

Article

# Residents' Attitudes towards Overtourism from the Perspective of Tourism Impacts and Cooperation—The Case of Ljubljana

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**Abstract:** Increasing worldwide evidence on disruptive unsustainable impacts, caused by growing overtourism, is shaking tourism research agendas and destination management styles. Monitoring the risks of overtourism is becoming a relevant issue for every destination. This paper combines the existing sustainability–responsibility tourism framework from academic research with current industry research on overtourism in order to propose a sustainable tourism impact and stakeholder cooperation based on the overtourism risk monitoring model. Data-based social science statistical methodology and tools were used to identify the residents' attitudes about tourism impacts and cooperation in the destination of Ljubljana, Slovenia. Ljubljana represents a case of a fast-growing tourism destination, which might lead to overtourism. Research has confirmed some impact factors that negatively influence the satisfaction of local residents with tourism presence. Furthermore, it has been confirmed that increased cooperation mitigates the negative perceptions of residents on tourism presence. In its present form, the proposed monitoring model can be used to examine the overtourism situation and to inform sustainable tourism policy and management for every destination.

**Keywords:** sustainable tourism; responsible tourism; overtourism; antitourism; tourism impacts; overcrowding; cooperation

## 1. Introduction

Sustainable tourism growth and development remains the prevailing matter of interest in tourism destination development. It has also become the main paradigm in planning, monitoring and managing tourism. However, many destinations fail to properly address and manage tourism sustainability in times of rapid tourism growth and its concentration in time and space. Growing visitor arrivals impose increasing pressure on destinations, both in physical environmental terms (such as congestion, traffic, pressure on facilities and infrastructure) and in social and cultural terms (community tolerance, crime, quality of life). In this regard, tourism might diminish the experience of many visitors and disrupt the life of residents at destination [1]. Local residents and stakeholders weigh the positive and negative tourism impacts on their lives and environments and the rapid tourism growth-stimulated disruption. Negative impacts and disruptions due to high tourism concentration have led to 'antitourism flare-ups' [1] in many destinations in 2017 [2]. Thus, rapid tourism growth and unwanted concentration damage the sustainability of tourism destinations. Both can affect attitudes of local residents and other tourism stakeholders, who can turn against further development of tourism [3].

The purpose of this article is to provide a model and to explore the overtourism risk in the case of tourism in Ljubljana. It follows on from previous studies and findings, which show that too large

a tourism size or too much concentrated visiting in time and space may cause too many negative impacts and result in local residents having a negative attitude towards tourism development and even taking actions against it. The same can happen from the perspective of any stakeholder group, including visitors. To assess the overtourism risk, academic and practical knowledge and information on current tourism phenomena are used. The academic base is the concept of sustainability and its known impacts, supported by destinations' responsibility to go sustainable. The practical knowledge and information is derived from overtourism situations and recent studies in overcrowded tourism destinations. The overtourism risk assessment model is proposed. The authors study Ljubljana residents' attitudes towards tourism growth and concentration, and use available secondary data on residents' dissatisfaction or irritation with tourism impacts [4]. Following the overtourism and anti-tourism media attention across Europe, some tourism stakeholders in Ljubljana are raising questions regarding rapid visitation growth and its disruption potential, making this survey relevant for Ljubljana tourism and its tourism policy and management.

Taking the elements of the sustainable-responsible tourism paradigm approach, and strongly informed by the current situation regarding over- and anti-tourism movements across the many destinations, three research questions have been formulated to study the risk of overtourism. The first explores the main overtourism impact factors and variables, the second surveys the connections among the factors and the third studies the mediating mitigation potential for possible negative perceptions about tourism.

The paper is structured as follows. After the introduction, the state-of-the-art section presents the theoretical sustainable-responsible tourism (in short SRT) framework that informs research on unsustainable tourism [5]. The next section presents the current developments, practical overtourism and anti-tourism situations, and attempts to define both phenomena. This section is followed by the overtourism risk assessment model proposal and presentation of the research questions. The next two sections contain information about Ljubljana, methodology, and data. A discussion about research implications and findings follows. The paper ends with concluding remarks and a presentation of the limitations of the model. Directions for future research are suggested.

## 2. Sustainable-Responsible Tourism

Relevant discussion on the negative impacts of tourism has a long tradition within tourism academia. Numerous tourism 'kinds' and concepts have been developed to address tourism's negative impacts almost 50 years ago; such as the book titled *Tourism, Blessing or Blight* [6], Doxey's irritation index [7], Butler's destination life cycle [8], tourism social costs to destinations [9], limits of acceptable change [10] and many others. Around 20 years ago, this debate led to the construction of a tourism sustainability paradigm, addressed in depth academically by Ritchie and Crouch [11], and a few years later politically by many UNWTO [12] and governmental documents. In order to achieve sustainable tourism:

- (1) The conceptual impacts must be taken into account
- (2) Responsible actions for implementing these (positive) sustainability impacts in real life must be executed.

The existing sustainable tourism models distinguish between three kinds of sustainable tourism impacts or pillars: economic, sociocultural, and environmental [5,11–13]. In addition, some authors and institutions emphasize business, social, and individual responsibility for the implementation of sustainable tourism, which demands real situation actions [13] in order to enable sustainable tourism practices. Both approaches are combined in the sustainable-responsible tourism model, which joins the conceptual sustainability pillars and responsible implementation enablers into a single model [5]. The model is presented by three conceptual and three implementation bubbles in Figure 1.



**Figure 1.** Sustainable-responsible tourism (SRT) model. Source: Adapted from [5].

In the category of impacts, it is beyond dispute that sustainable tourism development has been widely recognized as a three-pillar concept, which enables tourism operations to remain competitive in the long run [12]. In this context, some authors refer to economic, sociocultural and environmental sustainability [11,14].

In the category of enablers of sustainable tourism implementation, the current academic paradigm, as well as the sustainable-responsible tourism model presented here, centers on three premises, presented by three bottom row bubbles in the Figure 1, on the right side. These premises are:

- (1) First bubble illustrates sustainable tourism that must be based on an awareness of full sustainability and on sustainability ethics, supported by environmental education, knowledge and values, with full awareness about sustainability issues on the part of all stakeholders on both the demand and supply sides. The same “Sustainability ethics” bubble (Figure 1) may incorporate more detailed tourism capacities, such as norms, legislation, etc. [5].
- (2) Second enabler bubble relates to the dimension, which we call ‘stakeholder cooperation/satisfaction’ (Figure 1). More specifically, sustainability implementation requires the informed participation of all relevant destination stakeholders, their cooperation and consensus, a critical mass and strong political leadership, governance and, especially relevant for this paper, the support of local residents and visitors [5,15].
- (3) Third implementation bubble, as presented in our SRT model (Figure 1) reminds us that tourism should maintain a high level of visitor satisfaction (demand side), thereby meeting market needs [12], in order to be sustained over time. Indeed, tourism development needs the active and cooperative participation of all stakeholders. The implementation of sustainability needs critical mass and consensus on all its dimensions, including growth and size of tourism visitation and scale of positive and negative tourism impacts. Among the destination’s tourism stakeholders, local residents and their attitude towards tourism are becoming increasingly important. Based on the social exchange theory, local residents’ disappointment and irritation with tourism impacts can deter or stop the development of tourism with actions against tourism development. The more local residents gain from tourism, the more motivated they are to support tourism activities and protect the destination’s natural and sociocultural environment [16–18].

In the current overtourism and anti-tourism wave across some tourism destinations, additional research is needed in terms of relationships between residents’ satisfaction, perceived impacts of tourism at the destination, resident responses to tourism development, and the managerial potential of the destination’s authorities to manage perceptions of tourism’s impacts and the tipping point. The sustainable-responsible tourism model offers an appropriate framework to address these relationships by bringing impacts and stakeholder satisfaction and cooperation together [19].

### 3. New Tourism Phenomena

#### 3.1. Over- and Anti-tourism

Around the world, popular tourist destinations have reached a tourism tipping point. These destinations are being saturated with visitors in a new phenomenon has been named as ‘overtourism’ [20], ‘tourismphobia’ [21], ‘overcrowded locations’ [22] or ‘visitor pressure’ [23].

Overcrowding is disrupting the daily life of local residents and communities, degrading destinations’ natural and sociocultural assets, overcrowding tourism’s infra- and superstructure, and affecting the visitor experience. In some cases, overtourism has led to civic protests and residents demanding that tourism be stopped. Thus, the overtourism phenomenon has further transformed into an anti-tourism phenomenon.

In 2017, activists in several venues, including Barcelona, Venice, Palma de Mallorca, Amsterdam, Bhutan, and Dubrovnik, launched local campaigns against tourists and tourism [24]. Seraphin Sheeran and Pilato [25] describe the antitourism protesters as virulent. We have seen anti-tourism demonstrations in San Sebastián and crackdowns in Rome and Dubrovnik ‘as locals vented their frustration at city-breakers and cruise ships’ [2]. ‘Tourists go home’ was the motto of anti-tourism protest in Barcelona, organized by left-wing social activists in summer 2017 [26] that brought Airbnb issues to the forefront of anti-tourism debate. ‘Wish you weren’t here’ was the response from the side of the Cornwall visitors from overcrowded beaches in summer 2018 [27]. In August 2017, UNWTO called the rise in anti-tourist sentiment ‘a very serious situation that needs to be addressed in a serious way’ [2]. Addressing this not only from the established tourism research paradigm, but also from the political perspective, which represents a real and timely challenge for tourism research. After decades of debate over sustainable and/or responsible tourism development, tourism managers and researchers are facing new phenomena of tourism reality: over- and anti-tourism.

The term ‘overtourism’ is a new phenomenon, coined by Rafat Ali, founder and CEO of Sift tourism intelligence platform in the study on Iceland’s fast growing tourism [20]. It might be too early to talk about its clear understanding and categorization, based on the academic consensus and acceptance. According to the Collins online English dictionary, the word ‘overtourism’ is a new word—at the time of this paper’s preparation (December 2018) still pending investigation to be included as a term in itself. The dictionary suggested that the meaning of overtourism is: ‘The phenomenon of a popular destination or sight becoming overrun with tourists in an unsustainable way’ [28]. According to Responsible Tourism [29], ‘overtourism describes destinations where . . . locals or visitors feel that there are too many visitors and that the quality of life in the area or the quality of the experience has deteriorated unacceptably. It is the opposite of responsible tourism, which is about using tourism to make better places to live in and better places to visit.’ According to the recent UNWTO study [21], overtourism can be defined as ‘the impact of tourism on a destination, or parts thereof, that excessively influences perceived quality of life of citizens and/or quality of visitors experiences in a negative way’. The latest definition from European Parliament TRAN Committee [30] goes further and defines anti-tourism as “the situation in which the impact of tourism . . . exceeds physical, ecological, social, economic, psychological and or political capacity thresholds”. Obviously the above definition derives the content from different schools of thought, from the sustainability paradigm to the tourism capacity planning, irritation concept, social exchange theory etc. However, the common denominator of all is that overtourism means irresponsible, e.g., unsustainable tourism.

The tourism phenomenon that surprised us most is anti-tourism and its strong evidence of the failure of sustainable, life quality–centered tourism development. However, in terms of overcrowding, it is less easy to capture anti-tourism in a recognized mainstream definition. A scan of tourism literature and the current anti-tourism debate reveals two possible interpretations:

- (1) The first refers to the intellectual and cultural responses to a negative connotation of the words ‘tourist’ and ‘tourism’ [31] and becomes the antithesis of everything that is known as ‘touristic’. The idea builds on the critique of growing (mass) tourism and tourism consumerism and

profitability and dissociation from belonging to it. It distinguishes the 'righteous traveler from corrupt', vulgar and ignorant tourists [32]. Righteous travelers behave differently from 'ordinary' tourists and are authentic and unique experience seekers [33], travel with an open mind and heart, avoid souvenirs and explore rather than relax [34].

- (2) The second interpretation, based on recent tourism industry events, is connected to the overcrowding and overtourism phenomena. Martin, Martinez and Fernandez [35] speak about new situations of tourism rejection in traditionally tourism-dependent environments. Hughes [26] connects anti-tourism with consequences of mass tourism and the anti-tourism industry mobilization under the motto, 'Tourists go home'. Thus, anti-tourism from the perspective of local residents starts after the visitor congestion point is reached. The total residents' satisfaction with the presence of tourism turns into dissatisfaction and irritation, and residents react by opposing tourism's development, projects and presence. This refers to a mobilized or organized movement of irritated destination residents against the development of tourism. Similarly, the definition of anti-tourism in its new meaning can also be applied from the perspective of visitors. Anti-tourism from the perspective of visitors starts after the visitors' congestion point is reached: the overall visitors' satisfaction with their destination experience turns into dissatisfaction, and visitors react by leaving and avoiding the destination in question.

### 3.2. Local Residents and Visitors Overtourism Perceptions

The domain and history of tourism impact studies and need for further study have been already addressed in tourism literature [36]. Despite the numerous sustainable tourism measurement statements, the question of where overtourism starts cannot be easily answered, as there are different numbers for different destinations and different numbers for each of the five challenge areas listed above. Nevertheless, evaluation can be done from the hard and soft data perspective:

- (1) With benchmarking of corresponding sustainable tourism indicators. The European Tourism Indicator System (ETIS) [37] offers a set of such indicators that helps destinations to measure and benchmark the economic, sociocultural and environmental sustainability of a destination. The main recent studies on overtourism, already mentioned, propose their own (similar) diagnostic overtourism indicators [12,21,23,30] and overcrowding diagnostic with so-called 'heatmaps' [22];
- (2) Another approach, as already argued in this paper and derived from the sustainability orientation towards the life quality of locals, is to monitor the social capacity of tourism through stakeholders' perceptions of impacts.

The tipping point starts where there is an imbalance between the perception of positive and negative impacts of tourism for residents [38]. It is also important, for the commercial success of any destination, to monitor visitor satisfaction, or so-called 'tourist social capacity' [39]. For the sustainability of tourism destinations, both are of importance, as they have the potential to enable or stop continuous tourism development and growth. Dissatisfaction with overtourism on the part of local residents might mobilize forces to prevent the development or growth of tourism in the destination; the dissatisfaction of visitors may reduce the number of visits to the destination, thereby harming its economic sustainability.

This survey will address the overtourism risk from residents' perspective. Based on social carrying capacity and social exchange theory [16,18,40–42], residents who evaluate the tourism exchange as beneficial perceive tourism's impacts differently from someone who evaluates the exchange as not beneficial. Thus, benefits might mediate the negative tourism impact perceptions of local inhabitants.

### 3.3. Managing Overtourism Risk

In the three most recent tourism studies from the WTTC and McKinsey & Company on overcrowding [22], from the European parliament on overtourism [30] and from UNWTO on

perception of overtourism by residents [21] the new phenomenon in question has been addressed from the perspective of occurrence, policy and management responses. The first study addresses five different ‘challenges associated with overcrowding’ [22]. These are:

- (1) Impacts on the economic field are addressed in the [22] chapter ‘Overloaded Infrastructure’. Given that the infrastructure used by tourists is shared with essential non-tourism activities, such as commerce, health and transport, visitors add to infrastructure consumption and pressure that result in external effects and damage to visitors and local residents and business and businesses. The consumption of water and production of waste by visitors add to the local consumption and pollution.
- (2) Socio-cultural field impacts, as presented in the SRT model, are addressed in the [22] chapter ‘Threats to Culture and Heritage’. Overcrowding can threaten a destination’s spiritual and physical integrity, and crowds can make security more difficult and damage sites, including through vandalism.
- (3) Impacts on nature are addressed in the [22] chapter ‘Damage to Nature’. Visitors add to the overuse of natural resources, such as water and forests, waste pollution, and harm to flora and fauna.
- (4) Impacts on stakeholders (see Figure 1) are addressed in the [22] chapter ‘Alienated Local Residents’. Local residents complain about negative tourism impacts, such as rising rents, displacement of locals, noise, displacement of local retail, and changing neighborhood character and leakages of economic tourism benefits.
- (5) Impacts on visitors are addressed in the [22] chapter ‘Degraded Tourist Experience’. In many destinations, the tourist experience itself is deteriorating due to the queues, crowding, and annoyance due to overcrowding and increasing dissatisfaction with the tourist experience.

The second study from the European parliament proposes a conceptual model of overtourism. It expands tourism’s natural, social and socio-cultural capacities with physical, psychological and political [30].

The above impacts are five out of the six elements from our sustainable-responsible model, as presented in Figure 1. The first three directly address the sustainability pillars or areas of tourism impacts and may also cover the physical and psychological tourism capacities, explicitly proposed by the second model. However, the last two challenges are of a different nature, as they also belong to the category of enablers of sustainability (Figure 1). Local residents or visitors have the power to support or prevent the development and growth of tourism in a given destination. Furthermore, both studies partly address the sixth element in Figure 1, the ‘Ethics and values’ [22]. The European parliament’s study explicitly mentioned the political and governance capacity of the destination. The WTTC’s study argues that ethical issues cannot be ignored, yet fails to put them in direct connection with the main ‘challenges associated with overcrowding’.

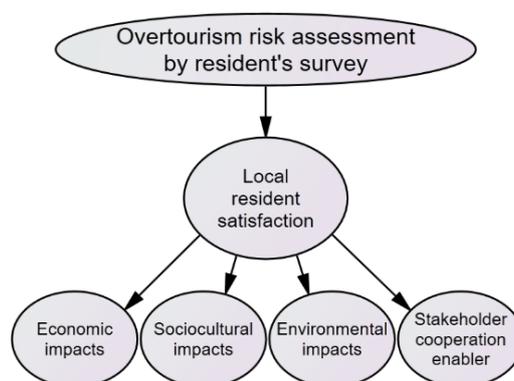
From the point of view of any tourism destination management, the possibility of overtourism has become a reality. In line with the proposed sustainable-responsible framework, destinations can address overcrowding from the perspective of pillars or enablers:

- (1) In the first case, they spread visitors out in time and space, apply pricing strategies to match tourism supply and demand, regulate the accommodation supply, control Airbnb sharing and regulate overcrowding by limiting access to destinations or activities [22,30].
- (2) In the second case, the overtourism risk is managed by managing the satisfaction of local residents and/or visitors. Here, understanding which factors have the potential to mitigate the negative perception of local residents or visitors of their tourism experience can additionally inform a destination tactic aimed at reducing the risk of overcrowding.

## 4. Overtourism Risk Assessment Research Construct

### 4.1. Overtourism Impacts Monitoring Model

Figure 2 presents the proposed overtourism-monitoring model. It is built on the SRT model presented in Figure 1 [5] and validated by the main recent studies on overtourism [21,22,30], as presented in Section 3.2. Three impact areas of the model correspond to sustainability pillars and have been addressed by all of the presented studies. The proposed monitoring model construction follows the Postma's modeling [36] and helps to visualize the overtourism risk relevant content. Based on the researcher's right to abstraction, only the survey relevant elements from the SRT model are presented. The 'sustainable ethics' balloon (Figure 1) has not been seen as direct overtourism risk factor and for this reason it has not been validated for our survey. The visitor satisfaction balloon from Figure 1 has not been included either, as our study focuses on residents' satisfaction with tourism only.



**Figure 2.** Overtourism risk assessment model by resident's satisfaction. Note: The model is based on the SRT model, but limited to the five challenges of overcrowding from the WTTC and McKinsey & Company report and to tourism risk assessment by resident's perceptions surveys only. Source: Adapted from [5,22].

### 4.2. Overtourism Risk Research Questions

The first research question (RQ1), which is of a somewhat exploratory nature, derives from the overtourism impact model (above) and explores the main possible overtourism factors in the case of Ljubljana tourism, as seen by local residents in the 2017 study. From among several overtourism problems, which are the main tourism impact and implementation enabler factors, according to the opinion of Ljubljana residents? What are the main measurement variables for each of these factors?

The second research question (RQ2) relates to direct and indirect relationships among impact factors. It explores the connection paths among these factors. Which factors are positively or negatively connected?

The third research question (RQ3) explores the possible overtourism risk mediating potentials of sustainability implementation trigger stakeholder cooperation. What is the potential of stakeholder participation to mitigate the negative perception of tourism impacts by local residents?

## 5. Destination Ljubljana

Ljubljana is a vibrant city that is visited by more and more tourists each year. The destination is known for its green and sustainable qualities, holding many renowned global tourism sustainability awards and certificates. Among others, it was chosen as the Green Capital of Europe 2016, and received the Tourism for Tomorrow Award (2015) and the World Trade Market Responsible Tourism Award (2017).

The number of visitors to Ljubljana is growing rapidly. This city of 289,000 inhabitants recorded 1,022,862 tourism arrivals and 2,179,916 tourist nights in 2018 [43]. The majority of overnight stays

happened during the high season (May–October). Most visitors were international tourists, since domestic tourists represent only around 5% of the tourists in Ljubljana. Tourists on average only spent 2.1 nights per visit, having an additional strong impact on the city's infrastructure and mobility space [43]. It is not surprising that the rapid growth in recent years has led to noticeable positive and negative economic, social, cultural and environmental impacts. Local media and residents have already started discussing possible life quality disruptions due to tourism growth.

In the period 2011–2018, Ljubljana had an average annual tourism visitation growth rate of 11.9% [43]. Compared to other city destinations, such a growth rate puts Ljubljana into the first quintile regarding the risk of overtourism [22]. According to the WTTC tourism intensity indicator, Ljubljana is in the third quintile, with 2.55 visitors per Ljubljana resident. Furthermore, according to the WTTC density-of-tourism indicator, Ljubljana has 147,400 tourists per city center square kilometer, which puts it into the fourth quintile regarding overtourism risk [43]. The above data give unclear overtourism risk diagnosis. Nevertheless, it is the high tourism growth that justifies the overtourism risk analysis.

## 6. Methodology and Data

The proposed overtourism risk assessment model is based on a synthesis of the SRT paradigm and available information on overtourism phenomenon and challenges. An engaged scholarship research approach is taken, combining scientific and practical knowledge [44], which fits the theoretical and practical nature of the phenomenon under consideration. Based on ongoing research and academic thinking on sustainable and responsible tourism development, this research engages academic knowledge. Furthermore, by deriving from current overtourism and anti-tourism situations and policies, it engages with reality. Both are iterated to fit the proposed model.

The paper's construction is also informed by exploratory factor analysis (EFA). EFA identifies coherent factors that represent the underlying dimensions of residents' satisfaction with economic, sociocultural and environmental tourism impacts, and one sustainability enabler, e.g., the stakeholder cooperation factor. In order to reduce the EFA error [45], we ensured the questionnaire's content validity and formed the statements from an in-depth literature review of tourism impacts. The survey statements have also been reviewed for validity, completeness and readability by three professors and three destination managers to decrease the risk of non-random errors [46].

The data for analysis were sourced from the survey on residents' perception of tourism in Ljubljana [4], conducted between 17 July 2017 and 13 August 2017 and financed by the Ljubljana Tourism Public Institute. The sample comprised 524 residents of Ljubljana. Among these, 57% were female and 43% were male. The age structure deviates a bit since it's not distributed evenly. The age structure is representative of the Ljubljana population, with the age brackets of the younger (15–34), middle-aged (35–64) and older (65+) population in the sample not deviating from the whole population ( $\chi^2 = 2.162$ ,  $p = 0.339$ ). The average respondent was 50 years old. A proportion of 49% had finished high school or less, whereas the other 51% had a higher level of education. A total of 12% of respondents have a connection with tourism. Slightly less than two-thirds had a personal income of up to 1100 euro/month. Slightly more than half of the respondents frequent the city center almost every day. More than half (56%) are well or very well informed about the tourism offer in Ljubljana.

The survey included demographic questions and 19 statements about different aspects of tourism in Ljubljana. The questionnaire was informed by the European Tourism Indicator System (ETIS) [37] to ensure content validity. The questions were measured using a five-point Likert scale, with 1 meaning 'I totally disagree' and 5 meaning 'I totally agree'.

Exploratory factor analysis was conducted on the 19 items in order to explore the underlying dimensions of local residents' satisfaction with given impacts of tourism development. Principal axis factoring with an oblique rotation (promax) was chosen to accommodate the possible correlation among factors. Underlying dimensions are assumed to be correlated, which is why oblique rotation is suitable: it generates a more accurate solution [47]. Table 1 shows the correlations among the six factors. A structural equation model with the maximum likelihood (ML) estimation method was used in order

to examine the relationships among factors and search for mediation effects. Various goodness-of-fit measures were calculated to decide whether the proposed conceptual model is acceptable.

**Table 1.** Correlation matrix of the factors of Ljubljana tourism.

Sustainability Impacts and Enablers	Factor	1	2	3	4	5	6
ECONOMIC IMPACT	Hospitality tourism business	1.000					
	Tourism superstructure	0.514	1.000				
SOCIOCULTURAL IMPACT	Destination life quality	0.261	0.335	1.000			
	Community benefits	0.397	0.543	0.378	1.000		
ENVIRONMENTAL IMPACT	Pollution and traffic	0.293	0.311	0.518	0.240	1.000	
STEKEHOLDER COOPERATION ENABLER	Cooperation	0.447	0.508	0.453	0.601	0.204	1.000

Extraction method: principal axis factoring; Rotation method: promax with Kaiser normalization; Source: Computed from data from Tourism Ljubljana [48].

## 7. Results and Discussion on Monitoring Overtourism in Ljubljana

### 7.1. Factors and Variables of Overtourism Risk

In order to address the first research question (RQ1), an exploratory factor analysis was performed. The initial solution yielded four factors on the basis of eigenvalues alone. After also examining the explained variance and the scree plot, we have also tried a six-factor solution, which explained 55.7 percent of the variance, and the factors also exhibited greater internal consistency (Table 2). In the process of factor analysis, we excluded one variable due to the loading substantially below 0.4 ('Living in Ljubljana is more expensive because of tourism'). All other variables had loadings higher than 0.4, and all cross-loadings were lower than 0.4 (except 'Prices in restaurants and cafes in the city center are appropriate', whose loading was only marginally below 0.4). We then checked the reliability of the factors using Cronbach's alpha, which showed that all factors had sufficient reliability.

**Table 2.** Factors of Ljubljana tourism, 2017.

No.	Sustainability Impacts and Enablers	Loading/Cron Alpha	Mean	Std. Deviation	Std. Error Mean	t	Sig. (2-tailed)
<b>ECONOMIC IMPACTS</b>							
1	Hospitality tourism business	0.794	3.61	0.782	0.034	17.814	0.000
1.1	There is high-quality service in restaurants and cafes in the city center.	0.933	3.67	0.956	0.042	16.041	0.000
1.2	Employees in restaurants and cafes in the city center are friendly.	0.913	3.85	0.903	0.039	21.578	0.000
1.3	The offer of local food in restaurants and cafes in Ljubljana is good.	0.417	3.75	1.031	0.045	16.697	0.000
1.4	Prices in restaurants and cafes in the city center are appropriate.	0.397	3.16	1.079	0.047	3.402	0.001
2	Tourism superstructure	0.668	3.98	0.845	0.037	26.409	0.000
2.1	Shopping, restaurants and entertainment options are better because of tourism.	0.756	3.88	1.014	0.044	19.810	0.000
2.2	The increase in the number of tourists in the community helps the development of the local economy.	0.535	4.07	0.935	0.041	26.257	0.000
<b>SOCIOCULTURAL IMPACTS</b>							
3	Destination life quality	<b>0.794</b>	3.84	0.919	0.040	−20.84	0.000
3.1	Residents in the city center feel penned in (reverse-coded).	0.806	3.39	1.221	0.053	−7.225	0.000
3.2	The number of tourists in Ljubljana should be limited (reverse-coded).	0.663	3.91	1.221	0.053	−17.099	0.000
3.3	Living in a tourist place is unpleasant (reverse-coded).	0.656	3.65	1.184	0.052	−12.622	0.000
3.4	Due to tourism, I would like to move out of Ljubljana (reverse-coded).	0.609	4.4	1.038	0.045	−30.809	0.000
4	Community benefits	<b>0.767</b>	4.13	0.793	0.035	32.603	0.000
4.1	The community benefits from tourism and tourists who visit us.	0.716	4.18	0.898	0.039	30.112	0.000
4.2	The development of tourism contributes to the development of Ljubljana.	0.716	4.42	0.801	0.035	40.617	0.000
4.3	The development of tourism contributes to a better quality of life in Ljubljana.	0.645	3.78	1.147	0.050	15.647	0.000
<b>ENVIRONMENTAL IMPACTS</b>							
6	Pollution and traffic (reverse-coded)	<b>0.745</b>	3.52	1.069	0.047	−11.17	0.000
6.1	Tourism in Ljubljana causes air pollution (reverse-coded).	0.859	3.64	1.164	0.051	−12.531	0.000
6.2	The development of tourism increases traffic problems in Ljubljana (reverse-coded).	0.642	3.41	1.231	0.054	−7.559	0.000
<b>STAKEHOLDER COOPERATION ENABLERS</b>							
5	Cooperation	<b>0.728</b>	2.96	0.998	0.044	−0.963	0.336
5.1	Overall, I am very pleased with the inclusion and influence of residents in the planning and development of tourism.	0.801	3.06	1.168	0.051	1.271	0.204
5.2	When planning tourism in Ljubljana, the quality of life of residents is taken into account.	0.694	3.08	1.118	0.049	1.681	0.093
5.3	I benefit from tourism and tourists who visit us.	0.506	2.73	1.413	0.062	−4.422	0.000

Extraction method: principal axis factoring; Rotation method: promax with Kaiser normalization; Note: The loadings for each variable are represented in plain text; the Cronbach's alphas for factors are represented in bold text. Source: Computed from data from Tourism Ljubljana [48].

The measurement variables for each impact factor are specified, and presented in Table 2 (in the form of statements). The content of the first two factors (Table 2, numbers one and two) refers to tourism's impacts on the economy. The factors *Tourism superstructure* (3.98) and *Hospitality tourism business* (3.61) have high mean values, meaning that Ljubljana's residents perceive corresponding tourism impacts as beneficial for Ljubljana's economy.

Sociocultural impacts of tourism are reflected through *Community benefits* (4.13), impacts on *Destination life quality* (3.84) and impacts on *Cooperation* (2.96) (Table 2). The survey identified high community benefits, stemming from the development of tourism. The factor *Destination life quality*

is constructed of four variables on the negative feelings of residents because of tourism, such as feeling trapped, too many tourists, the unpleasantness of Ljubljana and the residents' wish to move out of Ljubljana because of the presence of tourism (see Table 2, factor three). Some variables were reverse-coded so that all the variables measure the satisfaction of local residents with the situation in question. The mean value of *Destination life quality* for the residents is 3.84 on the Likert scale, which means that residents are on average satisfied with the quality of life in connection with tourism in Ljubljana. Then, *Cooperation* could play a vital role in lowering local residents' satisfaction with the development of tourism. In our case only the factor *Cooperation* has been evaluated with a value below 3.

Environmental impacts are represented by the factor *Pollution and traffic* (which we reverse-coded so that all factors are pointing in the same direction) (Table 2). The factor's mean value, on a five-point Likert scale, is 3.52, which means that residents' irritation with the corresponding issue has not reached the tipping point.

### 7.2. Relationships among Overtourism Risk Factors

With the second research question (RQ2), we studied the relationships between the factors within the economic, sociocultural and environmental impacts in Ljubljana with the path analysis model. The path analysis (Figure 3) shows that the tourism superstructure positively influences *Community benefits*, *Hospitality tourism business*, *Cooperation* and *Pollution and traffic*. *Pollution and traffic* also influences *Destination life quality*. *Cooperation* positively influences *Community benefits*, *Hospitality tourism business* and *Destination Life Quality*.

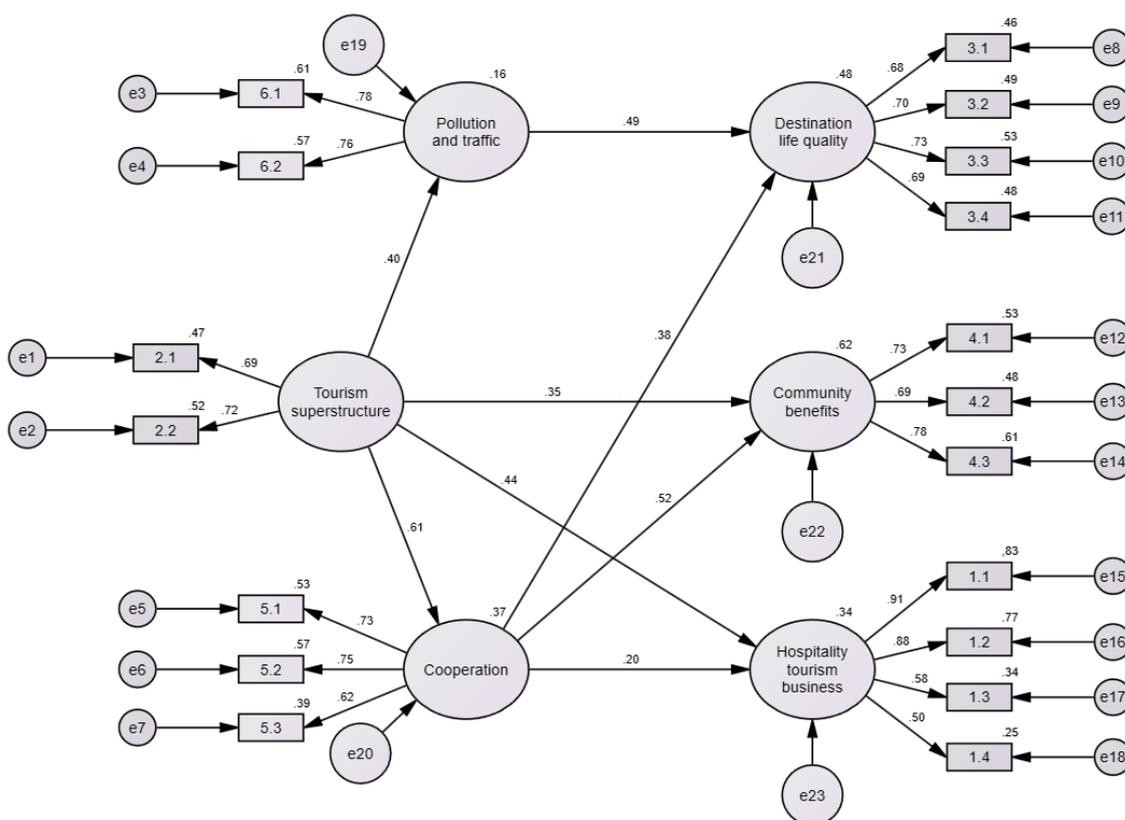


Figure 3. Path analysis model results. Source: Computed from data from Tourism Ljubljana [48].

The model is statistically a good fit (Table 3). The chi-square is significant but is also very sensitive to sample size, so a better measure is the relative chi-square, which indicates a good model fit. Both

CFI and IFI were above 0.9, indicating a good model fit. The RMSEA was slightly over 0.05 and the SRMR was well below 0.8, also indicating a good model fit [49–51].

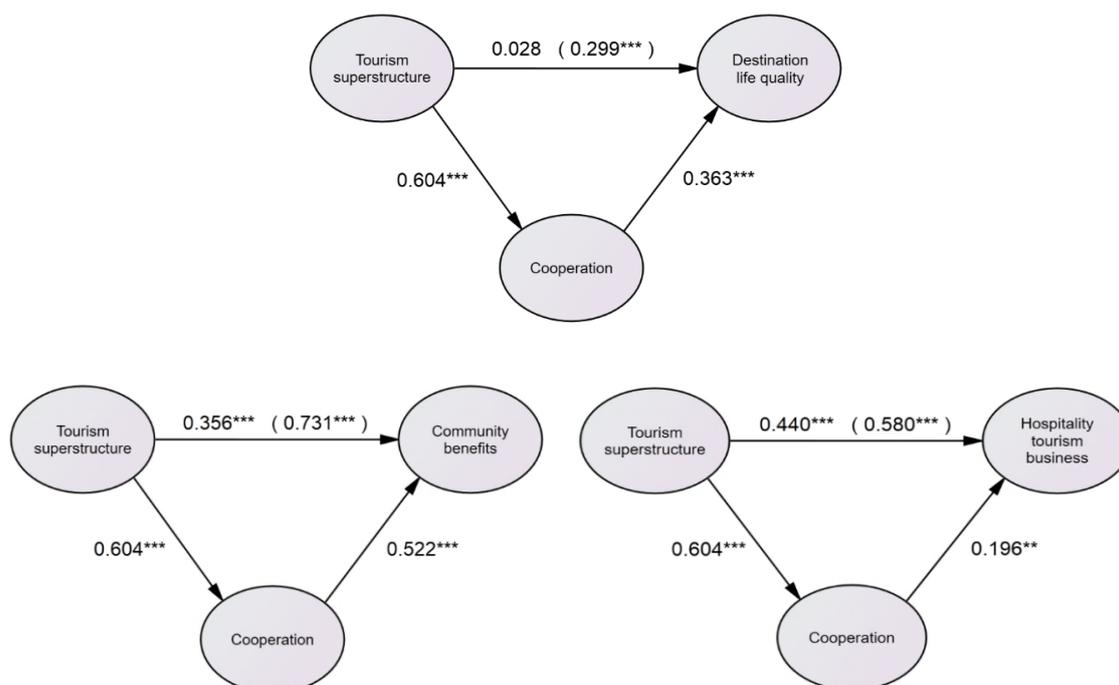
**Table 3.** Goodness-of-fit measures.

$\chi^2$	p	df	$\chi^2/df$	CFI	IFI	RMSEA	SRMR
365.855	0.000	127	2.881	0.933	0.933	0.060	0.0537

Source: Computed from data from Tourism Ljubljana [48].

### 7.3. The Mediating Power of Cooperation

After inspecting the relationships among factors, a mediation test was conducted (Figure 4). *Tourism superstructure* influences *Cooperation*, which, in turn, improves *Destination life quality* (the upper picture in Figure 4). However, when *Cooperation* was removed from the model, the formerly non-significant path from *Tourism superstructure* to *Destination life quality* became significant. Therefore, *Cooperation* fully mediates the relationship between *Tourism superstructure* and *Destination life quality*, which means that it is crucial to properly develop *Tourism superstructure*, which will help in cooperation with residents to improve the quality of life at the destination.



**Figure 4.** Mediation effects of stakeholder cooperation. Note: \* Statistically significant at  $p < 0.05$ ; \*\* statistically significant at  $p < 0.01$ ; \*\*\* statistically significant at  $p < 0.001$ . The testing was conducted on the whole model, although only the parts of interest are represented in each graphic. The number in parentheses represents the path when the mediator is not present. Source: Computed from data from Tourism Ljubljana [48].

The bottom pictures in Figure 4 represent the partial mediation effects. *Tourism superstructure* influences *Cooperation*, which, in turn, improves *Community benefits* and *Hospitality tourism business*. However, when *Cooperation* was removed from the model, the path from *Tourism superstructure* to *Community benefits* and *Hospitality tourism business* became stronger. *Cooperation* can therefore be used to improve the influence of *Tourism superstructure* on *Community benefits* and *Hospitality tourism business*.

## 8. Conclusions

This study has attempted to address the monitoring of the overtourism risk for destinations, which requires the understanding of the overtourism factors. This paper aims to contribute to this understanding by proposing a measurement model and by means of survey on the real case of destination of Ljubljana. The development of a measurement model has been supported by existing sustainable and responsible tourism paradigm from academia on the one hand; and by industry and public sector responses to overtourism phenomenon on the other. The model measures residents' attitudes on positive and negative sustainable tourism impacts and sustainability implementation enabler in a form of stakeholder cooperation. Model is applied on a fast-growing city tourism destination. The survey revealed factors in the area of sustainability impacts. Economic sustainability risk has been analyzed by factors tourism business and tourism infrastructure; socio-cultural risk by factors destination life quality and community benefits; and environmental sustainability risk by the factor pollution and traffic. Survey has confirmed some negative variables that influence irritation of local residents with tourism impacts and present a potential overtourism risk. Among these are impacts on (city) life quality, air pollution, traffic and crowding. Proper tourism development that helps with cooperation among stakeholders can be used to improve the influence of the tourism-related superstructure on community benefits, life quality and hospitality businesses at the destination.

The proposed impact model can be used for any destination. However, in this case, the model's limitations must be observed. The first refers to the current understanding of sustainable tourism pillars, which relate to three tourism environments: economic, sociocultural, and environmental/natural. Some tourism researchers have already addressed the political environment as a relevant tourism development area, yet a complete attempt to integrate it into the pillars model has not been made yet. Overtourism, and especially the anti-tourism phenomena, and their connection to civic and political movements call for such integration into an overtourism-monitoring model. This remains a challenge for future over- and anti-tourism research.

The second limitation refers to the proposed overtourism risk assessment model. The model has been strongly informed by a real situation and knowledge from industry and public policy perspective and is only limited to risk assessment through opinion surveys from the perspective of local residents. Thus, the presented model (Figure 3) has not addressed the possibility of carrying out risk evaluation by visitors' survey or by benchmarking other available, mainly hard statistical data on sustainability, such as tourism density, intensity and growth rate.

Another limitation of this study refers to the availability of the data used for the survey. The data from an existing study on local residents' satisfaction have been used. Data on visitors' satisfaction were not available and thus not included. Full tourism impact monitoring should add visitor satisfaction, being a part of the overtourism phenomenon that destination management should address.

Furthermore, only data for local residents' opinions were available and included in the monitoring. Future studies should collect the data of other stakeholders, especially tourism businesses that might see tourism growth differently from local residents. The presence of antitourism would require a proper understanding of the role of possible civic movements, political party interests, non-governmental organizations and analyses of tourism destination management at the destination.

Lastly, the available data have not enabled us to analyze the possible irritation of local residents in the peak season with the highest visitation pressure in July and August. Future research should be amended with statements or hard indicators that would help in exploring the impact of seasonal concentration in order to fully understand the possible causes of the perception of overtourism and give directions on how to manage them.

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