

# Effect of Overtourism on Residents' Quality of Life in World Heritage Cities

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## ABSTRACT

The main aim of this paper is to determine the perceptions of residents towards overtourism (tourism impacts) and to reveal the effect of overtourism on the quality of life in Safranbolu. In the research, the data were analyzed with the SPSS 22 statistical package program. Percentage, frequency tests, factor analysis and multivariate regression analysis were used to reach valid and reliable results. Results show that one-third of the residents believe that the city suffers from overtourism, and it affects the quality of life negatively. Besides, residents agree that tourism is harmful for the physical environment as it increases traffic congestion, parking problems, litter, water consumption and noise. In addition, they believe that tourism deteriorates the natural environment and exceeds the carrying capacity. Therefore, they have concerns about the deterioration of cultural heritage arising from too many tourists.

**Keywords:** Overtourism, Residents' Perceptions, UNESCO World Heritage Site, Safranbolu

## 1 Introduction

The travel industry's overall focus on growth without considering the negative effects of its impacts causes an excessive tourist influx after decades of uncontrolled growth, and as a result, tourism creates more harm than benefits in many destinations. In tourism destinations, especially during the high season, people's daily lives become more challenging, and they are suffering from too much tourism. These destinations experience problems in many issues, from noise pollution to increasing crime rates; and the

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infrastructure, especially in small settlements, cannot cope with large tourist numbers. Generally, five types of problems are encountered in destinations related to overtourism. These problems are (1) alienated local people, (2) a degraded tourist experience, (3) overloaded infrastructure, (4) damage to nature, and (5) threats to culture and heritage (WTTC and McKinsey & Company, 2017).

Overtourism is a multifaceted problem that causes destruction of the natural environment, increases in the amount of waste, residents of the region to flee their homeland, damage to the historical monuments. The pressure exerted by overtourism on the environment negatively effects the quality of life of residents (Biagi et al., 2022). Mitigating the effects of overtourism is only possible by keeping the number of tourists at a reasonable level. Considering the escalating issue of overtourism in certain renowned destinations (Zengin et al, 2023), there's been a collective pursuit among tourism experts and scholars to devise sustainable remedies. Some destinations such as Venice ban the access of tourists to some areas during a certain period. As stated by Seraphin et al. (2018), trexit (tourism exit) can be a strategy to decrease the number of tourists in a destination. It refers to strategies that aimed to deter tourists from visiting a destination or to restrict their access to some areas.

Safranbolu is one of the destinations where tourism activities and development are intensely experienced in Turkey. Safranbolu, which preserves its urban identity and is the first urban city in Turkey, has achieved great success in preserving its traditional urban texture, wooden masonry houses and monumental structures on a heritage city scale, in terms of ensuring its sustainability and was included in the World Heritage List by UNESCO in 1994. (UNESCO WHC, 1995; Koçođlu et al., 2020).

Safranbolu, which has an area of 1013 km<sup>2</sup> (Karabük Governorship, 2019), hosts 17 times more tourists than its own population. Therefore, considering that the tourism activities are concentrated in the Çarşı region, that is, in an area of 1.8 km<sup>2</sup> where 3038 people (Safranbolu Population Directorate, 2019) live, the increase in the number of tourists indicates that Safranbolu is approaching a dangerous limit. Safranbolu's main problem arises from day trippers. The city hosts over 1 million daily visitors, which can be harmful for the sustainability of the historical heritage in the near future.

This research investigates the perceptions of overtourism among the residents of Safranbolu and its impact on their quality of life. Safranbolu is one of the cities where cultural heritage is experienced intensely. Few studies Seraphin et al. (2018); Muler Gonzalez et al. (2018); Neuts and Nijkamp (2012); Popp (2012) have been conducted analysing the impacts of overtourism on cultural heritage. Overtourism has more serious impacts on historical cities, as historical artefacts are damaged due to excessive tourist visits. These historical cities are especially small settlements, and these small areas are insufficient to host the increasing number of tourists and cannot cope with the tourist mass. This can cause the local people to move away from their homeland. Therefore, public attention should be drawn to overtourism and the devastating impact of these activities in historic cities, especially in UNESCO world heritage sites.

## **2 Development of Theoretical Background and Hypotheses**

### **2.1 Theoretical background**

In a touristic destination, rental prices start to push local tenants financially; narrow roads are stuck with touristic vehicles; wildlife and natural environments are deteriorated; historical buildings begin to be damaged; touristic places cannot be visited due to crowds; prices in food and beverage venues increase; and residents become irritated because of the misbehaviours of tourists. All these issues are signs of overtourism. Seraphin et al. (2019) pinpointed the origins of overtourism, attributing it to a combination of sociological factors such as mankind's pursuit of happiness, business factors including marketing

strategies, and technological and economic factors such as advancements in technology and the accessibility of low-cost transportation. The phenomenon of overtourism, characterized by its myriad negative impacts on destinations, emerges because of the excessive growth of the tourism industry and the consequent influx of tourists into popular destinations worldwide (Türker & Saraç, 2019).

The fact that locations all over the world are flooded with visitors at an unprecedented rate creates a tourism surplus. In many destinations where tourism thrives, tourists are initially welcomed by the locals because of their foreign exchange spending, and hence the income generated, the more tourists in the destination emerge as a threat to the quality of life of the local people. As a result, less hospitable behaviour towards tourists occurs. The excessive growth of the tourism industry creates a tourism influx in tourism destinations and overtourism emerges. As tourism destinations grapple with the challenges posed by overtourism, scholarly interest in understanding the dynamics of tourist-local interactions and the broader impacts of tourism on host communities (Tanrısever et al., 2016) has surged since the 1980s.

Tourism research focusing on tourist-local people interactions and economic, socio-cultural, environmental impacts of tourism on the host community have increased since the 1980s. To illustrate: Doxey (1975) created the Irridex model (an irritation index) by considering the dissatisfaction of the host community due to the influx of tourists as the main indicator. Likewise, Butler's Tourist Life Cycle Model (TLCM) emphasized that as the number of tourists in a destination increases, the attitudes of the communities towards tourists and tourism will change negatively, which consists of six phases - exploration, involvement, development, consolidation, stagnation and rejuvenation or decline- (Butler, 1980). Depending on the number of visitors, destinations' infrastructure, and shifts in the natural and built environment, there are changes in the behaviours of the local people towards tourism during these stages. Ap and Crompton (1993) also examined the reaction of the host community towards tourism activities in four stages of embracement, tolerance, adjustment, and finally withdrawal. As tourism research has evolved to encompass the intricate dynamics of tourist-local interactions and the multifaceted impacts of tourism on host communities, scholars have identified various models and frameworks to understand the stages of tourism development and the responses of local populations.

Due to the huge increase in the number of tourists, local people cannot cope with the impacts of tourism, and they tend to leave the destination. For example, despite its population of 1.6 million, Barcelona (Info Barcelona, 2019) which hosts 30 million tourists a year (Martin et al., 2018) has a declining resident population. Euronews (2019) reported that Barcelona's residential population has declined 11% in the past four years due to the number of apartments being rented out to holidaymakers. As a result of the large increases in square meter prices due to tourism revenues, local people cannot afford the rent in touristic places and cannot buy houses or shops. As urban centers like Barcelona grapple with the challenges of overtourism, similar issues are observed in iconic destinations such as Venice, where the strain of excessive tourism has led to significant demographic shifts and economic pressures on residents.

Like Barcelona, Venice, which is listed as a UNESCO World Heritage Site, suffers from the negative impacts of overtourism. Seraphin et al. (2018) indicated that Venice is a "falling destination," while Milano (2017) refers to tourism saturation as the "Venice Syndrome". Venice, where 55,000 residents live in the historical city (Wikipedia, 2020), hosts an average of 60,000 tourists daily (Seraphin et al., 2018). Residents living in the historic centre decreased by 29% between 1990-2015 (Milano, 2017). Van Der Borg et al. (1996) identified that Venice is under high tourism pressure because the intensity is 89 visitors per resident. Due to increasing house rents (Airbnb is among the reasons for higher rates), thousands of people move to the outer parts of the city every year where house rents and house prices are cheaper.

According to Rössler (2018) the Director of the UNESCO World Heritage Centre, there are increased visitor numbers at individual World Heritage sites, not only in Europe but also in iconic sites such as Machu Picchu, Angkor Wat and the Taj Mahal. Machu Picchu, the Lost City of the Incas is experiencing the negative effects of overtourism. Although UNESCO's recommended carrying capacity for Machu

Picchu is no more than 2,500 visitors per day, during the summer months daily visitors are twice this number.

When the carrying capacity of a destination is exceeded, it leads to the degradation of the physical, economic, and socio-cultural environment (Saraç & Tanrıseven, 2018), as well as an undesirable decline in the satisfaction levels of visitors, as highlighted by the UNWTO (1981). Overtourism causes many negative effects on the local community. With the increase in the number of tourists, the excessive use of natural resources, environmental pollution, water consumption and noise pollution are increasing and threatening the quality of life of the local people. Over time, the shops used to meet the needs of the local people change as outlets that sell expensive goods or appeal to tourists and put pressure on infrastructure and other facilities (UNWTO, 2018; Çolak et al., 2020).

Demirci et al. (2020) found out that the environmental, social, and cultural perceptions of the people living in Eskişehir Odunpazarı region towards overtourism affect their life satisfaction negatively. The residents consider environmental effects such as noise, environmental pollution, excessive garbage, degradation of the landscape and damage to green areas as the factors that reduce the satisfaction of people due to overtourism. It has also been determined that cultural impacts such as the loss of identity and the sale of handicrafts that do not represent the local culture and social issues such as increases in crime rates are factors that reduce life satisfaction while traffic jams have the negative impact on satisfaction of life.

These developments have caused increasing complaints from residents and local stakeholders regarding tourism growth, anti-tourism movements and protests were observed in many popular tourism destinations. Attacks on tourist yachts in marinas and harsh and rude attitudes towards tourists are some of these examples. Residents frequently complain that the businesses that make the destination authentic and unique have turned into identical shops that sell food and souvenirs to tourists. They also complain about the excess of tour buses, insufficient public services, and long queues. As discontent among residents and local stakeholders escalates in response to the challenges posed by overtourism, it becomes evident that popular tourist destinations worldwide are witnessing a surge in anti-tourism movements, protests, and incidents of hostility towards tourists.

Overtourism has more dramatic effects on the world heritage cities where pressure created by tourism on infrastructure and the deterioration of cultural assets become a serious problem. These fragile sites cannot handle the increased number of tourists. Exceeding the carrying capacity due to the increase in the number of tourists negatively affects the environmental and socio-cultural sustainability of the sites (Koçoğlu et al., 2020). Public transportation, infrastructure, roads, museums, touristic places, or other services that were created primarily for local use are insufficient for the increasing number of tourists (Pappalepore et al, 2014). The cost of living for local people increases, socio-cultural negative effects such as cultural change occur, and excessive tourist increase causes cultural conflicts. Overtourism causes the alienation of the local people.

Safranbolu suffers from similar problems. Safranbolu is a popular cultural tourism destination not only for domestic visitors but also for international tourists, especially from Far Eastern countries. After its declaration as a heritage site, tourist numbers grew dramatically. While in 1992 overnight tourists were around 20 thousand, in 2018 it reached 315 thousand tourists. Overtourism also effects the quality of visitor experience negatively (Berselli et al., 2022). Tourists traveling with the motivation to experience the heritage and culture of a destination are not satisfied with the service they receive in destinations due to the overwhelming number of tourists.

## **2.2 Development of Hypotheses**

In this study regarding the effect of tourism impacts on the quality of life, six hypotheses were determined. A model of the study is presented in Figure 1 below. The tourist influx may lead to the loss of cultural identity, destruction in historical sites, and cause cultural commercialization (Sirakaya, et al.,

2001; Tosun, 2002). To illustrate, Seraphin et al. (2018) indicated that destruction of historical sites in Venice is a serious problem. Therefore, the following hypothesis is developed:

H1= Negative cultural impacts have negative effects on the quality of life of the residents in Safranbolu.

Tourism plays a vital role in increasing the welfare of communities by revitalizing the local economy. On the other hand, tourism can cause annoyance and decrease the life satisfaction as it increases tourist crowds, noise, pollution, traffic congestion, and conflicts between local people and tourists and causes inadequacy in local services (Bastias-Perez & Var, 1995; McCool & Martin, 1994). Therefore, the second hypothesis is as follows:

H2= Annoyance has a negative effect on the quality of life of the residents in Safranbolu.

Environmental problems such as destruction of natural resources, loss of biodiversity, pollution, trampling etc. arise when the tourist influx exceeds the carrying capacity of tourism destination (Türkey & Saraç, 2019). Jurowski and Gursoy (2004) revealed that residents living in a popular tourism destination have more negative perceptions towards tourism development than local people not living in and around tourism destinations. Therefore, the following hypothesis is developed:

H3= Environmental degradation has a negative effect on the quality of life of the residents in Safranbolu.

Overtourism create negative impacts on the host community such as traffic congestion and parking problems (Koens et al., 2018; Jurowski et al, 1997) especially in historic centres. Fyall and Garrod (1998) found that traffic problems were significant and widespread causes for concern, challenges for heritage sites in satisfying visitors' expectations, and manage their impact on the host community. Therefore, the fourth hypothesis is as follows:

H4= Traffic congestion has a negative effect on the quality of life of the residents in Safranbolu.

Overtourism may cause an increase in crime rates (Jurowski et al., 1997). Research that Seraphin et al. (2018) and Van Der Borg et al. (1996) have carried out have reported increased crime and vandalism in heritage cities. In addition, overcrowding in the destination can threaten the spiritual aspect of the region, and physical integrity and crowds create difficulty in ensuring security. It can adversely affect the quality of life of the host community. Therefore, the following hypothesis is developed:

H5= Security problems have negative effects on the quality of life of the residents in Safranbolu.

Tourism causes negative economic impacts and an increase in the cost of living for residents. It increases the cost of properties and rents and inflate the prices of goods. Research of Tosun (2002), Weaver and Lawton, (2001); Haralambopoulos and Pizam, (1996) show that residents perceive in prices in their community because of tourism. Woo et al. (2016) found that local communities' life satisfaction is dependent on tourism industry that residents' satisfaction with material and nonmaterial life decreased due to tourism development. The authors elucidated that the progression of tourism development

escalates the cost of living for residents, potentially resulting in a diminished satisfaction with their material quality of life. Consequently, the sixth hypothesis posits as follows:

H6= Cost of living has a negative effect on the quality of life of the residents in Safranbolu.

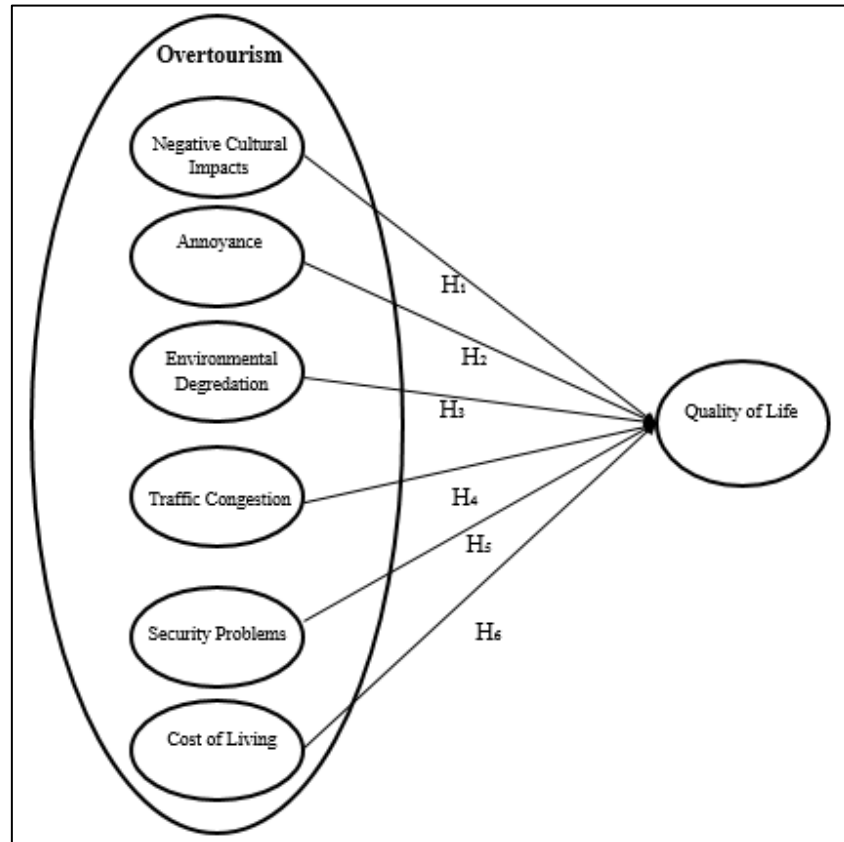


Figure 1 Model of the study

### 3 Methodology

#### 3.1 Survey Instrument

This study aimed to determine the perceptions of the host community living in Safranbolu towards overtourism and its effects on quality of life. Ethical approval for this research was obtained from the Karabük University Ethics Committee with approval dated 01/03/2024 and numbered 2024/03(34,35). In this study where a quantitative research method was adopted, an "overtourism" scale was developed using the literature (Perdue et al., 1990; Haralambopoulos & Pizam, 1996; Türker, 2013; Muler Gonzalez et al, 2018). The scale consists of 28 questions related to tourism impacts. Statements are structured as a five-point Likert Scale (1-Strongly disagree, 5-Strongly agree). The questionnaire also includes questions to determine demographic variables such as age, gender, educational level, length, and place of residence.

In the development process of the questionnaire first, 35 statements were identified. In order to determine the content validity of the questionnaire, these statements were examined by six academicians who have expertise on tourism impacts. The statements that could cause semantic difficulties in the questionnaire were corrected. Some of the statements were removed from the scale and the scale was reduced to 32 statements. In order to ensure reliability of the questionnaire and to predict possible

problems that may be encountered with the scale, a pilot study was carried out with 50 university students living in Safranbolu. Four statements were removed from the scale and the final questionnaire was formed with 29 statements. Finally, data was collected from 351 inhabitants living in the districts of Eski Çarşı where tourism activities mostly take place, Kıranköy, Bağlar, Emek, etc. using a structured questionnaire.

### **3.2 Data Collection and Sampling**

The population of the research is the host community living in Safranbolu. The most important reason behind choosing Safranbolu as the study area is that the increased number of tourists. Figures of the Safranbolu Tourism Information Office (2019) show that Safranbolu attracts 1,5 million visitors on a yearly basis. Due to time restrictions and economic reasons data was collected using convenience sampling method between 01.09.2022 and 01.11.2022, and a total of 351 questionnaires were analysed. This number of questionnaires is assumed to represent the population as at least 10 respondents are sufficient per item for the reliability (Kerlinger, 1978; Hair, et al., 1998; Kline, 2011).

### **3.3 Data Analysis**

A total of 400 participants were surveyed using face-to-face questionnaire technique. As proposed by (Hair et al, 2014), 49 questionnaires were excluded from the analysis of which 12 of them due to missing of 15% of the items and 37 respondents were "straight liners". Therefore, 351 available questionnaires were analysed. The data was analysed using a statistical package program for social sciences. Since Kurtosis and Skewness values showed that the data was normally distributed, parametric tests were performed. In the study, descriptive analysis (frequency and arithmetic mean) was conducted. T-tests and one-way Anova tests were performed to measure the significant differences between variables. In addition, regression analysis was performed to determine the effect of overtourism sub-dimensions revealed as a result of factor analysis on residents' quality of life.

### **3.4 Validity and Reliability**

In the study, exploratory factor analysis was performed to determine the structural validity of the scale. For this reason, first, the reliability test was applied to measure the internal consistency of the scale. The most preferred method for this measurement is the Cronbach Alpha statistic. This test determines whether the expressions in the scale are suitable for explaining a homogeneous structure. The smallest value accepted for the scale to be appropriate is 0.70 (Nunnally & Bernstein, 1994; Smith and Albaum, 2005; Kline, 2011). Since the Cronbach alpha values of all dimensions that make up the scale are above 0.70, the scale can be said to be reliable (Hair et al., 1998).

Appendix 1 shows the results of the Exploratory Factor Analysis. KMO and Bartlett tests were performed to determine whether the scale was suitable for factor analysis. The KMO value of the scale is 0.881, which is satisfactory for factor analysis (Sharma, 1996). As a result of the Bartlett  $\chi^2$  test, p value below 0.05 ( $\chi^2$ : 4840.405) was reached and it was determined that the scale was suitable for factor analysis (Zwick & Velicer, 1986). According to the factor analysis made, the scale was grouped under seven dimensions as negative cultural impacts, annoyance, environmental degradation, quality of life, cost of living and Traffic Congestion.

## **4 Results**

Table 1 shows the socio-demographic profile of the respondents. The distribution of gender shows that the percentage of male respondents are higher than females with a percentage of 59.5%. Almost one third of the respondents are between the ages of 28 and 37 years (32.5%) while the 38-47 age group counts 25.4% of this study. In terms of education, 31.6% of respondents hold a high school diploma. 23.9% of respondents have a graduate degree while 19.1% have an undergraduate degree diploma. Average length of residence is more than 21 years (69.2%). Respondents mostly reside in Eski Çarşı

(26.2%) Kırankoy (25.9) and Emek (19.9%) quarters. 64.1% of the respondents do not have direct income from the tourism industry.

**Table 1:** Respondents' demographic profile

<b>Gender</b>	<b>f</b>	<b>%</b>	<b>Length of Residence</b>	<b>f</b>	<b>%</b>
Female	142	40.5	5 years or less	48	13.7
Male	209	59.5	6-10 years	33	9.4
<b>Age</b>	<b>f</b>	<b>%</b>	11-15 years	10	2.8
18-27	62	17.7	16-20 years	17	4.8
28-37	114	32.5	21 years or more	243	69.2
38-47	89	25.4	<b>Place of Residence/Quarters</b>	<b>f</b>	<b>%</b>
48-57	65	18.5			
Above 58	21	6.0	Eski Çarşı	92	26.2
<b>Education</b>	<b>f</b>	<b>%</b>	Emek	70	19.9
Secondary School	89	25.4	Yeni Mahalle	33	9.4
High School	111	31.6	Kırankoy	91	25.9
Undergraduate	67	19.1	Barış Mahallesi	18	5.1
Graduate	84	23.9	Bağlar	47	13.4

Table 2 shows the local people's perceptions towards tourism impacts. The dimension that the participants perceived most negatively is "traffic congestion" (4.11), followed by "cost of living" (3.73) and "environmental degradation" (3.52) dimensions, respectively. Muler Gonzalez et al. (2018) reached similar findings in Besalú in terms of cost of living that residents believe that prices are higher due to tourism.

**Table 2:** Mean scores of the factors

<b>Dimensions</b>	<b>Mean</b>	<b>s.d.</b>
<b>Traffic Congestion</b>	4.11	.85981
<b>Cost of Living</b>	3.73	.91264
<b>Environmental Degradation</b>	3.52	.95182
<b>Security Problems</b>	2.65	1.01937
<b>Negative Cultural Impacts</b>	2.61	1.14725
<b>Quality of Life</b>	2.49	1.07688
<b>Annoyance</b>	2.24	1.07688

Table 3 shows that perceptions varied according to the place of residency. It has been determined that the residents of Eski Çarşı, which is concentrated with the tourist influx, perceive the tourism impacts more negatively than those living in other districts. Residents who live in Eski Çarşı region had more negative perceptions than the residents living in Barış Mahallesi (quarter), which is located away from the tourist crowd. In this study, it was also determined that those who do not generate income from the tourism industry in Safranbolu perceive tourism impacts more negatively than people who earn their living from tourism businesses regarding the "negative cultural impacts", "annoyance", "quality of life" and "cost of living". Research (Perdue et al., 1990; Glasson, 1994; Haralambopoulos & Pizam, 1996; Williams & Lawson, 2001; Gursoy et al., 2002) in the related literature show similar findings that perceptions towards the positive impacts of tourism were more favourable for people who work in tourism-related jobs.



**Table 3:** Impacts of tourism and results of ANOVA and t-tests according to place of residence and tourism income

Dimensions	Place of Residence		Tukey	Income from Tourism	
	F	P	P	t	P
Negative Cultural Impacts	2.774	.018	a>e	6.652	.000
Annoyance	3.247	.007	a>e	5.298	.000
Environmental Degradation	4.783	.000	a>e	1.841	.067
Quality of Life	3.476	.004	a>e	4.397	.000
Cost of Living	6.026	.000	a>e	2.990	.003
Traffic Congestion	2.314	.044	a>f	.469	.639
Security Problems	3.241	.007	d>e,f	1.794	.074

According to Table 4 multiple regression analysis performed to determine the effect of overtourism sub-dimensions on quality of life was found to be statistically significant ( $F=19.854$ ;  $p=0.000$ ). After we examine the contributions of the dimensions to the model, it is seen that four dimensions have significant effects on quality of life. According to standardized beta coefficients, Annoyance the highest effect, which is significant ( $H2$ ,  $\beta=-.277$   $p=.000$ ); followed by Negative Cultural Impacts ( $H1$ ,  $\beta=-.222$   $p=.000$ ); the Traffic Congestion ( $H4$ ,  $\beta=-.221$   $p=.011$ ); and Cost of Living ( $H6$ ,  $\beta=-.201$   $p=.012$ ) dimensions in the model that explains 38% of quality of life. Considering these results, hypothesis  $H1$ ,  $H2$ ,  $H4$  and  $H6$  were accepted. However, the other dimensions; Environmental Degradation ( $H3$ ,  $\beta=-.097$   $p=.245$ ) and Security Problems ( $H5$ ,  $\beta=-.019$ ,  $p=.783$ ) of the model have no significant effect on quality of life. Therefore, hypotheses  $H3$  and  $H5$  were rejected.

Multiple correlation and autocorrelation were examined in the analyses. Autocorrelation (Durbin-Watson value: 1.598) and multiple correlations (lowest tolerance value: 0.575, largest VIF: 1.738) were not detected in the analysis. Since VIF values are below 10, it shows that there is no multiple correlation between variables (Field, 2000).

**Table 4:** Regression analysis of overtourism dimensions

Model - Dependent Variable: Quality of Life ( $R$ )					
Independent Variables	$\beta$	t	P	T	VIF
Negative Cultural Impacts	-.222	-2.808	.006	.579	1.726
Annoyance	-.277	-3.670	.000	.575	1.738
Environmental Degradation	-.097	-1.167	.245	.746	1.340
Traffic Congestion	-.223	-2.578	.011	.774	1.291
Security Problems	-.019	-.276	.783	.889	1.125
Cost of Living	-.201	-2.530	.012	.786	1.272
$R=.631$ ; $R^2=.398$ ; Adjusted $R^2=.378$ ; D-W=1.598; $F=19.854$ ; $p=0.000$					

## 5 Conclusions, Discussion, and Recommendations

The economic benefits of tourism have led to the uncontrollable development of tourism in Safranbolu. Thus, challenges and a considerable amount of negative tourism impacts have emerged. One of these challenges is overtourism. Overtourism in Safranbolu is particularly present on weekends and public

holidays except in the winter. (1) high number of tourists per residents, (2) environmental issues (waste, water, litter, etc.), (3) traffic and parking problems, (4) commodification, (5) decrease in quality of life, (6) destruction of cultural heritage, (7) carrying capacity excess at public holidays, (8) gentrification (traditional houses are converted into hotels and restaurants in the old town) and (9) touristification.

In this study, an attempt has been made to determine the overtourism perceptions of the Safranbolu residents across seven dimensions. These include traffic congestion, cost of living, environmental degradation, security problems, negative cultural impacts, quality of life, and annoyance. Similar results to this research are found in the study by Mincheol et al. (2020). In their study, dimensions such as economic, social, cultural, environmental, and quality of life were reached. In contrast, Mihalic et al. (2021) aggregated overtourism under five dimensions in their research. The study aims to explain the effects of tourism's positive and negative impacts on quality of life through the dimensions of economic, socio-cultural, and environmental sustainability.

According to the regression analysis conducted, the dimension of annoyance is the most significant factor negatively impacting quality of life. Following annoyance, negative cultural impacts, traffic congestion, and cost of living dimensions also contribute to the reduction in quality of life. However, it was observed that the security problems and negative cultural impacts dimensions did not statistically significantly affect quality of life. In the study by Mincheol et al. (2020), it was found that economic and cultural factors have positive effects on quality of life, while social and environmental factors have negative effects. Similarly, in another study by Mihalic et al. (2021), the authors attempted to explain the effects of tourism's positive and negative impacts on quality of life through economic, socio-cultural, and environmental sustainability dimensions. Positive effects include local economic development, new investment, social benefits from visitors, restaurant and bar quality, shopping, entertainment, and sport opportunities, all of which positively impact quality of life in terms of economic sustainability. Conversely, negative effects under economic sustainability have a detrimental impact on quality of life. Consistent with the findings of Valicon (2017), the study indicates that high prices and overcrowding have a negative effect on quality of life. In the study by Mihalic et al. (2021), it was found that maintaining cleanliness through tourism positively affects quality of life in terms of environmental and socio-cultural sustainability. Similar findings were reached by TRAN (2018) aligning with this conclusion. Additionally, they noted that tourism contributes to culture through local identity, heritage identity, preservation, and promotion, as well as cultural awareness. Pressure on the natural environment, such as green spaces, air quality, visual pollution, and waste, negatively impacts quality of life. In the study by Zucco et al. (2020), it was concluded that traffic and vandalism have negative effects on the quality of life of residents. Positive tourism experiences, on the other hand, have a positive impact. In the study by Abbasian et al. (2020), it was found that crowding, traffic congestion, and various physical damages negatively impact the quality of life of residents. Liberto et al. (2020) also concluded in their study that tourism activities have a positive impact on the quality of life of residents.

According to the findings obtained from the study, dissatisfaction among residents in Safranbolu is increasing due to overtourism. As discontentment of residents increases due to overtourism in Safranbolu, local authorities will face more challenges. Therefore, local authorities, especially the Municipality of Safranbolu, should focus on minimizing the impacts of overtourism and finding effective solutions. This will involve adopting an understanding of tourism limits, seeking a quantity of tourists which provides quality experiences not only for residents but also for tourists, changing their efforts and emphasis on attracting more visitors to meeting the needs of current visitors satisfactorily and, therefore, decreasing the disturbance of permanent residents. Like Venice, restrictions can be placed in accessing some parts of the city or day trippers are obliged to pay higher parking tariffs, to

decrease day visitors as in Bruges or some roads can be closed to individual motorised vehicles, only public transportation, electric vehicles, bicycles, and pedestrians can be granted access.

Although overtourism is not currently a major problem for all the local population living in Safranbolu and overtourism concerns in Safranbolu still are not voiced by locals, it can be one of the challenges that await the city in the future and effective actions should be taken. For a sustainable urban tourism, a Destination Management Plan including visitor management should be implemented. The Municipality of Safranbolu with the partnership with the Karabük Cultural Heritage Preservation Board Regional Board Directorate should create a management strategy for the Historical Centre including an action plan. Setting a strategic long-term plan including the limits of the carrying capacity for the city and for specific areas and attractions is essential to prevent overtourism and increase the quality of life of the local population.

Despite the beliefs that restricting visitor growth is not useful, it can be a remedy for Safranbolu to limit the numbers of day trippers in order to avoid overtourism. Visitor numbers should be measured and according to visitor limits, and access should be restricted. These restrictions should take the ecological and social capacity of the destination into consideration. Besides, there should be time restrictions when tourists are not allowed to enter some areas in specific times to avoid concentration. To reduce the tourist numbers in Safranbolu, a certain number of tourists per day should be allowed to enter the old town called "Çarşı". Due to a higher number of tourists at weekends and national holidays, visitors should be distributed over the year.

Traffic in the old town should be restricted; vehicles, especially the tourist buses, should not be allowed to access the historical centre. Specific drop-off zones should be created for tour buses. Tour buses should drop the passengers at the entrance of the city. Transportation to the city centre should be provided by electric cars or vehicles with trailers, especially for the day trippers. Public transportation should be improved. Vehicles delivering goods and belonging to the locals living in the old town can be allowed. The old town should be a pedestrian zone.

Today locals are more interested in their quality of life than the income generated by the tourism industry (Seraphin et al., 2019). Due to the symbiotic relationship between tourists and local people, the perceptions of the locals towards overtourism and their expectations should be taken into consideration for the sustainability of tourism in Safranbolu. Therefore, local authorities should care for the concerns of the residents and arrange their living spaces in such a way that provides quality of life to locals. Overtourism problems can be solved by addressing issues through close cooperation among stakeholders, local administration, tourism enterprises, non-governmental organizations, local communities, and tourists. Committees or other formal mechanisms should be created to discuss problems and devise solutions and consultations with the local community should be held at proper times.

Tourism pressure is predominantly concentrated on the main attractions of the city such as old mansions, mosques, hammams and inns, which are in the old town, namely "Çarşı". Therefore, other parts of the town should be promoted by the local authorities. As tourism activities take place within a 1.8 km<sup>2</sup> area, this area is full of tourist crowds. Other parts of the city such as Kıranköy, Gümüş and Bağlar districts can be promoted and new locations, tourism attractions and events can be developed in these less-visited parts of the city.

As taxes can be a potential deterrent to overtourism, taxes should be levied from day trippers constituting the most important share of the number of tourists, especially coming with organized tours. Taxes may dampen tourist numbers and tourism growth.

## 6 Limitations and future research

The study results should not be generalized to other UNESCO World Heritage sites, which are important tourism attractions in Turkey. However, the study can give a general idea about the environmental and socio-cultural impacts/damages created by overtourism in these destinations. For future research, it is better to explore how these impacts can be managed in various destinations using a tailor-made approach.

When the relevant literature is examined, it is seen that the studies on overtourism generally focus on big cities such as Venice and Barcelona. Since these cities have developed infrastructure and superstructure, they have the potential to host many tourists. Future studies should focus on overtourism in small cities having limited infrastructure such as Safranbolu, therefore, the literature will be expanded. In addition, it would be appropriate to consider the carrying capacity of historical cities in future overtourism research.

## 7 Declaration

### 7.1 Competing Interests

There is no potential conflict of interest in this study.

### 7.2 Authors' Contributions

**Cenk Murat KOÇOĞLU:** Contributions were made to designing and conceptualizing the research, contributing to the writing of the study, conducting the analysis of the study, and writing up the findings, overseeing and supporting the progression of the article

**Nuray TÜRKER:** Contributions were made to designing and conceptualizing the research, contributing to the writing of the study, writing the introduction, conceptual framework, and findings of the study, overseeing and supporting the progression of the article.

**Ömer SARAÇ (Corresponding Author):** Contributions were made to designing and conceptualizing the research, contributing to the writing of the study, developing the hypotheses and writing the methodology of the study, overseeing and supporting the progression of the article.

## References

- Abbasian, S., Onn, G. and Arnautovic, D. (2020). Overtourism in Dubrovnik in the eyes of local tourism employees: A qualitative study. *Cogent Social Sciences*, 6(1), 1775944.
- Ap, J., J. Crompton (1993). Residents' Strategies for responding to tourism impacts. *Journal of Travel Research*. 32(1), 47-50.
- Bastias-Perex, P. and Var, T. (1995). Perceived impacts of tourism by residents. *Annals of Tourism Research* 22(1), 208–209.
- Berselli, C., Pereira, L. A., Pereira, T. and Limberger, P. F. (2022). Overtourism: Residents' perceived impacts of tourism saturation. *Tourism Analysis*, 27(2), 161-172.
- Biagi, B., Ladu, M. G., Meleddu, M. and Royuela, V. (2020). Tourism and the city: The impact on residents' quality of life. *International Journal of Tourism Research*, 22(2), 168-181.

- Butler, R.W. (1980). The concept of tourism area cycle of evolution: implications for management of resources. *Canadian Geographer*, 24(1), 5-12.
- Çolak, O., Kiper, V. O. ve Batman, O. (2020). Öçüsüz turizm'e (over-tourism) dair kavramsal bir yaklaşım. *Akademik Arařtırmalar ve Çalıřmalar Dergisi (AKAD)*, 12(23), 609-621.
- Demirci, B., Yılmaz, İ. Ve Ođuz, Y.E. (2020). Ařırı turizmin kent yařam memnuniyetine etkisi: Eskiřehir Odunpazarı örneđi. - *Journal of Tourism and Gastronomy Studies*, 4, 204-217.
- Doxey, G. V. A (1975). 1975 A causation theory of visitor–resident irritants: methodology and research inferences. The Impact of Tourism. In the Sixth Annual Conference Proceedings, pp.195-198. San Diego: The Travel Research Association.
- Euoronews (2019). Barcelona's tourist headache as residential population declines 11% since 2015. <https://www.euronews.com/2019/07/23/barcelona-s-tourist-headache-as-residential-population-declines-11-since-2015>. [Accessed the 23<sup>rd</sup> of July 2019].
- Field, A. (2000). *Discovering Statistics Using SPSS For Windows*. London: Sage.
- Fyall, A. and Garrod, B. (1998). Heritage tourism: at what price?. - *Managing Leisure*, 3(4), 213-228.
- Glasson, J. (1994). Oxford: a heritage city under pressure. *Tourism Management*, 15(2), 137–144.
- Gursoy, D., Jurovski, C. and Uysal, M. (2002). Resident attitudes. *Annals of Tourism Research*, 29(1), 79–105.
- Hair, J. F., Anderson, R. E., Tatham, R. L. and Black, W. C. (1998). *Multivariate Dataanalysis*. New Jersey: Prentice-Hall Inc.
- Hair, J. F., Jr, Hult, G. T. M., Ringle, C. and Sarstedt, M. (2014). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*, Thousand Oaks. - CA: Sage Publications.
- Haralambopoulos, N. and Pizam, A. (1996). Perceived impacts of tourism. *Annals of Tourism Research*, 23(3), 503–526.
- Info Barcelona (2019). [https://www.barcelona.cat/infobarcelona/en/city-council/the-population-of-the-city-continues-to-grow\\_685641.html](https://www.barcelona.cat/infobarcelona/en/city-council/the-population-of-the-city-continues-to-grow_685641.html) [Accessed the 23<sup>th</sup> of July 2019].
- Jurovski, C., Uysal, M. and Williams, D. R. (1997). A theoretical analysis of host community resident reactions to tourism. *Journal of travel research*, 36(2), 3-11.
- Jurovski, C. and Gursoy, D. (2004). Distance effects on residents' attitudes toward tourism. *Annals of Tourism Research* 31(2), 296– 312.
- Karabük Governorship (2019). Safranbolu, <http://karabuk.gov.tr/safranbolu-ilcesi> [Accessed the 25<sup>th</sup> July 2019].
- Kerlinger, F. N. (1978). *Foundations of Behavioral Research*. New York: McGraw Hill.
- Kline, R. B. (2011). *Principles and Practice of Structural Equation Modeling* (3rd ed.). NY: Guilford Press.
- Koçođlu, C. M., Saraç, Ö. ve Batman, O. (2020). Safranbolu'da sürdürülebilir turizm gelişmesine yönelik yerel halkın tutumları. *Türk Turizm Arařtırmaları Dergisi*, 4(1), 202-219.
- Koens, K., Postma, A. and Papp, B. (2018). Is Overtourism overused? understanding the impact of tourism in a city context. *Sustainability*, 10(12), 4384.
- Liberato, P. and Silva, A. (2020). The Tourism Impact on The Residents' Life Quality–Case Study. *Proceedings of the 36th International Business Information Management Association (IBIMA)*, 10565-10573.
- Martín, J. M.M., Martínez, J. M. G. And Fernández, J. A. S. (2018). An Analysis of the Factors behind the Citizen's Attitude of Rejection towards Tourism in a Context of Overtourism and Economic Dependence on This Activity. *Sustainability*, 10(8), 1-18.
- McCool, S. F. and Martin, S. R. (1994). Community attachment and attitudes toward tourism development. *Journal of Travel Research*, 32(3), 29-34.
- Mihalic, T. and Kuřcer, K. (2021). Can overtourism be managed? Destination management factors affecting residents' irritation and quality of life. *Tourism Review*, 77(1), 16-34.
- Milano, C. (2017). Overtourism and Tourismphobia: Global Trends and Local Contexts, Ostelea School of Tourism and Hospitality, Barcelona.
- Kim, M., Choi, K. W., Chang, M. and Lee, C. H. (2020). Overtourism in Jeju Island: The influencing factors and mediating role of quality of life. *The Journal of Asian Finance, Economics and Business*, 7(5), 145-154.
- Muler Gonzalez, V., Coromina, L. And Galí, N. (2018). Overtourism: Residents' perceptions of tourism impact as an indicator of resident social carrying capacity-case study of a Spanish heritage town. *Tourism Review*, 73(3), 277–296.
- Neuts, B. and Nijkamp, P. (2012). Tourist crowding perception and acceptability in cities: An applied modelling study on Bruges. *Annals of Tourism Research*, 39(4), 2133–2153.
- Nunnally, J. C. and Bernstein, I. H. (1994). *Psychometric Theory* (3rd ed.). New York: McGraw-Hill.

- Pappalepore, I., Maitland, R. and Smith, A. (2014). Prosuming creative urban areas. Evidence from East London. *Annals of Tourism Research*, 44(2014), 227–240.
- Perdue, R. R., Long, P. T. and Allen, L. (1990). Resident support for tourism development. *Annals of Tourism Research*, 17(4), 586–599.
- Popp, M. (2012). Positive and negative urban tourist crowding: Florence, Italy. *Tourism Geographies*, 14(1), 50–72.
- Rössler, M. (2018). Overtourism in UNESCO World Heritage Sites <https://www.tourism-watch.de/en/focus/overtourism-unesco-world-heritage-sites>. [Accessed the 20<sup>th</sup> of January 2021].
- Safranbolu Population Directorate (2019). Population according to districts.
- Safranbolu Tourism Information Office (2019).
- Saraç, Ö. ve Tanrısever, C. (2018). Kastamonu’da yeniden işlevlendirilen tarihi yapıların sürdürülebilirliğe etki eden çekicilik faktörleri. *Anatolia: Turizm Araştırmaları Dergisi*, 29(2), 151-163.
- Seraphin, H., Sheeran, P. and Pilato, M. (2018). Overtourism and the fall of Venice as a destination. *Journal of Destination Marketing and Management*, 9(2018). 374-376.
- Seraphin, H., Gowreesunkar, V., Zaman, M. and Lorey, T. (2019). Limitations of Texit (tourism exit) as a solution to overtourism. *Worldwide Hospitality and Tourism Themes*, 11(5), 566-581.
- Sharma, S. (1996). *Applied Multivariate Techniques*. John Wiley & Sons Inc.
- Sırakaya, E., Jamal, T. B. and Choi, H. S. (2001). Developing indicators for destination sustainability. *The Encyclopedia of Ecotourism*, 411-432.
- Smith, S.M. and Albaum, G.S. (2005). *Fundamentals of marketing research*. London: Sage.
- Tanrısever, C., Saraç, Ö. ve Aydođdu, A. (2016). Yeniden işlevlendirilen tarihi yapıların sürdürülebilirliği. *Akademik Bakış Dergisi*, 54, 1068-1082.
- Tosun, C. (2002). Host perceptions of impacts: A comparative tourism study. *Annals of Tourism Research*, 29(1), 231–253.
- Türkay, O. ve Saraç, Ö. (2019). Altyapı, üstyapı ve çevre sorunlarının turist şikâyetleri kapsamında değerlendirilmesi ve yerel yönetimlerin çözüm potansiyeli: Antalya örneđi. *Gümüşhane Üniversitesi Sosyal Bilimler Dergisi*, 10, 98-110.
- TRAN (2018). Research for TRAN Committee – Overtourism: Impact and Possible Policy Responses, European Parliament, Policy Department for Structural and Cohesion Policies, Luxembourg.
- Türker, N. (2013). Host community perceptions of tourism impacts: A case study on the World Heritage City of Safranbolu, Turkey. - *Revista De Cercetare Şi Intervenţie Socială (ISI)*, 43(2013), 115-141.
- UNESCO WHC. (1995). *World Heritage Committee 18th Session Report*, WHC94/CONF.003/16.
- UNWTO (1981). Saturation of Tourist Destinations: Report of the Secretary General. Madrid: World Tourism Organization.
- UNWTO (2018). World Tourism Organization (2018). “International Tourism exceeds expectations in the first months of 2018.” Press Release. <http://media.unwto.org/press-release/2018-06-25/international-tourism-exceeds-expectations-first-months-2018>. [Accessed the 25<sup>th</sup> June 2018].
- Valicon (2017), Odnos Mesčanov Do Turizma. Porocilo Raziskave. (Engl.: Attitudes of Citizens towards Tourism. Research Report.), 2017, TLJ104, Valicon, Ljubljana
- Van Der Borg, J., Costa, P. and Gotti, G. (1996). Tourism in European heritage cities. *Annals of Tourism Research*, 23(2), 306–321.
- Weaver, D. and Lawton, L. (2001). Resident perceptions in the urban-rural fringe. *Annals of Tourism Research*, 28(2), 349-458.
- Wikipedia (2020). <https://en.wikipedia.org/wiki/Venice>. [Accessed the 29<sup>th</sup> January 2021].
- Williams, J. and Lawson, R. (2001). Community issues and resident opinions of tourism. - *Annals of Tourism Research*, 28(2), 269–290. [https://doi.org/10.1016/S0160-7383\(00\)00030-X](https://doi.org/10.1016/S0160-7383(00)00030-X).
- Woo, E., Uysal, M. and Sirgy, M. J. (2016). Tourism Impact and Stakeholders’ Quality of Life. *Journal of Hospitality & Tourism Research*, 42(2), 260-286.
- WTTC and McKinsey and Company (2017). Coping With Success: Managing Overcrowding In Tourism Destinations. <https://www.wttc.org/-/media/files/reports/policy-research/coping-with-success---managing-overcrowding-in-tourism-destinations-2017.pdf>. [Accessed the 28<sup>th</sup> March 2021].
- Zengin, B., Colak, O., Cevrimkaya, M. and Sengel, U. (2023). Rethinking overtourism in the post-COVID-19 period: Is demarketing a solution? *Journal of Tourism Management Research*, 10(1), 32-46.

Zucco, F. D., Flores Limberger, P., de Souza Farias, F., Foletto Fiuza, T. and Morgana Boos de Quadros, C. (2020). The relationship of subjective well-being in residents' perceptions of the impacts of overtourism in the city of Blumenau, Santa Catarina, Brazil. *Sustainability*, 12(5), 1957.

Zwick, W. R. and Velicer, W. F. (1986). Comparison of five rules for determining the number of components to retain. *Psychological Bulletin*, 99(3), 432–442.



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## Appendix

### Appendix 1 Exploratory factor analysis

Dimensions of Tourism Impacts	Loadings	Variance Explained %	$\alpha$
<b>Negative Cultural Impacts</b>			
I believe that we have lost our cultural values because of tourism.	.829	14.05	.894
I believe that we have lost our traditions because of tourism.	.810		
I think we lost our beliefs because of tourism.	.741		
Revenues gained from tourism have destroyed the atmosphere of trust.	.736		
I believe that tourism in Safranbolu threatens the morality of the society.	.665		
I am sick and tired of seeing tourists everywhere.	.489		
<b>Annoyance</b>			
If I could, I would leave Safranbolu.	.805	12.01	.839
If I could, I would restrict tourism development in Safranbolu.	.785		
Having so many hotels and restaurants in Safranbolu bothers me.	.694		
I do not believe that tourism revenues are beneficial for Safranbolu.	.576		
I feel uncomfortable because of the development of tourism in Safranbolu.	.567		
Tourists destroy the historical monuments.	.479		
<b>Environmental Degradation</b>			
I believe that water resources will be insufficient in the future as tourism increases water consumption.	.752	10.12	.770
Tourism increased the waste in Safranbolu.	.703		
Tourism in Safranbolu has destroyed the natural environment.	.631		
Tourism activities increase noise.	.581		
The increase in the number of tourists in Safranbolu harms the cultural heritage.	.546		
People became more materialistic because of tourism.	.476		
<b>Quality of Life</b>			
Tourism in Safranbolu has a negative impact on the quality of life.	.777	9.72	.779
Tourism brings more damages than its benefits.	.722		
There are more tourists than locals.	.696		
<b>Cost of Living</b>			
Real estate prices were inflated.	.810	8.11	.754
Development of tourism in Safranbolu has increased the cost of living.	.767		
I believe the economic carrying capacity has been exceeded due to tourism.	.728		
<b>Traffic Congestion</b>			
Touristic vehicles (tour buses, cars) have increased the traffic congestion in Safranbolu.	.803	6.39	.785
Tourism has caused parking problems.	.782		
<b>Security Problems</b>			
Security problems increase during the tourism season.	.841	6.07	.710
Tourism causes an increase in alcohol and drug use.	.813		
<b>Cronbach Alfa: 0.913; Total Variance: 66.47; Extraction Method: Principal Component Analysis;</b> <b>Rotation Method: Varimax with Kaiser Normalization; Number of iterations: 8;</b> <b>KMO: 0.881; Bartlett's test of sphericity <math>\chi^2</math>: 4840.405; p: 0.000</b>			