RESEARCH NOTE

HEALTH SECURITY PERCEPTIONS AND LENGTH OF STAY

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The health risks associated with COVID-19 have increased tourists' safety concerns when traveling. We analyze the linkages between tourists' length of stay and their perceptions about health security in different public venues at the destination: the street, bars and cafés, restaurants, the chosen accommodation, the beach, and shops and stores. We use survey data collected from tourists to a nature-based region (Asturias) in Northern Spain in the summer of 2020 as our case study. Based on separate linear regressions, we examine how health security perceptions vary with the length of the stay across different public venues. In doing so, we control for a wide set of sociodemographic and trip-related characteristics. We find evidence of a consistent nonlinear negative relationship between the length of the stay and the perceived health security in these public venues. We also document that hotel guests have lower health security perceptions, both at the hotels themselves and other public venues. This is the first work that explores how health security perceptions in different public domains deteriorate with the tourists' length of stay.

Key words: COVID-19; Health risk perceptions; Length of stay; Hospitality security

Introduction

The outbreak of COVID-19 has disrupted the tourism and travel industry, which has led to a sharp decrease in international travel receipts (Mariolis et al., 2021). Leaving aside movement restrictions and lockdowns, people are becoming reluctant to travel due to the risks of contagion (Neuburger & Egger, 2020). Even if they do so, preliminary evidence on the effects of the pandemic on tourists' behavior shows a greater willingness to travel by private car and to stay for shorter periods (Li et al., 2020), a strong preference for private dining facilities in restaurants (Kim & Lee, 2020), and a prioritization of travel quality over quantity (Wen et al., 2020). In this regard, Shin and Kang (2020) showed that perceived health security through cleanliness and reduced personal interaction is a predictor of hotel booking

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intentions. All this points to virus-spread containment measures like social distancing, reduced capacity, and hygiene as prerequisites for traveling and ensuring safe stays (Naumov et al., 2021).

Hygiene is one of the most important standards for evaluating the quality of tourist destinations according to the World Tourism Organization (WTO, 2016). The perceived health security of the destination, both in public venues and private establishments, is therefore critical for ensuring pleasant experiences and increasing revisit intentions. In this regard, Tasci and Boylu (2010) document that positive perceptions about hygiene and health security are associated with greater tourist satisfaction. In the current pandemic context, it is relevant to study tourists' perceptions about how secure they feel with the level of compliance with health protocols at different public venues at the destination.

Since longer trips allow for more interactions and opportunities to explore the destination, subjective perception of health safety is prone to vary with the length of the stay. Tourism is an experience commodity and, consequently, affective perceptions tend to change over the course of the trip (Barker et al., 2003; George, 2003). From this standpoint, the length of the stay makes the signal about health safety to become more accurate.

This research studies whether health safety valuations differ depending on how long the tourist has been at the destination. Specifically, we analyze the effect of the length of the stay on the ratings for health security at six public venues: the street, bars and cafés, restaurants, the chosen accommodation, the beach, and shops and stores. We use representative survey data from visitors to Asturias (Spain) during the summer period of 2020 as our case study. This region is of interest because during this period it was the area with the lowest accumulated incidences of COVID-19 in Spain. Specifically, the 14-day accumulated incidences of confirmed COVID-19 cases in Asturias were 0.00, 10.46, and 46.54 at the beginning of July, August, and September, respectively, whereas the national mean was 8.47, 62.94, and 211.84. This increased the attractiveness of Asturias as a vacation destination, becoming the Spanish region with the highest share of hotel occupancy during July 2020 (50.05%) and the second highest in August (68.24%) (INE, 2020).

Theory and Research Hypothesis

Conditional on having decided to travel, people choose where to go based on destination characteristics and their personal preferences (Lancaster, 1966). Among many others, tourists assess health risks when deciding where to travel (Kozak et al., 2007), but when personal safety is threatened, health security becomes the most important facet.

It is widely recognized in the tourism literature that destination image plays a key role in destination choice (Tapachai & Waryszak, 2000; Kim & Perdue, 2011; Qu et al., 2011). In the aftermath of COVID-19, destination health security image is expected to play a major role, because tourists might aim to minimize risks by choosing areas with low accumulated incidences. Therefore, the epidemiological situation along with the perceptions on the health security of the alternative destinations may become key factors that drive destination choice.

Tourists choose a vacation destination according to their ex ante expectations about destination health safety along with other characteristics. These expectations are multidimensional; they could differ depending on the type of services considered. For instance, a tourist might have a positive perception about health security at the accommodation but a negative image concerning the public transport modes, or vice versa.

Destination image is a dynamic facet that varies over the course of the trip (Vogt & Andereck, 2003; Lee et al., 2014). It is highly probable that health security perceptions deteriorate as a tourist's stay lengthens. On the one hand, the probability of experiencing a displeasing situation that damages the perceived health security of a destination increases with how long the tourist stays. On the other hand, people tend to be loss averse and, therefore, inclined to attach greater weight to the disconfirmation with expectations than to positive feedback (Oliver, 1980). In this sense, suffering a single instance of a risky situation—like overcrowding in public transit or a lack of hygiene in a shop—will have a greater negative impact on health security perceptions than the positive impact from observing repeated compliance with health protocols. Therefore, we hypothesize that the likelihood of deterioration in destination health security image is greater among long-stayers.

Data and Methodology

The dataset for the analysis is provided by the Tourist Information System of Asturias. This institute is in charge of collecting survey data from tourists visiting Asturias to identify their patterns and behaviors and developing public policies. Since 1997, tourists and same-day visitors (over 18) have been personally surveyed throughout the year by trained enumerators, both at collective establishments and different sightseeing spots in the region. The data collection follows a mixture of quota and pure random sampling, with the quotas being defined according to the day of the week, month, geographical area, and type of accommodation (private vs. market based). Data samples are then weighted based on official records from the Spanish National Statistics Institute to make the data representative for inference. The questionnaire is available in different languages (Spanish, German, English, and French) and comprises questions about the length of the stay, the chosen accommodation, expenditure, and the travel purpose, among others. Sociodemographic characteristics like age, gender, and education are also collected.

From July 2020 onwards, the questionnaire has included a set of questions about perceived health security in the region related to COVID-19. Specifically, respondents are asked to rate the health security perceptions on a 0–10 Likert scale at six public venues: 1) the street, 2) bars and cafés, 3) restaurants, 4) the chosen accommodation, 5) the beach, and 6) shops and stores. In total, 889 valid questionnaires were collected between July 26 and September 20, 2020, which corresponds with the peak demand period. Tables 1 and 2 show descriptive statistics and demographics of the sample. The average age is 41.65 years, with 53.43% being males and 56.83% attaining a college education. The average length of the stay is 5.58 nights, with

30.40% of the sample being same-day visitors. Approximately 32% are local tourists that travel within Asturias, 64.67% are domestic travelers that come from other Spanish regions, and only 3.50% are foreign. The main travel purpose is leisure and recreation (82.56%), and most visitors come as a couple (41.84%) or with relatives (32.19%). The central area is preferred (50.85%), with 30.14% of people lodging at hotels, and a nonnegligible 21.70% opting for private accommodations.

Table 3 provides summary statistics of the tourists' health security perception scores in the six previously introduced public venues. Each venue includes answers from roughly 700 individuals, except Accommodation. This is because the question is only posed to tourists lodged at a market-based accommodation (around 50% of the sample). Interestingly, the accommodation is on average the best rated (8.27), closely followed by shops (7.94) and restaurants (7.88). The beach is, by contrast, the least valued (7.43). Overall, people have moderate to good valuations of health security in the different public venues.

Regression analysis is used to examine how health security perceptions relate to the length of the stay (henceforth LOS). To rule out confounding factors, we include a set of trip and sociodemographic characteristics as controls. This is important because the analysis needs to account for the differences in perceptions stemming from tourists' characteristics. Accordingly, we regress each of these six indicators on the following explanatory variables: LOS (both in levels and in the squared form to allow for a nonlinear effect); gender (a dummy for male); age (years); education (measured as an ordered indicator as follows: 1 = primary studies, 2 = secondary studies, 3 = vocational training, 4 = university studies); labor status (a dummy for being employed); leisure as the main trip purpose; being a first-time visitor; traveling

Table 1

Descriptive Statistics (*N* = 889)

Continuous Variables	Mean	*SD*	Min	Max
Length of stay (LOS; nights)	5.58	7.38	0	90
Age (years)	41.65	13.17	18	83
Distance (kilometers)	382.93	602.09	0	10,183.9

Table 2

Descriptive Demographics ($N = 889$)

Categorical Variables	%
Education	
Primary education	9.10%
Secondary education	10.25%
Vocational training	23.82%
College education	56.83%
Gender	
Male	53.43%
Female	46.57%
Labor situation	
Working	70.64%
Student	10.80%
Housekeeper	7.64%
Unemployed	4.62%
Retired	6.30%
Place of origin	
Spanish tourist	64.67%
Local tourist	31.83%
Foreign tourist	3.50%
First versus repeat visitor	
First-time visitor	26.54%
Repeat visitor	73.46%
Main trip purpose	
Leisure	82.56%
Other	17.44%
Single versus multidestination	
Single destination	59.28%
Multidestination	40.72%
Travel party	
Alone	7.64%
Couple	41.84%
With friends	18.33%
With relatives	32.19%
Active tourism	
Yes	12.71%
No	87.29%
Type of accommodation	
Hotel	30.14%
Rural house	8.09%
Camping	5.17%
Hostel	4.50%
Private accommodation	21.70%
Type of tourist	
Same-day visitor	30.40%
Tourist	69.60%
Geographic area	
West	19.35%
East	29.80%
Center	50.85%
Month	
July	10.91%
August	66.59%
September	22.49%

only to Asturias in the current trip (as opposed to a multidestination trip); engagement in active tourism (nature-based recreation activities like mountaineering, trekking, windsurf or canoeing, among

Table 3

Summary Statistics of Health Security Perceptions Scores in Public Venues

Variable	Obs.	Mean	SD	Min	Max
Street	793	7.81	1.43	3	10
Bars	764	7.44	1.37	1	10
Restaurants	759	7.88	1.33	1	10
Accommodation	442	8.27	1.40	3	10
Beach	706	7.43	1.71	0	10
Shops	723	7.94	1.37	2	10

others); traveling as a couple; Euclidean distance to origin (in kilometers); type of accommodation (hotel or rural houses), and controls for the geographic area within Asturias where the tourist stays (west and east) and the month of the questionnaire (July and August).

Please note that the intercept in each regression gathers the average valuation for the reference individual: a female who is unemployed/inactive, travels for nonleisure purposes, has been to Asturias before, visits other regions in the current trip, does not engage in active tourism activities, travels alone or with friends/relatives, is a same-day visitor or lodges at a camping/second residence, stays at the central area and comes in September. To make the data representative for inference, the regressions are adjusted by sampling weights and estimated by weighted ordinary least squares.

Results

Table 4 presents the coefficient estimates and Huber–White robust standard errors for linear regressions. We find a consistent negative relationship between tourists' health security valuations in the different public venues and LOS (although at a decreasing rate). This supports our research hypothesis, which implies that the self-perceived health safety worsens as the tourist stays for longer. Therefore, while same-day visitors and weekend tourists have an overall good perception about compliance with health protocols at destination public venues, these ratings are significantly lower among long-stayers. This is consistent with George (2003) and Barker et al. (2003), who showed that safety perceptions at the destination vary with the length of the stay.

Table 4
WOLS Regression Estimates for Health Security Perceptions on Different Public Venues

Explanatory Variables	(1) Street	(2) Bars	(3) Restaurant	(4) Accommodation	(5) Beach	(6) Shops
LOS	−0.027**	−0.026*	−0.037**	−0.076***	−0.037**	−0.045***
	(0.013)	(0.015)	(0.015)	(0.025)	(0.016)	(0.014)
LOS^2	4.1e-04***	5.8e-04***	6.2e-04***	9.6e-04***	6.5e-04***	6.9e-04***
	(1.5e-04)	(2.1e-04)	(2.0e-04)	(2.7e-04)	(2.1e-04)	(2.0e-04)
Male	−0.040	−0.139	0.012	−0.125	−0.072	−0.044
	(0.118)	(0.114)	(0.104)	(0.163)	(0.161)	(0.104)
Age	0.019***	0.015***	0.018***	0.008	0.018**	0.017***
	(0.005)	(0.005)	(0.005)	(0.008)	(0.008)	(0.005)
Education	0.183**	0.098	0.171***	0.142	0.188*	0.066
	(0.083)	(0.066)	(0.064)	(0.135)	(0.113)	(0.060)
Employed	0.319**	0.442***	0.472***	0.338	0.441**	0.376***
	(0.142)	(0.140)	(0.138)	(0.235)	(0.202)	(0.140)
Leisure	0.150	0.064	−0.071	0.191	0.193	−0.063
	(0.165)	(0.148)	(0.135)	(0.379)	(0.240)	(0.135)
First time	0.015	−0.071	−0.006	0.085	−0.366*	0.022
	(0.150)	(0.134)	(0.117)	(0.163)	(0.206)	(0.116)
Single destination	0.012	−0.179	−0.090	0.293	−0.022	0.016
	(0.149)	(0.154)	(0.140)	(0.245)	(0.207)	(0.150)
Active tourism	0.178	−0.134	0.240	0.567**	0.176	0.364**
	(0.156)	(0.184)	(0.152)	(0.221)	(0.224)	(0.175)
Couple	0.095	0.014	0.039	0.180	0.092	0.009
	(0.124)	(0.120)	(0.106)	(0.187)	(0.168)	(0.113)
Distance	0.008	0.011	−0.007	0.004	0.005	−0.001
	(0.008)	(0.009)	(0.011)	(0.011)	(0.009)	(0.006)
Hotel	−0.652***	−0.292**	−0.354**	−0.524**	−0.310	−0.489***
	(0.221)	(0.139)	(0.141)	(0.205)	(0.284)	(0.135)
Rural house	−0.173	0.083	−0.210	0.068	−0.094	−0.247
	(0.194)	(0.196)	(0.193)	(0.238)	(0.272)	(0.192)
West	−0.944***	−0.408***	−0.815***	−0.804***	−0.223	−1.030***
	(0.129)	(0.147)	(0.144)	(0.208)	(0.168)	(0.145)
East	−0.381**	−0.048	−0.410***	−0.615**	−0.229	−0.443***
	(0.156)	(0.147)	(0.133)	(0.241)	(0.216)	(0.152)
July	1.209***	0.925***	0.742***	0.358	0.778***	0.987***
	(0.198)	(0.201)	(0.188)	(0.359)	(0.265)	(0.202)
August	1.205***	0.912***	0.929***	0.079	1.000***	0.952***
	(0.161)	(0.160)	(0.135)	(0.329)	(0.239)	(0.144)
Constant	5.743***	5.927***	6.261***	7.589***	5.366***	6.803***
	(0.417)	(0.402)	(0.389)	(0.862)	(0.579)	(0.355)
Observations	771	752	749	422	698	714

Note. Robust standard errors are shown in parentheses.
*$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

The estimates also show that the scores are higher among elderly people and those currently employed, except for Accommodation. We considered the square of age to allow for a nonlinear relationship, but it was not significant. The valuations are higher in August and in the central area of the region. We also document that hotel guests (as opposed to other types of accommodation) have significantly lower health security perceptions, both at the hotels themselves and in the other public venues. By contrast, there are no statistical differences based on gender, education, distance to origin, travel purpose, first-time visit, Asturias being the only destination, or whether traveling as a couple.

Discussion and Conclusions

This research studies tourists' perceptions about health security in destination public venues and

how they relate to the length of the stay and other sociodemographic and trip characteristics. We document a consistent negative relationship between health safety ratings and length of stay, implying that people give worse ratings to health security as they stay for longer. Additionally, perceived security is higher among elderly people and lower among those lodged at hotels.

The study contributes to the academic literature on perceived safety at a tourist destination, focusing on the case of the health risks associated with COVID-19. Similar to Vogt and Andereck (2003), we illustrate how on-site health security perceptions are heterogeneous and change over the course of the trip. The study thus enhances our understanding of the potential sources of disconfirmation with a tourist destination showing that, although the overall valuation of health security and hygiene in public venues is high, beaches and bars have room for improvements.

Our findings have important policy implications. As discussed by Assaf and Scuderi (2020), public authorities and hospitality firms play a key role in the recovery of the sector in terms of generating the necessary market confidence. As such, hospitality managers and policymakers should stress to stakeholders the importance of complying with health protocols and adopting the necessary measures to guarantee safe tourism experiences. In light of our results, the attention to this should be specially reinforced to those lodged at hotels and long-stayers, which are indeed among the most important segments for tourism revenues. The literature shows that COVID-19 has increased hotel guests' concern about hygiene and crowdedness so that they are nowadays more demanding in terms of health security standards than before (Pappas & Glyptou, 2021). Consequently, additional efforts should be made to guarantee pleasant stays. Since hygiene nowadays stands as a key destination facet (Naumov et al., 2021), destination managers should prioritize ensuring prospective visitors that public venues at the destination are safe.

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