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The importance of local community attitudes for sustainable tourism in protected areas: The case of Tikvara Nature Park, Serbia

Abstract

One of the most important elements of tourism development is encouraging the participation of the local community. In order to encourage their participation, it is necessary to be aware of the attitudes of the local residents with respect to the development of tourism. The aim of this research is to determine the attitudes of the local community towards the development of sustainable tourism and ecotourism in the protected area Tikvara, along with the local residents' level of nature protection and preservation in the Tikvara Nature Park. A survey was conducted among 301 residents and the results indicate that while good community support for sustainable tourism activities in each area captured by the survey (planning, participation, activities, and decision-making) exists, local residents' attitudes are affected by their sociodemographic characteristics. Nonetheless, a large number of locals were happy

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to participate in protection programs and believed that the environment should be protected for future generations to enjoy the natural and cultural resources of this area. These findings should be considered when designing sustainable tourism management strategies, while respecting the needs and rights of the local community, as the willingness of locals to develop sustainable tourism is essential for the success of this sector.

Keywords: tourism, SUS-TAS, local community, community support, tourism stakeholders

Introduction

Research on sustainable tourism has expanded considerably in the last decades and covers various topics including the natural environment, nature protection and protected areas (Bramwell 2007; Buckley 2012; Obradović et al. 2021; Richardson 2021; Stojanović et al. 2021; Zhang et al. 2022). Sustainable tourism requires the application of sustainable development practices to the tourism sector, thus ensuring that the current needs are being met without compromising the resources to be at the disposal of future generations (Leung et al. 2008; Mowforth & Munt 2015). Therefore, sustainable tourism should focus on minimising the negative and maximising the positive effects of any tourism-related activities (Holden 2008; Weaver 2006; Wu et al. 2021). Sustainable tourism focuses on the local community, and its participation is the foundation for success in sustainable tourism development (Sharpley 2020). It is realised with a balance of the concerns of local people and the tourism industry (Gonzales et al. 2018). The concept of developing sustainable tourism sets the community as a core element of the development process as sustainable tourism development usually rests on the assurance of renewable economic, social and cultural benefits to the local community and its environment (Panchenko et al. 2018).

Since tourism is one of the most common uses of protected areas (Bushelland Bricker 2016; Dharmaratne et al. 2000; Spenceley & Snyman 2017), they are usually marked off, interpreted, labelled and marketed for this purpose (Reiniusand Fredman 2007). However, for the tourism industry to remain beneficial to the local community, it must support the protected areas through waste reduction, active involvement in government

and non-government-led protection measures and raising awareness of the importance of nature protection (UNWTO 2010). As the issues associated with tourism in protected areas are inherently complex and multi-faceted, local communities must be involved in any tourism initiatives (Chan et al. 2021; Strickland-Munro et al. 2010). Therefore, while initiating new programs in protected areas, residents' perceptions of tourism's economic, sociocultural and environmental impacts should be considered (Gu et al. 2021).

Moreover, as the balance between environmental protection and development needs is often closely related to residents' foundational attitudes toward the environment (Jurowski et al. 1997), residents should exert more control over the tourism development process within their community (Choi & Sirakaya 2005; Yu et al. 2011; Zhang et al. 2015). They should also be encouraged to be actively involved in tourism development, planning, and decision-making (An et al. 2021; Sirakaya-Turk et al. 2008).

Community attitudes towards the development of sustainable tourism are thus examined in the present study, as it aims to identify the potential conflicts in the attitudes of the community members (Kim et al. 2021; Lai & Nepal 2006). For this purpose, SUS-TAS testing was conducted in a protected area utilised by locals for picnics as well as sports and leisure activities. This area has a strong potential for the development of sustainable tourism, considering its richness in resources, such as interesting flora and fauna and landscape characteristics.

Therefore, the main purpose of this paper is to measure the attitudes of residents toward sustainable tourism development in the protected area of Tikvara.

The following hypotheses have been defined for research purposes:

H1: Residents have a favourable attitude toward sustainable tourism development.

H2: Residents' attitudes differ according to socio-demographic characteristics.

H3: Residents want to participate in nature protection programs.

The article will begin with the Tikvara Nature Park case study, the research design and instruments used in this paper, followed by data collection, sampling procedure and data analysis techniques. Finally, the results, discussion and conclusive remarks will be presented.

Materials and methods

Study area

The Tikvara Nature Park (NP) is situated in the western part of the Autonomous Province of Vojvodina, Northern Serbia. It covers the area of the Municipality of Bačka Palanka and is classified as Category V: Protected Landscape/Seascape according to the IUCN categorisation (Institute for Nature Conservation of Vojvodina Province, n.d). The NP covers a 554,52-ha area along the left bank of the River Danube and comprises (1) a Level II protection area (138,85 ha) and (2) a Level III protection area (415,67 ha). A sport-recreational centre Tikvara from Bačka Palanka is the protected area manager (Institute for Nature Conservation of Vojvodina Province, n.d).

The NP consists of compact boglands located on the alluvial plain of the River Danube, with its topography ranging from 78.6 m and 82.8 m at sea level. The entire inundation plane is covered with fresh layers of sand and mud deposited by regular Danube flooding and recession. Its main hydrological feature is Lake Tikvara, located in the eastern part of NP (Lazić et al. 2008). The lake is of fluvial origin, formed by moving the Danube riverbed to the south. The hydrographic characteristics in the low-lying part of the protected area depend on the Danube water level, as it is typically flooded during spring and early summer (Bogdanović et al. 1997).

River Danube is the hallmark of this plain region, characterised by complexes of bogland forests with well-preserved marsh and swamp ecosystems. Its main feature is Hungarian Hawthorne (Crataegu snigra) –a sub-endemic plant of the Danube banks. Yellow Lilies (Nupharlutea (L) Sm) and white Water-Lilies (Nymphaea alba L.) also thrive in this region and are protected by Code on declaration and protection of strictly protected and protected wild species of plants, animals and fungi (Official Gazette of RS, 2010). Extant research of ichthyofauna in NP further reveals that it is home to 20 fish species, including common carp (Cyprinus carpio), which also require protection. However, the ornitofauna at this locality is of particular importance, as an estimate 150 bird species populate the area, which is regularly visited by various species of Heron (Ardeidae), White Storks (Ciconia ciconia), Black Storks (Ciconia nigra) and White-tailed Eagle (Haliaeetus albicilla) (Lazić et al. 2008).

As indicated above, the NP Tikvara is of international importance and has been designated as an Important Bird Area (IBA) since 2009 (Study protec-

tion – Tikvara Nature Park, 2011). Since 2017, the Tikvara Nature Park has also been an integral part of the Bačko Podunavlje Biosphere Reserve (UNESCO) and was included in the cross-border Mura-Drava-Danube Biosphere reserve in 2021 (UNESCO, n.d.).

At present, Tikvara NP mainly serves mass tourism, as it includes two beaches on the banks of the Danube and on the lakeside, respectively, with several restaurants and bars. It is also popular amongst sports lovers, who are able to enjoy football pitches and beach volleyball courts. In addition, the nearby Sport and Recreational Centre 'Tikvara' offers a sports hall, a football stadium, an athletic track, tennis courts, basketball and volleyball courts, a gym and a trim track.

Tikvara Nature Park is located on the edge of the urban area of Bačka Palanka, a town with a centre of the municipality of the same name. About 28,000 people live in Bačka Palanka, and 55,000 people live in the municipality of Backa Palanka. The population is mainly employed in agriculture and industry, and significantly less in hospitality and tourism. As the centre of local self-government, Bačka Palanka is responsible for the organisation of tourism in the municipality of Bačka Palanka. The tourist organisation of the Bačka Palanka municipality over sees the promotion of natural values at the Tikvara Nature Park.

Research design and instrument

The data required for meeting the study aims were obtained via face-to-face and online surveys using a questionnaire specifically designed for this purpose, thus focusing on the residents' attitudes toward sustainable tourism development. The questionnaire consisted of four sections. The first section comprised seven questions probing into the respondents' sociodemographic and economic characteristics, such as gender, age, education, employment status, income, household size, and duration of residence in the area. In the second section, the 42-item SUS-TAS instrument developed by Choi and Sirakaya (2005) was reproduced to measure residents' attitudes towards sustainable tourism development, focusing on environmental sustainability, perceived social costs, perceived economic benefits, community participation, long-term planning, visitor satisfaction, and community-centred economy. Since its face validity, content validity, and internal consistency have been verified in extant

studies (Choi & Sirakaya 2005; Sirakaya-Turk et al. 2008), the SUS-TAS was translated into Serbian language and was adopted with only minor wording modifications. The third questionnaire section consisted of 17 statements about ecotourism development, which was in line with the approach adopted by Lai & Nepal (2006) in Taiwan and Chen & Qiu (2017) in China. The items included in the second and third sections required responses on a five-point Likert scale (1 = absolutely disagree, 2 = partially disagree, 3 = neutral, 4 = partially agree, and 5 = absolutely agree). The fourth section consisted of six questions (adopted from the study conducted by Stojanović et al. 2021), probing into the level of knowledge regarding the Tikvara Nature Parkthe local community possesses.

Data collection and sampling procedure

The survey was conducted from March to June 2021 and involved 301 respondents, 159 of whom completed an online questionnaire (using Google Forms) distributed via social media (Facebook). The remaining 142 individuals took part in face-to-face interviews wherein they completed the same questionnaire in a pen-and-paper format. All respondents were informed that the survey was anonymous. They were assured that their participation was voluntary and the survey results would only be used for research purposes. In this research, a quota purposive sample was used. For this type of sample, the proportions were based on the researchers' judgment for inclusion. For this study, the sample was selected after considering the population size of the settlement. All respondents resided within the territory of Bačka Palanka, a town located in the Municipality of Bačka Palanka that belongs to the South Bačka District. The sample size (n = 301) thus represents 1.06% of the total population of Bačka Palanka.

Data analysis techniques

The survey data were subjected to statistical analyses using IBM SPSS 25.0 Statistics, and descriptive statistics were reported for the respondents' sociodemographic profiles, while principal component analysis (PCA) was conducted to determine the SUS-TAS dimensions and those pertaining to ecotourism development. Cronbach's alpha was calculated to test the internal consistency

of the items measuring each factor, correlations between sociodemographic characteristics and the SUS-TAS and ecotourism development factors, whereas ANOVA was performed to ascertain whether the survey findings were affected by the respondents' sociodemographic characteristics.

Results and Discussion

Profile of the surveyed residents

As depicted in Table 1, the sample was gender-balanced, as it comprised 50.8% women and 49.2% men. The majority of the sample belonged to the 30–39 age group and had completed either high school (45.5%) or college/university education (41.2%). The greatest number of respondents were employed in the private sector (29.6%) followed by the civil sector (28.2%).

Table 1: Respondents' sociodemographic characteristics (n = 301)

Gender	**Percent (%)**	**Employment Status**	**Percent (%)**
Male	49.2	Civil sector	28.2
Female	50.8	Entrepreneurship	9.6
Age range	**Percent (%)**	Private sector	29.6
< 20 years	13.0	Student	9.6
20–29 years	11.6	Unemployed	10.6
30–39 years	26.6	Retired	12.3
40–49 years	21.9	**Income**	**Percent (%)**
50–59 years	15.0	Less than average (€450)	50.3
60+ years	12.0	Average	21.3
Education	**Percent (%)**	More than average	28.4
Elementary school	10.3	**Household size**	**Percent (%)**
High school	45.5	Less than three	36.9
College/University	41.2	Three to five	46.8
PhD	2.3	More than five	16.3
Other	0.7		
Length of residence	**Percent (%)**		
Less than 10 years	10.3		
10–19 years	18.9		
20–29 years	15.9		
30–39 years	22.6		

Gender	Percent (%)	Employment Status	Percent (%)
40–49 years	14.0		
50+ years	18.3		

Source: Created by the authors based on data analysis in SPSS 25.0.

Table 1 also demonstrated that the majority (49.5%) of the respondents earn more than the average income in Serbia, live in households with 3–5 members (46.8%), and have resided in this area for 30–39 years (22.6%).

Factor analysis on the local community attitudes towards sustainable tourism development

When the factorability of the 42-item SUS-TAS scale was examined, all 42 items were found to correlate with at least one other item (at ≥ 0.3), indicating reasonable factorability. Next, PCA with a varimax rotation was performed on the 42 items to delineate the SUS-TAS dimensions, which loaded into the seven domains it was designed to capture. As shown in Table 2, the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.853, thus exceeding the value of 0.6 recommended for good factor analysis (Kaiser 1974; Tabachnick & Fidell 2007; Field 2013). Bartlett's test of sphericity was also found to be significant ($\chi^2 = 6319.853$, $p < 0.001$). By applying the lower threshold of 1 for the eigenvalues, we confirmed the presence of seven significant factors that jointly explained 59% of the variance. While this percentage was somewhat low, a solution that accounts for 60% of the total variance (and in some instances even less) is frequently accepted in social sciences research (Peterson 2000; Hair et al. 2006). Finally, our analyses confirmed that each item shared some common variance with other items since all commonalities were above 0.3.

Since the sample body of evidence indicates that Cronbach's internal consistency reliability is the most widely used reliability test method (Cortina 1993; Pallant 2013; Serbetar & Sedlar 2016; Taber 2017), it was adopted in the present study, whereby Cronbach's alpha (Cronbach 1951) was calculated for each group of questions, as shown in Table 2. As 0.6–0.7 is a recommended range for acceptable values (Griethuijsen et al. 2014), the item, *Sometimes it is okay to exclude the population from tourism development,* was excluded. The remaining items presented a Cronbach's alpha coefficient in the 0.72–0.92

Table 2. Factor analysis on the host community's attitudes towards sustainable tourism development

	Environmental sustainability (α = 0.86; M = 4.77)	**Perceived social costs (α = 0.91; M = 1.51)**	**Perceived economic benefits (α = 0.92; M = 4.29)**	**Community participation (α = 0.75; M = 4.19)**	**Long-term planning (α = 0.77; M = 4.59)**	**Visitor satisfaction (α = 0.72; M = 4.55)**	**Community-centred economy (α = 0.73; M = 4.51)**
The community's environment should be protected now and for the future	.756						
The diversity of nature must be valued and protected	.751						
The development of tourism should increase efforts to protect the environment	.737						
Tourism must protect the community environment	.712						
Tourism must be developed in harmony with the natural and cultural environment	.663						
Appropriate tourism development always requires wildlife and natural habitat protection	.614						
Tourism development must promote positive environmental ethics for all tourism stakeholders	.595						
Regulatory environmental standards are needed to reduce impacts of tourism development	.592						
Tourism must improve the environment for future generations	.574						
Tourists in my community are disrupting my quality of life		.824					

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My quality of life has deteriorated because of tourism		.789					
I often feel irritated because of tourism in the community		.786					
The community's recreational resources are overused by tourists		.762					
My community is overcrowded because of tourism development		.760					
I do not feel comfortable or welcome in local tourism businesses		.746					
Tourism is growing too fast		.732					
The quality of social interactions in my community has deteriorated because of tourism		.706					
I like tourism because it brings new income into our community			.858				
Tourism makes a strong economic contribution to the community			.845				
Tourism generates significant tax revenue for the local government			.834				
Tourism is good for our economy			.827				
Tourism creates new markets for local products			.797				
Tourism diversifies the local economy			.775				

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Tourism is beneficial to other industries in the community			.687				
Tourism decisions need to be made by everyone in my community regardless of background				.743			
The whole community must participate in decisions for successful tourism development				.705			
Communities' residents should be given an opportunity to engage in tourism development and management				.661			
Tourism industry must plan for the future					.714		
I believe that successful management of tourism requires an advanced planning strategy					.679		
I believe that we need to take a long-term view when planning for tourism development					.645		
I think residents must be encouraged to assume a leadership role in the tourism planning committees					.636		
I believe that tourism development needs well-coordinated planning					.627		
Tourism development plans should be continuously improved					.432		

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Tourism businesses have a responsibility to provide for visitors' needs						.762	
Community attractiveness is the core element of environmental attractiveness to visitors						.698	
Tourism enterprises need to monitor visitor satisfaction						.638	
Tourism industry must ensure high-quality tourism experiences for future visitors						.547	
Tourism industry should be required to obtain at least one-half of their goods and services from within the local community							.764
I think tourism businesses should hire at least one-half of their employees from within the local community							.624
Communities' residents should receive a fair share of the benefits derived from tourism							.573
Tourism industry must contribute to community improvement funds							.529

Source: Created by the authors based on data analysis in SPSS 25.0.

range (with total scale reliability of 0.81), indicating that the variables showed a high correlation with their respective groupings. In the study conducted by Choi & Sirakaya (2005) employing the same instrument, the reliability coefficients ranged from 0.79 to 0.95. On the other hand, Sirakaya-Turk et al. (2008) obtained values in the 0.70–0.80 range; however, they adopted Confirmatory Factor Analysis (CFA) when testing the SUS-TAS construct validity.

Choi & Sirakaya (2005), Sirakaya-Turk et al. (2008), and Yu et al. (2011) also noted that the perceived social cost, perceived economic benefits, and environmental sustainability are the main factors with the highest overall reliability, which is also significant for perceived costs (Zhang et al. 2015). Conversely, visitor satisfaction and community-centred economy are usually the lowest-performing factors (Choi & Sirakaya 2005; Yu et al. 2011; Zhang et al. 2015), along with visitor satisfaction and community participation (Sirakaya-Turk et al. 2008).

In the present study, the findings yielded by the factor analysis of the SUS-TAS indicated that the seven-factor scale accounted for 59% of the variance in responses, which was comparable to 61.5% and 67% obtained by Choi and Sirakaya (2005) and Arslan (2017).

Factor analysis on the local community attitudes towards ecotourism development

To ascertain the local community attitudes towards ecotourism, PCA was applied to 17 questions classified into four groups. As illustrated in Table 3, the total variability was 56% and the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.718, exceeding the recommended value of 0.6 for good factor analysis. Bartlett's test of sphericity was significant ($\chi^2 = 1913.4$, $p < 0.001$) and the variables showed a relatively high correlation with their respective groupings, as confirmed by Cronbach's alpha coefficients that ranged from 0.581 to 0.898.

Overall, the survey responses indicate that the residents exhibited positive attitudes toward all four dimensions of ecotourism development, as reflected in the mean scores related to *conservation of natural resources* (4.45), *participation in ecotourism planning and management* (4.38), *preservation of cultural tradition* (4.25), and *sustainable community development* (3.65). These values are comparable to those reported by Lai & Nepal (2006), i.e. 4.46 for

Table 3. Factor analysis on the local community attitudes towards ecotourism development

	Conservation of natural resources (α = 0.731; M = 4.45)	**Preservation of cultural tradition (α = 0.581; M = 4.25)**	**Sustainable community development (α = 0.709; M = 3.65)**	**Participation in ecotourism planning and management (α = 0.898; M = 4.38)**
Encouraging the management authority not to restrict the tourist numbers in Tikvara Nature Park	.531			
Assisting the nature park managers in preventing illegal activities	.701			
Encouraging the relaxation of the reserve regulations for tourism development	.687			
Educating people not to buy/sell products made using rare plants	.606			
Educating people not to buy/sell products made using rare animals	.571			
Learning about the natural heritage of the area	.350			
Suggesting that the local government reschedule the traditional events to attract more tourists		.807		
Encouraging the local government to replace the original economic activities by tourism		.755		
Learning about the cultural heritage of the area		.739		
Providing environmental education for tourists			.765	
Using disposable tableware to save labor and costs			.754	

	Conservation of natural resources (α = 0.731; M = 4.45)	**Preservation of cultural tradition (α = 0.581; M = 4.25)**	**Sustainable community development (α = 0.709; M = 3.65)**	**Participation in ecotourism planning and management (α = 0.898; M = 4.38)**
Welcoming crowds of tourists to the community regardless of their number			.724	
Accepting negative tourism impacts to facilitate local development			.640	
Encouraging the local government to maximise non-local tourism investment			.637	
Communicating with the local government for ecotourism planning				.917
Participating in ecotourism planning				.909
Increasing ecotourism-related employment opportunities				.872

Source: Created by the authors based on data analysis in SPSS 25.0.

participation in ecotourism planning and management and 3.6 for *sustainable community development*.

Correlation analysis – SUS-TAS factors

A correlation analysis was conducted to determine whether there is a link between the SUS-TAS item ratings and respondents' employment status and length of residence (Table 4).

The results reported in Table 4 depict that employed residents are more likely to have positive attitudes toward a community-centred economy ($p = 0.01$) while those that have lived in the area for a longer period are most concerned with environmental sustainability ($p = 0.05$). On the other hand, employment status is negatively correlated with both perceived social cost and community participation.

Table 4. Correlation analysis – respondents' employment status, period of residence and sustainable tourism development factors

	Pearson correlation coefficient (r)	
Factors	**Employment status**	**Length of residence**
Environmental sustainability	0.34	**0.124***
Perceived social cost	**–0.146***	0.014
Perceived economic benefits	0.023	–0.18
Community participation	**–0.163****	–0.98
Long-term planning	0.066	0.007
Visitor satisfaction	0.077	–0.40
Community-centred economy	**0.122****	–0.56

* *The correlation is significant at the level of p = 0.05,* ** *The correlation is significant at the level of p = 0.01*

Source: Created by the authors based on data analysis in SPSS 25.0.

One-way analysis of variance (ANOVA) – SUS-TAS factors

Table 5 presents that residents in the 30–39 age group are more likely to consider social costs than those in the <20 and 60+ age groups. On the other hand, younger residents (below the age of 30) care the most about a community-centred economy ($F = 2.018$, $p < 0.05$). Other authors have also noted the link between respondents' age and attitudes (Knauper 1999; Kubiatko 2013; Wang & Chen 2006). Recently, An et al. (2021) further demonstrated that residents' demographic characteristics (age, gender, length of residence) can influence their attitudes toward tourism. On the other hand, Rathnayake and Darshi (2009) applied the SUS-TAS in Sri Lanka and failed to uncover any significant differences in the residents' towards sustainable tourism, except for perceived social costs.

The survey data was also subjected to ANOVA to identify potential differences in respondents' answers depending on their household size (Table 6).

As shown in Table 6, community participation is least significant for residents with 3–5 household members ($F = 11.570$, $p < 0.05$), which is in line with the results reported by Nguyen (2018) indicating that household size can influence community participation. Although the ANOVA was also applied to education status, income and length of residence, these analyses failed to

Table 5. ANOVA test – respondents' age and sustainable tourism development factors

Factors	F-value	LSD post-hoc test
Environmental sustainability	.615	/
Perceived social cost	**2.419**	**3 > 1, 6; 4, 5 > 1**
Perceived economic benefits	1.262	/
Community participation	2.786	/
Long-term planning	1.758	/
Visitor satisfaction	.784	/
Community-centred economy	**2.018**	**1 > 3, 4; 2 > 4**

* *p < 0.05; Note: (1) less than 20 years; (2) 20–29 years; (3) 30–39 years; (4) 40–49 years; (5)50–59 years; (6) 60+ years*

Source: Created by the authors based on data analysis in SPSS 25.0.

Table 6. ANOVA test – household size and sustainable tourism development factors

Factors	F-value	LSD post-hoc test
Environmental sustainability	.761	/
Perceived social cost	.178	/
Perceived economic benefits	.514	/
Community participation	**11.570**	**1, 3 > 2**
Long-term planning	.930	/
Visitor satisfaction	.754	/
Community-centred economy	.484	/

* *p < 0.05; Note: (1) Less than three; (2) Three to five; (3) More than five*

Source: Created by the authors based on data analysis in SPSS 25.0.

reveal statistically significant differences. It is also worth noting that Obradović et al. (2021) studied the attitudes of the Bačko Podunavlje population at the end of 2019 and the beginning of 2020. However, as the aim of this study was to gather more detailed information, the focus was on the Tikvara NP part of the Bačko Podunavlje Biosphere Reserve. In the initial study, Obradović et al. (2021) gathered 217 questionnaires for Bačka Palanka and 1,233 for the entire Bačko Podunavlje region, while only 301 respondents took part in the current

survey. Nonetheless, our findings were comparable, since both studies depicted that community members supported for six of the seven factors of sustainable tourism development.

Correlation analysis results – ecotourism development factors

Correlation analysis was conducted to ascertain whether respondents' attitudes toward ecotourism development depend on their level of education, employment status, and length of residence (Table 7).

As can be seen from Table 7, better-educated individuals have more favourable attitudes toward participation in ecotourism planning and management ($p = 0.01$) while conservation of natural resources and sustainable community development were the most important consideration for employed respondents ($p = 0.01$). On the other hand, the length of residence depicted a negative correlation with sustainable community development ($p = 0.01$).

Table 7. Correlation analysis – respondents' education, employment status, length of residence, and ecotourism development factors

	Pearson correlation coefficient (r)		
Factors	**Education**	**Employment status**	**Length of residence**
Conservation of natural resources	0.017	**0.165****	–0.004
Preservation of cultural tradition	0.046	0.010	–0.001
Sustainable community development	–0.009	**0.152****	**–0.199****
Participation in ecotourism planning and management	**0.164****	0.006	0.065

* *The correlation is significant at the level of p = 0.05,* ** *The correlation is significant at the level of p = 0.01*

Source: Created by the authors based on data analysis in SPSS 25.0.

One-way analysis of variance (ANOVA) – ecotourism development factors

ANOVA was also conducted to establish whether respondents' attitudes toward ecotourism development depend on their age (Table 8).

Table 8. ANOVA test – respondents' age and ecotourism development factors

Factors	F-value	LSD post-hoc test
Conservation of natural resources	1.223	/
Preservation of cultural tradition	0.607	/
Sustainable community development	**6.805**	**1, 2, 6 > 3, 4, 5**
Participation in ecotourism planning and management	0.511	/

* *p < 0.01; Note: (1) less than 20 years; (2) 20–29 years; (3) 30–39 years; (4) 40–49 years; (5)50–59 years; (6) 60+ years*

Source: Created by the authors based on data analysis in SPSS 25.0.

Table 8 demonstrates that the youngest (below the age of 30) and the oldest (60+) residents were most likely to consider sustainable community development while assessing the benefits of ecotourism ($F = 6.805$, $p < 0.01$).

Finally, ANOVA was conducted to compare the potential differences in the respondents' answers depending on their household size (Table 9).

As shown in Table 9, sustainable community development was the least significant for residents with 3–5 household members while assessing the benefits of ecotourism ($F = 11.502$, $p < 0.01$).

While two additional tests were conducted to identify the potential differences in the respondents' answers depending on their level of education and income, neither yielded statistically significant findings. On the other hand, Puhakka et al. (2014) found that better-educated and more affluent residents of the city near the ski resort Rika in Finland exhibited a greater level of acceptance of tourism. These results were expected as a ski resort would yield much greater benefits to the local community than a national

Table 9. ANOVA test – household size and ecotourism development factors

Factors	F-value	LSD post-hoc test
Conservation of natural resources	0.553	/
Preservation of cultural tradition	0.385	/
Sustainable community development	**11.502**	**1>2: 3>2**
Participation in ecotourism planning and management	1.541	/

* *p < 0.01; Note: (1) Less than three; (2) Three to five; (3) More than five*

Source: Created by the authors based on data analysis in SPSS 25.0.

park. Although our research did not show statistically significant differences between the ratings of ecotourism development factors provided by respondents with differing levels of education, we argue that strategies aimed at raising public awareness and educational programs related to ecotourism would be beneficial for local people. This assertion is supported by the findings reported by Chen & Qiu (2017) who indicate that age, gender, education, household income, and household size have a significant correlation with Chinese citizens' attitudes towards ecotourism development and the negative impact of the tourism industry. Our research also depicted that age influences residents' attitudes toward ecotourism development, particularly sustainable community development, with the youngest and oldest community members showing the greatest concern for sustainable community development. Puhakka et al. (2014) observed similar patterns in their study conducted in Finland, suggesting that older residents who resided near protected areas regarded conservation as a means to reduce employment and income, unlike those living in tourist-popular areas (Törn et al. 2008). While ecotourism can be a meaningful source of economic development and job creation (Anup et al. 2015; UNEP 2013), Lai & Nepal (2005) cautioned that ecotourism could have negative consequences for the preservation of natural resources and cultural traditions. Törn et al. (2008) similarly noted that the lack of perceived benefits from protected areas and inadequate involvement of locals in the foundation and management of protected areas can result in negative attitudes towards nature conservation.

Level of information of the local community about the Tikvara Nature Park

When residents were asked about their willingness to participate in the nature conservation initiatives within the Tikvara NP, most responded affirmatively, as they believed that the environment should be protected now as well as in the future, countering the findings reported by Stojanović et al. (2021) for Zasavica Special Nature Reserve (SNR). Although Tikvara NP is a relatively unknown protected area, respondents showed solid knowledge of the nature park, and almost half of the sample (45.85%) knew its proper conservation status. The majority of the survey respondents were also aware of the "symbols" of the

analysed area, unlike the respondents from Zasavica SNR (Stojanović et al. 2021). While the respondents were also familiar with the main protection problems, such as deforestation, inadequate garbage disposal, lack of maintenance, and poor investment in ecology and tourism, their participation in programs aimed at addressing these issues was limited. They suggested having skilled guide training systems to increase local knowledge and competency. However, respondents who believed that the development of tourism could bring them economic benefits were the most supportive of such initiatives.

Conclusion

Sustainable tourism development, as well as ecotourism, requires the involvement of all stakeholders, as well as strong links between tourism, environmental protection, and local community development (Michniewicz-Ankiersztajn et al. 2018). This study highlighted the importance of supporting and involving the local community while developing sustainable tourism and protecting natural and cultural resources. Using the SUS-TAS scale, it was determined that the local community supports the development of sustainable tourism and wishes to be involved. Tikvara, as part of the "Bačko Podunavlje" Biosphere Reserve, does not currently have developed tourism; however, it is recognised that the introduction of tourist activities to the area may bring considerable economic opportunities (Linderova et al. 2021). Given that sufficient knowledge regarding the main operations related to tourism, the potential consequences and the economic capacity to engage in ecotourism, as well as a sense of control over ecotourism development, are essential for the successful establishment of this sector (Drumm et al. 2005). Moreover, strong cooperation of all stakeholders is necessary to prevent or reduce the negative effects of tourism development in this area (Jianying et al. 2009).

In line with the findings reported by other authors, this study indicates that a community at an early stage of tourism development tends to demonstrate favourable attitudes (Peters et al. 2018). Since residents have a favourable attitude toward tourism development, the first hypothesis has been confirmed. However, Smith & Krannich (1998) and Lai & Nepal (2006) cautioned that residents of areas experiencing an economic decline tend to overemphasise the economic benefits of tourism, as they seek alternative means of earning

income and could be considered "tourism-hungry", compared to communities that are overburdened with tourism development or those that do not receive the expected benefits from tourism. The local community of Tikvara can thus be considered a "tourism-hungry" community but can also be viewed as "euphoric" (Akdu & Ödemiş 2018; Doxey 1975).The second hypothesis was partially confirmed, given that some sociodemographic characteristics influence the formation of attitudes but not all.

The local community has adequate knowledge of the Tikvara NP and is willing to engage in the conservation of this area by getting involved in protection programs. In this matter, the third hypothesis has been confirmed. However, while familiar with the protection problems, very few of the respondents presently take part in any such initiatives. Therefore, it is necessary to organise training aimed at enhancing their involvement in protection. The study participants are also of the view that local tourism can generate employment and economic benefits, leading to a reduction in poverty. Thus, community development planning and implementation should focus on these benefits to the local community.

As was shown in extant research, the link between ecotourism development, protection and preservation of biodiversity, as well as community development, has the potential to reduce degradation and bring economic benefits to all stakeholders. However, appropriate planning is necessary to ensure that all tourism-related stakeholders attain optimum economic benefits from tourism, while strict environmental policy must be in place, and should be accompanied by education on sustainable tourism development and infrastructure development to attract tourists. This research has confirmed that community participation and active involvement are necessary for nature protection and tourism development, and should be considered while designing and planning tourism development and nature protection measures in the Tikvara NR, as well as in other protected areas in Serbia along with other countries.

In sum, an optimal balance between community development and biodiversity conservation must be established, as when the community is desperate for economic gains, the latter aspects may be neglected. The findings reported in this work can serve as guidelines for ecotourism project managers while developing appropriate awareness-raising or incentive programs.

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