4.2%	6.8%	4.4%	5.0%
Total sample	146	237	297	320	1,000
	$\chi^2 = 11.904$; p=.018		$\chi^2 = 4.388$; p=.356		$\chi^2 = 9.932$; p=.042

159

160   It should be noted that once again we found differences according to the sex of the

161 respondents. In this case, 42.5% of women would opt for a change of dates, compared to

15

162 33.0% of men. These results reflect that there is a homogeneous pattern based on age and sex

163 among those who would consider changing their traveling dates (χ^2 =11.904; p=.018) (see

164 Table 2).

165   Moreover, respondents were asked about changes in their intended use of home-

166 sharing. The majority (54.5%) stated that they will use shared housing establishments to a

167 lesser extent, in contrast to only 1.8% who say they will use them more and 43.7% who say

168 they will use them the same as before COVID-19. Intentions to use home-sharing is related to

169 sex (see Table 3). There is also a positive relationship between travel intentions according to

170 geographical distance and the intention to use home-sharing (χ^2=73.386; p=.000). These

171 findings illustrate that there is a homogeneous pattern based on gender and travel intentions

172 according to geographical distance with intentions to use home-sharing.

173

174 Table 3. Relationship between consumer profile and intention to use home-sharing (%)

	I will use shared housing more	I will use it the same as before	I will use shared housing less	Total
Male	44.4	51.1	59.6	44.3
Female	55.6	48.9	40.4	55.7
Sex		χ^2 = 6.575; p=.037		
More locally	16.6	56.1	81.0	70.0
The same as before	83.4	43.3	17.8	29.1
More internationally	0.0	0.6	1.2	0.9
Geographical distance		χ^2 = 73.386; p=.000		

175

176   To continue to study in-depth the changes in consumer's decision-making, we

177 compared the *importance of travel planning stages before and after* COVID-19 (results are

178 shown in Table 4).

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180

181   Table 4. Changes in the importance of phases of a tourist trip (%)

		Before COVID-19	After COVID-19	Δ%	t	p
How important were/will be for you the following issues of a tourist trip?	Trip organization and preparation	23.02	25.95	+12.73	15.659	< .001
	Journey and accommodation	27.06	27.01	-0.2	-11.259	< .001
	Activities and services at the destination	21.86	22.72	+3.93	9.906	< .001
	Experiences	28.06	24.32	-13.32	-2.564	< .01

182

183   It can be seen that organization and preparation stage gain relevance in consumers'

184 mind, together with activities and services at destination, losing importance experiences at

185 destination (see Figure 5).

186

187

188 Figure 5. Changes in the importance of phases of a tourist trip (%).

189

190   Finally, analysing *how the use of transport will change in tourist trips*, we observe

191 differences between the uses of each means of transport, before and after COVID-19 (see *t*-

192 statistic in Table 5). Car use will increase substantially; meanwhile, almost all rest public

193 transport such as airplanes, trains, buses, and car-sharing will decrease (see Figure 6).
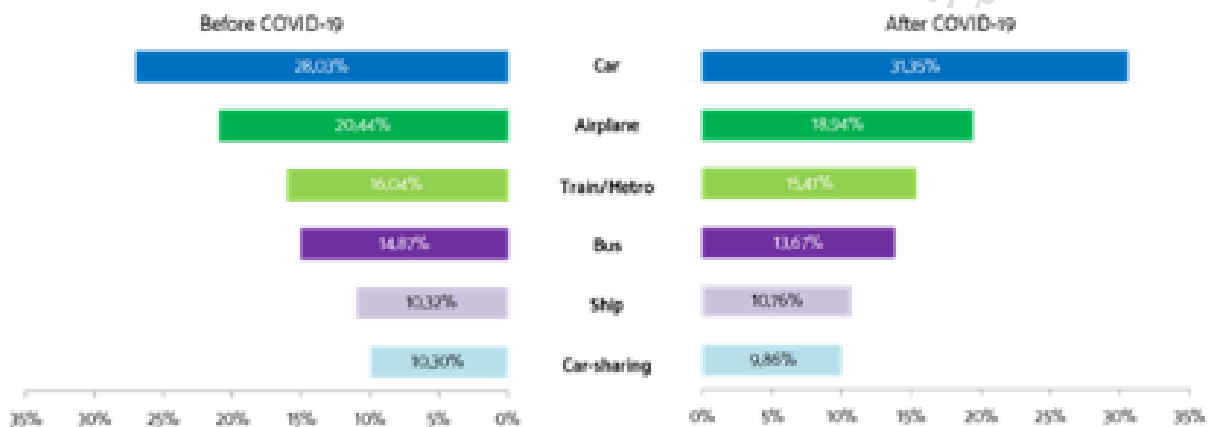
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195

196 Table 5. Changes in transport mean use (%)

		Before COVID-19	After COVID-19	Δ%	t	p
How often did/will you use the following means of transport?	Car	28.03	31.35	+11.84	5.375	< .001
	Airplane	20.44	18.94	-7.34	-15.452	< .001
	Train/Metro	16.04	15.41	-3.92	-10.400	< .001
	Bus	14.87	13.67	-8.04	-12.762	< .001
	Ship	10.32	10.76	+4.25	+3.356	< .001
	Car-sharing	10.30	9.86	-4.20	-7.374	< .001

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200 Figure 6. Expected changes in transport mean use (%).

201 *Consumer's propensity to change due to COVID-19: A segmentation analysis*

202 Based on behavioural responses to COVID-19, and considering consumers' heterogeneous

203 judgment of the risks and consequences (Isaac & Velden, 2018), segmentation analysis was

204 carried out. First, a hierarchical cluster using the Ward method was made, where the

205 suitability of obtaining a solution formed by three clusters was determined. Then, for the final

206 composition of the groups, a non-hierarchical cluster analysis (K-means) was applied.

207 Furthermore, a discriminant analysis was carried out for validation purposes, which showed

208 that 96.8% of the cases have been correctly classified (Hair et al., 2010). For the analysis, we

209   utilized seven variables to characterize these groups of consumers: (1) travel intentions

210   according to geographical distance, (2) travel group, (3) length of vacation, (4) expected price

211   increase, (5) expected increase in the use of virtual technologies, (6) impact of COVID-19

212   according to the destination, and (7) impact of COVID-19 according trip' goals.

213   In what follows the three clusters are described according to the interpretation of the

214   variables used to determine homogeneous groups of consumers.

215   *The true believers*

216   This segment accounts for 29.8% of consumers. This type of consumer expects a lower

217   impact of COVID-19 on tourism, and therefore expects to continue traveling to the same

218   destinations they have planned (59.4%) and with their habitual travel companions (79.9%).

219   Although they expect an average increase in the prices of tourist services in general, they are

220   not likely to shorten their vacation period (71.1%). Moreover, this group of consumers

221   considers that there will be a moderate increase in the use of virtual technologies for tourism

222   purposes. Compared with other segments, this is the most balanced in terms of gender, being

223   composed of 48.7% men and 51.3% women. This group includes the majority of people

224   between 18 and 24 years old (52%) and a good proportion of people between 25 and 40

225   (31%) and between 41 and 54 (30.3%). Consumers in this group are optimistic people and can

226   be called *true believers*, as they do not intend to make changes to their traditional tourist

227   routines, and therefore will continue with their normal travel planning.

228   *The cautious travellers*

229   This segment encompasses 30.9% of respondents. More local trips (68.7%) but of equal

230   length (72.2%) and with their traditional travel groups (75.1%) are preferred by this segment

231   of consumers. This group of tourists expects a modest impact on tourist destinations as a

232   result of COVID-19, and in turn considers that there will be a moderate increase in the prices

233   of accommodation, transport, food, and tourist activities. Furthermore, this group considers

234   that although the impact of virtual technologies will increase, this will not be exaggerated. If

235   we analyse the composition of the group, this is mostly composed of females (59.9%) and

236   encompasses a good proportion of people between 25 and 40 (31.7%) and between 41 and 54

237   years of age (29.2%). This group of consumers could be referred to as *cautious travellers*,

238   since although they intend to continue with certain traditional patterns of travel (e.g. traveling

239   with their traditional travel groups); they intend to opt for more local holidays, as they

240   anticipate an impact on various geographical destinations.

241   *The prophets of doom*

242   The third segment is the largest in size (39.3%) and includes consumers who mostly prefer

243   more local (69.1%), more individual (51.4%), and shorter (52.7%) trips. All of which because

244   they predict a high impact of COVID-19 on all tourist destinations, which in turn leads them

245   to forecast a high increase in the prices of the various tourist services and even a high increase

246   in virtual technologies to replace face-to-face tourism. This group is made up of 55.7%

247   women and 44.3% men and the age range distribution is quite homogeneous, but it is notable

248   for including most people between 55 and 65 years (53.4%). This type of tourist has a

249   negative outlook, intends to change several of their traditional tourist routines, opting for

250   more individual, more local, and shorter trips and predicts that COVID-19 will have a severe

251   impact on tourist destinations in conjunction with a high increase in prices. Therefore, this

252   group could be called the *prophets of doom*.

253   **Conclusions and discussion**

254   *Summary and discussion of findings*

255   The findings of this study show that despite the appearance of coronavirus, tourism is seen as

256   essential for the majority of people and part of their well-being. Previous literature (e.g.,

257   McCabe & Diekmann, 2015; Uysal et al., 2016) have demonstrated that tourism contributes to

258   the quality of life and the well-being of people, however, this study states that despite the

259   global health crisis, tourism continues to be important in people's lives. Nevertheless, it

260   should be noted that most people perceive tourism less and less as a leisure activity. This

261   implies changes in the leisure basket. In this context, our results warn that the elderly will be

262   the most affected with regard to traveling again, which is not surprising given that they have

263   been one of the groups most affected healthwise by coronavirus.

264   Thereafter, by analysing the scope of the impact of COVID-19 on tourism, our

265   findings provide evidence that destinations with open spaces and less mass tourism, such as

266   mountain and rural tourism may increase in demand, in contrast to urban and coast tourism

267   (Rodríguez-Pérez de Arenaza et al., 2019). Moreover, our results demonstrate that holiday

268   tourism is predicted to be the most affected, while it is thought that specialized tourism (e.g.

269   health and nature tourism) and affinity tourism (e.g. sports and business tourism) will be less

270   affected. Furthermore, people consider that all tourist products will face a price increase after

271   COVID-19. Accordingly, our results are consistent with previous literature that states that

272   normally in pre- and post-crisis periods increases occur in the price of tourist services

273   (Jiménez-Guerrero et al., 2019). The increasing of costs, fall in demand, and also possible

274   limits in supply are possible arguments that may explain consumers' expectations regarding

275   prices. In fact, this crisis is providing examples of price cuts in situations of industry

276   overcapacity, such as the case of air transport, where prices have fallen sharply (La

277   Vanguardia, 2020). However, opposite evidences are found in the train transport (El Pais,

278   2020). Our findings also anticipate a general increase in the use of virtual technologies, which

279   will make up for some of the reduction in presential tourism, thereby hastening the expected

280   adoption of this type of technology.

281   Regarding changes in tourist behaviour patterns, while segmentation analysis yields

282   three segments, overall results also show certain prevailing trends, such as a greater

21

283 propensity for more local and individual travels. If anything, people are inclined to contract

284 more insurance. In such a way, our results are consistent with previous analyses (e.g., Sarman

285 et al., 2020), that identify health-related crisis events as one of the drivers for increased travel

286 insurance purchase. Furthermore, our results, as well as confirming that the car is the

287 preferred means of transport for tourists, anticipate its increased use, in contrast to a reduced

288 use of public transport (e.g. airplane, bus), which may lead to a stagnation in demand for

289 public transport services. Our findings also suggest that people will use fewer tourist

290 intermediaries, giving more relevance to pre-purchase stages regarding the organization and

291 planning of the trip at the expenses of experiences at destination. Furthermore, our results

292 allow us to say that the COVID-19 is acting as a brake on the intense growth of home- and

293 car-sharing services, which could lead to these types of services having to be rethought or to

294 undergo innovation to meet new consumer's safety needs. Furthermore, our results show that

295 in overall, women tourists foresee to make more changes in their travel routines than men,

296 consistent with previous literature (Lepp & Gibson, 2003).

297   Finally, the study contributes to the identification of three segments of tourists with

298 clearly different decision-making behaviours as a result of COVID-19. One group is made up

299 of tourists who do not intend to make too many changes in their routines and therefore

300 continue with their normal travel planning, these are the 'true believers'. Secondly, a group of

301 'cautious travellers', who choose to change certain traditional travel patterns. The third group

302 could be named as 'prophets of doom' since they choose to change the vast majority of their

303 normal tourist routines because they foresee a high impact of the COVID-19 on all aspects of

304 tourism. This behavioural segmentation could help decision-makers to adopt more effective

305 hospitality and tourism decisions (Isaac, 2020).

306

307

308 *Implications*

309 This study offers several theoretical and managerial implications. From a theoretical point of

310 view, we identify the benefits of re-evaluating the activities considered as leisure, as well as

311 the renewed relevance of alternative evaluation phase and choice criteria by addressing

312 various issues of concern, such as the role of information, planning and the pre-trip stage.

313   From the managerial point of view, based on the results of this study and on the

314 review of the literature on crisis event management, this work addresses some guidelines for

315 appropriate marketing recovery plans. This means forging a link between consumer decision-

316 making and marketing management. Appropriate product management, should not resort to

317 excessive price decreases or increases, it should provide timely and trusty information, and a

318 promotional strategy oriented to ensure a sensation of safety. Accordingly, the hospitality

319 industry should incorporate signals to their customers that maximize the perception of safety.

320 Moreover, it is of particular relevance that destination management organizations help to

321 support recovery initiatives for the hospitality industry, not be disjointed from the local

322 cultural context.

323   It is also necessary to redefine the range of products on offer, especially for the third

324 age sector, and opportunities are emerging for virtual leisure alternatives, in particular, in

325 relation to places that are visited en masse, such as museums or major tourist destinations. In

326 relation to insurance and coverage management companies, these can find business

327 opportunities in renewed demands from potential customers. Likewise, the restaurant industry

328 may find an increased predisposition to adopt new payment services that avoid cash, such as

329 apps or restaurant coupons. Finally, the sharing economy could consider devising new quality

330 signals to reduce perceived risks and fears.

331

23

332 *Limitations and future research lines*

333 Carried out in the assimilation phase of the crisis, this study is not exempt from certain

334 limitations. Further evidence from longer research periods are needed to detect post

335 consumption behaviour and fully assess the impact of COVID-19. Another avenue of research

336 is the reassessment of the drivers of customer satisfaction and loyalty. Moreover, although

337 this study raises some managerial guidelines, it is necessary to explain how quality signals in

338 hospitality can incorporate relevant information on health conditions. Finally, an emerging

339 debate that deserves attention is about the duration of the COVID-19 effects, between those

340 who consider a simple short-term effect (Zopiatis et al., 2019), even when they have

341 catastrophic effects (Rittichainuwat et al., 2018), and those who posit a long-term effect that

342 will change a generation's behaviour (e.g., Malmendier & Nagel, 2011).

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503

504 **Supplementary material**

505 Survey instrument

Variables	Measurement	Author/s
Section 1 - The importance of tourism and profile of affectation		
Tourism is essential in my life	Likert scale 1 = none; 5 = much	McCabe and Diekmann, 2015
Tourism is part of my well-being	Likert scale 1 = none; 5 = much	Uysal et al., 2016
After COVID-19, your consideration of traveling as a leisure activity?	1 = will be lower; 2 = will be the same; 3 = will be higher; 4 = will depend on the destination	Chang and Gibson, 2015
What kind of people will COVID-19 affect the most to travel again?	1 = children; 2 = youngsters; 3 = adults; 4 = elders	Losada et al., 2017
Section 2 - The scope of impact of COVID-19 on tourism		

How do you think COVID-19 will influence the price of …?
  Transport
  Accommodation
  Food
  Activities at destination
	Likert scale
	1 = none; 5 = much
	Index 0 to 100
		McKercher, 2016; Medlik and Middleton, 1973

Do you think that COVID-19 will negatively affect these destination tourist types?
  Coast tourism
  Urban tourism
  Rural tourism
  Mountain tourism
	Likert scale
	1 = none; 5 = much
	Index 0 to 100
		Duman et al., 2020; Goeldner and Ritchie, 2012

How do you think COVID-19 has affected the following tourism products?
  Leisure/holiday tourism
  Sports tourism
  Health tourism
  Nature tourism
  Cultural tourism
  Business tourism
	Likert scale
	1 = none; 5 = much
	Index 0 to 100
		Duman et al., 2020; Goeldner and Ritchie, 2012

How much do you think that virtual tourism technologies (virtual reality, augmented reality) will be used after COVID-19?
  Places of massive visit
  Far destinations
  Places of cultural content
  Natural environments
	Likert scale
	1 = none; 5 = much
	Index 0 to 100
		Tussyadiah et al., 2017

Section 3 - Changes in tourist behavior patterns		
How do you think COVID-19 will change the way you do tourism?		
Regarding geographical distance	1 = I will travel more domestically; 2 = It will be the same as before; 3= I will travel more internationally	Reisinger and Mavondo, 2005
Regarding the number of people	1 = I will travel more individually; 2 = It will be the same as before; 3 = I will travel more as a group	Meng, 2010

Regarding the organization of the trip	1 = I will rely less on tourist intermediaries; 2 = It will be the same as before; 3 = I will rely more on tourist intermediaries	Camilleri, 2018
Regarding the contracting of coverages (insurance, cancellations)	1 = I will hire fewer coverages than before; 2 = I will hire the same coverages; 3 = I will hire more coverages than before	Sarman et al., 2019
Regarding the duration of your vacation/holiday	1 = It will be of shorter duration; 2 = It will be of equal duration; 3 = It will be of longer duration	Gokovali et al., 2007
Regarding the period that you usually made/scheduled your vacation trip	1 = I would travel on the usual date; 2= I would modify my usual travel dates	Kozak et al., 2007
Regarding the use of shared housing (e.g. Airbnb, ...)	1 = I will use shared housing less; 2 = It will be the same as before; 3 = I will use shared housing more	Guttentag et al., 2017

Before COVID-19, how important were for you the following issues of a tourist trip?
  Organization and preparation of the trip
  Journey and accommodation
  Activities and services at the destination
  Experiences
	Likert scale
	1 = none; 5 = much
	Index 0 to 100
		Cohen et al., 2013; Godovyk and Tasci, 2020

After COVID-19, how important will be for you the following issues of a tourist trip?
  Organization and preparation of the trip
  Journey and accommodation
  Activities and services at the destination
  Experiences
	Likert scale
	1 = none; 5 = much
	Index 0 to 100
		Cohen et al., 2013; Godovyk and Tasci, 2020

Before COVID-19, how often did you use the following means of transport?
  Airplane
  Train/Metro
  Ship
  Bus
  Car
  Car-sharing
	Likert scale
	1 = none; 5 = much
	Index 0 to 100
		Hossain, 2020; Nerhagen, 2003

After COVID-19, how often will you use the following means of transport?
  Airplane
  Train/Metro
  Ship
  Bus
  Car
  Car-sharing
	Likert scale
	1 = none; 5 = much
	Index 0 to 100
		Hossain, 2020; Nerhagen, 2003

Section 4 – Demographic profile		
Sex	1 = Male; 2 = Female	
Age category	18-24; 25-40; 41-54; 55-65; > 65	Isaac, 2020; Perpiña et al., 2019; Yang et al., 2018
Educational level	Primary; Secondary; University	
Home province	Name of province	

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