

Protected areas as recreational zones for nearby cities – The case study of the City of Pančevo

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Abstract: This research seeks to determine whether the residents of the City of Pančevo use the surrounding protected areas (PAs) for excursions and to what extent. A survey was conducted on a sample of 715 respondents above the age of 15. One main and six assisting hypotheses were set, testing the significance of differences between specific groups of respondents. Following the analysis of the results obtained by the descriptive statistics method and a Chi-Square Test, statistic conclusions were derived. The results show that 88.7% of the respondents like excursions into nature, but due to the lack of free time, money, and similar factors, only 55.1% of them practice such trips. Findings about preferred activities (dominated by walking 33.8%), the frequency (58.6% of respondents having visited the Special Nature Reserve “Deliblatska peščara” several times; 51.9% of respondents never having visited the Nature Park “Ponjavica”; 65.9% of respondents never having visited the Nature Monument “Ivanovačka ada”) and the style of visits to these PAs (mostly on their own), can help define guidelines for their further development.

Keywords: protected areas, one-day excursions, City of Pančevo

JEL classification: L83

Zaštićena područja kao rekreacione zone obližnjih gradova – Primer grada Pančeva

Sažetak: Ovo istraživanje ima za cilj da uvrđi da li stanovnici Grada Pančeva koriste zaštićena područja u svom okruženju za izlete i rekreaciju, i u kom obimu. Sprovedeno je anketno istraživanje na slučajnom uzorku od 715 stanovnika Grada Pančeva, uzrasta preko 15 godina. Postavljene su jedna glavna hipoteza i šest pomoćnih kojima je proverena značajnost razlika među pojedinim grupama ispitanika. Nakon analize rezultata metodom deskriptivne statistike i upotrebom Chi-Square Testa, izvedeni su statistički zaključci. Rezultati su pokazali da 88,7% ispitanika voli jednodnevne izlete u prirodu, ali zbog manjka slobodnog vremena, novca i sličnih faktora, tek 55,1% njih to i praktikuje. Saznanja o tipovima rekreacije (među kojima prednjači pešačenje sa 33,8%), učestalosti poseta (Specijalni Rezervat Prirode „Deliblatska peščara” 58,6% nekoliko puta do sada; Park Prirode „Ponjavica” 51,9% nikada; Spomenik Prirode „Ivanovačka ada” 65,9% nikada) i načinu posete (većinski samostalno) mogu pomoći u definisanju smernica njihovog razvoja i doprineti naučnoj zajednici po pitanju ove nedovoljno istražene teme.

Ključne reči: zaštićena područja, jednodnevni izleti, Grad Pančevo

JEL klasifikacija: L83

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1. Introduction

According to the definition of the World Tourism Organization, the one-day visitor (or an excursionist) is the visitor whose trip does not include an overnight stay (UNWTO, n.d.). According to Štetić et al. (2011), excursions involve organizing various types of short trips for fun and pleasure. Furthermore, this type of trip is marked by visits to nearby tourist destinations which may last a couple of hours, half a day or all day. They depend on the time and season and are closely related to tourist recreation.

Being the areas of preserved nature with cultural and historical heritage as an added value, many of protected areas (PAs) have great recreational potential (Cetin & Sevik, 2016), especially those that may be reached in less than one hour (Sanchez Martin et al., 2018). Such tourist movements are becoming increasingly topical (Štetić et al., 2021), leading to more research of PAs (Sanchez Martin et al., 2018), especially as destinations for excursions and recreation (Cetin & Sevik, 2016; Le Corre et al., 2021; Opačić et al., 2014; Sanchez Martin et al., 2018). This is expected, keeping in mind the fast pace of life of the urban population, who more often go out into nature to escape pollution, noise and stress, especially in the form of short and frequent trips to places of preserved nature, preferably close to their permanent residences. More and more frequently, they opt for several single-day excursions throughout the year instead of one longer vacation. Also, the presence of the global pandemic of SARS-CoV-2 over the past two years has given rise to a trend of intensified visits to tourist destinations in Serbia, including visits to protected areas (Štetić et al., 2021).

The priority role of these areas is the preservation of natural values and heritage, but most of them, especially the ones with larger areas, provide possibilities for open recreation (lat. *recreate* – to re-create, to refresh, in this case to refresh the mind and the body). Some authors (Opačić et al., 2005; Vidaković, 2003) assert that this also depends on the type of protected area. Accordingly, in the protected areas of the highest rank – national parks for example, the tourist component prevails, while in protected areas of lower rank, the recreational component prevails. In line with Pan & Ryan (2007) and their view that national parks are, as a rule, at greater distances from cities, while other PAs are closer to cities and are affected by landscape transformation, they provide wider specter of recreation types. A very comprehensive research (almost 14.000 respondents) in four PAs in Extremadura, an Autonomous community in Spain, which was conducted by Sanchez Martin et al. (2018) showed that the distance to PAs was much more important than their attractiveness, i.e. that the percentage of PAs visitors decreases with increasing time necessary to reach PAs. They concluded that this was especially the case with PAs where travelling from the starting point required more than 60 minutes. This study, which is particularly interesting because of tourist mobility analysis, also shows that private transportation is still dominant over collective transportation.

In the Republic of Serbia, 7.66% of the territory (678.237 ha) is under protection. In the Autonomous Province of Vojvodina, where the studied areas are located, protected areas cover 6.91% of the territory (138 PAs, 148.599,6 ha) (Institute for Nature Conservation of Vojvodina Province, n.d.). The research of the habits of PAs visitors (the time of visit, the number of visitors, the activities they are involved in, etc.) are a necessary part of planning the sustainable development of tourism (Hadwen et al., 2007). Three PAs that are the subject of this research, with the exception of SNR “Deliblatska peščara” (Kovačev et al., 2014; Štetić et al., 2021; Trišić, 2019; Trišić, 2020; Trišić et al., 2020; Vesić, 2017), are still insufficiently explored, particularly as destinations for hikers and recreationalists. This paper is the result of a two-month research conducted among the inhabitants of the City of Pančevo dealing with one-day excursions in the nearby protected areas. It is the first step in a more extensive research on the use of protected natural areas in Serbia in the vicinity of cities by the population living there. The aim of this research is to find out to what extent the inhabitants of the City of Pančevo use

protected natural areas in the territory of their municipality as places for one-day excursions and recreation in leisure time, how they use them, how often, and how they reach them. The aim is to help future managers of the three PAs set out guidelines in their future work on developing these areas and attracting even more visitors.

Based on the analysis of similar research (Le Corre et al., 2021; Opačić et al., 2014) and the experience of interviewing the residents of the City of Pančevo, the following hypotheses have been formulated:

- H₁: The residents of the City of Pančevo do not use PAs in their surroundings on a large scale.
- H₂: There is a correlation between gender and the practice of going out into nature in free time;
- H₃: There is a correlation between gender and the way of spending time in nature;
- H₄: There is a correlation between gender and the frequency of visiting surrounding PAs;
- H₅: There is a correlation between age and the practice of going out into nature in free time;
- H₆: There is a correlation between age and the way of spending time in nature; and
- H₇: There is a correlation between age and frequency of visiting surrounding PAs.

The results were analyzed using descriptive statistics, and the application of relevant statistical tests assisted in the formulation of statistical conclusions in this research.

2. Materials and methods

2.1. Study area

According to the administrative territorial division (SORS, n.d.), Pančevo is one of the eight settlements in the Autonomous Province of Vojvodina that have the status of the City. According to the 2011 Census, the urban settlement of Pančevo had a total of 76,203 inhabitants (SORS, 2012). Based on the records of the Central Register of Protected Natural Resources (Institute for Nature Conservation of Serbia, n.d.) and the number and type of protected areas in the municipality of Pančevo, materials provided by the Tourism Organization of the City of Pančevo (Tourism Organization of the City of Pančevo, n.d.; Pančevo info, n.d.), and the assessment made during the field research, three protected areas were selected: Special Nature Reserve “Deliblatska Peščara” (SNR), Nature Park “Ponjavica” (NP) and Nature Monument “Ivanovačka ada” (NM) (Figure 1).

Figure 1: Protected areas in the vicinity of the City of Pančevo



Source: Author's research

SNR “Deliblatska peščara” is one of the most important centers of biodiversity in Europe. Located between the Danube and the Carpathian slopes (Amidžić et al., 2007), it is protected as the largest expanse of sand in Europe with pronounced forms of an aeolian relief (Stojanović et al., 2011). It has preserved the sandstone, steppe and forest ecosystems inhabited by over 900 species of plants and animals (about 180 species of birds, Puzović, 2009), many of which are rare and endangered (*Paconia officinallis subsp. Banatica*, *Paeonia tenuifolia*, *Artemisia panicii*, *Helicarysum arenarium*, *Juniperus communis*, *Falco herrug*, *Aquila heliacal*, *Riparia riparia*, etc.) (Provincial Secretariat for Architecture, Urbanism and Construction, 2006; Official Gazette of the Republic of Serbia, No. 3/02). It is internationally protected as an IBA (Important Bird Areas in Europe), IPA (International Plant Areas in Central and Eastern Europe), PBA (Prime Butterfly Areas), a Ramsar area and a potential Emerald area. It is included in the list of the geomorphological geoheritage sites of Serbia (Amidžić et al., 2007). The frequency and massiveness of excursionists' influx to the SNR is at its highest on weekends and on public holidays, especially between April and October (Kovačev et al., 2014). The allowed activities that are potentially interesting for tourists are the following: controlled collection of plant and animal species, educational activities, cultural activities, hunting, sport fishing and ecological tourism (Official Gazette of the Republic of Serbia, No. 3/02). Kovačev et al. (2014) mention walking and freebiking on several hundred bicycle and motorcycle trails that intersect Deliblatska Peščara as the most represented activities of excursion tourism in the SNR “Deliblatska Peščara”. It is the fourth most visited protected area in Vojvodina (Stojanović et al., 2011). The primary tourism sites planned to house tourism information centers are Čardak and Devojački Bunar (Provincial Secretariat for Architecture, Urbanism and Construction, 2006). Čardak is the starting point for most excursion tours in the SNR, which are organized by various mountaineering clubs, sports associations, and educational institutions (Kovačev et al., 2014). Devojački Bunar is a weekend settlement or a zone of holiday homes, affected by illegal development. The sites Čardak and Devojački Bunar are 42.5 km and 35.4 km away from Pančevo, respectively. There is no direct bus line from Pančevo to either of these tourist sites.

The Ponjavica is a river in southern Banat springing in the Kapetanova Bara pond near the village of Starčevo, flowing into the Danube near the village of Dubovac (Stojanović et al., 2011). A part of this watercourse was first protected in 1992, by a decision on preliminary protection and in 1995, the site Ponjavica was designated a Nature Park (Institute for Nature Conservation of Vojvodina Province, 2012). The NP “Ponjavica” belongs to the III category of protected areas, i.e. to protected areas of local importance. It is located in the territory of the City of Pančevo, namely in the territory of the cadastral municipalities of Omoljica and Banatski Brestovac. It covers an area of 302.96 ha with a protection zone of 678.57 ha and an established three-level protection regime. Among other things, sport sanitary and selective fishing is allowed (Official Gazette of the City of Pančevo, No. 6/2014). Among the natural tourism values of the NP “Ponjavica”, Stojanović et al. (2011) particularly highlight the course of the Ponjavica River and the species-rich wildlife (ornitho and ichthyofauna) inhabiting local aquatic and wetland ecosystems, as well as the remnants of former lowland forests. This protected area is still a destination unknown to the wider tourist population (Brankov, 2010; Đukić et al., 2014). It is about 22 km away from Pančevo, it has an arranged picnic area and two beaches. Over the past two years, attention has been paid to reed cutting, mulching, and restocking. It has a very small capacity and as such it can only have local importance.

NM “Ivanovačka ada” is a river island (*ada*) in the Danube, in the territory of the City of Pančevo. It was protected in 2009 as a natural monument because of the remnants of former lowland forests of the indigenous species of white poplar and willow, which are also the habitat of rare and protected species of plants (*Rorippa sylvestris*, *Vitalis vinifera L. Subsp. Sylvestris*, *Erysinium sheiranthoides L.*) and animals (*Alcedo atthis*, *Haliaeetus albicilla*, *Picus viridis*).

It covers an area of only 6.07 ha, with a 50 m wide protection zone. Until 2009, in the immediate vicinity of the site, but on a much larger area (582 ha), there was the Omoljička ada nature reserve, which was under a strict protection regime. However, the decision on protection was annulled ([Official Gazette of the City of Pančevo, No. 22/2009, 4/2011](#)). It is one of the most famous terrains in the vicinity of Pančevo for fishing and one-day excursions (Vojvodjanski agrar, n.d.). This resort is about 20 kilometers away from the center of Pančevo. It is easily accessible, as it has good traffic signalization and visitors can take a bus from Pančevo. The inhabitants of Pančevo, as genuine cycling enthusiasts who often use the bicycle as a means of transportation, can also get to Ada by bicycle. Theoretically, the international bicycle route EuroVelo 6 passes between the village of Ivanovo and NM, but in practice the path that goes along the embankment is neglected and barely passable.

2.2. Data collection and analysis

The research was conducted using a survey method, partly through a direct interview (216 respondents), and partly through an electronic Google questionnaire (520 respondents). The respondents were interviewed at their workplaces, in pubs, hair salons, on the Tamiš quay and in the Sport Fishing and Boating Association “Tamiš”. The Google Forms questionnaire was promoted on the websites and Facebook pages of Pančevo sports clubs, mountaineering clubs, on the Facebook page “PančevoMOJKraj”, on the Facebook page “Pančevci” and on the website of the Technical School “23rd May”.

The research involved the categories of adult population (15–64 years old) and seniors (over 65 years old). In the population of the City of Pančevo over 15 years of age (38,512), the share of the adult population is 97.5%, whereas the seniors account for 2.5% ([SORS, 2012](#)). Among the respondents, the adult population account for 94.97%, and the seniors for 5.03%. The average age of the inhabitants of the City of Pančevo is 41.6 years, while the average age of the respondents is 36.2 years. The share of men over 15 years of age in the total population of the City of Pančevo is 47.73%, whereas women account for 52.27% ([SORS, 2012](#)). The share of male respondents is 40.3%, and female 59.7%. All of this indicates the similarity of the sample and the population, proving the sample’s reliability and validity.

The questionnaire contained a total of 14 questions. The first two questions were introductory, to gain an insight into the habits of respondents regarding leisure time and the type of recreation they practiced. Furthermore, the survey included two questions related to the visits to each of the three selected protected sites, questions about the importance of organized transport to these destinations and additional drivers for visit, as well as questions seeking to determine whether the respondents knew how many protected areas could be found in their environment. The last three questions were related to the sociodemographic characteristics of the respondents.

The survey was open for random respondents between December 15th, 2021, and February 1st, 2022. Out 736 responses in total, 715 were accepted as valid and were analyzed using the Statistical Package for the Social Sciences (SPSS), version 20.

3. Results and discussion

In the sample of 715 valid surveys, 40.3% of the respondents were male and 59.7% female. The average age of the respondents was 36.2. This is a couple of years less than the average age of the inhabitants of the City of Pančevo, according to the latest census (41.6 years) ([SORS, 2012](#)). The youngest respondent was 15 years old, and the oldest was 81. As regards the employment status of the respondents, the majority came from the category of employees (55.9%), and the fewest belonged to the category of students (2.8%) (Table 1).

Table 1: Sociodemographic characteristics of the respondents

Age	Mean	36.21	
	Std. deviation	16.277	
	Minimum	15	
	Maximum	81	
		Frequency	Percent
Gender	Male	288	40.3
	Female	427	59.7
	Total	715	100.0
		Frequency	Percent
Employment Status	Pupil	207	29.0
	Student	20	2.8
	Employed	400	55.9
	Unemployed	43	6.0
	Retired	45	6.3
	Total	715	100.0

Source: Author's research

Half of the respondents (55.1%) said to be using their free time for excursions and recreation in nature. Their favorite ways of spending time in nature were walking (33.8%) and hanging out with friends over food and drink (19.6%). The other activities practiced by more than 4% of the respondents included: a combination of walking and hanging out with friends over food and drink (8.1%), cycling (4.1%), a combination of walking and cycling (4.3%) and fishing (5%). All other types of activities and their combinations, 35 in total, were far below 4%. At the same time, 4.1% of respondents said that they had no interest in nature.

This type of destinations is not very popular among local tourists. Many of them are even unknown to tourists (Tešin et al., 2020). It was expected that the SNR “Deliblatska peščara” would be recognized as a leading excursion site. As many as 58.6% of the respondents have been to SNR several times, and only 7.6% of respondents have never visited it. However, a large percentage of the citizens of Pančevo have never visited the other two sites, which are much closer to the city: 51.9% of the respondents have never been to the NP “Ponjavica”, and as many as 65.9% of them have never visited the NM “Ivanovačka Ada” (Table 2). It would be interesting to compare these results with the conclusion of the extensive Spanish study (Sanchez Martin et al., 2018), according to which visits to PAs decline with the distance – however, the example of these three PAs suggests a different conclusion. However, the results are in agreement with those obtained by Ali and Irfan (2021), who have also demonstrated that distance is not crucial when visitors plan to visit a protected area.

Table 2: Visits to protected areas (PAs) in the vicinity of Pančevo

Have you ever been to any of these PAs?	Special Nature Reserve “Deliblatska peščara”		Nature Park “Ponjavica”		Nature Monument “Ivanovačka Ada”	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Once	98	13.7	110	15.4	109	15.2
Several times	419	58.6	208	29.1	117	16.4
At least once a week	20	2.8	12	1.7	4	.6
At least once a month	66	9.2	7	1.0	7	1.0
At least once a year	58	8.1	7	1.0	7	1.0
Never	54	7.6	371	51.9	471	65.9
Total	715	100.0	715	100.0	715	100.0

Source: Author's research

Most inhabitants from Pančevo who visited these protected natural assets did this on their own, i.e. they organized the excursion and used their own transportation. This especially applies to the visits to NP and NM, where using one’s own transportation was almost the only way to reach the sites (Table 3). The result is interesting from the perspective of tourist mobility since it is in line with the findings of [Sanchez Martin et al. \(2018\)](#) that indicate the dominance of private transport in PAs visits.

Table 3: The usual way to visit protected areas (PAs) in the vicinity of Pančevo

If you have visited these PAs, how did you arrange the visit?	Special Nature Reserve “Deliblatska peščara”		Nature Park “Ponjavica”		Nature Monument “Ivanovačka Ada”	
	Frequency	Valid	Frequency	Valid	Frequency	Valid
On my own	490	74.1	316	91.6	224	91.8
Organized	119	18.0	25	7.2	15	6.1
Both ways	52	7.9	4	1.2	5	2.0
Total	661	100.0	345	100.0	244	100.0

Source: Author’s research

What can be done to make the inhabitants of Pančevo visit protected areas in their immediate surroundings more intensively? Should they be made more accessible by introducing direct seasonal lines? Should the media coverage be better? Perhaps the low intensity of visits has to do with the fact that the sites are not sufficiently developed and supplied with infrastructure and services? The respondents from Pančevo expressed their opinion on these issues as well. The largest percentage of the respondents (49.6%) would go to these areas more often if direct seasonal bus lines were available. For a slightly lower percentage of the respondents this would not be crucial, because they have their own transport (43.8%), while the minority (6.6%) are not interested in visiting these places at all.

At the same time, 65.7% of the respondents would choose these sites for excursions and recreation more often if they were better developed and supplied with infrastructure and services. A better media coverage, i.e. a better promotion as a driving factor was mentioned by 18.0% of the respondents (Table 4). The importance of better promotion, time and money is also mentioned by [Tešin et al. \(2020\)](#), describing the results of a similar research. It is interesting that the mentioned study emphasizes inadequate waste disposal as a major factor discouraging potential visitors. In the areas analyzed in the paper, this problem is also present, but none of the respondents mentioned it.

Table 4: Additional drivers for visiting protected areas in the surroundings of Pančevo

What would influence your decision to visit these areas more often?	Frequency	Percent
Better state of development and availability of infrastructure and services	470	65.7
Better promotion	129	18.0
Nothing, because I am not interested	48	6.7
Better state of development and promotion	46	6.4
More free time	6	0.8
Better state of development and accessibility for cyclists	4	0.6
Solving the problem of illegal building	4	0.6
Better financial situation	2	0.3
Nice weather	2	0.3
More leisure time and money	2	0.3
Company	1	0.1
I don’t know, I’ve never been there	1	0.1
Total	715	100.0

Source: Author’s research

The need to better promote these valuable natural areas is evidenced by the fact that 33.3% of the respondents are not aware that there are protected areas in the vicinity of Pančevo, while 6.6% believe that there are none (Table 5).

Table 5: Awareness of the people of Pančevo about the existence of PAs in the vicinity

Is there any protected area near Pančevo?	Frequency	Percent
Yes, there is one	188	26.3
There are more of them	242	33.8
There are none	47	6.6
I don't now	238	33.3
Total	715	100.0

Source: Author's research

In order to compare the obtained data in relation to gender and age, since these are nominal data, the Pearson Chi-Square Test was used. Out of all male respondents, 63.9% practice excursions, 22.9% would like to but cannot manage, while 13.2% do not practice excursions. Out of all female respondents, 49.2% practice excursions, 40.7% cannot manage but would like to, while 10.1% do not go on excursions. Significance (Sig.) is less than 0.05, which confirms H₂ and indicates that the differences in frequency are not accidental, i.e. that gender and the practice of excursions are related (Table 6). A similar study conducted in the Hingol National Park in Pakistan and obtained by Ali & Irfan (2020) also found that men visited recreational sites more often than women.

Table 6: Gender and excursions to nature in free time

Gender	Excursions to nature in free time			Total
	Yes	Wished I could	No	
Male	184 63.9%	66 22.9%	38 13.2%	288 100.0%
Female	210 49.2%	174 40.7%	43 10.1%	427 100.0%
Total	394 55.1%	240 33.6%	81 11.3%	715 100.0%
	Value	df	Asymp. Sig.	
Chi-Square	24.529	2	0.000	

Source: Author's research

Testing H₃ showed a significance of less than 0.05, indicating that there is a significant difference between male and female respondents in terms of the type of recreation they prefer (Table 7). Respondents had the opportunity to choose a number of preferred activities, resulting in a total of 35 combinations. Table 7 presents the top five favourite activities for both genders. Among male respondents, most prefer walking (24.3%), then hanging out with friends over food and drink, and in third place is fishing (11.8%). As for female respondents, most prefer walking (40.3%), hanging out with friends over food and drink (21.5%) and cycling (3.5%).

Table 7: Gender and favorite ways to spend free time in nature

Gender	Top 5 Favourite types of activities					
	Walking	Hanging out with friends	Cycling	Fishing	Team sports	No interest in nature
Male	70 24.3%	48 16.7%	14 4.9%	34 11.8%	13 4.5%	14 4.9%
Female	172 40.3%	92 21.5%	15 3.5%	2 0.5%	6 1.4%	15 3.5%
Total	242 33.8%	140 19.6%	29 4.1%	36 5.0%	19 2.7%	29 4.1%
	Value		Df		Asymp. Sig.	
Chi-Square	127.093		34		0.000	

Source: Author's research

The intersection of data on the gender of the respondents and the frequency of their visits to the three protected natural assets in the territory of the City of Pančevo (H_4) shows that there is a difference between men and women ($\text{Sig}<0.05$). In the case of the SNR “Deliblatska peščara”, 60.4% of all male respondents have said they visited this site several times, while only 3.8% have never been to SNR. Among female respondents, 57.4% visited the SNR several times, while 10.1% have never visited SNR. The largest percentage of male respondents have never been to the NP “Ponjavica” (41.3%), but a significant percentage of them have been there several times (39.2%). The majority of female respondents have never visited the NP (59.0%), and 22.2% of them visited the NP several times. The NM “Ivanovačka ada” had the least visits. Among the surveyed men, 61.5% have never visited this PA, while 21.2% of them have been there on several occasions. Among the surveyed women, 68.9% have never visited the NM, while 16.4% went there more than once (Table 8).

Table 8: Gender and visits to protected areas (PAs) in the vicinity of Pančevo

Gender	Visits to SNR “Deliblatska peščara”						Total
	Once	Several times	Once a week	Once a month	Once a year	Never	
Male	27 9.4%	174 60.4%	6 2.1%	32 11.1%	38 13.2%	11 3.8%	288 100.0%
Female	71 16.6%	245 57.4%	14 3.3%	34 8.0%	20 4.7%	43 10.1%	427 100.0%
Total	98 13.7%	419 58.6%	20 2.8%	66 9.2%	58 8.1%	54 7.6%	715 100.0%
Visits to NP “Ponjavica”							
Male	42 14.6%	113 39.2%	3 1.0%	6 2.1%	5 1.7%	119 41.3%	288 100.0%
Female	68 15.9%	95 22.2%	9 2.1%	1 0.2%	2 0.5%	252 59.0%	427 100.0%
Total	110 15.4%	208 29.1%	12 1.7%	7 1.0%	7 1.0%	371 51.9%	715 100.0%
Visits to NM “Ivanovačka ada”							
Male	38 13.2%	61 21.2%	3 1.0%	4 1.4%	5 1.7%	177 61.5%	288 100.0%
Female	71 16.6%	56 13.1%	1 0.2%	3 0.7%	2 0.5%	294 68.9%	427 100.0%
Total	109 15.2%	117 16.4%	4 0.6%	7 1.0%	7 1.0%	471 65.9%	715 100.0%
Pearson Chi-Square Test							
PAs	Value		df		Asymp. Sig.		
SNR	33.853		5		0.000		
NP	37.640		5		0.000		
NM	15.251		5		0.009		

Source: Author’s research

In order to test the H_5 hypothesis, the respondents were first divided into three categories, for comparison: young (15–24 years old), middle aged (25–64 years old) and old (over 65 years old). The Chi-Square Test shows that there is a significant difference between age groups when it comes to practicing recreation. Young respondents are the least likely to practice “escape” into nature in their free time – 38.5% of the total number of young respondents. This age group is also the least interested in this way of spending free time – 22.1% of all young respondents (Table 9). These results are in agreement with a similar research conducted in the Medvednica National Park in Croatia (Opačić et al., 2014), where young respondents showed poor interest in recreation.

Table 9: Age groups and excursions to nature in free time

Age groups	Excursions to nature in free time			Total
	Yes	Wish I could	No	
Young	87 38.5%	89 39.4%	50 22.1%	226 100.0%
Middle-aged	284 62.7%	140 30.9%	29 6.4%	453 100.0%
Old	23 63.9%	11 30.6%	2 5.6%	36 100.0%
Total	394 55.1%	240 33.6%	81 11.3%	715 100.0%
	Value	Df	Asymp. Sig.	
Chi-Square	53.895	4	0.000	

Source: Author's research

The analysis shows that there is a significant difference among age groups in terms of ways of spending free time in nature, which confirms H₆. The respondents falling into the young category prefer to spend time in nature hanging out with friends over food and drink (27.9% of the young). The middle-aged respondents prefer walking (37.7% of all in this category), just like seniors (55.6% of the old). The seniors do not practice cycling and team sports at all, but they are the leaders in fishing (11.1% of seniors) (Table 10).

Table 10: Age groups and favourite ways of spending free time in nature

Age groups	Top 5 Favourite types of activities					
	Walking	Hanging out with friends	Cycling	Fishing	Team sports	No interest in nature
Young	51 22.6%	63 27.9%	10 4.4%	4 1.8%	14 6.2%	22 9.7%
Middle aged	171 37.7%	73 16.1%	19 4.2%	28 6.2%	5 1.1%	5 1.1%
Old	20 55.6%	4 11.1%	0 0.0%	4 11.1%	0 0.0%	2 5.6%
Total	242 33.8%	140 19.6%	29 4.1%	36 5.0%	19 2.7%	29 4.1%
	Value		df		Asymp. Sig.	
Chi-Square	179.972		68		0.000	

Source: Author's research

The intersection of data on age groups and the frequency of visits to the observed protected natural assets (H₇) indicates differences among the young, middle-aged, and senior respondents. The obtained significance (Sig<0.05) for the three PAs shows that the differences in the resulting frequency are not accidental. As for the SNR "Deliblatska peščara", among the respondents who visited it more than once, the seniors prevail (66.7% of all old), while the young respondents make the greatest part (12.4% of all young) of the respondents who have never visited this PA. The same applies to the visits to the NP "Ponjavica", where 70.4% of the young respondents have never visited this NP, while only 16.8% of them visited it more than once. Among the middle-aged respondents, 44.4% have never visited this NP, while 33.6% visited it more than once. Among theseniors, half (50.0%) visited this NP several times, while 30.6% have never visited it. The protected area in the territory of the City of Pančevo that is the least visited, NM "Ivanovačka ada", has never been visited by 75.7% of the young respondents, while 12.8% of them visited it once. As for the middle-aged respondents, 63.4%

have never visited this PA, while 17.9% have paid several visits to the NP. Among those from the category of seniors, 41.7% visited NM several times, while 36.1% of them have never visited this PA.

Table 11: Age groups and visits to the protected areas (PAs) in the vicinity of Pančevo

Age groups	Visits to SNR “Deliblatska peščara”						Total
	Once	Several times	Once a week	Once a month	Once a year	Never	
Young	47 20,8%	124 54.9%	2 0.9%	14 6.2%	11 4.9%	28 12.4%	226 100.0%
Middle-aged	48 10.6%	271 59.8%	16 3.5%	50 11.0%	44 9.7%	24 5.3%	453 100%
Seniors	3 8.3%	24 66.7%	2 5.6%	2 5.6%	3 8.3%	2 5.6%	36 100.0%
Total	98 13.7%	419 58.6%	20 2.8%	66 9.2%	58 8.1%	54 7.6%	715 100.0%
Visits to NP “Ponjavica”							
Young	22 9.7%	38 16.8%	6 2.7%	0 0.0%	1 0.4%	159 70.4%	226 100.0%
Middle-aged	81 17.9%	152 33.6	6 1.3%	7 1.5%	6 1.3%	201 44.4%	453 100%
Seniors	7 19.4%	18 50.0%	0 0.0%	0 0.0%	0 0.0%	11 30.6%	36 100.0%
Total	110 15.4%	208 29.1%	12 1.7%	7 1.0%	7 1.0%	371 51.9%	715 100.0%
Visits to NM “Ivanovačka ada”							
Young	29 12.8%	21 9.3%	0 0.0%	3 1.3%	2 0.9%	171 75.7%	226 100.0%
Middle aged	73 16.1%	81 17.9%	4 0.9%	4 0.9%	4 0.9%	287 63.4%	453 100.0%
Seniors	7 19.4%	15 41.7%	0 0.0%	0 0.0%	1 2.8%	13 36.1%	36 100.0%
Total	109 15.2%	117 16.4%	4 0.6%	7 1.0%	7 1.0%	471 65.9%	715 100.0%
Pearson Chi-Square Test							
PAs	Value		df		Asymp. Sig.		
SNR	35.941		10		0.000		
NP	57.918		10		0.000		
NM	37.097		10		0.000		

Source: Author’s research

4. Conclusion

The fast-paced city life has intensified the trend of one-day excursions into nature. Urban population increasingly spends weekends and free time outside cities. Protected areas play an important role in this, especially those in the vicinity of cities, which are suitable for one-day excursions, offering rich natural heritage and opportunities for nature-based recreation.

The findings of the conducted research, which were obtained with the help of descriptive statistics, show that a significant number of the residents of the City of Pančevo spend their free leisure time in protected natural sights, while only a small share of them are not aware

that protected areas can be found in the vicinity of Pančevo. Based on this, hypotheses H₁ “The residents of the City of Pančevo do not use PAs in their surroundings on a large scale” has been refuted, and the alternative hypothesis (H_A) “The residents of the City of Pančevo use PAs in their surroundings on a large scale” has been accepted. Gender and age are significant indicators. By applying a Chi-Square Test according to gender and age, it has been found that there are notable differences among the respondents as regards their visits to the three PAs in the territory of the City of Pančevo and the type of recreation they prefer. Based on this, all initial hypotheses have been accepted. The male respondents visit the studied PAs for recreation more often, so there is a correlation between gender and the practice of going out into nature in their free time (H₂). There is a significant difference between the male and female respondents in terms of the type of recreation they prefer, so there is a correlation between gender and the way of spending time in nature (H₃). Gender also affects the frequency of visits to these areas. Men visit these places more often, and among the respondents who have never visited the protected areas, there is a greater share of women. Hence, there is a correlation between gender and the frequency of visiting the surrounding PAs (H₄). Age has also proved to be an important indicator. Young respondents visit PAs less often than the middle-aged and seniors, which confirms that there is a correlation between age and the practice of going out in nature in free time (H₅). Also, the type of recreation they practice differs, as does the frequency of visits to SNR, NP and NM. There is a correlation between age and the way of spending time in nature (H₆), and there is also a correlation between age and the frequency of visiting the surrounding PAs (H₇).

The residents of the City of Pančevo mostly visit SNR “Deliblatska peščara”. Although much closer to the City, the NP “Ponjavica” and NM “Ivanovačka Ada” are rarely their choice. The low level of development and the poor availability of infrastructure are the main shortcomings of the protected areas in the vicinity of the City of Pančevo. The respondents have also highlighted the poor media coverage of these sites. Better promotion would be a significant driver for them to visit the sites more often and on a larger scale. The fact that only one-third of the respondents know that there are several protected natural assets in the municipality of Pančevo shows that it is necessary to talk and write more about these protected areas. The findings also reveal the need for introducing seasonal bus lines to the sites. This is especially true in the case of the SNR. With developed trails that are regularly maintained by the mountaineering club “Jelenak“, info boards, sports grounds and the parking space, the tourist sites of the SNR meet almost all conditions for more intensive visits by excursionists. In addition to solving the problem of illegal development, which was highlighted by many respondents, the only thing missing is a public transport connection between the two main picnic areas and Pančevo (Devojački Bunar and Čardak), so that the residents of Pančevo who do not own a car can use the benefits of this tourist destination. The other two areas have a specific morphology and access is only possible by car, bicycle, or on foot. One thing that should be taken into account is the ubiquitous problem in Serbia, even in protected assets – inadequate waste disposal, especially visible in the NP. As far as the third protected area is concerned, the pedestrian and bicycle path along the Danube embankment from Starčevo to Ivanovo should be developed. It has been traced along the embankment for a long time, but is so neglected that many respondents complained and said it would never occur to them to go there again. The most pressing issues for the users of the camp, which has been there for years, include a bad road and the lack of sanitary facilities and drinking water, although they regularly pay the annual rent for the plot to the manager.

If all these issues were resolved and better promotion and popularisation ensured, these valuable areas would certainly continue to be the oases of peace and relaxation for the residents of Pančevo. In this regard, the results presented here could help the public institutions that manage these three PAs in planning further development of sustainable tourism and visitor

management. The research community will also benefit as the topic of recreation in protected areas near cities is still insufficiently discussed in the local research literature.

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Conflict of interest

The author declares no conflict of interest.

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