

## Research Article

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# Trying to underline geotourist profile of National park visitors: Case study of NP Fruška Gora, Serbia (Typology of potential geotourists at NP Fruška Gora)

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**Abstract:** Geotourists, as visitors with a specific preference for geoheritage and attractive geodiversity, have been identified and typified by many authors worldwide. Considering that Serbia is recognized as an area of geotourism in its initiation phase, this type of research has not been conducted thus far. In spite of global trends, geotourism as a special interest form of travel does not exist in this region, and is principally related to speleotourism and pure admiration of aesthetic values of geodiversity. As one of the first studies of geotourism of such character in Serbia, the research presented within was conducted to reveal whether there is a certain level of interest for geoheritage amongst the general public. The questionnaire was conducted in 2015 on the territory of Vojvodina Province (North Serbia), counting a total of 198 respondents. Bearing in mind the lack of geotourism terminology within the study area, the general public is not familiar with the existence, attractiveness and even degradation of geodiversity. Hence, questions aimed to discover respondents' habits and tendencies during travel, their attitude in everyday life, particularly towards nature (including the abiotic component). Last of all, the goal of the presented study is also to reveal whether there are certain types of potential geoheritage lovers - geotourists depending on their social-

demographic characteristics. With specific profiles identified, results could be later used for geotourism planning, education, promotion and management in the Vojvodina region and wider.

**Keywords:** Geotourism, Visitors, Typology, Statistics, Vojvodina

## 1 Introduction

Travel to areas of outstanding natural landscapes or unique landforms is not unaccustomed. Modern geotourism was first defined and developed in the United Kingdom by Hose [1] and later on spread across Europe [2]. However, the concept of geotourism has only occurred relatively recently and has been defined by two different standpoints - geotourism as 'geological' or geotourism as 'geographical' tourism. The former has been characterised by geologists, the latter by the National Geographic Society which made dual understanding of geotourism [3].

While geotourism is more or less clearly defined, it is a much more difficult task to determine who geotourists are [4]. In the last few decades, many studies have been conducted to determine the typology of geotourists. There are several research papers that propose typology or classification of geotourists, which will be elaborated in the next section (Geotourist classification). Most of them proposed a profile based on socio-demographic characteristics of tourist who visited geosite [5–7], while some of them proposed a more complex analysis and classification based on an educational factor [8], motivation [9] or habits and attitudes [10–12].

The main aim of the paper was to create a scale which will define the profile of geotourists based on their main habits, attitudes and behaviour related to nature and travel. Factor analysis was conducted in order to deter-

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mine whether there are underlying latent dimensions that this scale measures. The survey focused on the visitors of Fruška Gora Mountain, as a complex and possible geotourism destination. The paper also intended to analyse the differences in socio-demographic characteristics related to the extracted factors. As a final point, after defining the geotourists' profile, the authors gave suggestions on practical use of the results which could be beneficial to the managers of the geotourism destinations.

## 2 Study area

For the purpose of this study, the research was conducted among visitors of Fruška Gora Mountain, recreational area for two main cities in Serbia, Novi Sad and Belgrade (Figure 1). Fruška Gora Mountain is situated in northern Serbia, between  $45^{\circ} 06'$  and  $45^{\circ} 12'$  north latitude and  $19^{\circ} 12'$  and  $20^{\circ} 01'$  east longitude. The area is located at the right bank of the Danube River, in the northern part of Srem District in the Vojvodina region. The highest peak of the mountain is Crveni Čot (539 m), the third highest peak in Vojvodina region, after Gudurica (641 m) and Fox Head (590 m) at Vršac Mountains. The mountain represents a dominant geomorphologic complex in this part of country, but it is also one of the most diverse geological and pedological areas in the Pannonian Plain [13]. Fruška Gora Mountain was the first Serbian National Park, established in 1960, with vast forest areas (over 90%) and about 5,000 ha of meadow habitats. The park has over 1500 plant species (including the greatest concentration of linden trees in Europe) and over 300 animal species [14, 15].



**Figure 1:** Visitors at Beli Majdan, one of the Fruška Gora's popular geosites (Photo: Dražen Žigić).

Aside from the resource-rich natural values, there are 16 Orthodox Church monasteries, dating from the 15th to the 18th century, monumental fortifications, and numerous castles and palaces in the surrounding areas; all of which contribute to the comprehensive value of the area. Marković *et al.* [16] proposed an inventory of Fruška Gora geosites. With all of the previously mentioned, we can say that Fruška Gora can be perceived as a complex touristic destination composed of natural and anthropogenic heritage. Due to this fact and acknowledgment, it was included in the survey.

## 3 Geotourist classification

Research on geotourist habits and preferences has been conducted since late 20<sup>th</sup> century, *e.g.* [17, 18], and segmentation and profiling of geotourists is not new in the realms of the geotourism and geoconservation studies. However, understanding the drive and the motivation behind the visitors' coming to geosites in the relevant tourism literature is still not sufficiently developed [19] and research of tourists' motivation undertaking a geotourism experience is still sporadic [20].

Most general division of geotourists was proposed by Hose [21] where he recognizes two main types of geotourists: "dedicated users" such as students and specialists with apparent interest in geosciences, and "non-dedicated users" who are most probably casual recreationists. In several papers, Hose [21–23] gives descriptive, useful and distinctive typology of geotourists' depending on their (fore)knowledge and interest, where he compares them to insects. This classification spans from "butterflies" (general tourists, lacking knowledge in geosciences, use display panels and leaflets, mostly admire aesthetical appeals of sites) to "beetles" (postgraduate and graduate students who use field guides and research papers as fundamental interpretation source).

Similarly, Grant [12] has suggested the typology according to the level of interpretation or more precisely the relationship between entertainment and complexity of interpretative tools. Thus he suggested six types of geotourists that are classified according to their interests and previous knowledge, but also their goal of geosite visits. Firstly, there are aware or unaware visitors who come to the site with previous knowledge and expectation *i.e.* whose impressions mostly are based on visual/aesthetic appeal of the site. Next are interested visitors who, unlike the previous two groups, show interest in educational component of a travel, without any specific preferences.

The offer for them should be slightly more developed than for the previous two groups. Finally, there are “real” geotourists - visitors who deliberately come to geosites to learn or expand their geoscientific knowledge, have practically supplemented their theoretical knowledge or have witnessed rare, unique, important or threatened phenomena or processes - elements of geodiversity. Grant [12] named them respectfully according to their geo-knowledge: Geo-amateurs, Geo-specialists and Geo-experts. For them, the geotourism offer must be of a very complex character - they are informed by reading scientific papers and publications so the interpretation must be at the highest scientific level.

On the other side, in several studies typology of geotourists was conducted according to socio-demographic characteristics. For instance, Page *et al.* [5] conducted research of Dorset and the coast of East Devon Coast visitors in the United Kingdom, where they identified two general groups of geotourists: families with children and older couples.

Apart from the UK, Australia stands out as an area where, in addition to a very well managed geotourism, surveys of geotourists are regularly conducted. Mao *et al.* [6], for example, examined the motivation of scientists in the field of geosciences as potential geotourists or targeted geotourism market. Similar study, but on Hawaii, was conducted by King [7] who categorized geotourist according to their life cycles: (1) just married/honeymoon, (2) families, (3) young, (4) middle-aged and (5) pensioners.

These are only few of various researches on this topic. Everything aforementioned proves that it is almost impossible to make the generally applicable profile of a geotourist [4].

## 4 Methodology

### 4.1 Study sample

Sample consisted of 198 respondents of different socio-demographic characteristics (Table 1). Gender distribution among respondents is almost even, 47% are male and 53% are female. Age of the respondents falls under two main groups 21-30 and 31-40 and with that in mind authors made two new groups 21-30 (49%) and over 30+ (51%). Most respondents are urban dwellers (82.3%), while according to the level of education, they mostly acquired College, Bachelor degree or Master degree (91.9%), which indicates that the sample is mostly of high level of education. Reciprocal to age structure, the respondents' marital status is mostly unmarried (59.6%), while most of the respondents are em-

**Table 1:** The overview of the socio-demographic profile of the respondents.

<b>Gender:</b>	(%)	<b>Place of residence:</b>	(%)
Male:	47	Urban environment	82.3
Female:	53	Rural environment	17.7
<b>Age structure:</b>	(%)	<b>Degree of education:</b>	(%)
21-30 years	49.0	High school	8.1
31-40 years	42.4	College	42.9
41-50 years	4.0	Faculty	27.3
51-60 years	2.5	Master degree	21.7
More than 60 years	2.0		
<b>Marital status:</b>	(%)	<b>Employment:</b>	(%)
Not married	59.6	Employed	74.7
Married	31.8	Unemployed	8.1
Cohabitation	5.6	Student	16.2
Divorced	3.0	Retired	1.0
<b>Monthly income:</b>	(%)	<b>Occupation:</b>	(%)
To 150 €	8.6	Social sciences	12.6
151 - 300 €	12.1	Economic sciences	14.1
301 - 450 €	23.7	Education	17.2
451 - 600 €	28.3	Technical sciences	14.1
601 - 1200 €	22.7	Service sector	21.7
Over 1201 €	4.5	Student/pupil	8.1
		Natural sciences	12.1

ployed (74.7%), while the amount of monthly income and the type of work are mostly evenly distributed throughout the categories.

All processing and data preparation were performed in the statistical program SPSS 17 for the Windows operating system. The analyses that were applied in the paper are: Exploratory factor analysis, ANOVA test and t-test. Firstly, Exploratory factor analysis is a statistical technique that is used to reduce data to a smaller set of summary variables and to explore the underlying theoretical structure of the phenomena. In this paper, it was applied to extract factors representing characteristics of geotourists depending on their different attitudes and behaviours. Secondly, analyses of differences in the factors with regard to sociodemographic characteristics were done by applying ANOVA test and t-test. The t-test and ANOVA examine whether group means differ from one another. The t-test compares two groups – which is why it was used for comparing factors in terms of gender differences, while ANOVA can do more than two groups – it was applied to analyse the differences in the factors with regard to education, place of residence (city/village) and monthly income.

### 4.2 Instrument

The research used a questionnaire consisting of two parts that measured different aspects. The first part measured

the socio-demographic variables (gender, age, place of residence, level of education, marital status, employment, type of work and amount of monthly income), for each question appropriate set of categories was offered out of which respondent choose one that best describes him/her.

The second part of the questionnaire was composed of different types of attitudes: the attitudes of the respondents in relation to travel, attitudes towards the local community during travels, habits in everyday life, and attitudes towards nature and the environment. In this section, the respondents estimated, or they agreed with given attitudes on the six-point Likert scale. General attitudes and habits during travel relating to various activities, education, independence, travel organization, type of destination and locality were measured using a modified scale which was developed by Allan [20], who measured different attitudes of visitors on several geotourism destinations in Australia and Jordan. Authors also included questions that examine geotourist's attitudes towards nature during travelling. Attitudes of respondents towards the local community were also measured, which is a very important topic within the framework of geotourism, where the natural environment is mainly accompanied by small, rural communities and settlements. In this regard, authors measured the level of respect towards the visited area, tourism impact awareness on the local community, the negative (harassment, natural and mental balance) and positive (employment, income, management of natural goods). This part was based on the model of Steuve *et al.* [10], who tried to measure similar dimensions of attitudes and behaviours when visiting cultural heritage sites. Questions that measure human (according to the sample) attitudes towards the environment in everyday life *i.e.* habits that can certainly affect that environment were also derived from Steuve *et al.* [10] research. Finally, general attitudes towards nature and the environment which determined the relations of man towards the natural environment were measured based on Dunlap *et al.* [24] questionnaire, with slight modifications.

### 4.3 Procedure

The online survey was conducted in autumn 2015 using Google Forms. The questionnaire was distributed via e-mail and social networks so that the structure of the respondents is as diverse as possible in terms of socio-demographic characteristics (age, education, occupation, place of residence, etc.). The sampling procedure is convenient but using different means of gathering the data, authors aimed to make the sample as representative as possible.

All respondents were informed in detail about the purpose of the research, as well as the identity of the researchers and the institution which they come from. However, the only predetermined fact was that all of the respondents had to be visitors of Fruška Gora Mountain as this destination represents recreational area for the wider region, especially major urban entities – Novi Sad and Belgrade. This diverse sample should provide more general image and study results. Respondents voluntarily participated in the research and were informed that the research was anonymous and that the data would only be used for scientific research purposes.

All processing and data preparation were performed in the statistical program SPSS 17 for the Windows operating system.

## 5 Results

### 5.1 Exploratory Factor Analysis

In order to extract factors representing characteristics of geotourists depending on their different attitudes, the principal component of exploratory factor analysis (EFA) was carried out, with Varimax rotation and Kaiser normalization. Bartlett's test confirmed the adequacy of performing factor analysis ( $\chi^2 = 1791,346$ ,  $df = 595$ ,  $p < .01$ ) and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy equalled satisfactory .767. Using eigen value criterion (larger than 1), we isolated five significant factors with the total of 39.04% of variance explained.

The first factor describes attitudes related to the local community at the visited destination, and this factor is referred to as **Local community oriented**. Most of the variables that make up this dimension coincide with the theoretical framework and Steuve's *et al.* [10] original model which was the basis for this part of the questionnaire. Items "The local population must have the opportunity to plan and manage tourism in their area", "I would like that income from tourism goes to the local population", "Tourism inspires pride in the local population towards its surroundings", "Local population employment in tourism must be seen as priority", "I always look on travel artwork and crafts made by the local population", "On travels I always seek food grown in the local community environment" and "On travels I always seek accommodation owned by the local population" are from the original Steuve's *et al.* [10] questionnaire that measure attitudes towards local population. On the other hand, the items "I first gather information about the destination I



am visiting”, “During trips I always go on excursions offered at the destination” and “Travelling is more pleasant for me if it is managed in a smaller-group environment” have originally been part of the dimension “Attitudes and habits on travels”. Namely, this can be interpreted that these three variables also characterize the profile of a tourist who has awareness of importance and involvement of the local community in the tourism organization, either directly or indirectly. If we look at it in a more detail manner, it is evident that visitors who respect the local community of the visited destination want to get acquainted with it through informing in detail about the destination before and during travelling, they like various and new contents offered by the local community (i.e. “to go to excursions offered at the destination”) and they do not want to disturb their everyday life, or they want to assimilate with them, which is certainly a prerequisite for travelling in smaller groups.

The other extracted factor grouped the attitudes of the respondents towards nature and the environment which coincides with the original Dunlap’s *et al.* [24] dimension. This factor was named **Environmentally aware** and the following dimensions falls under it: “Plants and animals have the same rights on Earth as humans do”, “Humanity is seriously endangering the environment”, “Natural resources have value in themselves and not because of their usable values that serve man”, “When people get involved in natural processes, it usually has catastrophic consequences”, “Natural balance and peace is very sensitive and easy to disrupt”, “I think that the current topic of environmental threat is too pronounced”, “Man is created to rule the nature”, “Man has the right to modify the natural environment according to his needs”. Variable “In everyday life I never litter, I only throw waste to the place foreseen for it” falls under the mentioned factor, although originally it was not part of “Nature and man” dimension from the questionnaire.

Within the third factor (**Nature-based traveller**), the following items were grouped: “On travels, I prefer wild/untouched nature rather than arranged natural tourist destination”, “On travels, I prefer to visit natural destinations, rather than those created by man (towns, villages, cultural sites)”, “During travels, the beauty of a landscape to me is a basic component of a tourist experience”, “On travels I choose those routes that pass through natural landscapes and stop on beautiful views” and “On travels I want to get away from the everyday environment by staying in nature”. All the items within this factor coincide with the Allan’s [20] modified dimension general attitudes towards travelling/behaviour during travelling. It should be noted that within this factor only the items that

related to the relationship towards nature during travels were grouped; they appreciate nature and consider it an important segment of the trip. This factor defines travellers whose main motive is nature and natural settings. These preferences indicate that he enjoys the natural environment and that attractive geosites would be very important segments of a journey.

The fourth factor grouped items related to attitudes that influence the environment in everyday life and hence was called **Eco-responsible**. The following items were grouped: “I save water in everyday life”, “I regularly recycle in everyday life”, “I choose products that do not have negative environmental impacts in everyday life” and “I avoid using my own transport for the benefit of the city transport”. All the items within this factor were originally part of attitudes towards environment developed following the Steuve *et al.* [10] research. Certainly, people who possess mentioned dimension can be seen as potential geotourists, because if they have awareness of environmental threats in their everyday life, they can recognize its value in tourism activities.

The last, fifth factor grouped variables that were originally classified into the other four dimensions. A deeper analysis revealed a clear profile of the **Plog psychocentric** defined by Plog [25]. Namely, Plog [25, 26] investigated types of personality and linked them with behaviour and preferences on travels, resulting in a spectrum of profiles ranging from psychocentric to allocentric types of tourists. Generally speaking, the author defined Psychocentrics, later defining them as Dependable, as persons who aspire to focus only on small life problems, love pre-planned things, are related to a specific location and person, have a general anxiety and feelings of impotence. The first sentence: “I prefer to travel on a well-established tourist route rather than exploring the paths” coincides with Plog’s “psychocentric” that “loves predictability”, “does not look for new ideas and experiences” and “avoids making important decisions” [26]. The second, third and fifth item: “On travels, I prefer to get information from a professional guide, but through interpretive boards and literature / brochures”, “I always travel by my own organization without the engagement of a travel agency or someone else” and “On travels I participate in sports-recreational activities such as walking, hiking, cycling, rafting, fishing, etc.” coincide with the characteristics of “psychocentrics” that “often require an authoritative figure for guidance and instruction in life”, “love the structure and routine in their peaceful life”, “want to be surrounded by family and friends”, “like popular and reliable brands of products and services” [26]. It should be noted that the third and fifth items received negative values, that is, the values are rever-

Table 2: Structure matrix of extracted factors.

Items	Local community oriented	Environmentally aware	Nature-based traveller	Eco- responsible	Plog psy- chocentric
The local population must have the opportunity to plan and manage tourism in their area	0.736				
I would like that income from tourism goes to the local population	0.637				
Tourism inspires pride in the local population towards its surroundings	0.631				
Local population employment in tourism must be seen as priority	0.621				
I always look on travel artwork and crafts made by the local population	0.494				
On travels I always seek food grown in the local community environment	0.466				
On travels I always seek accommodation owned by the local population	0.443				
I first inform about the destination I am visiting	0.386				
During trips I always go on excursions offered at the destination	0.381				
Travel is more pleasant for me if its managed in smaller groups environment	0.343				
Plants and animals have the same rights on Earth as humans do		0.612			
Humanity is seriously endangering the environment		0.602			
Natural resources have value in themselves and not because of their usable values that serve man		0.602			
When people get involved in natural processes. it usually has catastrophic consequences		0.588			
Natural balance and peace is very sensitive and easy to disrupt		0.428			
In everyday life I never litter, I only throw waste to the place foreseen for it		0.378			
I think that the current topic of environmental threat is too pronounced		-0.365			
Man is created to rule the nature		-0.53			
Man has right to modify the natural environment according to his needs		-0.587			
On travels, I prefer wild / untouched nature rather than arranged natural tourist destination			0.749		
On travels, I prefer to visit natural destinations, rather than those created by man (towns, villages, cultural sites)			0.728		
During travels, the beauty of a landscape for me is a basic component of a tourist experience			0.714		
On travels I choose those routes that pass through natural landscapes and stop on beautiful views			0.658		

Continued on next page

Table 2: ...continued

Items	Local community oriented	Environmentally aware	Nature-based traveller	Eco- responsible	Plog psy- chocentric
On travels I want to get away from the everyday environment by staying in nature			0.578		
I save water in everyday life				0.682	
I regularly recycle in everyday life				0.67	
I choose products that do not have negative environmental impacts in everyday life				0.655	
I avoid using my own transport for the benefit of the city transport					
I prefer to travel on a well-established tourist route rather than exploring the paths				0.619	0.612
On travels, I prefer to get information from a professional guide, but through interpretive boards and literature / brochures					0.589
I always travel by my own organization without the engagement of a travel agency or someone else					−0.562
When I say nature, I refer primarily to plants and animals					0.407
On travels I participate in sports-recreational activities such as walking, hiking, cycling, rafting, fishing, etc.					−0.378
					Concluded

sed from the statement. Namely, the negative values of the entries “I always travel by my own organization without the engagement of a travel agency or someone else” and “On travels I participate in sports – recreational activities such as walking, hiking, cycling, rafting, fishing, etc.” indicate that respondents in this dimension in fact, “never organize travel by themselves, but engage travel agencies or some other person” and “They do not take part in sports-recreational activities such as walking, hiking, cycling, rafting, fishing, etc.”. The variable “When I say nature, I refer primarily to plants and animals” is not directly related to the journey, but corresponds to the “psycho-centrics” characteristics “unsure of what it is” and “does not want to oppose” [26], as this profile supports obvious but inaccurate fact that nature is primarily composed of biological diversity.

## 5.2 Analysis of differences in the factors with regard to sociodemographic characteristics

Within this section, the sociodemographic differences) will be analysed in relation to the obtained factors.

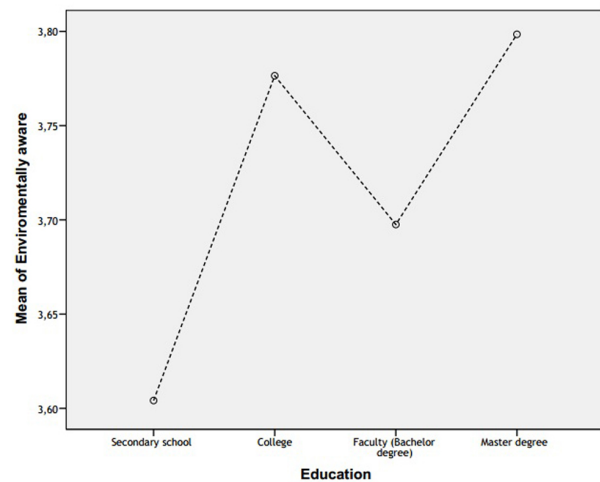
Firstly, gender differences were analysed. T-test was conducted and Table 3 shows that there is a significant difference only for the "Local Population" factor, since the significance value is below 0.05. The average response for this factor for men was  $M = 4.11$ , while for women  $M = 4.36$ , which means that men ranked this dimension lower, i.e. that women find the local community of visited destination more important during the travels.

**Table 3:** T-test results by gender structure.

Factors	t	df	Sig. (2-tailed)
Local community oriented	-2,544	196	0,012
Environmentally aware	0,026	196	0,979
Nature-based traveller	1,399	196	0,163
Eco-responsible	0,005	196	0,996
Plog psychocentric	-0,603	196	0,547

Regarding the age structure, a t-test was also conducted, because the age groups from the questionnaire were merged due to the sample characteristics in two new groups: 21-30 and over 30 years of age. However, significant differences were not obtained in this analysis, because significance values (Sig.) for each factor are higher than 0.05.

In order to determine whether there is a significant difference between subjects of different levels of education, ANOVA test was conducted. The results indicate that there is a statistically significant difference in the Environment **ally Aware factors** ( $F = 2.932$ ;  $p > 0.035$ ). Respondents who have completed secondary school score items of this factor lower than respondents who have completed college ( $MD = -0.38691$ ) and master studies ( $MD = -0.36076$ ). This may be result of the fact that Environmental awareness is often developed by additional knowledge on environmental pollution and suggested responsible behaviour people gain in higher levels of their education (Figure 2).



**Figure 2:** Environmental awareness and level of education.

As for the place of residence, two factors showed significant differences in the attitudes of the respondents, factor **Environmentally aware** ( $t = 2,004$ ,  $df = 196$ ,  $p = 0,042$ ) and **Eco-responsible** ( $t = -1,959$ ,  $df = 196$ ,  $p = 0,052$ ). The mean values of all factors according to the place of residence are shown in Table 4.

**Table 4:** Results of the t-test by the place of residence (city/village).

Factors	T	df	Sig. (2-tailed)
Local Community Oriented	-0,004	196	0,996
Environmentally Aware	2,044	196	0,042
Nature-Based Traveller	0,310	196	0,757
Eco-Responsible	-1,959	196	0,052
Plog Psychocentric	-1,286	196	0,200



For **Environmentally Aware** factor, respondents living in the village have significantly lower average response ( $M_{city}=3.86$ ;  $M_{village}=3.60$ ). This result is logical because rural inhabitants use natural resources for agriculture and livestock, which brings them basic living income. Therefore, the conclusion could be drawn that the respondents with the place of residence in the village look at the nature as a resource, not a surrounding to admire at, and thus have lower scores on this factor.

There is also a significant difference for **Eco-Responsible** factor ( $M_{city}=3.68$ ;  $M_{village}=4.01$ ). Namely, respondents who live in the urban environment have lower scores on this factor, which might be a consequence of the general tendency of urban areas in Vojvodina and Serbia, where little attention is paid to the environment (energy saving, recycling, cleanliness). On the other hand, people from rural communities feel more attached to local, smaller environments, so they are more respectful and better maintain their surroundings.

Finally, the significant differences between respondents with different monthly income were not found.

## 6 Discussion

Results of this study show the main characteristics of a potential geotourist, or rather five dimensions which can better describe his/her habits, attitudes and behaviour. Research implies that not all of them are of the same importance. The analysis showed that **Local community oriented** has the highest mean value among all extracted factors, meaning that one of the major characteristics of geotourists is their care for local community and involvement in tourism development. This is particularly well pointed out by Allan and Shavanddasht [27] as they classified a new geotourism product and new niche market in tourism, determined as rural geotourism. Rural geotourism is a form of natural tourism that occurs in the countryside which includes unique geological and geomorphological landscapes. Geo-villages, in particular stone villages are also considered new rural geotourism destinations and they are ideal for those who are interested in local culture, natural, and geological sciences, particularly lithology and petrology, and also for those willing to gain knowledge about their places in our dynamic earth. That not only encompasses characteristics of rural tourism, but also emphasizes? geology and geography within rural component. It strives to explore and revive cultural identities and to integrate them with geo-knowledge for educating locals and transferring knowledge to visitors.

Following **Nature-based traveller** and **Plog psychocentric** factors also have a high mean value over 4. This can be perceived as important information for DMO (in further reading: Destination Management Organisation) and travel agencies which indicate what type of destination geotourists prefer and what is their main travel motivation. This refers to destinations which are adequately interpreted and managed for visitation which leads to better experience design. It is also interesting that **Environmentally Aware** and **Eco-Responsible** are the factors with the lowest average score, but still with the mean values over 3.5 meaning they can still be considered as important for geotourists. To make the results more applicable to managers of the geosites, in the following text we provided the description of the extracted factors in the light of the geotourists' profile based on their habits, attitudes, preferences and behaviours.

**Local community oriented** ( $M=5.18$ ,  $SD=0.7688$ ). We can describe this person as an individual that is local community oriented. He/she would prefer that local community can participate in developing tourism at the given destination, and that income from tourism goes to the local community, also he/she would like to experience service from the local community people and see them employed in tourism sector. He/she also likes souvenirs and hand-craft made by the local community people and to eat food they produce, also he/she will choose accommodation hosted within local community. Beside mentioned he/she will always participate on excursion and fieldtrips offered at the destination and will get well informed about the destination before travelling. He/she also chooses smaller groups for travelling, so he/she can better experience destination and interact with local community.

**Nature-based traveller** ( $M=4.31$ ,  $SD=0.08954$ ). We can say that this individual has high regard towards nature. He/she prefers contact with wild nature during his/her travel, more than urban environment, and likes to spend more time in a nature setting during travel. He/she finds beautiful natural surrounding more attractive and always stops at good points of view to admire nature. His/her travel to nature is seen as an escape from everyday life.

**Plog psychocentric** ( $M=4.24$ ,  $SD=0.9611$ ). This factor describes a person which is more focused on well-known and explored destinations, and loves to obtain information from tour guides during travel. He/she prefers to travel with an experienced tour operator and doesn't organize travels by himself/herself. When nature is taken into account, he/she thinks about plants and animals, but also about the abiotic segment. He/she does not participate in hiking, cycling, fishing and other sport activities at the

destination, which can mean that he/she values an educational moment of travel more than psychical activity.

**Environmentally Aware** ( $M=3.77$ ,  $SD=0.5307$ ). This factor describes an individual who is nature protection oriented, as he/she thinks that nature should have equal treatment as the human kind, and that nature should have similar rights as humans. He/she assumes that humans degrade nature, and that their involvement has catastrophic implications on nature. Further, he/she senses that natural solitude and peace can be easily distorted and that natural resources should have more meaning to humans than merely a utilitarian one. He/she does not want to litter, and he/she thinks that humanity should pay more attention to nature-degradation issues. He/she believes that man is not created to rule nature and that he/she should not modify nature according to his/her needs.

**Eco-Responsible** ( $M=3.74$ ,  $SD=1.0620$ ). The last factor describes an individual who is environmentally oriented and prefers sustainable use of resources. He/she does not want to waste water and likes to conserve it, and recycles in everyday life. He/she chooses products, that do not have a negative impact on nature, and favours public transport as a replacement for personal transport, as has lower impact on nature degradation.

The analyses of the differences in terms of sociodemographic characteristics and the extracted factors indicated some significant findings. Statistically significant difference was found in the attitudes between men and women regarding the factor “Local community oriented”. The results show that men are less concerned about the local community at the tourist destination than women. The reason for this can certainly be greater empathy and sensitivity towards the local community of the female population, especially due to the fact that one of the main symbols of the smaller and rural communities is the local association of women engaged in various crafts, from culinary to knitting and arts. This is especially distinguishing for a multicultural environment such as Fruška Gora Mountain and Vojvodina region. On the other hand, the absence of differences in case of all other factors indicates the increasing emancipation of women and the equalization of attitudes between the sexes, which resulted in similar attitudes towards nature, as well as certain travel habits and attitudes towards the environment. Moreover, the results showed no differences in factors according to the age structure. The reason for this result could be a relatively uniform sample as the majority of respondents are in the age group from 21 to 40 years (91.4%). As already presented in the previous chapter, respondents who live in the village have lower mean values connected with the factor “Environmentally aware”. This could be due to the fact that inhab-

itants of the rural areas believe that natural values should serve humans, and as such, should not be protected and presented as tourist values. This attitude could come from the fact that they use natural resources for agriculture and livestock, which secures their basic living income. On the other hand, rural respondents showed greater environmental awareness of pollution, cleanliness, sustainability and environmental protection because they rated the factor “Eco-responsible” higher than the inhabitants of cities. This phenomenon is explained through greater attachment to the smaller community of the village inhabitants, who respect it and better maintain it. On the other hand, respondents who live in the urban area have the characteristics of the inhabitants of the larger communities, where little attention is paid to the environment (savings, recycling, cleanliness). Interestingly, in both categories of respondents, there is no difference in the “Local community oriented” factor, although it would be logical for village respondents to higher rate this factor. However, this also indicates that residents of towns are becoming more aware of the importance of the local community. Also, the factor “Nature-based traveler” proved to be equally relevant for both segments, which leads to the conclusion that the place of residence in modern times does not affect certain tourist habits and attitudes, especially those related to natural attractions.

When it comes to education, a significant difference exists only in the case of the factor “Environmentally Aware”. The results showed that respondents who have completed secondary school have lower mean value on this dimension than those who have completed college and master studies. More information on environmental issues and man’s contribution to this could explain the greater awareness of this topic of more educated respondents.

Furthermore, the variable “Monthly Income” did not show significant differences and, accordingly, it can be concluded that the level of income does not determine significantly respondents’ attitudes, behavior and preferences on travel.

Interestingly, no difference was found regarding the factor “Nature-based traveler”. This factor is most related to the geotourist’s profile, because the items refer to how much the natural environment is attractive and important as a tourist experience and motive. Also, the Plog psychocentric factor does not show even a marginal difference in case of any sociodemographic variables, which points to the fact that such a profile of geotourists does not have predetermined characteristics, at least not in the sample of this research.

## 7 Conclusion and further implications

The research paper's main focus was to analyse attitudes and behaviour of visitors of National Park Fruška Gora and to a certain extent it was accomplished. Authors proposed preliminary (geo)tourist profile, which could become a useful tool to the NP management and relevant DMOs. The main findings reveal that a visitor is mostly local community oriented and has much respect towards the local community. He/she is also focused on nature based tourism and admires spending time in nature and natural surroundings. An interesting finding of the profile analysis is that a person can be described as psychocentric, something which does not go well with other findings and characteristics, but can be explained that geotourists single out the educational component [8], and for that reason they prefer well informed tour guides, and like to know about the destination prior to their travel and visit. They can also be perceived as eco-responsible persons and environmentally aware. As they enjoy spending time in nature, it is logical to presume that they would care about the nature. The mentioned characteristics could be quite useful to DMOs and protected areas management as they show what type of destination visitors find attractive, and what profile characteristics can be linked to the desired characteristics of the destination.

Other significant findings which can be linked to the geotourists' profile is that women pay more respect to the community and are more local community oriented on travel. Also, individuals who have a higher degree of education are more environmentally aware, presumably because most of them have had some course about environmental protection during studies which influenced their determination and attitude. Another interesting finding is that individuals from rural areas pay more respect to the environment and that they are "eco-friendlier" than people from urban areas. Life in a rural surrounding is more connected to nature and natural resources, as they are nature dependent and most of their work is allied with nature. Most of the research findings can be used by travel agencies, tour operators, DMOs for market segmentation, marketing strategies, action plans and destination strategies. For instance, NP Fruška Gora management is duty-bound to develop action plans which ensure a greater involvement of the local community in the decision making processes, promote settlements and local population, stimulate them to get involved in the tourism sector, and provide food and accommodation for visitors and present their culture, tradition and folklore. Also, they

should provide more information about the destination through promotional material, as visitors like to be well informed, have good connection with nature, enjoy natural surroundings and get involved in similar nature-based activities.

Further research on the topic covered should expand the sample profile gathered at different (geo)tourism destination types. We can just presume that different destination types will affect the motivation, attitude and behaviour of a visitor. Also, larger sample size and diverse sociodemographic characteristics of respondents (nationality, age, education, etc.) could prove interesting for further research. Moreover, cluster analysis could be used in some further research in order to extract the profiles of geotourists.

To conclude, it is irrelevant which classification or typology is used, rather it is the experience that is of fundamental viability for the (geo)tourism industry that should always match or exceed the realistic expectations of the visitor [4]. For this reason, it is expected that the quantity and quality of research efficacy on geotourist typology, geosite interpretation and geoconservation will heighten and become more resourceful.

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