



THE VIEWS OF THE LOCAL COMMUNITY ON THE IMPACT OF (SPA) TOURISM DEVELOPMENT ON THE ENVIRONMENT OF SOKOBANJA

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Abstract:

The paper deals with the assessment of the impact of tourism in Sokobanja on environmental indicators such as noise, ecosystem degradation, loss of aesthetic values, air and soil pollution. Solving social challenges and human well-being can be achieved through sustainable management and restoration of ecosystems. The paper presents the results obtained by surveying the local population. Through the analysis of respondents' opinions, negative impacts on environmental indicators were determined, which in the future may lead to unwanted effects on the quality of life of the local population. Based on all the above-mentioned, it can be concluded that the development of spa tourism directly affects the state of the environment and represents a potential risk of devastation of biodiversity, and that spa tourism should be developed in accordance with the benefits for the local community. Further development of Sokobanja tourism should be based on creating a balance between tourism development and environmental protection as a solution to the problem of sustainability.

Keywords:

sustainable development, ecological indicators, spa tourism, Sokobanja.

INTRODUCTION

The end of the last century saw concerns regarding environmental degradation being raised for the first time and the implementation of sustainable development being mentioned as the main challenge. The search for a balance between the goals of the economy and the environment is addressed in the theory of sustainable - economic development that meets human needs without undermining the global ecosystem and depleting essential resources (Harris JM, 2009). After the COVID pandemic, the search for a destination that, in addition to an active vacation, would provide a stay in nature, in the fresh air, with local gastronomic specialties, has opened up opportunities for the development of many destinations that prior did not have a large number of visitors both from domestic and foreign tourists. Sokobanja is a destination that faced a lot of pressure, unwilling to accept the newly created situation, without a pre-prepared plan on how to successfully respond to tourist demand while at the same time managing to protect the environment. The large number of tourists who visited Sokobanja during and after the COVID-19 outbreak, thus attracting many investors, led to great pressure on anthropogenic and natural

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tourism values, as well as on the exploitation of construction land. For tourism to properly contribute to overall development, it needs to be planned and managed in a way that contributes to the quality of life of the local population and the protection of the natural and cultural environment. (Popescu, 2016). The term “sustainable development” was first used in 1987. United Nations report entitled *Our Common Future* (Giddens, 2007).

The phrase sustainable future is not new. It was used by the authors Sarre, Smith and Morris in 1991, before the first United Nations Conference on Environment and Development in Rio (Morpeth, Yan, 2015). Sustainable development would thus mean an ideal growth that relies on recycling physical resources, without exhausting them, with minimal environmental pollution (Ahmadi *et al.*, 2018). For tourism to be sustainable, it is necessary to establish a balance between economic, ecological and social indicators of development that is, take care of environmental protection, and improve the quality of life and economic development (Nunkoo *et al.*, 2020). Through the National Sustainable Development Strategy of the Republic of Serbia, pollution, waste generation, pressure on natural resources, ecosystem and habitat are listed as negative impacts of tourism. Thus, we can classify tourism as an activity that has a harmful impact on the environment like any other industry. Modern spa and wellness tourism should contribute to sustainable development and be integrated into the natural, cultural and human environment (Arsic *et al.*, 2024). A condition for the proper management of tourism is that the sustainability of the resources on which it depends must be guaranteed (Szromek, Polok, 2022). Three forms of sustainability are important for the development of sustainability in tourism: economic, social and ecological. All three indicators must be considered in order for us to have a true image of sustainability of tourism. A destination is more competitive if the principles of sustainable tourism are implemented, thus creating a path to long-term business. In the development strategy of the Republic of Serbia, Sokobanja was placed in the eighth place on the list of priority tourist destinations. Today, numerous criteria, principles and indicators of sustainable tourism are available, from global ones (UNWTO) to those that can be used at the destination (GSTC) or those that are used for the benefit of local communities (Planet Happiness). Local population and ecosystems are indirect participants in tourism and form an integral part of the tourism product in addition to those direct participants such as consumers, decision makers and service providers. Sustainable tourism represents a development model that will bring indicators of sustainable development in balance with the satisfied users of tourism services - tourists (Germanovich *et al.*, 2020). In the opinion of Chen *et al.* (2023), sustainable tourism allows meeting the tourist needs of modern tourists without jeopardizing the resources necessary to meet future tourists' needs.

This paper investigates the impact of environmental indicators on the development of tourism in Sokobanja, such as soil and air pollution, noise, ecosystem degradation and loss of aesthetic values. The well-being of the local community implies supporting a higher quality of life of the local population, while avoiding any form of social and environmental degradation or exploitation (Maksin, Pucar, Milijic, Korac, 2011). The objective of this paper is to analyze the sustainability of tourism in Sokobanja by analyzing selected environmental indicators. In addition, by analyzing ecological indicators, we can evaluate the impact on the future development of tourism in Sokobanja. The purpose of this research is to assess the impact of tourism activity on nature, air and ecosystem through the analysis of ecological indicators. The analysis of the selected indicators can contribute to establishing monitoring with the aim of improving the natural resources and attractions of Sokobanja as a tourist destination.

The subject of the research represents the spa destination of Sokobanja. The starting hypothesis H is that Sokobanja is a tourist destination developed on the principles of ecologically sustainable tourism, where such development does not jeopardize the ecosystem and aesthetic values, which affects the quality of life of the local population. It was concluded that ecological unsustainability was indicated by the development of tourism in Sokobanja and that it left negative consequences on the ecological and visual identity of the destination, with a tendency to affect the life of the local population.



METHODOLOGY

The local population of Sokobanja and its surroundings participated in the research, a total of 234 respondents. Environmental indicators of sustainable tourism development were used in the research as parameters for measuring the impact of tourism development on the quality of life of the local population. The following variables were used: Ecosystem degradation, Loss of aesthetic values, Noise pollution, Land pollution, Air pollution. Respondents were expected to rank the mentioned influences that certain attitudes have on their lives, using a five-point Likert scale (Likert, 1967), from negative to positive. In order to compare the answers in relation to the gender of the respondents, the Pearson Chi-Square test was used. For statistically significant differences in answers, those with a value of p less than 0.05 are considered. With higher values, it can be stated that there is no statistical significance in relation to the gender of the respondents.

Sokobanja is a spa center with 187-year-old tradition of tourism in Serbia. The first steps in developing tourism in Sokobanja were taken on April 1, 1834, when Prince Milos issued an order on the adoption of a plan for the construction of the first public bath, the first of its kind in Serbian spas (Denda, Stojanovic 2017). In 1835, under his order the healing water of Sokobanja was sent to Vienna for analysis. Due to its healing properties, it has been compared to the waters in Bad Gastein and Pfeffer spa (Nikolic, Stankovic 2008). In the period from 1933 to 1939, Sokobanja was visited by a significant number of guests, and it ranked second among spa centers in Serbia at the time. During the development of spa tourism, Sokobanja was visited by many prominent Serbian personalities, such as Branislav Nusic, Ivo Andric, Isidora Sekulic, Dobrica Eric, Mesa Selimovic, Stevan Sremac, Desanka Maksimovic and others. Although the reason for their visit was treatment, they found inspiration for many literary works in the spa. Sokobanja is located in a basin between the Morava and Timok basins, with which it is connected by the regional road Knjazevac - Sokobanja - Aleksinac. The favorable traffic and geographical position of Sokobanja is contributed by the distance from the E75 highway of only 30 km. The area of Sokobanja encompasses archeological, monumental and ethnographic tourist sights significant for the development of tourism.

The most significant anthropogenic motifs are Sokograd, the remains of the Trebic archaeological site, the Amam bath, the Monastery of St. Archangel, Residence of Prince Milos, Latin City, Seselac Cave. The development of tourism in Sokobanja was favored by the presence of a large number of thermal mineral springs, the climate, the mountainous environment of Rtanj and Ozren, as well as the very position of the location in the basin. Canyons, caves, Bovan lake and Vrmazan lake, Moravica river, make up the value of this destination and the base of tourism development in this area, i.e. its primary tourist resource. Thermal mineral springs occur along the Moravica river and at the foot of Ozren and Devica mountains. The temperature varies from 22-46.5° C. The six locations of those springs were turned into modern baths. Some of the thermal springs are the Park bath, the Preobrazenje spring, Banjica I and Banjica II, Lemon spa and springs in the village of Josanica. The thermal mineral water in Sokobanja is used for medical purposes, it is suitable for drinking, inhalation and bathing. It is used for the treatment of many diseases as well as for their prevention. The springs of Sokobanja belong to the group of mineral and thermal waters of karst areas. They are characterized by increased mineralization and increased radioactivity, which gives them special balneological significance (Protic, 1995). On the territory of the municipality of Sokobanja, the protected area of Ozren meadow, the area of outstanding features "Lepterijska - Sokograd", the nature monument "Big and small Rupaljka" and the special nature reserve Rtanj, have been registered. Rupaljka is a waterfall on the Gradasnica river located on Ozren mountain.

RESULTS AND DISCUSSION

For the purposes of the research, a survey was conducted on a sample of 234 respondents, in which both men and women were equally represented, as shown in TABLE I. The local population of Sokobanja was surveyed. Of these, 119 (50.9%) were male and 115 (49.1%) female. The variables referred to the local population's opinion on environmental indicators such as noise, soil and air pollution, ecosystem degradation and loss of aesthetic values. The questions were related to whether there were changes and whether any of these environmental indicators worsened with the development of tourism in Sokobanja. The Pearson Chi-Square Test was used as one of the procedures for analyzing the obtained data. This test searched for correlation when it comes to differences in responses between male and female respondents. The following tables will show the results obtained from the responses to the questions related to the research.



Table 1. Gender

		Frequency	Percent
Valid	Male	119	50.9
	Female	115	49.1
	Total	234	100.0

Source: Author's calculation

Table 2. Eco system degradation

		Ecosystem degradation		Total
		Worse	No change	
Gender	Male	41	78	119
	Female	84	31	115
Total		125	109	234

Source: Author's calculation

Table 3. Pearson chi-square test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	35,000 ^a	1	0.000

Source: Author's calculation

From the given tables, we can conclude that there are different opinions about the degradation of the ecosystem in Sokobanja, and that the male respondents do not think that there has been a deterioration, in contrast to the female gender, who are of the opposite opinion. When we look at the opinions of all the respondents, we come to the conclusion that 53% of the respondents believe that the development of tourism has influenced the degradation of the ecosystem in Sokobanja (TABLE II.). From the results obtained with the Pearson Chi-Square Test (TABLE III.), we can see that there is a statistically significant difference in the responses in relation to the gender of the respondents. The female gender believes that the ecosystem in Sokobanja is deteriorating.

Table 4. Loss of aesthetic values

		Loss of aesthetic values, especially during the summer			Total
		Much worse	Worse	No change	
Gender	Male	33	60	26	119
	Female	9	52	54	115
Total		42	112	80	234

Source: Author's calculation

Table 5. Pearson chi-square test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24,024 ^a	2	0.000

Source: Author's calculation



Based on the given tables and questions about the loss of aesthetic values in Sokobanja, mostly during the summer season, the respondents gave their responses in relation to three variables. Of all those surveyed, 18% believe that there has been significant deterioration, 48% also believe that aesthetic values are lost with more tourists present during the season, while 34% believe that such negative changes do not occur. When we look at the total number of respondents, we conclude that as many as 66% of respondents notice negative changes in the examined environmental indicator (TABLE IV.). The Pearson Chi-Square Test shows that there are significant differences in responses between male and female respondents. In this case, the men believe that the state of aesthetic values deteriorates during the summer season in Sokobanja (TABLE V.).

Table 6. Noise pollution

		Noise pollution			Total
		Much worse	Worse	No change	
Gender	Male	0	52	67	119
	Female	2	65	48	115
Total		2	117	115	234

Source: Author's calculation

Table 7. Pearson chi-square test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6,517 ^a	2	0.038

Source: Author's calculation

Given that the residents of Sokobanja had similar responses to the question related to noise, with the Pearson Chi-Square Test it was established that there were statistically significant differences in the responses in relation to the gender of the respondents (TABLE VII.). There is a higher percentage of women who believe that the noise level has worsened. Also, as can be seen in TABLE VI., the opinion of the respondents is divided in relation to the deterioration of the environmental indicator, where 51% believe that there are changes compared to 49% who think that there is no deterioration when it comes to the creation of higher noise levels at the destination. This research result tells us that the local population is exposed to an unwanted sound level.

Table 8. Land pollution

		Land pollution			Total
		Much worse	Worse	No change	
Gender	Male	4	77	38	119
	Female	0	42	73	115
Total		4	119	111	234

Source: Author's calculation

Table 9. Pearson chi-square test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25,269 ^a	2	0.000

Source: Author's calculation



Based on TABLE VIII., we can see that 53% of the respondents are of the opinion that soil pollution has occurred, while 47% are those who believe that no such changes have occurred. The Pearson Chi-Square Test (TABLE IX.) shows that there are differences in the responses of male and female respondents. The male respondents are of the opinion that the quality of the soil has significantly worsened, compared to majority of the female respondents, who believe that there are no significant changes.

Table 10. Air pollution

		Worse	No change	Total
Gender	Male	47	72	119
	Female	60	55	115
Total		107	127	234

Source: Author's calculation

Table 11. Pearson chi-square test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.788 ^a	1	0.052

Source: Author's calculation

In TABLE X., we see the values that were obtained by summarizing the responses of those surveyed about the state of air pollution in Sokobanja. Out of 234 respondents, 107 are of the opinion that air quality has deteriorated, while 127 respondents do not hold such an opinion. Approximately 46% are of the opinion that the development of tourism in Sokobanja has had a negative impact on air quality, in contrast to 54% of respondents who believe that there have been no changes. By looking at TABLE XI., we can see that there is no significant difference between the responses of male and female respondents, given that $p=0.052$.

CONCLUSION

By analyzing the obtained data, it can be concluded that the biggest deterioration changes are observed in the ecosystem and aesthetic values of Sokobanja. The female gender has negative opinions when it comes to the ecosystem and noise, while the male gender gave negative responses regarding aesthetic values and land pollution. Women attach more importance to the appearance of nature and are sensitive to noise, which is mainly caused by a greater number of traffic and motor vehicles. The opinions of both genders about the air quality in Sokobanja are divided. Therefore, initial hypothesis H that Sokobanja is a tourist destination whose tourism development does not jeopardize the natural environment, cannot be confirmed, and there is no indication that it is being developed in accordance with the principles of ecologically sustainable tourism. Protecting natural resources, preserving cultural and natural assets, and spreading awareness of the benefits of sustainability are just some of the ways to overcome real obstacles (Turčinović *et al.*, 2024). Sustainability of tourism means creating jobs for the local community and ensuring local participation in planning and decision – making processes (Minciu *et al.*, 2010). This research should contribute to the education of the population and employees in tourism to meet the criteria of sustainable tourism according to the given indicators. Tourism can improve the quality of life through improved infrastructure, intercultural understanding and local value assessment of people, their culture, their heritage and traditions (Tigu, 2012). Future research should be related to the analysis and constant monitoring of the impact of tourism on sustainability indicators. It is necessary to pay attention to ecology and sustainable development because only a clean and orderly environment will significantly contribute to the development of tourism and will have positive effects on the local population. Sokobanja should base further development of tourism on the principles of sustainable development. Through sustainable development, the ecological and economic aspects of tourism should be reconciled, i.e. mass tourism



should be replaced by sustainable tourism that would be oriented towards quality instead of quantity and, in this way, the positive economic effects will be maintained while simultaneously preserving the environment (Vujovic, Cvijanovic, Stetic 2012). Development of sustainable tourism as a result has the rise of the standard of living of the local population, i.e., the rise of income (Huo *et al.*, 2023). A high standard of living for the local population implies improvement in the living conditions overall for the local community. A harmonious relationship between economic progress and the environment, which ensures the preservation of natural wealth for future generations, represents the sustainable development of a destination. Simply put, sustainable tourism is the smart disposal of tourist resources, from cultural values to natural resources. If Sokobanja as a tourist destination develops on such principles, it will create a competitive advantage over similar tourist centers in Serbia.

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