

Article

# Towards a Better Understanding of Motivation and Constraints for Domestic Geotourists: The Case of the Middle and Lower Danube Region in Serbia

Nemanja Tomić \* and Miloš Marjanović 

Department of Geography, Tourism and Hotel Management, Faculty of Sciences, University of Novi Sad, Trg Dositeja Obradovića 3, 21000 Novi Sad, Serbia; milos.m2305@gmail.com

\* Correspondence: airtomic@gmail.com

**Abstract:** The main goal of this study is to explore the motivation and constraints among domestic geotourists in Serbia. For this purpose, a survey was conducted on 303 respondents from Serbia who have visited geosites within the Middle and Lower Danube region in Serbia during the past three years. The initial results were obtained through an exploratory factor analysis which revealed five motivating factors (Visiting attractions, Research and prestige, Rest and relaxation, Acquiring new knowledge and Friends) and four constraints factors (Structural, Lack of time, Lack of information and recommendation and Inter/Intrapersonal). Ranking the factors further revealed that “Acquiring new knowledge” motivates geotourists the most while Structural constraints are the main demotivator. Further analysis by using ANOVA and T-test for independent samples revealed significant differences between gender and educational groups, and the results show that women are more motivated than men by the factor related to acquiring new knowledge, while those with master’s or doctoral degrees consider the factor related to friends less important than those with lower degrees.

**Keywords:** geotourism motivation; geotourism constraints; geotourists; Danube; Serbia



**Citation:** Tomić, N.; Marjanović, M. Towards a Better Understanding of Motivation and Constraints for Domestic Geotourists: The Case of the Middle and Lower Danube Region in Serbia. *Sustainability* **2022**, *14*, 3285. <https://doi.org/10.3390/su14063285>

Academic Editor: Lester Johnson

Received: 19 February 2022

Accepted: 9 March 2022

Published: 11 March 2022

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## 1. Introduction

Geotourism, its development, promotion, products, and services have gained big popularity worldwide in the last decade [1] and it will continue to grow fast [2,3]. There are numerous articles on geoheritage presentation, assessment, and conservation, but more attention should be paid to geotourists and the factors affecting their decision to visit a certain geosite [4]. A very important question for future geotourism development is what motivates people to visit specific geosites as well as what hinders them to do so [5–7]. However, it is difficult to find precise reasons why people travel and what limits their movement intention, due to the compound character of humans [8,9]. According to Khan et al. [9], motivation represents the psychological state of individuals that appears due to the need to act. If an individual has need deficiency, it can influence travel motivation. Authors Li and Cai [10] claim that motivation is a predisposition of mind that arises due to a need that drives an individual to perform an action, which has fulfilling or unfulfilling consequences. Tourism motivation is a psychological need that initiates a person’s behavior and activity [11]. Many researchers considered travel motivation as an initiator of tourist behavior [11–13] which leads to visit intention [10,14–16]. The lack of motivation in tourism will lead to a lack of tourism demand [17]. It is of great importance to constantly evaluate tourist motivations and constraints due to global economic integration, continuously improving communication, and rapid technological innovation [18]. Therefore, the main goal of this paper is to investigate the motivation and constraints of domestic geotourists in Serbia and obtain data which would help in creating tailor-made geotourism products in the future.

There are numerous motivation theories [19–22], and they are a significant part of understanding why tourists travel [5]. One of the widely accepted motivation theories often applied in tourism research is the push and pull motivation theory by Crompton [23]. This theory has been referred to many times in tourism literature [21,24–27]. It is based on two groups of motives. Push motives are inner traveler's forces that stimulate travel intention (social–psychological motivators), and pull motives are external elements of the destination (specific attractions or unique attributes) that interest the traveler. Thus, traveler intention furthermore depends on their preferences and needs or the characteristic assets of a particular destination [28,29]. Early research of Crompton [23] has identified several push factors, such as self-exploration, escape, relaxation, regression, prestige, social interaction, and kinship enhancement as well as a few pull factors, such as education and novelty. Several other authors argued that travel motivation should be considered using the cognitive (perceptions and beliefs) and effective approaches (person's emotions and feelings) [30,31], as travel career approach [32,33] or as optimal arousal theory [34]. However, the push and pull factor theory has been most widely used to this date for tourism research.

On the other hand, tourists' motivation for visiting can be limited by a variety of barriers which can occur in everyday life. These barriers are often related to lack of money or time, health issues, family commitments or lack of adequate travel company. As such, these limitations represent constraints which restrict our willingness to participate in leisure activities such as traveling [35]. The travel constraints concept is derived from the leisure constraints theory [36]. Travel constraints are main elements that hinder people from traveling [37], and they are usually associated with inability to start traveling, or its continuation, or they have negative impact on the quality of travel [38]. Thus, they have a negative effect on the creation of leisure preferences and the ability to participate and enjoy the travel activity. However, having constraints does not always result in not traveling [39], but it can initiate traveling in a different way than when lacking constraints [40]. The decision to travel to a certain destination often depends on the ability to successfully negotiate the existing constraints rather than on their complete absence [41].

Early research of travel constraints reported that deficiency of leisure time, money, or interest are perceived as constraints that influence the travel intention and destination choice [42]. Further research reported that there are numerous barriers which inhibit people to travel [39,43–45]. A widely accepted leisure constraints theory was proposed by Crawford and Godbey [36] where they were defined in a three-dimensional model as intrapersonal, interpersonal, and structural constraints. Intrapersonal constraints are represented by individual psychological states and attributes that affect the leisure preferences growth (stress, depression, religiosity, anxiety, confidence, attitudes). Interpersonal constraints arise from communication with other people (family, friends, and co-workers). Structural constraints are derived from external conditions in the environment (season, working schedule, the lack of opportunities, climate, financials) [36]. Some studies [46,47] presented the organizational constraints referring to pre-travel education, poor information, advertising, and marketing. However, constraints are not general for all people; they vary according to nationality, age group, family life cycle stage, and education level [14,38,48–50].

Even though motivation and constraints have been widely studied in tourism, the existing literature directly related to motivation and constraints in a geotourism context is very limited. There are studies regarding the typology of geotourists and their preferences [51–59], but research on geotourism motivation and constraints still remains to be explored in a greater extent.

## 2. Methodology

The main goal of this research was to explore the motives and constraints of domestic geotourists when it comes to visiting geosites in Serbia. To achieve this, a survey was conducted on a sample of 303 respondents living in Serbia.

### 2.1. Sample Profile

During the research process, 365 questionnaires were distributed, from which 303 were valid, while 62 questionnaires were exempt from the statistical analysis due to the number of missing data (over 5%). The socio-demographic profile of the respondents is shown in Table 1.

**Table 1.** Sociodemographic characteristics of the respondents.

Gender		Education	
Male	38.2%	Primary school	0.4%
Female	61.8%	High school	24.9%
<b>Age</b>		Higher school	13.3%
Average age	31.3	Faculty	35.3%
Standard deviation	10.941	Master's degree	23.3%
Age range	17–65	PhD	2.8%
Employment status		Amount of monthly income	
Pupil	0.8%	Below average	45.8%
Student	34.1%	Average	32.9%
Employed	49.8%	Above average	21.3%
Unemployed	12%		
Retired	3.2%		

The gender structure showed that most of the sample are females (61.8%) in comparison to males (38.2%). Nearly half of the respondents are employed (49.8%), whereas slightly more than a third of the respondents are students (34.1%). Furthermore, 12% are unemployed while a small number of them are retired or pupils, 4% in total. When it comes to education, more than half of the respondents have a university degree out of which nearly a quarter have a master's degree, while 35.3 have a bachelor's degree. A small number of the respondents (2.8%) have a PhD, while 13.3% have a higher school degree. A quarter of the sample is made up from respondents with a high school degree while those with primary school education make up only 0.4% of the total sample size. If we take into consideration that the average salary in Serbia is approximately 430 euros, the third of the respondents (32.9%) have an average salary while 21.3% have salaries that are above average. A total of 45.8% of the respondents have a monthly income that is below average.

### 2.2. Procedure and Data Collection

The survey was conducted from March to October 2019. The goal was to reach people who have visited any geosite in the Middle and Lower Danube region in the past three years. To reach different age groups, an online survey (Google docs) was shared via Facebook and e-mail with all questions marked as obligatory so that incomplete submissions could be avoided. A total of 182 questionnaires were collected this way. A large part of the questionnaires (121) was also collected by the classic pen and paper technique during the tourists' bus ride to their chosen destination within the study area. All respondents were informed about the aim of the research and the identity of the researcher.

### 2.3. Instruments and Measurement

The questionnaire consisted of three parts. The first part included the socio-demographic characteristics of the respondents (gender, age, employment status, education, income, occupation). Several answers were offered for each of the categories, and the respondent was asked to circle the one that best described him. The respondents had to write the answer themselves only for the variables age and occupation. The second and third part

were designed to explore the motives and constraints for visiting geosites within the study area. In the second part, each respondent was asked to measure the reasons for choosing to visit on a 5-point Likert scale (1—I totally disagree, 5—I totally agree), while in the third part, the respondents were asked to measure the reasons for not choosing to visit based on the same 5-point Likert scale. A total of 27 items for motivation and 16 items for constraints were included in the survey (Tables 2 and 3).

**Table 2.** Rotated component matrix (motives).

Items	Visiting Attractions	Research and Prestige	Rest and Relaxation	Acquiring New Knowledge	Friends
To expand knowledge				0.874	
To learn something new				0.871	
To satisfy my curiosity				0.757	
To learn something about the geology and geomorphology of this area				0.599	
To spend time with friends					0.506
To make new acquaintances					0.581
Because others think it's good for me to do it					0.878
To rest physically			0.709		
To rest and relax mentally			0.855		
To escape from obligations and everyday life			0.837		
To be in a calm and peaceful environment			0.836		
To be up to date with the latest archaeological, geological and paleontological research in this area		0.658			
Because of scientific research work		0.884			
Due to participation in archeo-paleo and geological workshops		0.884			
Due to participation in an event (conferences . . . )		0.871			
Due to the increasingly positive image that the geosite has in the domestic and world public		0.686			
Because the geosites of this area are well-known tourist attractions		0.555			
To gain the respect of others		0.848			
To see the Vinča archeological site	0.810				
To see the loess sections of Stari Slankamen and Titel loess plateau	0.788				
To see the Đerdap gorge geosites	0.804				
To see the geosites of Fruška gora	0.802				
To see paleontological remains (mammoth fossils . . . )	0.850				
To see the mammoth park in Viminacium	0.849				
To see the industrial heritage and the second largest surface mine in Serbia	0.774				
To see the Viminacium Archaeological Park	0.830				
To see ex-situ geoheritage sites (Natural History Museum in Belgrade and the Provincial Institute for Nature Protection)	0.639				

Bartlett's test ( $\chi^2 = 4694.418$ ;  $df = 351$ ;  $p < 0.01$ ). Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy: 0.889.

**Table 3.** Rotated component matrix (constraints).

Items	Inter/Intrapersonal	Lack of Information and Recommendation	Structural	Lack of Time
I have no time to travel				0.894
I cannot travel because of work				0.912
I do not have a steady job			0.699	
The costs of travel and accommodation are high			0.884	
Entrance fees/tickets are high			0.845	
The sites are too far from where I live			0.681	
I do not have transportation			0.653	
I do not have enough information about the geosites of this area		0.430		
The travel agency did not recommend		0.751		
Friends and family did not recommend		0.850		
I do not know what to expect from this visit		0.723		
I'm not in the mood to travel	0.817			
Family members are against me going	0.838			
I have no interest in geology and geotourism	0.755			
I have no one to go with	0.651			
My family and friends do not want to go	0.701			

Bartlett's test ( $\chi^2 = 1886.654$ ;  $df = 120$ ;  $p < 0.01$ ). Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy: 0.845.

### 3. Results

#### 3.1. Tourist Motivation Scale

For the extraction of motivation factors that affect tourists during their decision process whether to visit any geosite within the study area, a principal component exploratory factor analysis with Promax rotation and Kaiser normalization was carried out. By using eigenvalue criterion (larger than 1), we have isolated five significant factors with the total of 67.896% of variance explained.

The first factor refers to visiting attractions (nine items), the second is related to research and prestige (six items), the third to rest and relaxation (four items), the fourth to acquiring new knowledge, while the fifth is related to friends (four items). These five factors are further described in Table 2.

The first factor is associated with the visit of attractions that motivate the tourists to visit the geosites of this region, so it is therefore named “Visiting attractions”. It encompasses in situ but also ex situ geosites of the Middle and Lower Danube region in Serbia. Geosites that fall within this group are the Đerdap Gorge, Mt. Fruška Gora, loess sections of Stari Slankamen and Titel loess plateau, the Vinča archaeological site, the Viminacium archaeological and palaeontological site with all its attractions, as well as the Natural history museum in Belgrade and the Provincial institute for nature conservation.

The second factor is called “Research and prestige” and refers to scientific work, research and active visits through participation in scientific conferences and various workshops. Moreover, this factor contains items related to the human need for recognition by others or the need for others to respect or even envy them because they visited something that is currently very popular with the public, so visiting such a place is a status symbol or a matter of prestige.

The third factor consists of four items—physical and mental rest, peaceful environment, as well as an escape from the routine of everyday life—so it is therefore named “Rest and relaxation”.

The fourth factor is called “Acquiring new knowledge” and includes the following motives for visiting: to expand my knowledge, to learn something new, to satisfy my curiosity, to learn something about the geology and geomorphology of this area.

The fifth factor is related to socializing with other people and is called “Friends”. It includes the following variables: to spend time with friends, to make new acquaintances, because others think it is good to do it.

By ranking these five separate factors, we see that the fourth factor “Acquiring new knowledge” motivates visitors the most ( $M = 4.20$ ;  $Std. = 0.815$ ) to visit geosites of the Middle and Lower Danube in Serbia. Second place belongs to “Visiting attractions” ( $M = 3.69$ ;  $Std. = 0.926$ ), third place to “Rest and Relaxation” ( $M = 3.26$ ;  $Std. = 1.070$ ), and fourth place to “Research and Prestige” ( $M = 3.69$ ;  $Std. = 0.926$ ). = 2.98;  $Std. = 1.085$ ) while the factor that least motivates visitors to visit is “Friends” ( $M = 2.56$ ;  $Std. = 0.872$ ).

With further analysis, we tried to establish whether there are significant differences between different gender and educational groups when it comes to motivation for the visit of geosites in our study area.

To determine whether there is a difference between the different genders in the motivation to visit, we conducted a T-test for independent samples. The results show a statistically significant difference between male and female respondents when it comes to acquiring new knowledge ( $t = -2534$ ;  $df = 247$ ;  $p < 0.05$ ). Women are more motivated than men to visit geosites in order to acquire new knowledge ( $MD = -0.266$ ).

To determine whether there are differences between educational groups in the case of motivation to visit, we did the ANOVA test. Based on the results, we see that the motive “Friends” is more important for high school students and those with a bachelor’s degree than for those with a master’s degree.



### 3.2. Tourist Constraints Scale

In this section, we tried to establish what limits or what demotivates tourists to visit geosites within the study area. For the extraction of constraints that affect tourists during their decision process whether to visit any geosite within the study area, a principal component exploratory factor analysis with Promax rotation and Kaiser normalization was carried out. By using eigenvalue criterion (larger than 1), we have isolated four significant factors with the total of 65.732% of variance explained.

Factor one is related to inter/intrapersonal constraints (five items), factor two is lack of recommendation and information (four items), factor three is related to structural factors (five items) and factor four to lack of time (two items). These four factors are further described in Table 3.

The first factor (five items) refers to inter/intrapersonal constraints which imply social (the impact of family and friends on the intention to visit geosites) and psychological barriers (current mood and interests) to visit geosites, so it therefore called “Inter/Intrapersonal constraints”.

The second factor (four items) refers to lack of information about the geosite and the lack of recommendation for visiting, thus it is called “Lack of information and recommendation”.

The third factor (five items) is related to structural constraints such as finances, transportation and distance, so it is called “Structural constraints”.

The fourth factor consists of only two items (I have no time for travel, I cannot travel due to work) and is related to the lack of time, thus it is called “Lack of time”.

By ranking these four separate factors, we can see that the third factor “Structural constraints” demotivates visitors ( $M = 2.55$ ;  $Std. = 1.048$ ) the most. Second place belongs to “Lack of time” ( $M = 2.40$ ;  $Std. = 1.289$ ), third place to “Lack of information and recommendation” ( $M = 2.21$ ;  $Std. = 0.979$ ) and the factor that least demotivates visitors to visit is “Inter/Intrapersonal constraints” ( $M = 1.80$ ;  $Std. = 0.865$ ).

With further analysis, we tried to establish whether there are significant differences between different gender and educational groups when it comes to constraints for visiting the geosites of the researched area. To establish whether there are differences between different genders, we conducted the T-test for independent sampling. The results show statistically significant differences between male and female respondents when it comes to “Inter/Intrapersonal constraints” ( $t = 2.045$ ;  $df = 247$ ;  $p < 0.05$ ) and “Lack of information and recommendation” ( $t = 3.115$ ;  $df = 247$ ;  $p < 0.05$ ). Men are more demotivated by “Inter/Intrapersonal constraints” ( $MD = 0.229$ ) and “Lack of information and recommendation” ( $MD = 0.391$ ) than women.

To determine whether there are differences between educational groups in the case of demotivation for a visit, we performed the ANOVA test. Based on the results, we see that interpersonal constraints demotivate high school students and those with higher education more than those with completed bachelor or master’s studies. We also see that the “Lack of information and recommendation” constraint is more important to high school students, those with higher education and completed bachelor studies than those with completed master’s or doctoral studies.

The third statistically significant difference between educational groups in the case of demotivation for a visit occurs with structural constraints. This factor demotivates high school students more than all other groups with a higher level of education.

## 4. Discussion

Based on the exploratory factor analysis that we performed with all the motives for visiting the geosites of the Middle and Lower Danube in Serbia, we see that five groups of motives/factors stand out. By ranking them, we found that the factor “Acquiring new knowledge” motivates visitors the most. This is followed by “Visiting attractions”, “Rest and relaxation”, “Research and prestige” and finally the group of motives entitled “Friends”.

One of the reasons for these results may be the fact that geosites, in general, are an educational type of destination. Because education is one of the most important elements of geotourism, when visiting each geosite, special attention is paid to the explanation of certain natural processes that have formed a certain geological or geomorphological shape. People who visit such attractions generally expect to be educated and learn something about the site itself and the processes that led to its formation, so it is quite logical that acquiring new knowledge is the most dominant reason for visiting.

Geosites themselves represent a specific type of destination or attraction. Considering that geotourism is a relatively new form of tourism that is not sufficiently promoted in Serbia and is still in the initial phase of development, individuals want to visit such places for that very reason. These attractions are still outside of major tourist flows in this country, and they represent something unexplored, new and interesting, and for that reason they attract the attention of the public and individuals who want to acquire some new knowledge.

Certain geosites within our study area, such as loess sections, do not have a great aesthetic value that in itself is enough to attract tourists. However, when the scientific or educational value and the possibility to explain certain natural processes that led to the creation of such relief forms are added, that is enough to attract attention. Precisely for this reason, it is necessary to provide visitors with the best possible presentation of geoheritage at geosites along with the processes that formed them. Education should take place in interpretive centers that would enable the public to acquire new knowledge in the field of geosciences in an interesting way. However, this result may also be a consequence of a larger number of students in the sample (34.1%), given that they are generally more willing and have a greater need and desire to learn something new.

Rest and relaxation as motives for visiting geosites are only in the third place, which at first glance may seem unusual. However, as we mentioned earlier, geosites are specific attractions and generally do not represent a type of destination for rest and relaxation. Most people in Serbia have a different idea in their head when they think of these activities. Holidays are usually associated with going to the mountains, spas, or the sea. Rarely will anyone go on vacation to a geopark or visit a geosite. Although such visits represent a kind of active vacation, they are usually not associated with relaxation.

In fourth place is the motive of research and prestige. The reason for this can be found in the fact that a small number of people who visit such places do so for research purposes. When we compare the percentage of researchers with the number of tourists who visit a geosite during the year, we can easily see that the number of researchers is much smaller than the average tourist.

By further analysis, we found that there are significant differences between men and women when it comes to the motive “Acquiring new knowledge”. Women are more motivated than men to visit geosites in order to acquire new knowledge. The reason for this may lie in the fact that women are generally more willing than men to learn something new and travel more to educate and increase their cultural level. This finding is consistent with previous research that suggests that women are more motivated than men by culture [60,61] and by education and the acquisition and expansion of knowledge when visiting a destination [61].

The second part of our research was focused on travel constraints. In order to group the constraints that influence the decision of tourists to visit or not to visit some of the geosites within our study area, we again performed an exploratory factor analysis which singled out four factors or groups of constraints that influence tourists when making a decision.

The results indicate that structural constraints demotivate potential visitors the most. The reason for this is certainly the lack of money or travel costs, the distance of the site and the lack of adequate transport to certain geosites. The lack of organized transport to most of the geosites of the Middle and Lower Danube makes their visit much more difficult. Even well-known sites like Viminacium do not have organized cheap transportation, and

they are not located in the immediate vicinity of larger cities, so for potential visitors, a tour of such a destination with their own transportation is a bigger expense.

The constraint that affects potential visitors second most is lack of time. If we look at the structure of the sample, we will see that half of the respondents are employed, and 34% are students. Therefore, we can assume that most of the respondents are busy due to business and university obligations, so they feel that they do not have enough free time to visit such places.

The third most often constraint is the lack of recommendations and information. In general, people in Serbia do not have enough information about geosites. Travel agencies do not promote them as much and do not include them in their offers. Therefore, many people do not know and do not have time to find out about these attractions.

Intrapersonal constraints are in the last place because this factor is the least restrictive with potential tourists. From earlier analysis it can be seen that there is a certain level of interest for visiting geosites. Therefore, these constraints that are related to the lack of interest for geology and geotourism are in the last place.

The results also show that the groups of motives “Intrapersonal constraints” and “Lack of information and recommendation” demotivate men more than women. Men are more demotivated by intrapersonal constraints because they are less interested in geology and geomorphology than women. Moreover, they rely more on the influence of the environment (family and friends, recommendations) and on the recommendations of others when making a travel decision, while women are more independent and make decisions based on some of their personal judgments.

Further analysis revealed that intrapersonal constraints are the most demotivating for those with lower education than those with higher education. Moreover, we see that recommendations and information are more important to high school students, those with higher school degrees and completed bachelor studies than those with completed master's or doctoral studies. Respondents with completed master's or doctoral studies travel more often for research and personal development, so the recommendations of others are not so important to them. They are the ones who research and learn on their own through independent work, and other people's opinion does not have so much influence on their decision to visit a geosite, but they do it on their own initiative. Considering that they have a higher level of education, we can assume that they already have more information about certain destinations at the beginning, that is, that they have a certain prior knowledge, so they will be more interested in visiting. As one of the consequences of the wider knowledge and perspective of educated people, they generally have greater independence in decision making, so they do not rely so much on the recommendations of others.

The results also indicate that structural constraints demotivate high school students more than all other groups with a higher level of education. In general, lower education usually means lower average income, so structural constraints that are significantly related to finances are more demotivating and limit those with lower levels of education.

## 5. Conclusions

One of the main contributions of this research is the construction of motivation and constraints scales for domestic geotourists visiting geosites in Serbia. The results give us a better understanding towards motivation and constraints of Serbian geotourists. A topic that has not been investigated in much detail so far. The obtained results can be of great value to geosite management and other geotourism stakeholders when it comes to planning geotourism activities at geosites in Serbia. One of the identified constraints that can be solved relatively easy is related to the lack of information about geosites. This tends to be a major issue not just for geotourism destinations but other destinations in Serbia as well. However, it can be avoided by better promotional activities by all tourism stakeholders on local, regional, and national levels. Promotion is also identified as one of the key issues in an earlier study by Božić and Tomić [55] related to geotourist typologies in Serbia. Therefore, better promotional activities, especially on social networks along with



recommendations from travel agencies are essential for attracting more visitors to geosites in the future. Other constraints such as lack of time and structural constraints related to finances are more difficult to overcome. However, as the overall economic situation and standard of living is slowly rising, more and more people can afford such trips, and an increase in visitor numbers in the last two to three years at geotourism destinations throughout Serbia is evident. This fact combined with better promotional activities and motivation factors such as “Acquiring new knowledge” and “Visiting attractions” can lead to a significant increase in visitor numbers at geosites in Serbia.

Some of the limitations of this study are that both scales were tested only on Serbian tourists. Future studies should explore other market segments, especially tourists from other countries that visit Serbia and have at least some interests in geology, geomorphology or even nature destinations in general. This could aid in creating tailor-made geotourism products for different market segments based on their motivation and constraints for visiting geotourism destinations.

**Author Contributions:** Conceptualization, N.T.; formal analysis, N.T. and M.M.; investigation, N.T. and M.M.; methodology, N.T. and M.M.; writing—original draft, N.T. and M.M.; Writing—review & editing, N.T. and M.M. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research was funded by the Ministry of Education, Science and Technological Development of the Republic of Serbia (Grant No. 451-03-68/2022-14/200125).

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Not applicable.

**Data Availability Statement:** The data presented in this study are openly available. Also, it is possible to contact one of the study authors.

**Conflicts of Interest:** The authors declare no conflict of interest.

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