# EXPLORING THE NEXUS OF TOURISM DEVELOPMENT, COMMUNITY PERCEPTIONS, AND SUSTAINABILITY IN PROTECTED AREAS

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### **ABSTRACT**

Sustainable tourism integrates economic, social, and environmental aspects of sustainability. This study investigates the local community's perceptions of tourism development impacts and factors influencing support for sustainable tourism and destination sustainability within Stara Planina Nature Park. Using a Structural Equation Modeling (SEM) approach, using multiple hypothesized relationships across key dimensions, including economic, environmental, social, and infrastructural impacts are examined. The findings highlight the importance of socio-cultural factors in fostering support, while also recognizing the negative impact of environmental and infrastructural concerns. Socio-cultural impacts significantly and positively influenced support for sustainable tourism and destination initiatives, highlighting the role of cultural exchange, tradition preservation, and community identity in garnering local support. These findings align with previous studies, emphasizing the importance of perceived socio-cultural benefits in fostering community backing for tourism development. Effective STD management requires the active involvement of local stakeholders to ensure alignment with local values and environmental goals. Policymakers should focus on enhancing socio-cultural benefits, addressing infrastructural challenges, and effectively communicating economic advantages. Limitations of the study include its cross-sectional design, suggesting the need for longitudinal research to better understand the evolving impact of tourism.

Keywords: Sustainable tourism, Destination sustainability, Local community, Tourism impact, Residents' support, Protected areas.

# INTRODUCTION

Tourism development plays a very important role in sustainable development, which offers opportunities and challenges for the local community (Reindrawati, 2024). As tourism globally expands, destinations focus more and more on strategies that will enable a balance of social, economic and environmental impacts to ensure long-term sustainability (Nguyen et al., 2024). The tourism economic benefits include the possibility of employment for locals, an increase in income, and the growth of entrepreneurship, and mainly there are certain social changes and changes in infrastructure (roads, electricity, sewerage, improvement of public services) (Baloch et al., 2023). Contrary to the benefits, the uncontrolled development of tourism can lead to damage to the local ecosystem and certain problems that disrupt community life, which indicates the necessity of sustainable practices (Kapera, 2018).

Local communities are key stakeholders, and necessary for sustainable tourism development (Wondirad & Ewnetu, 2019). The way they see the changes brought by tourism - the impacts of development, whether they are environmental, social, economic or infrastructural, will have a lot to do with their decision whether to support further tourism development or not (Riyanto et al., 2023). The involvement of the local population will not only reflect their attitudes towards the development of tourism but will also strengthen ownership and resilience of sustainable practices (Marzo et al., 2023). When local people are involved in the decision-making process and tourism development activities, it will enable the development to be in accordance with local values, needs and traditions, which will enable a foundation for destination resilience, and lasting tourism development support (Han et al., 2023)

The current study aims to investigate these dynamics in Stara Planina Nature Park (NP), focusing on how local communities perceive and support tourism development across multiple dimensions. In this way, it will contribute to the understanding of these interactions and the local community's importance, and their necessity for achieving sustainable tourism outcomes. Considering the topic's significance, even though a significant number of studies focused on tourism-related community perception (Gautam & Bhalla, 2024; Wondirad & Ewnetu, 2019; Reindrawati, 2024; Uslu et al., 2023), it is very important to examine the attitudes of the local population in protected areas, in order to avoid the negative

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tourism impacts and degradation. The primary goals of the current study are to create and evaluate a structural equation model (SEM) using a resident-oriented approach, including four-dimensional tourism impacts and tourism development support. Thus, the article adds to the corpus of literature currently available on sustainable tourism by highlighting the importance of community perception and how it influences tourism support. The paper tries to present a theoretical and practical explanation of communities' support in nature protected areas and tourism. The study's conclusions can be utilized by policymakers and community members to draft regulations and take other useful steps that will include communities more and encourage environmental preservation and sustainable development.

This paper first emphasizes local community involvement and support, sustainable tourism and nature protected areas, tourism impacts. The following focuses on factors that result from local community perception of impacts and support and develop research hypotheses. Then, the specifics of the case study, research instrument, and data analysis are discussed. The results were followed by discussions, conclusions and implications for nature protected area sustainable tourism development through community support.

### LITERATURE REVIEW

Sustainable tourism development (STD) and nature-protected areas

Sustainable development in protected natural areas (NPAs) primarily focuses on the balance of conservation through tourism development and fulfilling the needs of local communities (Wang et al., 2024). STD points to the importance of protecting biodiversity, cultural heritage and ecosystems while simultaneously focusing on the promotion of responsible tourism that will bring benefits to the local population while minimizing negative impacts (Agarwal et al., 2024). Effective management of STD implies the involvement of local stakeholders, residents and businesses in decisionmaking processes to ensure that development is in line with environmental goals (Mardiani et al., 2024). Research (Baloch et al., 2023; Han et al., 2023; Pérez-Calderón et al., 2024) has shown that integrating sustainable tourism practices into NPAs can lead to favorable effects of tourism growth, such financial gains for the community, then revenues that will be further used for area protection and heritage preservation. However, to make everything possible it is necessary to involve the local population because ignoring them could lead to rebellions and fatal consequences (Sarr et al., 2020). Therefore, active involvement of the local community in tourism development is essential for fostering sustainable growth, ensuring equitable distribution of benefits, and enhancing residents' sense of ownership and commitment to conservation efforts.

Importance of local community participation and support

Local community participation is very important, if not crucial, for the success and sustainability of tourism in protected areas (Obradović et al., 2022; Wondirad & Ewnetu, 2019). When the local population is involved, development is enabled that takes into account their needs, values, heritage and traditions, while ensuring the promotion of ownership and resilience (Leal Filho et al., 2022; Reindrawati, 2024). When the local support is secured, they will enjoy the "fruits" of tourism development through income, new job opportunities, entrepreneurship, which are vital parts of healthy rural development and retention of young people in the area (Pezeshki et al., 2023). In order to enable conservation and preservation efforts, local involvement is necessary because of their knowledge and practices that can promote sustainable practices and reduce heritage degradation (Obradović et al., 2023). On the contrary, if there is insufficient involvement of locals, it can lead to resistance, which will lead to negative consequences for tourism initiatives, environmental and social sustainability (Mariam et al., 2024). All in all, the local community support is necessary and represents the basis of STD through integrating local perspectives, minimizing conflicts between community interests and tourism objectives, and ensuring long-term benefits (Han et al., 2023; Tong & Yang, 2024).

The local population's support depends mostly on how they view the effects of tourism, whether positive or negative (Riyanto et al., 2023). If the local population sees tourism as something useful, good - for example, it brings new jobs, improves public services and infrastructure, enables the preservation of natural and cultural heritage, there is a greater chance that they will support tourism initiatives (Yayla et al., 2023). Conversely, if they are concerned about negative impacts such as increased crime rates, congestion, degradation of cultural and natural resources, or increased prices, this can lead to resistance (García-Buades et al., 2022). That is why it is necessary to investigate the local population perception towards the effects of tourism, which can help policymakers when forming tourism development strategies that will include the concerns of the locals, promote support and enable development that is in line with sustainability goals and the interests of the local community. For sustainable tourism development plans to be implemented successfully, community cooperation is essential, particularly in places that are protected by nature (Nugroho & Numata, 2020).

Impacts arising from tourism development and the local community's perception

The development of tourism brings many changes that can be economic, social, environmental, etc. and they greatly affect the views of the local population about tourism (Alamineh et al., 2023). When these changes are positive, for example growth and development of the local economy, employment opportunities, improved infrastructure, it will lead to a positive opinion of the locals about tourism and their support for further development (Javadan et al., 2024). On the contrary, when these are negative consequences, for example increased living costs, degradation, congestion, it can often lead to resistance from the local population (Linderova et al., 2021).

How local people view impacts plays a key role in determining their support for tourism initiatives (Han et al., 2023). Previous research (Han et al., 2023; Liu et al., 2023; Su & Swanson, 2019) has shown that when the benefits of development outweigh the costs, the local population is more likely to show support and get involved in the development. On the other hand, negative effects can lead to local opposition that can prevent further development of tourism (García-Buades et al., 2022). Understanding these perceptions is crucial through the definition and development of tourism strategies that enable a balance between the local community benefits and the goals of sustainable development, and which focuses on the inclusion of the local population and therefore supportive of tourism initiatives (Obradović & Tešin, 2023).

Based on the theoretical background, the research model can be proposed (Figure 1) and the following hypotheses can be formulated:

- H1. Perception of environmental impacts is reflected in a) support for STD and b) support for a sustainable destination.
- H2. Perception of economic impacts is reflected in a) support for STD and b) support for a sustainable destination.
- H3. Perception of cultural impacts and social impacts is reflected in a) support for STD and b) support for a sustainable destination.
- H4. Perception of infrastructural impacts is reflected in a) STD support and b) sustainable destination support.

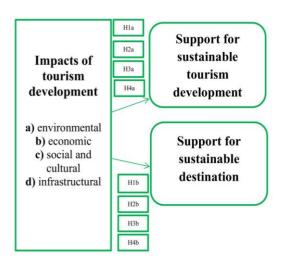


Figure 1. Proposed Research Model and Hypotheses.

### MATERIALS AND METHODS

Case Study Area: Stara Planina Nature Park (SPNP)

The SPNP, which is also known as the Balkan Mountain Range, is located in eastern Serbia and stretches across the border with Bulgaria. This nature park, which is in the process of being declared a national park, is recognized for its different ecosystems, numerous species of fauna and flora, waterfalls, valleys, canyons (Institute for Nature Conservation of Serbia, 2024). This protected area is managed to ensure the preservation of biodiversity while supporting sustainable tourism and development (Stankov et al., 2011). In addition to natural values, there are also numerous traditional villages where the local population relies on agriculture, livestock farming, but also on the increasingly growing tourism activities. As part of the PAs network of Serbia, Stara Planina is one of the key destinations for nature-based activities, ecotourism and hiking (Marjanović et al., 2022). Since many endemic species are found here, their preservation is of the utmost importance. Managing the challenges that arise to balance the growth and development of tourism and the preservation of cultural and natural heritage, presents this area as an ideal setting for researching the attitudes of the local population as well as their support for sustainable tourism practices and initiatives. This area has incredible potential for sustainable tourism due to its natural resources, but also cultural, village, folklore and tradition.

# Data Collection

The research was conducted in January and February 2021 in four municipalities where SPNP extends: Zaječar, Pirot, Knjaževac and Dimitrovgrad. Due to the restrictions caused by COVID-19, the research was conducted online, by creating a questionnaire in Google Forms and posting it on social media.

The questionnaire was shared primarily through Facebook and Instagram, targeting local community groups, municipal government pages, and forums related to tourism in the selected municipalities. Posts encouraged participants to share the survey within their networks to reach a broader audience.

It was clearly explained to the participants that participation is voluntary, anonymous, and that the results of the survey will be used exclusively for scientific research purposes. While this approach facilitated rapid data collection under pandemic restrictions, it may have introduced sampling biases, as individuals without internet access or social media presence were excluded. Future research should explore complementary methods to ensure inclusivity and mitigate potential limitations.

# Questionnaire Design

The questionnaire comprised three main sections:

- 1. Socio-Demographic Characteristics
- 2. Tourism Impacts Perception
- 3. Tourism Development Support (Sustainable Development and Destination Sustainability).

In the second and third section of the questionnaire, statements were adjusted from previous research (Eraqi, 2007; Eshliki & Kaboudi, 2012; Hanafiah et al., 2013; Mureşan et al., 2016), translated into Serbian and first tested on a small number of respondents. When it was determined that the questions were comprehensible, the questionnaire was distributed to the residents of the aforementioned municipalities. These responses were analyzed on a five-point Likert scale. A total of 440 valid questionnaires were collected, margin of error 4.5% and confidence level 95.

### Analysis

The data collected from the questionnaires were analyzed using IBM SPSS and AMOS software. To assess validity, Pearson's correlation was evaluated at a 5% significance level. The suitability of the data for factor analysis was confirmed with the Kaiser-Meyer-Olkin (KMO) test, which yielded a value of 0.807, indicating meritorious sampling adequacy. Bartlett's test of sphericity confirmed the reliability of the data with a significant result ( $\chi^2(435) = 15.553,477 \text{ p} < 0.001$ ). Common method bias was ruled out, and skewness and kurtosis values were within acceptable ranges. Internal reliability was assessed using Cronbach's Alpha, composite reliability (CR), and average variance extracted (AVE). Descriptive statistics were calculated to profile respondents, and model fit was evaluated using fit indices such as GFI, CFI, RFI, AGFI, SRMR, NFI, TLI, and RMSEA. After confirming validity and reliability, the hypotheses were tested for significance.

## **RESULTS**

Of the total number of respondents who live near STNP, 51% are women, and 49% are men, so it is mostly equal by gender (Table 1). The average age of the respondents is 42 years, and the majority have completed high school and are employed (more than half). Most of the people earn less than average.

When looking at the results shown in Table 2, it can be said that internal consistency is achieved because all alpha values are greater than 0.70 (Hair et al. 2021) even above 0.80.

A SEM model was created, and values were tested to approach the hypotheses' analysis. The model values show that the overall fit is acceptable, reasonable (Kline 2016):  $\chi 2$  (122)=319,599, p=0.000, CMIN=2.620, RMSEA=0.071, SRMR=0.019, NFI=0.965, RFI=0.921, IFI=0.971, GFI=0.925, AGFI=0.810, TLI=0.935, CFI=0.971. All items were statistically significant to the factors they belong to, and it can

be said that the data set supports a model of six dimensions and 30 items.

**Table 1.** Sociodemographic attributes of the respondents (n=440).

Gender		Employment			
Male	49.0%	Student	5.50%		
Female	51.0%	Employed	67.0%		
Age		Unemployed	14.80%		
		Housewife	5.70%		
Average age = 42		Retiree	6.82%		
	Std. = 12.635		Income		
Age range (18 – 80)		Less than	60.20%		
		average			
		(510€)			
		Average	33.0%		
		More than	6.80%		
		average			
	ı				
Elementary	2.30%				
school					
High school	53.40%				
Bachelor's	38.0%				
degree					
Master's	6.30%				
degree/PhD					
degree					

**Table 2.** Descriptive statistics and measurement model validity.

Variables	Mean	Cronbach's alpha	AVE	CR
EI	3.02	0.876	0.594	0.874
ECI	4.26	0.904	0.512	0.658
SCI	4.36	0.925	0.573	0.755
II	4.07	0.949	0.848	0.750
SSTD	4.42	0.938	0.530	0.705
SSD	4.25	0.922	0.512	0.682

If we look at individual values, you can see that RMSEA is still in the acceptable range, between 0.05 and 0.08, and that the values of NFI, RFI, IFI, GFI, TLI and CFI are above 0.90 (AGFI was slightly lower). the model fit is good and even above the standard cut off points (Kim et al., 2016). When the validity of the model has been established, the next step is to establish construct validity (Hair et al. 2021). To achieve convergent validity of data, factor loadings should be above 0.5 and statistically significant. The values of factor loadings for all items ranged from 0.600 to 0.938, which is an indicator of strong convergent validity. In addition, it is important that the AVE values are above 0.5 and CR above 0.6, which can be seen from Table 2 that it was also achieved.

The results shown in Table 3 show the discriminant validity. As suggested by Hair et al. (2021), if the root of AVE is greater than the correlation value for each dimension, it is considered that discriminant validity has been achieved. As can be seen, each examined dimension shows discriminant validity.

**Table 3.** Discriminant Validity.

	EI	ECI	SCI	II	SSTD	SSD
EI	0.771					
ECI	0.321	0.715				
SCI	0.204	0.706	0.757			
II	0.097	0.702	0.723	0.921		
SSTD	0.002	0.339	0.505	0.287	0.728	
SSD	0.110	0.341	0.550	0.375	0.701	0.715

<sup>\*</sup> Correlations are off-diagonal elements; the AVE's square root represents diagonal elements.

Since the internal consistency of the data and convergence, as well as the validity of the model and discriminant validity have been determined, it is justified to test the hypotheses. Hypothesis testing was performed based on SEM and CFA analysis and is shown in Table 4.

**Table 4.** Hypothesis testing.

	Relations hip	Beta	Std.Er ror	C.R.(t)	Status
H1a	EI to SSTD	-0.112*	0.042	-2.572	Supported
H1b	EI to SSD	-0.210*	0.045	-5.124	Supported - negative
H2a	ECI to SSTD	0.076	0.082	1.032	Not supported
H2b	ECI to SSD	0.168	0.087	2.401	Not supported
НЗа	SCI to SSTD	0.772*	0.070	10.121	Supported
НЗь	SCI to SSD	0.805*	0.074	11.158	Supported
H4a	II to SSTD	-0.239*	0.058	3.629	Supported
H4b	II to SSD	-0.101	0.062	-1.622	Not supported

Environmental impacts negatively influence support for sustainable tourism development ( $\beta = -0.112^*$ ), as do infrastructural impacts ( $\beta = -0.239^*$ ). However, socio-cultural impacts positively influence support ( $\beta = 0.772^*$ ), confirming hypotheses H1a, H3a, and H4a. Economic impacts, however, do not significantly influence residents' support, so H2 is not confirmed for either sustainable development or destination support.

Regarding support for a sustainable destination, environmental impacts negatively influence support ( $\beta = -$ 

 $0.210^*$ ), while socio-cultural impacts positively do so ( $\beta$  =  $0.805^*$ ), confirming H1b and H3b. Infrastructural impacts (H4b) were not supported.

In total, five out of eight hypotheses were confirmed, with two relationships showing negative influences, as detailed in Table 4 (p-value = 0.001).

### DISCUSSION

The findings of this study reveal important insights into the factors influencing residents' support for sustainable tourism development and sustainable destinations. The local population's support for tourism largely hinges on their perception of its impacts. Understanding these perceptions is vital for policymakers to develop tourism strategies that address local concerns, encourage support, and align with sustainability goals and community interests. This approach ensures balanced development that benefits both tourism and the local population.

Environmental impacts were shown to negatively influence support for both sustainable tourism development and destination support. This means that the locals of Stara Planina are concerned about the environmental degradation that tourism may cause and therefore would not support either the destination or its further development. This highlights the importance of addressing environmental concerns when implementing tourism policies in ecologically sensitive areas. Infrastructural impacts, similarly, were found to negatively affect support for tourism development, indicating that inadequate or inappropriate infrastructure may hinder positive community perceptions.

These findings are in line with Linderova et al. (2021) and García-Buades et al. (2022) who stated that negative consequences, for example degradation, congestion or lack of infrastructure can often lead to resistance from the local population and their lack of support.

On the other hand, socio-cultural impacts were found to have a strong positive influence on support for both sustainable tourism development and destination support. This aligns with prior research (Javadan et al., 2024; Linderova et al., 2021) suggesting that communities tend to support tourism initiatives when they recognize cultural and social benefits, such as increased cultural exchange, preservation of traditions, and enhanced community identity.

Economic impacts, however, were not found to significantly influence support for sustainable tourism or destination development. This lack of a significant relationship contradicts expectations, potentially due to the perceived short-term economic costs or the absence of tangible economic benefits felt by the community. Further research may explore why economic impacts do not play as significant a role in shaping support, particularly in areas where the long-term benefits of tourism are still not fully realized by residents.

These findings confirm five out of eight hypotheses, emphasizing the importance of socio-cultural impacts in fostering community support for sustainable tourism and destination development. The negative influence of environmental and infrastructural impacts suggests that managing these aspects is crucial for sustaining positive attitudes toward tourism development. Infrastructural improvements and environmental protection measures are key to ensuring the success of sustainable tourism initiatives.

# **CONCLUSION**

This study contributes to the theoretical understanding of how different impacts affect local community support for development sustainable tourism and destination sustainability. The results underscore the significant role of socio-cultural factors, while also highlighting the negative effects of environmental and infrastructural concerns. Effective management of STD requires the active participation of local stakeholders, residents, and businesses in decisionmaking. This involvement ensures that development aligns with environmental goals and addresses local needs, values, and traditions. Local community engagement not only fosters ownership and resilience but also generates economic benefits, such as income, new job opportunities, and entrepreneurship. These factors contribute to healthy rural development and help retain young people in the area, making local support crucial for the long-term success and sustainability of tourism in protected areas.

From a practical standpoint, these findings suggest that policymakers should prioritize socio-cultural benefits, address environmental and infrastructural issues, and ensure that economic benefits are effectively communicated to the local community.

Despite the contribution of these findings, this study has several limitations. First, the cross-sectional design limits the ability to infer causal relationships. Longitudinal studies could provide more insight into how perceptions change over time as communities experience the tangible impacts of tourism development. Additionally, the absence of a significant relationship with economic impacts calls for further exploration of how economic benefits are communicated to local communities. Future research could investigate whether perceived economic benefits take time to materialize and how they are perceived differently across various demographic groups.

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