Why Did Greeks Prefer not to Do Tourism in the Covid-19 Era?

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Abstract The tourism sector, globally, was one of the largest markets of the twenty-first century, until the world faced the COVID-19 pandemic. Regarding the impact of the crisis on the hospitality industry of all countries for the 3rd week of March 2020, compared to the corresponding week in 2019, the number of visitors has decreased significantly by 50% or more. The hardest hit was in countries that were exposed to the crisis acutely with a large number of cases, as well as in countries that have imposed radical measures to curb population movement. The outbreak of COVID-19 due to its expansion worldwide affected negatively all the sectors that are interrelated to tourism Therefore, it is important to distinguish and quantify perceived attitudes and social behaviours related to tourism during the COVID-19 crisis in order to reduce its adverse effects. In this paper, we aim to discover the potential attitudes of Greek tourists that will not go for holidays due to COVID-19 and to classify them into groups according to their attitude towards these issues. This paper explores the potential attitudes of Greek tourists that will not go for holidays due to COVID-19 and classifies them into groups according to their attitude towards these issues. A primary

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N. Persiani et al. (eds.), *Global, Regional and Local Perspectives on the Economies of Southeastern Europe*, Springer Proceedings in Business and Economics,
https://doi.org/10.1007/978-3-031-34059-8_16

survey has been conducted to a randomly selected sample of Greek tourists. Principal component analysis has been employed to characterize the main factors that influence tourists not to go for holidays. Cluster analysis has been utilized to classify tourists into groups according to their attitude towards those decisions whilst discriminant analysis has been employed to check cluster predictability. Non-parametric tests have been used to examine the impact of their demographic characteristics towards their attitudes. Non-parametric tests including chi-square and Friedman non-parametric test performed to develop the profile of those citizens.

Keywords Marketing · Tourism marketing · Covid-19

1 Introduction

The tourism sector, globally, was one of the largest markets of the twenty-first century, until the world faced the COVID-19 pandemic. Since the beginning of the COVID-19 crisis, the appearance of the outbreak has begun to burn out all forecasts for the tourism sector as it came up as the most discussable issue in news and social networks. According to the WHO, the coronavirus has spread to 227 countries and territories (WHO 2020). COVID-19 caused multiple lockdowns in many countries and travel restrictions. Worldwide, there have been 72,556,942 confirmed cases of COVID-19, including 1,637,155 deaths, as stated by the WHO on December 17, 2020.

For those reasons, the World Travel and Tourism Council (WTTC) has reported that COVID-19 has a chain effect on the worldwide economy, endangering the livelihoods of 300 M employees (10% of the world workforce) working in the tourism sector (WTTC 2019). At the same time, a serious impact on the global economy is expected, a shrinkage of 6% has been predicted for the year 2020 by the Organization for Economic Co-operation and Development (OECD). Almost all countries are virtually trying to control losses in order to minimize the impact on their GDP (World Bank 2020). As foresights show, tourist activities will be reduced by 20–30%, which will cause a depression of the international tourism turnover about three to four and half billion USD. According to WTTC (2020) the number of jobs that are threatened jobs in the tourism and travel industry are up to 50 million, which would have a tremendous impact on employment (a loss of about 12–14%) and the international travel sector (a loss of approximately 25% for the year 2020).

As medical interventions available to treat COVID-19 are limited, most countries around the world have responded with various forms of non-pharmacological interventions, including social distancing, cancelling, or postponing events, forbiddances on assemblages of people over a particular number, lockdown, and closure of non-essential businesses and schools/universities. Restrictions on travels applied at international, national, and local level with a significant impact on national economies, including tourism activities (Gossling et al. 2020). Hence, during the

previous months, global tourism sector has shifted to no tourism (Traveller 2020) from overtourism in previous years (Seraphin et al. 2018).

Therefore, it is important to distinguish and quantify perceived attitudes and social behaviours related to tourism during the COVID-19 crisis in order to reduce its adverse effects. In this paper, we aim to discover the potential attitudes of Greek tourists that will not go for holidays due to COVID-19 and to classify them into groups according to their attitude towards these issues.

2 Literature Review

Tourism industry, as well as the whole economic system and the society suffered from the appearance of pandemics worldwide (Gossling 2002; Huan et al. 2004; Hall 2006; Page and Yeoman 2007; Fauci and Morens 2012; Fotiadis and Huan 2014; Bloom and Cadarette 2019; Scott and Gossling 2015; Seraphin et al. 2019; Hall 2020). However, SARS and COVID-19 are the two main recent epidemics that had a significant impact on the global tourism market and the economy worldwide (Ying et al. 2020).

A completed survey on tourism risk, crisis and disaster management consisting of 142 papers published between 1960 and 2018 describing the approaches and the identified gaps, the methodologies employed and the suggestions for similar future problems (Ritchie and Jiang 2019). Page et al. (2006) presented that tourism industry does not need to panic and appropriate response strategies have to be planned after a health crisis such as the swine flu pandemic. They also examined the impact of media frenzy on tourism as it might damage the image of a destination to visit.

Many factors, such as the continuous mobilization of population worldwide, the urbanization, and the high concentration of population might be the causes of increasing pandemic threats (Pongsiri et al. 2009; Labonte et al. 2011). Additionally, there have been many epidemics due to human interventions in biodiversity and natural ecosystems (Schmidt 2016; Petersen et al. 2016). Therefore, all these factors can have a significant impact on the individual's travel decisions, as well as on the overall travel behavior (Dreyer et al. 2010).

A crucial issue to understanding health security and global change constitutes of the association between pandemics and tourism (Burkle 2006). Disease outbreaks have influenced tourism many times since the beginning of the century. Hence, the variation of the scientific interest in exploring the association between epidemics and tourism depends on that of the general economic and governmental sector. Furthermore, numerous tourism and health researchers have warned that pandemics comprise tremendous threats to tourism and society (Gossling 2002; Hall 2006; Page and Yeoman 2007; Fauci and Morens 2012; Scott and Gossling 2015; Bloom and Cadarette 2019; Hall 2020).

Nowadays, the academic community investigated the effects of COVID-19 based mainly on preliminary data available, either indicated possible research patterns on pandemic or possible relations between outbreak crises and tourism (Gössling et al.

2020; Ying et al. 2020; Wen et al. 2020). Polyzos et al. (2020) investigated the expected effects of the current COVID-19 pandemic on Chinese tourist arrivals in the US and Australia and they argued that it may take 6–12 months for arrivals to come back to pre-crisis and hence there would be significant adverse effects on the whole global economy.

Organisational learning is critical for building disaster-resilient tourism businesses. Limited research has examined the mechanisms of organisational learning in tourism enterprises operating in disaster-prone destinations (Bhaskara and Filimonau 2021). The example of Sweden's COVID-19 response to lure visitors is described by Grech et al. (2020), also showing how countries will express the negative impact on tourism.

3 Methodology

This study is aiming to reject the following research hypotheses:

Ho1: *"Greek tourists that will not go for holidays due to COVID-19 crisis cannot be classified into groups according to their attitude towards these issues".*

Ho2: *"The demographic and personal characteristics of the Greek tourists are not significantly related to their attitude towards these issues".*

Hence, the researchers conducted an electronic survey in all over the Greek territory to collect the necessary data. The total productive sample consists of 2364, whilst 1104 (46.7%) of them declared that will not go for holidays this year and 1260 (53.3%).

The representativeness of the sample assessed by checking the proportion of the members of the sample who declared that would go for holidays within COVID-19 crisis with those of the pilot survey adopting the methodology proposed by Siardos (1997). More specifically, the proportion of the of the citizens (p) in the pilot survey who indicated that prefer not to go for holidays within COVID-19 crisis is 45%, whilst the total population of the Greece (N) is 10,816,286 according to Greek Census data (ELSTAT 2020). Therefore, in order to achieve a representative sample, the sample size should be at least 380 consumers (in order have $z = 3$ and $d = 5\%$). The researchers to secure a representative sample send the questionnaire electronically to 3,045 persons. The productive sample reached the 2,364 persons and is reasonable representative according to Siardos (1997) methodology ($z = 1.96$ and $d = 5\%$). Additionally, a power analysis ($\beta = 0.95$) was conducted using the software package G*POWER 3.1.9.2 (Faul et al. 2009), indicating a minimum sample size of 1073 people for a small effect size (Cohen 1988). The effect size was calculated as (mean of experimental group—mean of control group)/standard deviation; a correlation greater than 0.5 is large, between 0.5 and 0.3 is moderate, between 0.3 and 0.1 is small, and anything smaller than 0.1 is trivial (Cohen 1988). Therefore, a sample size of 2,364 people has been considered as fully representative of the whole Greek population.

Prior to the main sampling, a pilot survey addressed to 100 respondents in order to evaluate the adequacy of the questionnaire before the main survey have been undertaken. The pilot survey indicated that the main survey could be conducted with no further modification to the survey tool. In the next stage, for the purposes of the current paper, the researchers selected from the surveyed sample, the people who declared that will not go for holidays within COVID-19 crisis.

The main survey conducted during the period May–July of 2020 whilst the questionnaires were completed electronically by the respondents using the Google forms. For the main survey, the researchers used 87 volunteer enumerators from the thirteen Regions of Greece. Each enumerator sent the questionnaire electronically to about 35 citizens of his/her area (of each generational cohort Z, Y and X as these generations are familiar with Internet surveys) by using their own social media networks. As it was not possible to check which Region derives each completed questionnaire, the representativeness of the sample assessed by using the methodology proposed by Siardos (1997) and in particular, by checking the proportion of the members of the sample who declared that would not go for holidays within COVID-19 crisis with those of the pilot survey.

Moreover, multivariate statistical techniques employed including Principal Component Analysis (PCA), hierarchical and k-means cluster analysis, quadratic statistical analysis (QDA) to the 1104 people responded that will not go for holidays.

The relation between the demographic characteristics of tourists and their attitudes towards their decision to not go for holidays explored though logistic regression analysis. Furthermore, the profile of each group of respondents regarding their demographic characteristics have been developed by using chi-square analysis.

4 Results

4.1 Factors Affecting Attitudes of Tourists that Will not Go for Holidays Due to COVID-19 Crisis

Principal components and factor analyses (through a varimax rotation) were performed to distinguish the key attitude factors, the latent root criterion (eigenvalue = 1), and the proportion of variance were applied to determine the number of factors (Table 1). Many different trial rotations were performed to compare factor interpretability as proposed by Hair et al. (1998).

PCA identified two key factors that affect Greek tourists' decision to not go for holidays this year due to COVID-19 crisis (Table 2).

In the next step, hierarchical and non-hierarchical clustering techniques were utilized to build a typology of the attitudes of tourists regarding their decision not to go for holidays (Hair et al. 1998). Cluster analysis was performed on the 1104 observations, as there were no outliers.

Table 1 Results of PCA regarding the factors that affect Greek tourists' decision not to go for holidays this year due to COVID-19 crisis

Component	Eigenvalue	Variance (%)	Cumulative variance (%)
1	6.979	43.619	43.619
2	2.505	15.656	59.276
3	1.161	7.257	66.533
4	0.887	5.545	72.078
5	0.702	4.389	76.467
6	0.585	3.656	80.123
7	0.558	3.490	83.613
8	0.475	2.966	86.579
9	0.445	2.780	89.359
10	0.364	2.275	91.633
11	0.331	2.068	93.701
12	0.302	1.886	95.588
13	0.275	1.718	97.306
14	0.185	1.157	98.463
15	0.130	0.813	99.276
16	0.116	0.724	100.00

KMO MSA = 0.929, Bartlett test of Sphericity = 11,653.432, P < 0.001

It recognized two clusters of tourists that were named according to the factors affecting them in their decision (Table 3). These are: (a) those that are concerning for the economic and health protection measures and, (b) those that are affected by other family reasons. In particular those that are concerning for the economic and health protection measures, comprise 43% of those who prefer not go for holidays. They believe that there is a lack of trust regarding the cleanliness and the adoption of hygiene measures by the restaurants, café, by the people staying in hotels, hostels, etc., by the beach bars and organized beaches, due to COVID-19. They are afraid to become infected by COVID-19 and want to avoid overpopulation and to keep distances among people. They do not like the necessity of adopting hygiene measures more often than home. They have to protect people within the family that belong to vulnerable groups. Furthermore, they have to face income reduction due to COVID-19 crisis; the general economic difficulty, loss of job by a family member due to COVID-19 crisis as well as they have to save money in order to face another possible lockdown due to COVID-19.

On the other hand, those that are affected by other family reasons comprise 57% of the sample. They pay attention to: (a) another health problem, (b) other family obligations, (c) recent illness of themselves of other family member by COVID-19, (d) bad psychology due to the consequences of COVID-19.

The results of the cross-validation classification of the QDA are indicated in Table 4.

Table 2 The main factors that affect Greek tourists' decision not to go for holidays due to COVID-19 crisis derived from PCA

Main factors affecting Greek tourists' decision to not go for holidays this year	Factor loadings
Concern regarding efficient prevention measures towards COVID 19	
Lack of trust regarding the cleanliness and the adoption of hygiene measures by the restaurants, café, etc. due to COVID-19	0.918
Lack of trust regarding the cleanliness and the adoption of hygiene measures by the people staying in hotels, hostels, etc. due to COVID-19	0.914
Lack of trust regarding the cleanliness and the adoption of hygiene measures by hotels, hostels etc. due to COVID-19	0.913
Lack of trust regarding the cleanliness and the adoption of hygiene measures by the beach bars and organized beaches, etc. due to COVID-19	0.898
Fear not to be infected by COVID-19	0.811
Avoidance of overpopulation and keeping the distances among people	0.804
Due to the necessity of adopting hygiene measures more often than home	0.757
Protection of people within the family that belong to vulnerable groups	0.611
Economic reasons	
Income reduction due to COVID-19 crisis	0.864
General economic difficulty	0.805
Loss of job by a family member due to COVID-19 crisis	0.760
Saving money in order to face another possible lockdown due to COVID-19	0.723
Other family reasons	
Another health problem	0.759
Other family obligations	0.616
Recent illness of myself of other family member by COVID-19	0.540
Bad psychology due to the consequences of COVID-19	0.458

Table 3 Classification of Greek people regarding the factors that affect them in their decision to not go for holidays this year due to COVID-19 crisis

Main factors affecting Greek people do not go for holidays	Those that are concerning for the economic and health protection measures	Those that are affected by other family reasons	P-Value
Concern regarding efficient prevention measures towards COVID-19	0.5607	−0.35087	0.001
Economic reasons	0.63062	−0.39472	0.001
Other family reasons	−0.54197	0.33923	0.001
Number of persons (n = 1104)	425	679	

Table 4 Summary of classification with cross-validation

Actual Classification	Those that are concerning for the economic and health protection measures	Those that are affected by other family reasons
Those that are concerning for the economic and health protection measures	416	40
Those that are affected by other family reasons	9	639
Total N	425	679
N correct	416	639
Proportion	97.9%	94.1%
Number of tourists (n = 1104)	N correct = 1055	Proportion Correct = 95.6%

Thus, the three key factors that affect Greek tourists in their decision to not go for holidays due to COVID-19 crisis could correctly predict and distinguish tourists' group membership.

Therefore, the hypothesis *Ho1 "Greek tourists that will not go for holidays due to COVID-19 crisis cannot be classified into groups according to their attitude towards these issues"* may be rejected.

4.2 Profiling Each Group of Tourists According to Their Demographics

A logistic regression analysis conducted to explore the association between each identified group of tourists that will not go for holidays due to COVID-19 and their demographic characteristics. Table 5 indicates there is a significant association between the identified groups of Greek tourists that will not go for holidays due to COVID-19 and the Gender (females), Generation X, Education (those who hold an undergraduate or postgraduate degree) Occupation (private employees, free licensed, Unemployed people and those who prefer housekeeping) and family income (15,001–25,000 Euro and more than 25,000 Euro). No significant association found between planned holidays income and the classified groups. On the other hand, as portrayed in Table 6, in the cases odds ratios that are greater than 1 indicate that the participation of tourists in the group that are affected by other family reasons is more likely at level A, whilst in cases odds ratios are less than 1 indicate the participation of tourists in the group that are affected by other family reasons is less likely at level A. In particular, it is more likely tourists who are male, belonging to generation Z, with primary education, working as civil servants with family income less than 9,000 Euro and spending less than 501 Euro for holidays to be affected by other family reasons in their decision to not go for holidays this year.

Table 5 Logistic regression—coefficients

Term	Coef	SE Coef	Z-Value	P-Value	VIF
Constant	1.966	0.433	4.54	0.000	
GENDER					
Female	−0.396	0.139	−2.84	0.004	1.08
GENERATION					
Generation Y	−0.114	0.223	−0.51	0.610	2.16
Generation X	−0.512	0.240	−2.13	0.033	2.48
EDUCATION					
High School	−0.474	0.311	−1.52	0.128	4.53
University degree	−1.078	0.323	−3.34	0.001	6.10
Postgraduate degree	−1.426	0.382	−3.73	0.000	2.95
OCCUPATION					
Private employee	−0.649	0.264	−2.46	0.014	2.47
Free licensed	−0.927	0.278	−3.33	0.001	2.17
Student	−0.193	0.301	−0.64	0.522	5.30
Retired	0.469	0.611	0.77	0.442	1.19
Unemployed	−0.856	0.316	−2.71	0.007	2.26
Housekeeping	−0.779	0.363	−2.15	0.032	1.67
PLANNED HOLIDAY BUDGET					
501–1,000 Euro	0.110	0.150	0.73	0.465	1.24
1,001–2,000 Euro	−0.124	0.228	−0.54	0.587	1.25
2,001 + Euro	−0.226	0.298	−0.76	0.449	1.30
FAMILY INCOME					
9,001–15,000 Euro	0.104	0.157	0.66	0.508	1.41
15,001–25,000 Euro	0.470	0.208	2.26	0.024	1.52
25,001 + Euro	0.822	0.276	2.98	0.003	1.45

Y' = 1.966 + 0.0 Male—0.396 Female + 0.0 GENERATION_Z—0.114 GENERATION_Y—0.512 GENERATION_X + 0.0 EDUCATION_Primary School—30.474 EDUCATION_High School—1.078 EDUCATION_University—1.426 EDUCATION_Postgraduate + 0.0 Civil Servants—0.649 OCCUPATION_Private Employee—0.927 OCCUPATION_Free Licensed—0.193 OCCUPATION_Student + 0.469 OCCUPATION_Retired—0.856 OCCUPATION_Unemployeed—0.779 OCCUPATION_Housekeeping + 0.0 PLANNED HOLIDAY BUDGET_ < 500 Euro + 0.110 PLANNED HOLIDAY BUDGET_501-1000 Euro—0.124 PLANNED HOLIDAY BUDGET_1001-2000 Euro—0.226 PLANNED HOLIDAY BUDGET_ > 2000 Euro + 0.0 FAMILY INCOME_ < 9001 Euro + 0.104 FAMILY INCOME_9001-15,000 Euro + 0.470 FAMILY INCOME_15001-25,000 Euro + 0.822 FAMILY INCOME_ > 25,000 Euro.

Table 6 Logistic regression—odds ratios

Level A	Level B	Odds Ratio	95% CI
GENDER			
FEMALE	MALE	0.6732	(0.5125; 0.8844)
GENERATION			
GENERATION Y	GENERATION Z	0.8924	(0.5763; 1.3818)
GENERATION X	GENERATION Z	0.5992	(0.3744; 0.9591)
GENARATION X	GENERATION Y	0.6715	(0.4534; 0.9945)
EDUCATION			
HIGH SCHOOL	PRIMARY EDUCATION	0.6227	(0.3382; 1.1466)
UNIVERSITY DEGREE	PRIMARY EDUCATION	0.3402	(0.1806; 0.6409)
POSTGRADUATE DEGREE	PRIMARY EDUCATION	0.2403	(0.1136; 0.5082)
UNIVERSITY DEGREE	HIGH SCHOOL	0.5464	(0.3864; 0.7726)
POSTGRADUATE DEGREE	HIGH SCHOOL	0.3858	(0.2280; 0.6529)
POSTGRADUATE DEGREE	UNIVERSITY DEGREE	0.7062	(0.4314; 1.1559)
OCCUPATION			
PRIVATE EMPLOYEE	CIVIL SERVANT	0.5227	(0.3118; 0.8764)
FREE LICENSED	CIVIL SERVANT	0.3956	(0.2294; 0.6824)
STUDENT	CIVIL SERVANT	0.8246	(0.4567; 1.4888)
RETIRED	CIVIL SERVANT	1.5987	(0.4831; 5.2898)
UNEMPOYED	CIVIL SERVANT	0.4247	(0.2285; 0.7894)
HOUSEKEEPING	CIVIL SERVANT	0.4588	(0.2254; 0.9340)
FREE LICENSED	PRIVATE EMPLOYEE	0.7569	(0.4758; 1.2039)
STUDENT	PRIVATE EMPLOYEE	1.5775	(0.9739; 2.5553)
RETIRED	PRIVATE EMPLOYEE	3.0584	(0.9586; 9.7584)
UNEMPOYED	PRIVATE EMPLOYEE	0.8124	(0.4872; 1.3549)
HOUSEKEEPING	PRIVATE EMPLOYEE	0.8777	(0.4611; 1.6706)
STUDENT	FREE LICENSED	2.0843	(1.2096; 3.5915)
RETIRED	FREE LICENSED	4.0408	(1.2611; 12.9474)
UNEMPOYED	FREE LICENSED	1.0734	(0.6173; 1.8665)
HOUSEKEEPING	FREE LICENSED	1.1596	(0.5987; 2.2462)
RETIRED	STUDENT	1.9387	(0.5860; 6.4137)
UNEMPOYED	STUDENT	0.5150	(0.3040; 0.8723)
HOUSEKEEPING	STUDENT	0.5564	(0.2707; 1.1434)
UNEMPOYED	RETIRED	0.2656	(0.0808; 0.8736)
HOUSEKEEPING	RETIRED	0.2870	(0.0841; 0.9792)

(continued)

Table 6 (continued)

Level A	Level B	Odds Ratio	95% CI
HOUSEKEEPING	UNEMPLOYED	1.0803	(0.5368; 2.1742)
PLANNED HOLIDAY BUDGET			
501–1,000 Euro	< 501 Euro	1.1158	(0.8318; 1.4967)
1,001–2,000 Euro	< 501 Euro	0.8833	(0.5647; 1.3819)
2,001 + Euro	< 501 Euro	0.7980	(0.4448; 1.4316)
1,001–2,000 Euro	501–1,000 Euro	0.7917	(0.5090; 1.2314)
2,001 + Euro	501–1,000 Euro	0.7152	(0.4018; 1.2732)
2,001 + Euro	1,001–2,000 Euro	0.9034	(0.4747; 1.7194)
FAMILY INCOME			
9,001–15,000 Euro	< 9,001 Euro	1.1095	(0.8159; 1.5087)
15,001–25,000 Euro	< 9,001 Euro	1.5999	(1.0634; 2.4070)
25,001 + Euro	< 9,001 Euro	2.2761	(1.3250; 3.9097)
15,001–25,000 Euro	15,001–25,000 Euro	1.4420	(0.9859; 2.1091)
25,001 + Euro	15,001–25,000 Euro	2.0514	(1.2175; 3.4566)
25,001 + Euro	25,001 + Euro	1.4226	(0.8271; 2.4470)

Odds Ratio for Level a Relative to Level B

Finally, a chi-square analysis conducted for each group of tourists in order to build their profile regarding their demographic characteristics. As shown in Table 7, the tourists that are concerning for the economic and health protection measures are mainly female of generation Z, holding a university degree, mostly students, who planned to spend up to 500 Euro for holidays and their family income is between 9,001 and 15,000 Euro. Similar is the profile of those who are affected by other family reasons.

Therefore, the hypothesis Ho2 *"The demographic and personal characteristics of the Greek tourists are not significantly related to their attitude towards these issues"* may be rejected.

5 Discussion and Conclusions

This study explored the potential attitudes of Greek tourists that will not go for holidays due to COVID-19 and classified them into groups according to their attitude towards these issues. It identified the factors during COVID-19 that influence Greek tourists to not go for holidays. The results of this work provide important insights about the attitudes of Greek tourists regarding their decision to not go for holidays due to the COVID-19 crisis. Factors including people's concern regarding efficient prevention measures towards COVID-19, economic and other family reasons, influence the Greek tourists in their decision not to go for holidays due to COVID-19.

Table 7 Profiling each group of tourists according to their demographics

Demographic Characteristics		Those who are concerning for the economic and health protection measures		Those who are affected by other family reasons	
Gender	Male	$x^2 = 49.471$ ($P < 0.001$)	49.1%	$x^2 = 18.146$ ($P < 0.001$)	41.8%
	Female		50.1%		58.2%
Age	Generation Z	$x^2 = 47.976$ ($P < 0.001$)	49.3%	$x^2 = 178.695$ ($P < 0.001$)	57.9%
	Generation Y		24.6%		21.7%
	Generation X		26.1%		20.4%
Education	Primary School	$x^2 = 290.059$ ($P < 0.001$)	5.5%	$x^2 = 450.757$ ($P < 0.001$)	8.4%
	High School		24.9%		27.3%
	University Degree		58.6%		57.4%
	Postgraduate Degree		11.0%		6.9%
Occupation	Civil Servant	$x^2 = 213.186$ ($P < 0.001$)	9.9%	$x^2 = 551.052$ ($P < 0.001$)	12.4%
	Private Employee		18.8%		15.1%
	Free Licensed		15.8%		10.8%
	Student		35.5%		44.5%
	Retired		1.9%		4.0%
	Unemployed		11.8%		8.5%
	Housekeeping		6.3%		4.7%
Family Holiday Budget	< 501 Euro	$x^2 = 184.195$ ($P < 0.001$)	47.3%	$x^2 = 314.655$ ($P < 0.001$)	46.8%
	501–1,000 Euro		34.3%		36.2%
	1,001–2,000 Euro		11.4%		10.6%
	2,001 + Euro		7%		6.4%
Family Income	< 9,000 Euro	$x^2 = 121.758$ ($P < 0.001$)	37.6%	$x^2 = 116.953$ ($P < 0.001$)	31.8%
	9,001–15,000 Euro		38.4%		37.5%
	15,001–25,000 Euro		16.5%		19.8%
	25,001 + Euro		7.5%		10.9%

Consequently, this study is in line with the outcomes of other researchers presented in literature review (Gossling 2002; Hall 2006, 2020; Page et at. 2006; Page and Yeoman 2007; Koe et al. 2008; Scott and Gossling 2015; Noveli et al. 2018; Hanrahan and Melly 2019). Moreover, this study classified those tourists into two groups according to factors that influence their decision to not go for holidays due to COVID-19: (a) those that are concerning for the economic and health protection measures and, (b) those are influenced by other family reasons.

Furthermore, tourists' age, gender, occupation, educational level, as well as their planned budget of holidays and their family income have a significant impact on their decision to not go for holidays due to COVID-19.

In particular females, Generation X, university or postgraduate education, occupation as private employees and free licensed, unemployment, housekeeping, and those with family income between 15,001 and 25,000 Euro and more than 25,000 Euro are factors that significantly affect their decision to not go for holidays due to COVID-19. Moreover, this study indicated that it is more likely tourists who are male, belonging to Generation Z, with primary education, working as civil servants with family income less than 9,000 Euro and spending less than 501 Euro for holidays to be influenced by other family reasons in their decision to not go for holidays this year.

The above information is important for decision makers in tourism industry sectors and for the policy makers because it can be used for the implementation of appropriate regulation programs and tools. Managers and owners in tourism enterprises should also be informed about the attitudes and factors influencing tourists' decision to not go for holidays due to COVID-19 crisis in order to make the appropriate decisions and conduct accordingly their marketing and business plans.

In addition, the outcomes of this study provide useful recommendations for introducing stimulus and recovery measures to handle the consequences of the COVID-19 pandemic. Tourism sector must be financially supported by governments in order to recover by the COVID-19 pandemic effects.

The main limitation of the present study is that the survey was performed during a period were the COVID-19 outbreak in Greece was at peak. Therefore, it was possible to collect a timely response from respondents, but, at the same time, the respondents may have been affected by strong emotions at the time. Nevertheless, this crisis is still expanding and its effects on tourism require further consideration in future studies. The impact of the COVID-19 pandemic is expected to diminish over time once the pandemic is brought under control. There might even be some positive effect on the tourism sector on certain tourist destinations, such as ecological improvements from the dramatic drop in carbon emissions during the crisis (Qiu et al 2020).

In this regard, the results of this work should lead to further research, both in Greece and in other countries with similar characteristics. Longitudinal studies are also worth conducting.

References

Bhaskara GI, Filimonau V (2021) The COVID-19 pandemic and organisational learning for disaster planning and management. J Hospit Tour Manag

Bieger T (2008) Management von Destinationen. 7. unveränd. Aufl. München

Bloom DE, Cadarette D (2019) Infectious disease threats in the twenty-first century: strengthening the global response. Front Immunol 10:549

Burkle Jr FM (2006) Globalization and disasters: issues of public health, state capacity and political action. J Intern Affairs, 241–265

Cohen J (1988) Statistical power analysis for the behavioral sciences (2nd edn). Erlbaum, Hillsdale, NJ, USA, pp 273–406

Dreyer A, Dreyer D, Obieglo D (2010) Krisenmanagement im Tourismus: Grundlagen. Oldenbourg Verlag, Vorbeugung und kommunikative Bewältigung
ELSTAT (2020) https://www.statistics.gr/el/statistics/-/publication/SAM03/ Accessed 12 Feb 2022
Fauci AS, Morens DM (2012) The perpetual challenge of infectious diseases. New England. J Med 366(5):454–461
Faul F, Erdfelder E, Buchner A, Lang A (2009) Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. Behav Res Methods 41(4), 1149–1160
Fotiadis AK, Huan TC (2014) Disaster, tourism. Encycl Tour, 1–2
Gössling S (2002) Global environmental consequences of tourism. Glob Environ Chang 12(4):283–302
Gössling S, Scott D, Hall CM (2020) Pandemics, tourism and global change: a rapid assessment of COVID-19. J Sustain Tour, 1–20
Grech V, Grech P, Fabri S (2020) A risk balancing act–tourism competition using health leverage in the COVID-19 era. Intern J Risk Safety Med (Preprint), 1–5
Hair JF, Anderson RE, Tatham RL, Black WC (1998) Multivariate data analysis. Prentice Hall Inc., New Jersey
Hall CM, Scott D, Gosling S (2020) Pandemics, transformations and tourism: be careful what you wish for. Tour Geogr. https://doi.org/10.1080/14616688.2020.1759131
Hall CM (2006) Tourism, biodiversity and global environmental change. In S Gossling, Hall CM (eds) Tourism and global environmental change: ecological, economic, social and political interrelationships (pp. 142–156). Routledge
Hall CM (2020) Biological invasion, biosecurity, tourism, and globalisation. In: Timothy D (ed) Handbook of globalisation and tourism. Edward Elgar, pp 114–125
Hanrahan J, Melly D (2019) Biosecurity risk and tourist communication in Ireland. Eur J Tour Res 22:45–61
Hoque A, Shikha FA, Hasanat MW, Arif I, Hamid ABA (2020) The effect of Coronavirus (COVID-19) in the tourism industry in China. Asian J Multidisc Stud 3(1):52–58
Huan TC, Beaman J, Shelby L (2004) No-escape natural disaster: mitigating impacts on tourism. Ann Tour Res 31(2):255–273
Labonté R, Mohindra K, Schrecker T (2011) The growing impact of globalization for health and public health practice. Annu Rev Public Health 32:263–283
Lehto X, Douglas AC, Park J (2008) Mediating the effects of natural disasters on travel intention. J Travel Tour Mark 23(2–4):29–43
OECD (2020) COVID-19: tourism policy responses. https://read.oecd-ilibrary.org/view/?ref=124_124984-7uf8nm95se&title=Covid-19_Tourism_Policy_Responses. Accessed 3 Mar 2022
Page S, Yeoman I (2007) How VisitScotland prepared for a flu pandemic. J Bus Contin Emer Plan 1(2):167–182
Page S, Yeoman I, Munro C, Connell J, Walker L (2006) A case study of best practice—Visit Scotland's prepared response to an influenza pandemic. Tour Manage 27(3):361–393
Petersen E, Wilson ME, Touch S, McCloskey B, Mwaba P, Bates M, Azhar EI (2016) Rapid spread of Zika virus in the Americas-implications for public health preparedness for mass gatherings at the 2016 Brazil Olympic Games. Int J Infect Dis 44:11–15
Polyzos S, Samitas A, Spyridou AE (2020) Tourism demand and the COVID-19 pandemic: an LSTM approach. Tour Recreat Res, 1–13
Pongsiri MJ, Roman J, Ezenwa VO, Goldberg TL, Koren HS, Newbold SC, Salkeld DJ (2009) Biodiversity loss affects global disease ecology. Bioscience 59(11):945–954
Qiu RT, Park J, Li S, Song H (2020) Social costs of tourism during the COVID-19 pandemic. Ann Tour Res 84:102994
Reichel A, Fuchs G, Uriely N (2007) Perceived risk and the non-institutionalized tourist role: the case of Israeli student ex-backpackers. J Travel Res 46(2):217–226
Ritchie BW, Jiang Y (2019) A review of research on tourism risk, crisis and disaster management: launching the annals of tourism research curated collection on tourism risk, crisis and disaster management. Ann Tour Res 79:102812

Schmidt CW (2016) Zika in the United States: how are we preparing? Environ Health Perspect 124(9):A157–A165
Scott D, Gössling S (2015) What could the next 40 years hold for global tourism? Tour Recreat Res 40(3):269–285
Seraphin H, Sheeran P, Pilato M (2018) Over-tourism and the fall of Venice as a destination. J Destin Mark Manag 9:374–376
Séraphin H, Zaman M, Fotiadis A (2019) Challenging the negative image of postcolonial, post-conflict and post-disaster destinations using events: the case of Haiti. Caribbean Quart 65(1):88–112
Sharma A, Nicolau JL (2020) An open market valuation of the effects of COVID-19 on the travel and tourism industry. Annals Tour Res
Siardos G (1997) Methodology of agricultural sociological research. Ziti Publications, Thessaloniki, Greece, p 367
Taylor T, Toohey K (2007) Perceptions of terrorism threats at the 2004 Olympic games: implications for sport events. J Sport Tour 12(2):99–114
Traveller CN (2020) Before and after: how coronavirus has emptied tourist attractions around the world
Wen J, Wang W, Kozak M, Liu X, Hou H (2020) Many brains are better than one: the importance of interdisciplinary studies on COVID-19 in and beyond tourism. Tour Recreat Res, 1–4
WHO (2020) WHO coronavirus disease (COVID-19) Dashboard. https://covid19.who.int/. Accessed 20 Mar 2022
World Bank (2020) COVID-19 to plunge global economy into worst recession since World War II. https://www.worldbank.org/en/news/press-release/2020/06/08/covid-19-to-plunge-global-economy-into-worst-recession-since-world-war-ii. Accessed 14 Mar 2022
WTTC (2019) Economic Impact Reports, https://wttc.org/Research/Economic-Impact. Accessed 4 Mar 2022
WTTC (2020) Coronavirus puts up to 50 million travel and tourism jobs at risk says WTTC. https://wttc.org/News-Article/Coronavirus-puts-up-to-50-million-Travel-and-Tourism-jobs-at-risk-says-WTTC. Accessed 4 Mar 2022
Yang Y, Zhang H, Chen X (2020) Coronavirus pandemic and tourism: dynamic stochastic general equilibrium modelling of infectious disease outbreak. Annals Tour Res
Ying T, Wang K, Liu X, Wen J, Goh E (2020) Rethinking game consumption in tourism: a case of the 2019 novel coronavirus pneumonia outbreak in China. Tour Recreat Res, 1–6
Yu Q, McManus R, Yen DA, Li XR (2020) Tourism boycotts and animosity: a study of seven events. Ann Tour Res 80:102792