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Determinants of the Individual Decision to Travel Less during the COVID-19 Pandemic

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Abstract

In an effort to reduce the spread of the COVID-19 outbreak, the international tourist arrivals worldwide have been brought to pre-1990s levels, the travel and hospitality industry being one of the most affected industries during the pandemic. Multiple factors created difficulties in planning trips, decreasing travel demand. This paper investigates the determinants of the individual decision to travel less during 2020 and 2021, through a quantitative analysis of 224 survey answers collected from a convenience sample of people living in and outside Europe. The results show that the unease generated by the travel restrictions and scheduling when considering flights and accommodations had the highest impact on travel. Moreover, being older, and the fear of getting infected as a result of the trip increased the likelihood of travelling less. The respondents manifest travel-related anxiety and a preference for prudent trips (domestic, familiar, or tailored). The gender, occupation, income, and continent were not found as predictors of the level of travel during the pandemic.

Keywords: tourism, travel, COVID-19, pandemic, behavior, hospitality, airline, anxiety.

JEL Classification: L83, L93, D91, I12, I18, Z3.

1. Introduction

Travel and tourism companies struggled to adapt and survive during the COVID-19 pandemic. Customer behavior experienced changes, with potential long-term effects. However, as travel restrictions started to be removed, airports and

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airlines were unprepared to accommodate the surge in demand in 2022, producing delays, cancellations, and strikes (Amaro, 2022).

Individuals faced tremendous uncertainties when planning trips in 2020 and 2021, thus choosing or being forced to stay at home more. Travel restrictions, alongside health concerns and other factors, increased prudence when considering destinations, transport means, accommodations, entertainment, etc., prudence acting as a safety net for one's state of mind in uncertain situations and aiming to alleviate anxiety. Tourists influenced business models through their selections and feedback. New travel trends emerged, people preferring longer stays with higher spending, in domestic or closer destinations that offer "get away", sustainable and authentic experiences (World Tourism Organization, 2022).

This paper aims to assess the individual travel behavior and decision making during the COVID-19 pandemic. The investigation is based on the research question: *What are the determinants of the individual decision to travel less during 2020 and 2021?*

2. Context

In an effort to reduce the spread of the COVID-19 outbreak, the international tourist arrivals worldwide have been brought to pre-1990s levels, the pandemic having a stronger impact than the SARS epidemic of 2002-2004 or the global financial crisis of 2007-2008, as presented in Figure 1 (World Tourism Organization, 2020 and 2022).

Figure 1. International tourist arrivals in the past three decades (worldwide)
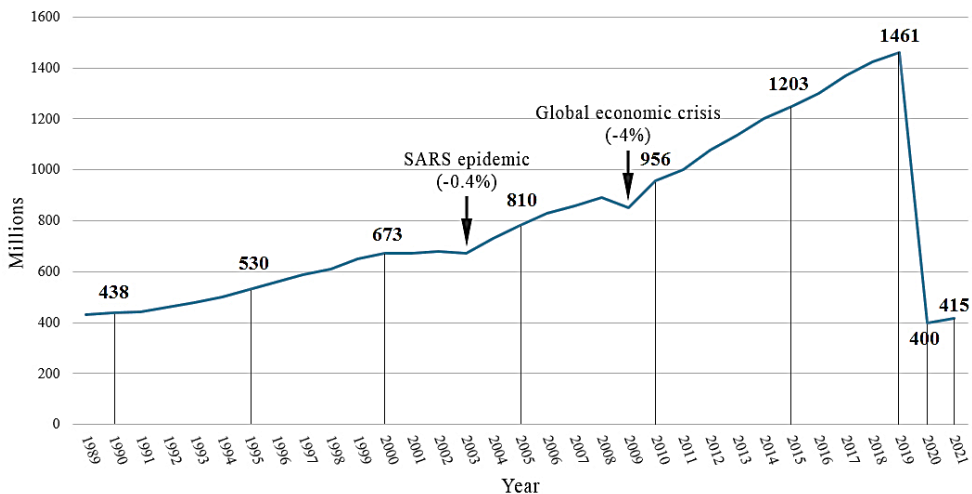
Source: As resulting from the World Tourism Organization (2020 and 2022).

The international tourist arrivals worldwide increased by 4% in 2021; however, this is still 72% lower compared to 2019 (World Tourism Organization, 2022). 64%

of the global tourism experts expect international tourism in their country to return to pre-pandemic levels in 2024 or later (World Tourism Organization, 2022).

The global business travel expenses were reduced by 52% in 2020 (Benefield et al., 2021). Although business travel accounts for only 12% of airline passengers, it generates up to 75% of profits (USfunds, as cited by Investopedia, 2021). This could lead to big losses for airlines, hotels and other industries serving corporate travelers, as lower volumes of business travel are expected even after the pandemic, due to increasing effectiveness and time savings through virtual meetings (Semuels, 2021).

The COVID-19 pandemic lowered air fares in 2020, as the air service providers tried to attract more customers; however, higher prices could be expected in the near future, since airlines will attempt to recover from two years of massive losses (The Conversation, 2021; Schengen Visa Info, 2021).

Multiple factors created difficulties in planning trips, decreasing travel and tourism demand, from countries temporarily closing their borders to all/most international travel and frequent changes in regulations, to the fear of getting infected, delays in treatment and vaccine availability, the emergence of new virus variants increasing uncertainty, etc.

The parasite-stress theory explains how a species identifies and avoids infected individuals, maximizing reproductive success and altering the species' values, social behaviors and immune systems (Fincher and Thornhill, 2017; Fincher et al., 2008). Pathogen threats predict greater in-group attraction, while individual differences in disgust sensitivity and subjective perceptions of pathogen prevalence, regardless of actual infection rates, predict out-group avoidance and prejudice (Meleady, Hodson, Earle, 2021; Landry, Ihm, Schooler, 2021), and higher levels of engagement in preventive health behaviors (Shook et al., 2020). The perception of the risk of human-to-human transmission of infection when travelling was greatly increased by the COVID-19 pandemic (Rahman et al., 2021), people manifesting greater levels of disgust sensitivity compared with pre-pandemic data (Stevenson, Saluja, Case, 2021) and increased anxiety (Makhanova, Shepherd, 2020). Furthermore, the actual or perceived pathogenic threat predicts authoritarianism (Pazhoohi, Kingstone, 2021) and collectivism (Fincher et al., 2008; Kashima et al., 2021). These cultural adaptations to pathogenic threats amplify in-group acceptance and out-group avoidance, through imitation of in-group members, ethnocentrism, obedience, and punitive attitudes toward dissenters. Since cultural patterns have a strong tendency to influence their future state through temporal autocorrelation (Kashima et al., 2021), long-term socio-economic setbacks could be generated, either as a result of widespread ideological compliance, or intense state and institutional distrust.

The COVID-19 pandemic was often studied in relationship with the behavioral immune system (BIS), which is represented by a series of psychological mechanisms allowing individual organisms to detect potential pathogens in their immediate environment and facilitate the avoidance of infection by triggering cognitive and emotional responses (Schaller, Park, 2011). However, some authors criticize BIS's applicability in infectious respiratory diseases due to the lack of apparent cues of infection, especially in asymptomatic and pre-symptomatic transmission, and the

limited utility of the behaviors engaged by BIS in combating this type of infection (Ackerman, Tybur, Blackwell, 2020).

The terror management theory, which focuses on the role mortality salience plays in different aspects of life, was also studied in relationship with the COVID-19 pandemic. While proximal defenses are activated to forestall death and provide a feeling of safety in the short term, distal defenses push for the pursuit of meaning and close relationships which buffer death anxiety in time of crisis, thus creating a tension between following the COVID-19 related safety measures and the desire to resume a "normal" life (Pyszczynski et al., 2020; Ahmed, Ahmed, Barkat, 2020).

Collective emotions, such as collective anxiety, could spread within populations as a result of pandemic awareness, the type of information people come into contact with, and the perceived credibility of the source, affecting human behavior and decision-making.

3. Methodology

A self-administered, online survey collected 224 valid answers during 2021 from people in and outside Europe selected through convenience and snowball sampling. The sample size meets the requirements for a 95% confidence level with a 6.55% margin of error.

The first section of the survey aims to gather demographic data (i.e., age, gender, occupation, average monthly net income in the last 12 months). The second and last section of the survey has 33 items measured on a 1 to 6 Likert scale (1 = "strongly disagree"; 6 = "strongly agree") for assessing the respondents' travel behavior and decision making during the pandemic.

Data analysis was performed in SPSS. A principal component analysis (PCA) was used for the Likert items and checked against a parallel analysis and reliability analysis. Index variables were constructed for each of the latent variables through arithmetic mean of their items. A multiple linear regression was performed for the predictors of the tendency to travel less during the COVID-19 pandemic (regardless of transport type, travel type or destination). Cluster analysis was employed for the demographic variables. Tests of correlation, association, and difference of means were used where appropriate.

4. Findings

The 224 valid answers came mainly from the younger generations, as available in Table 1. 90% of the respondents are from Europe, the rest living on the other continents. 70.5% of the total respondents are women. The dataset has no unemployed or retired respondents, 37% being students and 63% being employees of public or private organizations. 34% of the total respondents reported they had an average net income of 1000-2000 EUR in the last 12 months, 43.3% having below 1000 EUR and 22.7% above 2000 EUR.

Table 1. Dataset demographics

		Frequency	Percent
gender	man	66	29.5
	woman	158	70.5
age	18-25	140	62.5
	26-35	34	15.2
	36-45	13	5.8
	46-55	35	15.6
	over 56	2	.9
occupation	student	82	36.6
	employed	142	63.4
income (average monthly net income in the last 12 months)	under 300 EUR	37	16.5
	300-599 EUR	27	12.1
	600-999 EUR	33	14.7
	1000-1999 EUR	76	33.9
	2000-2999 EUR	20	8.9
	3000-4000 EUR	16	7.1
	over 4000 EUR	15	6.7
continent	Europe	202	90.2
	Other	22	9.8

Source: Dataset analysis in SPSS.

As a result of PCA, parallel analysis and reliability analysis, 30 Likert items were separated into five factors (Table 2): (1) Less travel in 2020 and 2021 – the tendency to travel less during the COVID-19 pandemic, regardless of transport type, travel type or destination; (2) Concern: Travel restrictions and scheduling – the unease with travel restrictions and scheduling when selecting flights and accommodations; (3) Concern: Destination and virus – the infection fear and caution when selecting a destination, flight, and accommodation; (4) Concern: Refunds and cancellations – the unease with refunds and cancellations when selecting flights and accommodations; (5) Travel anxiety and pacifying choices – the travel anxiety and preference for prudent trips (domestic, familiar or tailored). The other three Likert items in the survey are analyzed separately.

Table 2. Factor analysis results

Factor	Item	Cronbach's Alpha (std.)
Less travel in 2020 and 2021 (regardless of transport type, travel type or destination)	I have travelled less in 2020 – the first year of the COVID-19 pandemic.	.722
	I have travelled less in 2021 – the second year of the COVID-19 pandemic.	
	I have booked significantly fewer accommodations in 2020 - the first year of the COVID-19 pandemic.	
	I have booked significantly fewer accommodations in 2021 – the second year of the COVID-19 pandemic.	

Factor	Item	Cronbach's Alpha (std.)
Concern: Travel restrictions and scheduling (for flights and accommodations)	I have been very cautious when choosing the dates for my future flight in 2020 considering the pandemic.	.788
	I have been very cautious when choosing the dates for my future flight in 2021 considering the pandemic.	
	I was strongly taking into account the possible travel restrictions when booking a flight.	
	I have been very cautious when choosing the dates for future accommodation booking in 2020 considering the pandemic.	
	I have been very cautious when choosing the dates for future accommodation booking in 2021 considering the pandemic.	
	I was strongly taking into account the possible travel restrictions when booking accommodation.	
Concern: Destination and virus (social distancing and infection fears)	I was very cautious when choosing a travel destination in 2020 considering the pandemic.	.707
	I was very cautious when choosing a travel destination in 2021 considering the pandemic.	
	I was concerned about social distancing regulations implemented by the chosen airline company.	
	I considered the safety regulations (COVID-19-related) implemented by the accommodation when choosing and booking a place to stay.	
	I was very concerned regarding the possibility of contacting the COVID-19 virus.	
Concern: Refunds and cancellations (for flights and accommodations)	I was very careful when choosing the airline company in terms of the refund policy.	.847
	I was worried that the chosen airline company may cancel my booking due to unforeseen COVID-19 restrictions.	
	I was more likely to choose an airline company with a flexible booking policy rather than one with a no-change policy	
	I was concerned about not receiving the refund quickly (or at all) from the booked airline company.	
	I was careful when choosing the accommodation in terms of the refund policy.	
	I was very concerned about not receiving the refund quickly (or at all) from the booked accommodation.	

| Factor	Item	Cronbach's Alpha (std.)
	I was more likely to choose accommodation with a flexible booking policy rather than one with a no-change policy.	
	I was worried that the chosen accommodation may cancel my booking due to unforeseen COVID-19 restrictions	
Travel anxiety and pacifying choices (domestic, familiar or tailored trips)	I was anxious about planning a trip in 2020 and 2021 due to COVID-19.	.706
	I was anxious about having to quarantine due to COVID-19 (at destination or when back home).	
	My psychological well-being was affected by the restrictive travel.	
	I considered planning trips inside my own country instead of abroad due to COVID-19 risks & restrictions.	
	I was more likely to choose an internal trip (inside my country) rather than an external one (outside my country).	
	I was more likely to explore my city rather than visit another one (within my country) taking into account the pandemic.	
	I was more likely to choose a tailored trip rather than a short and disorganized one due to the higher risks when travelling during the COVID-19 pandemic.	

Source: Dataset analysis in SPSS.

All factors have reliability values >0.7, with adequate inter-item correlations to allow for factor analysis, $p<0.001$, and adequate sampling, KMO>0.5. The five factors explain 50.85% of the variance.

With the exception of the "I was more likely to explore my city rather than visit another one (within my country) taking into account the pandemic" item (M = 3.26, SD = 1.669), for which the respondents manifested slight disagreement, $p<0.05$, all the other items had statistically higher means compared to the Likert scale midpoint of 3.5, showing a level of agreement with the statements, $p<0.01$. No statistically significant difference was found between rating the level of travel in 2020 vs. 2021, $p>0.05$.

The following index variables were constructed for each factor through arithmetic mean of their items: LESS (for the "Less travel in 2020 and 2021" factor); C:RESTR&DATE (for the "Concern: Travel restrictions and scheduling" factor); C:REF&CL (for the "Concern: Refunds and cancellations" factor); C:DEST&VIR (for the "Concern: Destination and virus" factor); ANX&PR (for the "Travel anxiety and pacifying choices" factor).

Figure 2. Answers distribution for the five index variables
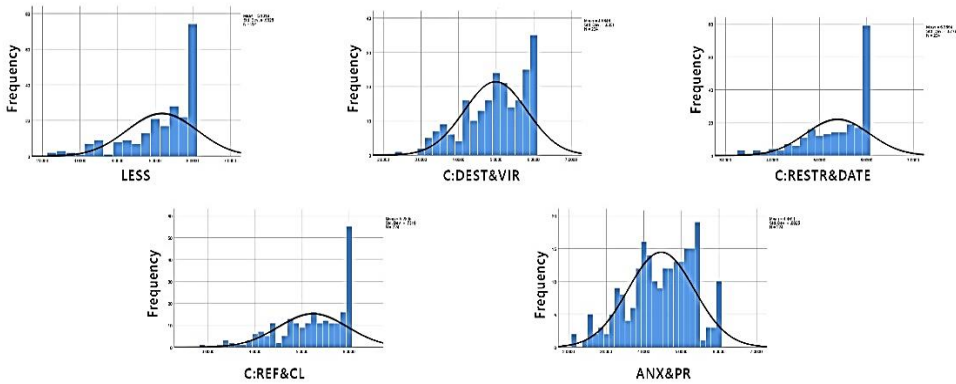
Source: Dataset analysis in SPSS.

As presented in Figure 2, the index variables follow a non-normal distribution with negative skew, Kolmogorov-Smirnov showing a significant departure from normality for all factors, p<0.001. The results show that the respondents were highly inclined to say they travelled less during the COVID-19 pandemic, being concerned with the travel restrictions, scheduling, refunds and cancellations when selecting flights and accommodations, and manifesting travel anxiety and infection fear, being cautious when selecting a destination, and having a preference for prudent trips (domestic, familiar, or tailored).

The index variables have moderate tendencies to vary in the same direction (Table 3). The demographic variables have very weak associations with the five index variables, Eta coefficients < 0.19. No statistically significant differences were found in the way each of the demographic variables (gender, age, occupation, income, continent) rated the index variables, Mann-Whitney and Kruskal-Wallis p>0.05.

Table 3. Pearson correlations between the index variables

	(1)	(2)	(3)	(4)	(5)
LESS (1)	1				
C:RESTR&DATE (2)	.492**	1			
C:DEST&VIR (3)	.362**	.459**	1		
C:REF&CL (4)	.195**	.486**	.405**	1	
ANX&PR (5)	.260**	.408**	.485**	.322**	1

**p<0.001; *Source*: Dataset analysis in SPSS.

The dataset was split into two clusters based on the age, occupation and income variables, as resulting from hierarchical cluster analysis using the Ward method, followed by the k-means cluster analysis. The gender and continent items were not deemed significant for clustering. Figure *3* offers a visual representation of the clusters.

**Figure 3. Dataset clustering based on age, occupation and income,
as represented by the cluster center values**
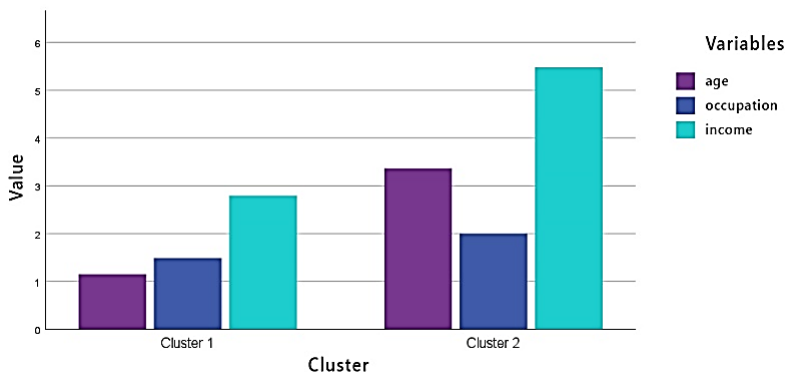
Source: Dataset analysis in SPSS.

Cluster 1 has 161 cases and is comprised of the younger generations (87% 18-25 years old, 11.2% 26-35 years old and 1.8% 36-45 years old) who are approximately 50% employed and 50% students, having an average monthly net income of zero to 2000 EUR in the last 12 months. Cluster 2 has 63 cases and is represented by the respondents who are at least 26 years old (55.6% 46-55 years old, 25.4% 26-35 years old, 15.9% 36-45 years old, 3.1% over 56 years old), 100% being employed, with average monthly net incomes of 600 to over 4000 EUR in the last 12 months. The clusters have very weak associations with the five index variables, Eta coefficients < 0.19. No statistically significant difference was found between the ways the two clusters rated each of the index variables, $p > 0.05$.

A multiple linear regression (MLR) was performed for the predictors of LESS. The model found that C:RESTR&DATE, C:DEST&VIR and age make a significant contribution to the prediction of LESS, $p<0.05$. There are no multicollinearity concerns, VIF≈1 (<10), Tolerance≈0.75 (>0.2) and the regression residuals follow a normal distribution. C:RESTR&DATE makes the strongest contribution in explaining the outcome, with Beta = 0.392, $p<0.001$, as available in Table 4.

Table 4. Summary of MLR for the predictors of LESS

Dep. var.	R Sq.	Adj. R Sq.	Std. Err.	F	Df1	Df2	Interc.	95% conf. int. for intercept	Predictor	Beta	β	95% conf. int. for β
LESS	0.281	0.271	.796	28.602 **	3	220	1.055	[0.164, 1.946]	C:RESTR&DATE	0.392 **	0.539	[0.362, 0.715]
									C:DEST&VIR	0.188 *	0.210	[0.067, .0352]
									age	0.125 *	0.101	[0.009, 0.193]

*p<0.05; **p<0.001; *Source*: SPSS.

28.1% of the variance in LESS is explained by the regression model. The model is a statistically significant predictor of the outcome, with p<0.001 and is defined by equation (1).

$$LESS_i = 1.055 + 0.539 * C{:}RESTR\&DATE_i + 0.210 * C{:}DEST\&VIR_i + 0.101 * age_i + \varepsilon_i \qquad (1)$$

The respondents were asked if they believe "we will go back soon to what we used to know as normal travelling", the results showing a slight agreement with the statement t(223)=2.550, p<0.05 (M=3.75, SD=1.494, Skewness = –0.078, Kurtosis = –0.943). People living in Europe were marginally more optimistic, p<0.05. To add, there was no inclination for investing or not "in travel insurance due to the risks presented by the pandemic", p>0.05 (M=3.39, SD=1.804, Skewness=0.060, Kurtosis = –1.381), and the respondents had almost 50-50 chances to report they were spontaneous when it comes to a trip considering the COVID-19 virus. People who were not from Europe were strongly disagreeing with being spontaneous when planning trips during the pandemic, p<0.05. However, the comparative analysis of people living in and outside Europe is limited by the small number of non-Europeans in the sample.

5. Conclusion

The tendency to travel less during the COVID-19 pandemic was particularly influenced by the unease with the travel restrictions and scheduling when considering flights and accommodation. Moreover, being older, and the fear of getting infected as a result of the trip increased the likelihood of travelling less.

There was a preference for prudent travel choices, such as domestic, familiar or tailored trips; however, this did not seem to reduce travel anxiety enough to produce a substantial increase in travel. Besides, a study based in South Korea, suggests that even if there are no strict travel restrictions for particular domestic destinations with low COVID-19 infection rates, the overall national situation impacts the citizens' decision to travel to those places (Ren et al., 2022).

Similarly, choosing airlines and accommodations with flexible booking and customer-friendly refund policies did not seem to reduce the concern of getting the trip cancelled (or not receiving a refund) enough to markedly increase the number of trips in 2020 and 2021.

The gender, occupation, income, and continent were not found as predictors of the level of travel during the pandemic taken individually, and neither was the combination of age, income and occupation.

The high number of extreme cases on the agreement side when considering various travel worries might capture strong collective emotions influenced by peers, travel restrictions, government regulations and information circulated in the mainstream media, social media and academic papers. However, there is a slight optimism when considering the idea that normal travel will resume soon.

While the pandemic forced states, institutions, and individuals to take decisions under remarkable uncertainties and pressures, it is critical to consider the cultural

and economic implications of pandemics and contemplate ways to avoid prolonged and cascading failure.

In an effort to reduce the spread of the COVID-19 outbreak, the international tourist arrivals worldwide have been brought to pre-1990s levels, the travel and hospitality industry being one of the most affected industries during the pandemic. This paper contributes to the understanding of the determinants of the individual decision to travel less during the COVID-19 pandemic, providing insight for governments, marketers, and industry players. However, this study has a demographically unbalanced sample, covering mainly the experience of younger Europeans, and did not account for multiple travel types (business, leisure, family visits, etc.) or other transport types apart from airlines. Thus, further studies could develop on this exploration by increasing the focus on specific issues, such as business travel, destination selection, or travel marketing receptiveness in a post-pandemic context.

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