

## PERCEPTIONS OF ENVIRONMENTAL IMPACTS OF TOURISM: A CASE STUDY OF VRNJAČKA BANJA

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### Abstract

*Tourism can contribute to destination development, but its impacts are not always positive. Primary attractions of tourism destinations, i.e. natural and cultural attractions can be directly threatened by the development of non-sustainable tourism. For achieving competitiveness of a tourism destination there is a need for managing the economic, socio-cultural and environmental impacts of tourism. This paper analyzes the local residents' and tourists' perceptions of the environmental impacts of tourism in Vrnjačka Banja. The survey method was applied to a sample of 120 respondents. Data were processed by Statistical Package for the Social Sciences (SPSS). Results indicate that respondents' perceptions of the environmental impacts of tourism in Vrnjačka Banja is negative.*

Key Words: *tourism impacts, environment, sustainability, Vrnjačka Banja*  
JEL classification: *L83, Z30, Z32*

### Introduction

Tourism is one of the main sources of foreign income and employment generator for many countries (Milićević & Petrović, 2019). Statistical reports on tourism development show that tourism is one of the world's largest *industries*, which is growing year by year. In 2018 tourism generated exports of \$1.7 trillion, and it accounted for 10% of global GDP, while international tourist arrivals grew 5% to reach the 1.4 billion mark (UNWTO, 2019). Speaking about the increase in the number of tourists, it is important to point out that a larger number of tourists also means that the impacts of tourism are becoming greater.

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In the literature, the impacts of tourism development are observed from an economic, socio-cultural and environmental perspective (Li et al., 2019a; Pratama & Mandaasari, 2020). A large number of studies have examined tourism impacts, and the economic received the most attention because of the positive impacts they can have on destinations and communities, while socio-cultural and environmental are seen more as negative (Gill, 2015).

Balancing the economic, socio-cultural and environmental impacts is the basic principle of sustainable development in tourism, which has become a necessity and a trend in the tourism market (Đorđević & Kostić, 2019).

Tourism in Serbia has positive growing tendencies. The most visited destinations are Belgrade (1,205,183 tourists in 2019) and Vrnjačka Banja (283,491 tourists in 2019) (Statistical Office of the Republic of Serbia, 2020). Belgrade as the capital city is an economic, socio-cultural, political center of Serbia, while Vrnjačka Banja has developed tourism primarily because of its natural resources like mineral springs.

The rapid development of tourism has led to a significant degradation of natural and anthropogenic attractiveness (Kostić et al., 2019). Considering that the number of tourists in Vrnjačka Banja is growing in the last few years (Statistical Office of the Republic of Serbia, 2020), the question that arises is what the impacts of tourism development in this destination are.

Large numbers of tourists increase the vulnerability of the environment. There is a need for wider roads and parking spaces, most often at the expense of green spaces. A large amount of waste also occurs. There is a greater production of wastewater from accommodation facilities and other facilities included in tourism (Hrabovski-Tomić & Milićević, 2012).

The aim of this paper is to analyze the local residents` and tourists` perceptions of the environmental impacts of tourism in Vrnjačka Banja. Determining the perceptions of residents and tourists towards tourism is an important tool in the evaluation of tourism development and its sustainability. It is important to understand these aspects so that policies can be developed to improve the sustainability of tourism destinations (Alaeddinoglu et al., 2016). Also, the locals who will enjoy the benefits or suffer the consequences of tourism should be given voice in its policy, planning and decision-making (Bosselman et al., 1999).

### **Literature review**

After the introduction of the concept of sustainable development by the Brundtland Commission in 1987, environmental protection became a major issue in the 1990s (Du Plessis, 2010) and it continues to be ever since. Sustainable development means "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations General Assembly, 1987), where the key principle is "integration of environmental, social, and economic concerns into all aspects of decision making" (Emas, 2015).

Tourism is usually described as an important industry, because of its economic benefits, like improvements in community infrastructure and public facilities (Yoon et al., 2001), high tourist receipts, the multiplier impacts within the industry and creation of employment opportunities for the local community (Chong & Balasingam, 2019). Besides this, it generally provides conditions for a better quality of life (Durkalić & Đorđević, 2019). On the other hand, there are direct and indirect impacts of tourism on the emission of CO<sub>2</sub> (Li et al., 2019b), pollution (Azam et al., 2018), and degradation of social and cultural values (Haddad et al., 2019). Considering that tourism has both positive and negative impacts (K. C, 2018), to maximize benefits from it there must be a balance (Dahal et al., 2020), i.e. sustainable tourism must be the only way for future development.

The economic impacts of tourism are important for state, regional and community planning and economic development. At the same time, there are economic benefits for both host countries and tourists' home countries. Tourism also involves some economic costs, including government costs for infrastructure to better serve tourists and the direct costs incurred by tourism businesses. Also, there are many hidden costs to tourism, which can have unfavorable economic impacts on the host community, such as high inflation, import leakages, exported profits of foreign earners, external costs and overdependence (Icoz & Icoz, 2019).

Zhuang et al. (2019) point out that tourism development may contribute to local residents' knowledge about "foreign countries, and people, transnational tourism, thereby instilling a sense of pride in natives associated with their heritage and culture as well as contributing to the rehabilitation of existing buildings and historic sites, and the transformation of old buildings to new uses". Also, there are negative

socio-cultural impacts of tourism such as: "social order being disturbed, cultural decline, negative changes in residents' dietary culture, drinking rituals, dress codes, and religious values, increased racial discrimination, crime and prostitution, etc." (Zhuang et al., 2019).

Tourism can result in preserving and protecting the resources, and on the other hand, it can result in the destruction or damaging environment. Environmental impacts of tourism can be in the form of pollution increase (air, water, noise, etc.). However, in favor of tourism advantages, negative environmental impacts might be ignored by the local community (Yoon et al., 2001; Nematpour & Faraji, 2019).

The main difficulties for measuring tourism impacts are the following (Briassoulis, 1991):

- Tourism involves a large number of interconnected activities which hinders the process of measuring the impacts of individual activities.
- Some tourism activities are taken not only by tourists but also by local residents, which makes it harder to separate impacts from one another.
- Ecological changes may happen for many different reasons, and it is difficult to identify the changes that occurred only because of tourism.
- Tourism often has indirect and cumulative impacts that are harder to identify.

In order to maintain the sustainability and long-term success of the tourism industry, it is important to understand and measure tourism impacts in local communities (Diedrich & García-Buades, 2009). Numerous studies have examined the economic, socio-cultural, and environmental consequences of tourism and its associated development. These studies are mostly related to local residents' perceptions of tourism impacts (Dimitrovski et al., 2015; Gursoy et al., 2019; Kuščer & Mihalič, 2019; Lin et al., 2019; Podovac et al., 2019; Tournois & Djerić, 2019; Carvalho et al., 2020), and less to tourists' perceptions of tourism impacts (Du Plessis, 2010; Gill, 2015; Joo et al., 2019).

As Botzori et al. (2018) point out, local residents and business owners have a crucial role in managing some environmental impacts. On the other hand, tourists are interested in visiting nice, clean and pollution-free areas (Asadzadeh & Mousavi, 2017), which is why it is important to observe their perceptions of environmental tourism impacts. Studies have shown that tourists' emotional bonds with the destination positively affect their perceptions of and reactions to tourism in the destination (Joo et al., 2019).

When it comes to local residents' perceptions about the nature of tourism impacts, it may vary. Some might perceive tourism development as having mainly positive impacts, while others might perceive that tourism accrues negative impacts (Tichaawa & Moyo, 2019). There is evidence from different countries that they recognize positive economic impacts of tourism, and negative social and environmental impacts such as noise and water pollution, littering, traffic jams, crowding, crime, housing costs, and disruption from tourists when they use public facilities (Choe & O'Regan, 2015; Tichaawa & Moyo, 2019). Also, in the study about tourism impacts in national parks in Serbia, local residents expressed a generally supportive attitude toward tourism, while some concerns were primarily about the environmental and social impact of tourism (Brankov et al., 2019).

### **Study area**

Vrnjačka Banja is located in the central part of the Republic of Serbia at 43° 37' north latitude, 20° 53' east longitude, about 200 km south of Belgrade. It extends through the valley of West Morava and the northern slopes of Goč mountain (Vrnjačka Banja, 2020a). According to the 2011 Census, there were 27.527 inhabitants (Statistical Office of the Republic of Serbia, 2011). It is located at the intersection of local and regional roads which give it a good position in the road transport network.

Vrnjačka Banja is characterized by great natural resources, like climate, flora, fauna and thermo-mineral waters, which is the basis for tourism development. In this area there is a temperate continental climate with local characteristics that have a favorable effect on the human body (Milićević, 2015; Vrnjačka Banja 2020b).

There are seven mineral water springs in Vrnjačka Banja: Topla Voda, (36.5°C), Snežnik (17°C), Slatina (14°C), Jezero (27°C), Borjak, Vrnjačko Vrelo and Beli Izvor. Topla Voda is the oldest and most famous mineral spring, which, according to archaeological findings, was known in prehistoric times, and then used in the Roman period from I to IV century AD for the recovery and treatment of Roman legionnaires. (Milićević & Podovac, 2013). There is the Vrnjačka and Lipovačka rivers and the Petrasinovička and Lipovački creeks. The territory of Vrnjačka Banja municipality is one of the most forested municipalities in Serbia, where forests and forest plantations cover just over 65% of the total municipality territory.

Also, there are several natural monuments (Municipality of Vrnjačka Banja, 2013):

- Parks of Vrnjačka Banja;
- Black pine, in the park of Vrnjačka Banja;
- Five oaks (there are three trees today);
- Two pedunculate oak trees - Vrnjci;
- Pedunculate oak in village Vraneši;
- Beech on Goč mountain.

The entire territory of Vrnjačka Banja municipality, especially Goč mountain, is extremely rich in plants, forest fruits, aromatic and medicinal plants. It is estimated that there are 650 plant species on Goč mountain, of which over 200 medicinal, aromatic and other beneficial species (Hrabovski-Tomić & Milićević, 2012).

Besides these natural resources and attractions, on the territory of Vrnjačka Banja municipality there are protected cultural and historical objects, entities and localities, such as (Borović-Dimić, 2005):

- Belimarković castle, the cultural value of great significance for the Republic of Serbia;
- spatial cultural-historical unit of great importance Čajka Hill with 49 objects;
- 100 of individually protected facilities;
- archeological sites from prehistoric period, Roman period, Middle Ages to Ottomans dominions (about 30 sites).

Vrnjačka Banja has a large number of accommodation facilities and there is a tendency to be more of them. The most common form of tourism in Vrnjačka Banja is health tourism with a tradition of over 150 years. The crucial stakeholder for developing health tourism is the Special Hospital Merkur, known for its treatment of diabetes. Tourists visit this place not only for health reasons but for recreation, sport, manifestations, etc. The most visited manifestations are *Carnival of Vrnjci* and *LoveFest*, which are organized during summer.

As previously mentioned, Vrnjačka Banja is one of the most visited tourism destinations and the most visited spa destination in Serbia (Statistical Office of the Republic of Serbia, 2020). Table 1 shows a noticeable increase in the number of tourist arrivals and overnight stays in the last five years. The average annual increase in the number of tourist arrivals is

12.8%. The highest growth of the number of tourist arrivals was recorded in 2018 (16.2%). Although, the number of tourist arrivals increased in 2019, the growth rate was 14.4, which is slightly lower than in 2018. Vrnjačka Banja is mostly visited by domestic tourists. The average night stay of domestic tourists is 3.4, while the average night stay for foreign tourists is 2.7 (Statistical Office of the Republic of Serbia, 2016; 2017; 2018; 2019; 2020).

Table 1: *Tourist arrivals and overnight stays in Vrnjačka Banja, for the period from 2015 to 2019*

Year	Tourists arrivals			Overnights stays		
	Total	Domestic tourists	Foreign tourists	Total	Domestic tourists	Foreign tourists
2015	175,153	146,208	28,945	562,862	481,150	81,712
2016	202,820	163,997	38,823	677,690	573,394	104,296
2017	213,194	176,202	36,992	701,622	603,279	98,343
2018	247,709	200,343	47,366	818,045	695,171	122,874
2019	283,491	230,887	52,604	907,892	774,206	133,686

Source: *Statistical Office of the Republic of Serbia (2016; 2017; 2018; 2019; 2020).*

### Methodology

The subject of the study is to investigate local residents' and tourists' perceptions of the environmental impacts of tourism in Vrnjačka Banja. For data collection, a survey method was used. Questionnaires were distributed in the form of a Google questionnaire in February and March 2020.

The questionnaire is divided into two parts. The first part consists of the questions related to the socio-demographic characteristics of respondents. To differentiate between whether the respondents are tourists or local residents of Vrnjačka Banja, the first question was set to check that. The respondents that do not live in Vrnjačka Banja and have never been there, could not proceed with filling out the questionnaire form.

The second part consists of statements related to the environmental impacts of tourism in Vrnjačka Banja. Residents provided answers using a five-point Likert scale (1 = Strongly disagree, 5 = Strongly agree). The statements were defined on the basis of Kim's (2002) research about tourism impacts on the quality of life of local residents. In this study, all

three impacts of tourism, i.e. economic, socio-cultural and environmental were examined by looking for relations between those impacts and quality of life of local residents in Virginia, USA. Only the scale for investigating the perceptions of the environmental effect of tourism defined by Kim (2002) was used for the purpose of this research with small adaptation to conditions of tourism in Vrnjačka Banja.

### Results and discussion

There were 120 respondents who took part in this research (62 tourists and 58 local residents), out of which 65 were female (54.2%) and 55 were male respondents (45.8%) (Table 2).

Table 2: *Socio-demographic characteristics of respondents*

		<b>Frequency</b>	<b>Percent</b>
Have you ever been in Vrnjačka Banja?	<i>Yes</i>	62	51.7
	<i>No</i>	0	0
	<i>I live in the territory of Vrnjačka Banja municipality</i>	58	48.3
Gender	<i>Male</i>	55	45.8
	<i>Female</i>	65	54.2
Age	<i>20-30</i>	62	51.7
	<i>31-40</i>	40	33.3
	<i>41-50</i>	12	10.0
	<i>51-60</i>	4	3.3
	<i>&gt; 60</i>	2	1.7
Level of education	<i>High school graduate</i>	37	30.8
	<i>Vocational degree</i>	11	9.2
	<i>Bachelor's degree</i>	46	38.3
	<i>Master degree</i>	22	18.3
	<i>Doctoral degree</i>	4	3.3

Source: *Authors, based on research*

For the question of age, 5 age groups were defined. The respondents belonging to the age group from 20 to 30 years, that is 62 respondents (51.7%), make the largest part of participants, as well as the respondents aged 31-40, which is 40 respondent (33.3%), 12 respondents (10%) belong to the age group from 41-50, 4 respondents (3.3%) to the age group from 51-60 and only 2 respondents (1.7%) are more than 60 years old.



According to the education level, the highest number of respondents are those with a bachelor's degree, 46 respondents (38.3%). 37 respondents (30.8%) who took part in this research are high school graduates. There were 22 respondents (18.3%) with a master's degree, 11 respondents (9.2%) with a vocational degree and 4 respondents (3.3%) with a doctoral degree.

In the second part of the questionnaire, respondents could agree or disagree with 11 statements about the environmental impacts of tourism in Vrnjačka Banja (Table 3) by using a five-point Likert scale. The results of the descriptive statistics show that the respondents mostly agree that *Tourism produces congestion* in Vrnjačka Banja (M = 4.2). Also, a high level of agreement was expressed regarding the statements that *Tourism produces littering* (M = 4.1) and *Tourism produces noise* (M = 4.0). Besides this, with mean score above 3, responders also rated that *Tourists' littering destroys the beauty of the landscape* (M = 3.7), *Tourist activities produce serious water pollution (mineral water and rivers)* (M = 3.6), *Tourism businesses that serve tourists throw-away tons of garbage* (M=3.5) and that *Tourism produces large quantities of waste products* (M=3.1). Generally, respondents agree that *Tourism causes environmental pollution in Vrnjačka Banja* (M = 3.6).

Respondents mostly disagree that *Tourism has contributed to the preservation and protection of the natural environment* (M=2.7), that *Tourism has improved the ecological environment of the community in many ways* (M=2.9) and even greater disagreement they express towards statement *Tourism does not contribute to the negative effect of vegetation and loss of meadows and green space* (M=2.5).

Table 3: *Environmental impacts of tourism in Vrnjačka Banja*

	Mean	Std. Deviation	Variance
Tourism causes environmental pollution.	3.6167	1.13154	1.280
Tourism produces noise.	4.0000	1.11521	1.244
Tourism produces littering.	4.0667	.95911	.920
Tourism produces congestion.	4.1917	1.04757	1.097
Tourist activities produce serious water pollution (mineral water and rivers).	3.5917	1.17749	1.386
Tourism produces large quantities of waste products.	3.0500	1.21510	1.476
Tourism businesses that serve tourists throw away tons of garbage.	3.5333	1.12969	1.276

	<b>Mean</b>	<b>Std. Deviation</b>	<b>Variance</b>
Tourists' littering destroys the beauty of the landscape.	3.7083	1.16961	1.368
Tourism has contributed to the preservation and protection of the natural environment.	2.7500	1.20398	1.450
Tourism has improved the ecological environment of the community in many ways.	2.8667	1.15179	1.327
Tourism does not contribute to the negative effect of vegetation and loss of meadows and green space.	2.4833	1.42595	2.033

Source: *Authors, based on research*

It can be noticed that when it comes to statements that describe negative environmental impacts of tourism in Vrnjačka Banja respondents mostly agree about them, considering that mean scores for these statements are above 3. On the other hand, when it comes to some positive environmental impacts of tourism in Vrnjačka Banja respondents expressed slight disagreement, considering that mean scores for these statements are below 3. This gives the conclusion that respondents' perceptions of the environmental impacts of tourism in Vrnjačka Banja is negative.

### **Conclusion**

Tourism has become a favorable industry for many countries, considering the economic, socio-cultural and environmental benefits of tourism development. However, with the increase of tourist arrivals, the great pressure on natural and cultural resources of destination may occur. Environmental anxiety about tourism impacts has increased (Milićević et al., 2020). Because of this, sustainability should become the only way for future tourism development.

Tourism in Vrnjačka Banja has growing tendencies and in order to reach sustainability, it is important to investigate how crucial stakeholders perceive positive and negative impacts of this development. There are many studies about perceptions of tourism impacts in a destination, but less with the focus on perceptions of both tourists and local residents of environmental impacts in spa destination. The findings of this study suggested that tourists and local residents have negative perceptions of the environmental impacts of tourism in Vrnjačka Banja.

The research may be used for further planning and improving the tourism offer of Vrnjačka Banja according to principles of sustainable development. The main limitation of this research is the small number of respondents who completed the questionnaire. Future research should focus on determining a statistically significant difference among tourists` and local residents` perceptions of tourism impact using larger sample size.

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