Evaluation of the tourist functions of protected areas: A case study of Shumen Plateau Nature Park

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Abstract

Protected territories have great potential for nature-based forms of tourism. These specific forms of tourism have also been considered as a tool for developing sustainable forms of tourism. Therefore, they have been a subject of scientific research in recent years. The purpose of this study is to evaluate the tourist functions of the Shumen Plateau Nature Park in North-East Bulgaria. It is among the small natural parks in terms of area, but it is a valuable natural site among the vast, highly anthropogenically modified territory of the eastern part of the Danube plain. By using the survey method, the study determines the overall recognition of the area and analyzes the visitor's opinions regarding the tourist use of the park territory. According to the results of this study the Shumen Plateau Nature Park has potential for protection and management of natural processes and, in parallel, an opportunity for the development of sustainable tourism and the implementation of ecological-educational and tourist programs. Visitors are well aware of the possibilities for tourism and sports, while they do not take advantage of all possibilities, but only the ones that are a priority for them. 100% of respondents answer positively when asked "Would you visit the Shumen Plateau again?". Further research could combine more innovative and mixed methodologies to broaden the research interest.

Key words: Bulgaria, ecosystem services, karst, natural environment, satisfaction, tourism, tourist infrastructure, visitors

1. Introduction

Nature-based tourism focuses primarily on natural ecosystems conservation, biodiversity and landscapes while providing opportunities for ecotourism, recreation and education (Weaver 2001; Mendoza-González et al. 2018; Nautiyal et al. 2023). This form of tourism is endowed with natural resources that hold recreational value, which is a critically important aspect of ecosystem services (Tibesigwa et al. 2020). Protected areas are important providers of ecosystem services (Stoyanova 2021). They are an essential element in the ecological use of nature in tourism (Toncheva 2009).

Protected areas in Bulgaria are areas with huge tourist potential, especially for nature-based tourism. In recent years there has been a notable increase
in attention given to nature-based tourism and other specific forms of sustainable tourism as tools for fostering overall sustainable development. This shift in focus reflects a growing recognition of the potential of tourism to contribute positively to economic growth, environmental conservation, and socio-economic life while minimising negative impacts. Considering all of the above and the lack of comprehensive research in this direction for the Shumen Plateau Nature Park determines the significance of the present study. It can be considered that one of the main functions of nature parks is the provision of opportunities for tourism and recreation in nature, which does not contradict their main purpose related to the protection of the ecosystems in them. Natural parks offer a variety of opportunities to practice different types of specialised tourism such as hiking, different types of sports tourism (for example, rock climbing, horse riding, bicycle tourism, etc.), as well as speleological tourism, cognitive tourism for observing plants, birds, large mammals, photo hunting etc. (Vasileva 2013). They favour the development of ecotourism and weekend tourism, too. The recreational benefits of nature-based recreational activities relate mainly to strengthening physical and mental health, aesthetic enjoyment, stimulating inspiration, increasing working capacity and other benefits. Developing tourism in protected areas, on the one hand, leads to an increase of informativeness and environmental awareness. On the other hand, however, the risk of disruptive behaviour increases. Human influence on nature in protected areas must be carried out with particular care. The number of tourists must be regulated, and their attitude must be conscious and responsible, so that environmental contradictions and conflicts do not arise. According to Art. 144 paragraph 1 of the Forestry Act, the access to forest territories is free, at one's own risk, and subject to compliance with the instructions of the forest administration (Forestry Act 2011). Nature parks in Bulgaria are not still sufficiently recognized as a valuable tourist resource, except in the cases of short-term recreation mainly for local residents (Vasileva 2018).

Valuation of recreation-related cultural ecosystem services (RRCES) in national parks is a challenging task due to the range of reasons related to the specific definitions, methods and purposes of the valuation (Nikolova 2022). Recreation-related ecosystem services represent the contribution of ecosystems to the cultural (recreational) benefits that humans receive through the biophysical characteristics and qualities of ecosystems that enable people to use and enjoy the environment through direct, in situ, physical interactions with the environment (United Nations et al. 2021). The recreation ecosystem services (RES) are all ecosystem services relevant to the recreation and the recreation industries. These services may be provisional (biotic and abiotic), regulating and maintenance (biotic and abiotic) or cultural (biotic or abiotic) according to The Common International Classification of Ecosystem Services (CICES). There are 96 individual services at “class” level in the classification, 12 of them are important for recreation and tourism (Nikolova et al. 2021a). Tourism is one of the few permitted anthropogenic activities within most protected areas. However, the tourist pressure in them should not lead to changes in the state of ecosystems and the quality of the provided ecosystem services but should be consistent with them (Nikolova et al. 2021b).

Territories including diverse ecosystems with a variety of plant and animal species and their habitats, with characteristic and remarkable landscapes and
objects of inanimate nature are declared nature parks (Protected Areas Act 1998). The Protected Areas Act allows for the presence of towns, villages and resorts within the boundaries of nature parks, as well as the implementation of productions and activities that do not pollute the environment. The Protected Areas Act prohibits clear-cutting, bivouacking (except in designated areas), hunting, gathering plants, etc.

Natural parks are a valuable natural tourist resource that offers a variety of opportunities for tourism and recreation in a preserved natural environment. There are 11 nature parks in Bulgaria, with a total area of 256,441 ha (National Statistical Institute 2024). Natural parks have the largest share (43.9%) of the total area of protected areas in Bulgaria. The Protected Areas Act mentions that "Natural parks are managed with the aim of:

1. maintaining the diversity of ecosystems and protecting their biological diversity;
2. providing opportunities for the development of scientific, educational and recreational activities;
3. sustainable use of renewable natural resources while preserving traditional forms of livelihood, as well as ensuring conditions for the development of tourism" (Protected Areas Act 1998).

The review of the scientific evaluation on the subject shows that the natural components of the territory of the Shumen Plateau Nature Park are relatively well studied. However, its tourism functions, including the public opinion and attitudes of park visitors, have hardly been studied and analyzed. The present study seeks to fill in this research gap. The aim of the present study is to evaluate the tourist functions of Shumen Plateau Nature Park. To achieve the set goal, several methods were used, including survey, field observations, logical methods, etc. This research focuses more specifically on the opinion of the visitors regarding the tourist use of the park territory.

2. Materials and methods

2.1. Study of the problem

Protected areas attract increased scientific interest from researchers. The protected areas in Bulgaria have been reviewed by Georgiev (2010) and Tsonev (2020). Special attention is paid to the Shumen Plateau by Ivanova et al. (2000). The issues with the management and development of the protected areas are topics of discussion by interested parties (Alexova 2013; Alexova and Balev 2013). A modern trend in the scientific research of the protected areas is the search and consideration of the economic benefits of the ecosystem services provided by them (Nikolova 2022). In recent years, ecosystem services have also been mapped in a number of mountainous areas in Bulgaria (Nedkov et al. 2014, 2018, 2021a, 2021b, 2022). The ecosystem approach is suitable and applied for the study of nature-based tourism in Bulgaria (Nikolova et al. 2021a). The satisfaction of visitors and users of these ecosystem services, however, still remains poorly studied in Bulgaria. Such a topic is particularly relevant and discussed by a number of researchers abroad, for example in China (Ge et al. 2023; Zhang et al. 2023). Navrátil et al. (2015) have revealed that relaxation is the most important activity among tourists in the large-area protected
natural territories, according to a survey of 1,500 participants. Entertainment is the second most important activity. Recreational sport activities (such as swimming, tennis, etc.) are respectively in the third and fourth places. The same survey identified four segments of demand in visits to these protected natural territories: passive visitors, visitors focused on exploring but not participating in any physical activity, active visitors with a dominant interest in bicycle touring, and active visitors with a dominant interest in history. Another survey concluded that anthropogenic tourist motifs must be united in the offer with the natural phenomenon and its near environment (Jojić Glavonjić et al. 2017).

The tourist functions of the protected areas are an alternative for supporting the protection of the environment, on the one hand, and, on the other hand, for supporting the economic development of these areas. Modern nature-based tourism should focus primarily on the conservation of natural ecosystems, biodiversity and landscapes, while providing recreational and educational opportunities (Ge et al. 2023). It is necessary for the management of the territory to be more closely connected with the local population and non-governmental organizations, which can change the public opinion towards the protected territories in an economic and social aspect. When the overall impact of tourism is positive, the quality of life of local residents increases, and this positively affects their attitude towards tourism initiatives. This can be a decisive factor in community engagement and generate support for further tourism development (Yayla et al. 2023).

According to Cholakova and Dogramadjieva (2023), the lack of comprehensive and reliable data about visitation and tourist behaviour has been acknowledged as an issue. Herewith, collected data through tourist surveys could contribute to better understanding of the problem.

2.2. Case study area

Shumen Plateau Nature Park is located in northeastern Bulgaria (Fig. 1), southwest of the city of Shumen. Some of the city's neighbourhoods are in close proximity to the park. The park itself was established in 1980 to protect the broad-leaved forests of the Shumen Plateau, a large part of which were recreated as a result of afforestation after the destruction of the natural vegetation at the beginning of the last century. It spans over an area of 3,895.8 ha, of which nearly 90% is covered with forests, mostly deciduous (Association of Parks in Bulgaria 2024). It is among the small nature parks in terms of area, but it is a valuable natural site among the vast, highly anthropogenically modified territory of the eastern part of the Danube plain.

The nature of the Shumen Plateau is relatively well-studied. Together with scientists from Shumen University and other specialists from various interested institutions, the park directorate carries out a number of serious studies, thanks to which the rock composition, soils, karst formations and caves, birds and grass communities, hydrological features, as well as rock monasteries have already been thoroughly analyzed. Assessments of the risk to the quality of ecosystem services were made through a comparative physicochemical analysis of surface soils subjected to strong anthropogenic pressure, and through an analysis of the degree of contamination of groundwater and the degree of contamination of the snow cover by using cytogenetic biomarkers.
Figure 1. Location of the Shumen Plateau Nature Park.
Shumen Plateau Nature Park is a site for the development of sustainable tourism (Fig. 2). The existing visitor interest is determined by the opportunities that the protected area offers in combination with the adjacent areas:

- relatively evenly distributed interesting routes directing visitors to all parts of the park;
- specialized routes connecting places with biological diversity, sites of cultural and historical heritage, tourist sites, panoramic viewing platforms, etc.;
- places for recreation and relaxation;
- places for food and accommodation.

2.3. Methodological approach

2.3.1. General approach

The research methodological approach uses quantitative and qualitative methods which are complex in nature. The main research method for the present study is a questionnaire survey. This research method was chosen due to its consistency with the declared research objective.

A questionnaire survey is the most appropriate research method for gathering public opinions and attitudes.

It is primarily intended to collect “soft” information (opinions, ratings, attitudes) and also provides “hard” quantitative information (facts and data), and the inclusion of closed and semi-closed questions (rating scales, ranks,
etc.) allows for easy quantification of some of the results (Dogramadjieva et al. 2018). In addition, it should be noted that even “purely” qualitative information is subject to quantitative analysis if it is in sufficient volume, and appropriate processing and systematization techniques are used (White and Marsh 2006). Accompanying research methods are:

- review of the research literature on the subject, including the normative regulations regarding protected territories in Bulgaria, and scientific publications by Bulgarian and foreign authors;
- field observations of both the natural environmental and cultural elements, as well as the infrastructure. Field observation is a qualitative research method that allows researchers to gain an in-depth understanding of a setting or community by directly observing and immersing themselves in the environment being studied. Field observation enables researchers to experience the setting firsthand, providing context that might not be apparent through other methods. It provides a deep understanding of issues in their (local) context;
- expert opinion and primary information from the directorate of Shumen Plateau Nature Park;
- questionnaire survey conducted through the use of a survey card;
- general methods, including analysis, synthesis, summary, evaluation, etc.

To outline basic approaches for managing the sustainable development of tourism in the territory under consideration, several general methods were applied to the conclusions and summaries of the research findings.

2.3.2. Questionnaire

For the purposes of the current research, a questionnaire with 20 questions of a varied nature (dichotomous questions, closed and open questions) was developed. We aimed to get the required information by asking a minimum number of questions. This facilitates the respondents and increases their willingness to participate in the survey.

Section 1 (questions 1–15) was about the case study area. Section 2 (questions 16–20) contained socio-demographic questions about the age of participants, their gender, education, place of residence and professional occupation.

This study analyzes the data extracted from the answers to the questions in focuses generated in Section 1. The questions are formulated in such a way as to obtain information on the pattern of tourism activities in the Shumen Plateau Nature Park. Question 1 is a single-answer question and, aiming to register the number of visitors to the National Park. Questions 2 and 3 were created as multi-choice questions. Question 2 explores the type of tourist activities carried out in the park territory. Question 3 explores the tourist activities which park visitors want to perform but haven’t done so yet. Questions 4 to 8 use a rating scale to obtain answers. Rates from 1 to 7 were created to illustrate the lowest and the highest level of assessment. Each of the questions addresses different elements of the park environment: natural components (question 4), human-made objects (question 5), elements of the tourist infrastructure (question 6), food and entertainment facilities (question 7), accommodation (question 8). Question 9 aimed at identifying existing problems in the territory of natural parks. It is a multi-answer question that
includes a free-answer option. Question 10 evaluates the overall satisfaction from the park visit. For this purpose, a scale from 1 to 5 was used, where 1 relates to the lowest and 5 to the highest level of satisfaction. Questions 11 and 13 are dichotomous, requiring only a “yes” or “no” answer. A “yes” answer to question 11 leads to question 12—a multi-choice question with an option for an open answer. This question lists the possible reasons for visitors to return to the Shumen Plateau Nature Park. The structure of question 14 is similar. It is aimed at dissatisfied visitors and asks about the reason why they would not recommend this particular nature park to their friends, relatives or colleagues. Question 15 is an open-answer question and collects specific recommendations for environmental improvements that will help to develop further recreational services and tourism in the park.

2.3.3. Profile of the respondents

Our goal was to interview many respondents with a diverse profile and achieve a large sample and credibility of the obtained results. We selected the respondents according to two criteria:

1) have visited Shumen Plateau Nature Park at least once. Therefore, the respondents have direct observations on the ground and could answer the questions asked in the questionnaire.
2) to be willing to answer the questions asked in the survey card.

These two criteria limit the possibilities for a wider sample but are a prerequisite for obtaining reliable results. Respondents differ in gender, age, professional employment, place of residence, etc. These differences are presented in item 3.1.

2.3.4. Survey procedure

262 people took part in the survey. It was held in May–October 2023 through the online platform Google Forms, as well as in person on the territory of the park. The Google Forms platform provides an opportunity to quickly and easily process the results received, as well as to cover a wide range of respondents regardless of their current location. Due to these advantages, the online survey turned out to be the preferred one and, accordingly, a more widely used channel for communication between surveyors and respondents. The majority of the respondents answered the questions online (68.5%), due to the possibility provided by this type of survey to complete it at a convenient time and place. Surveying the territory of the park enables direct access to tourists and immediate observations. It also guarantees fresh impressions and, thus, greater credibility of the results.

3. Results

3.1. Characteristics of the respondents

The answers to the socio-demographic questions show that 73.3% of the survey participants were female and 26.7% were male. All age groups were covered, with the largest percentage of respondents (34.4%) being between
40–49 years old, 20.6% being between 30–39 years old, 19.1% being between 50 and 59 years old, 14.5%—from 18 to 29 years old, 9.9% from 60 to 69 years old, 0.8% up to 18 years old and 0.8% over 70 years old. Most of the respondents are from the North-East region—residents of the city of Shumen (75.6%), residents of other towns and villages in North-East Bulgaria (9.9%). Significantly fewer (6.9%) are residents of other cities in Bulgaria, residents of the capital (6.1%) and foreigners (1.5%). This is due to the obligatory requirement that the respondents must have visited the park, which turned out to be a limiting factor for the territorial diversity of the respondents.

Regarding the educational level of the respondents, 85.5% of them have higher education, 13.7% have high school education and 0.8% have studied till eighth grade. Most of the respondents are people of working age—45% work in the service sector (education, culture, science, health care, finance, public administration, etc.), 22.9%—in the private sector, 19.1%—in the public sector, 13.7% are students, 6.1% are retired, 4.6% are freelancers, 3.8% are on long-term leave, unemployed or not working, 2.3% work in the secondary sector and 0.8% in the primary sector.

3.2. Tourist behavior and visitor satisfaction

To the first question, “How often do you visit Shumen Plateau Nature Park?”, the largest number of respondents (33.6%) answered that they visit the park every week, 27.5%—several times a year, 21.4%—every month, 4.5%—every year. The percentage of those who answered “less often” (7.6%) and “I visited it only once” (5.3%) is the lowest (Fig. 3). The results correspond to the fact that most of the respondents are from the city of Shumen. Therefore, the park is a popular place to visit among the respondents and they are well aware of its facilities.

The second question “What types of tourism and/or activities do you most often practice when you visit the Shumen Plateau Nature Park?” allows a multiple choice. Most of the respondents answered hiking (89.3%). Other preferred answers are rest and/or picnic at designated places (50.4%), cultural and educational tourism (42.7%), participation in organized events (32.1%), visiting restaurants and entertainment (29%), nature conservation (25.2%),

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**Figure 3.** Answers to the question “How often do you visit Shumen Plateau Nature Park?”. 

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Journal of the Bulgarian Geographical Society 50: 149–168 (2024), DOI: 10.3897/jbgs.e117725
ecotourism (16.8%). Therefore, the most popular tourist activities in the park are hiking and resting and/or picnicking in designated areas.

Among the most numerous answers to the third question, "Which of the indicated types of tourism and/or activities have you not practised so far, but are interested in and would try on the territory of Shumen Plateau Nature Park?" are speleotourism (38.9%), nature conservation (31.3%), dendrological tourism (28.2%), buggies, ATV (23.7%), paragliding (22.1%), rock climbing (21.4%), sports orientation (18.3%). As another option, 0.8% indicated that they would like to participate in "folk dancing and literary writing".

The evaluation of the natural environment of Shumen Plateau Nature Park (Question No. 4) includes rock forms and formations, caves, climate, water reserves, plant diversity and wildlife diversity (Table 1; Fig. 4). The proposed scale is from 1 to 7. The answers of the respondents are as follows:

Of the components of the natural environment, the climate, rock formations and flora in the nature park receive the highest marks. Water resources were rated lowest, possibly due to the fact that much of the water is underground. A significant part of the respondents marked that they had no opinion about the caves and the fauna of the nature park. Therefore, they are the least known to visitors, probably due to their difficult accessibility.

Table 1. Assessment of the natural environment of Shumen Plateau Nature Park (%).

<table>
<thead>
<tr>
<th>Component of the natural environment</th>
<th>Very good</th>
<th>Good</th>
<th>Sufficient</th>
<th>Neither good nor bad</th>
<th>Unsatisfactory</th>
<th>Bad</th>
<th>Very bad</th>
<th>Have no opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rock formations</td>
<td>54.1</td>
<td>33.7</td>
<td>6.1</td>
<td>1.5</td>
<td>0.8</td>
<td>-</td>
<td>-</td>
<td>3.8</td>
</tr>
<tr>
<td>Caves</td>
<td>45</td>
<td>31.4</td>
<td>13.8</td>
<td>-</td>
<td>2.4</td>
<td>-</td>
<td>-</td>
<td>7.6</td>
</tr>
<tr>
<td>Climate</td>
<td>58</td>
<td>33.6</td>
<td>6.1</td>
<td>0.8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.5</td>
</tr>
<tr>
<td>Water sources</td>
<td>29.8</td>
<td>27.4</td>
<td>15.3</td>
<td>11.5</td>
<td>4.6</td>
<td>-</td>
<td>1.5</td>
<td>9.9</td>
</tr>
<tr>
<td>Plant diversity</td>
<td>54.2</td>
<td>31.3</td>
<td>8.4</td>
<td>3.8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2.3</td>
</tr>
<tr>
<td>Diversity of wild animals</td>
<td>38.8</td>
<td>25.2</td>
<td>16</td>
<td>11.5</td>
<td>0.8</td>
<td>-</td>
<td>0.8</td>
<td>6.9</td>
</tr>
</tbody>
</table>

Figure 4. Assessment of the natural environment of Shumen Plateau Nature Park (%).
The fifth question rates the more popular sites in the nature park also from 1 to 7 (Table 2; Fig. 5).

One of the popular sites for cultural tourism, namely the monument Founders of the Bulgarian State and the Old Town, receive the highest marks. The lowest scores were for Biserna Cave, probably due to restrictions on visitor access, as well as the zoo, which was closed for renovation and respondents rated its status before the renovation.

**Table 2.** Assessment of the state of tourist resources in Shumen Plateau Nature Park (%).

<table>
<thead>
<tr>
<th>Sites</th>
<th>Very good</th>
<th>Good</th>
<th>Sufficient</th>
<th>Neither good nor bad</th>
<th>Unsatisfactory</th>
<th>Bad</th>
<th>Very bad</th>
<th>Have no opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest park Kioskovete</td>
<td>-</td>
<td>35.9</td>
<td>20.6</td>
<td>25.2</td>
<td>7.6</td>
<td>8.4</td>
<td>-</td>
<td>0.8</td>
</tr>
<tr>
<td>Zoo</td>
<td>11.5</td>
<td>36.6</td>
<td>18.3</td>
<td>8.4</td>
<td>8.4</td>
<td>6.1</td>
<td>0.8</td>
<td>9.9</td>
</tr>
<tr>
<td>Shumen Plateau visitor center</td>
<td>29</td>
<td>31.3</td>
<td>16</td>
<td>7.6</td>
<td>2.3</td>
<td>1.5</td>
<td>0.8</td>
<td>11.5</td>
</tr>
<tr>
<td>Biserna Cave</td>
<td>30.5</td>
<td>30.5</td>
<td>11.5</td>
<td>4.6</td>
<td>-</td>
<td>-</td>
<td>0.8</td>
<td>22.1</td>
</tr>
<tr>
<td>Rock churches</td>
<td>29</td>
<td>34.3</td>
<td>14.5</td>
<td>5.4</td>
<td>0.8</td>
<td>1.5</td>
<td>-</td>
<td>14.5</td>
</tr>
<tr>
<td>Shumen Fortress (Old Town)</td>
<td>45.9</td>
<td>36.6</td>
<td>9.9</td>
<td>5.3</td>
<td>0.8</td>
<td>-</td>
<td>-</td>
<td>1.5</td>
</tr>
<tr>
<td>Founders of the Bulgarian State Monument</td>
<td>52.6</td>
<td>34.3</td>
<td>8.4</td>
<td>3.1</td>
<td>0.8</td>
<td>-</td>
<td>-</td>
<td>0.8</td>
</tr>
</tbody>
</table>

**Figure 5.** Assessment of the state of tourist resources in Shumen Plateau Nature Park (%).

In the sixth question, the respondents assessed the state of the tourist infrastructure (Table 3) and related services again on a scale from 1 to 7.

Most of the respondents gave a “good and sufficient” rating for all elements. The most highly rated are the hiking trails and the parking lots. The lowest ratings are for pedestrian walkway lighting, cleaning, and access for people with special needs. Existing studies show that tourists are more likely to pay for
Table 3. Assessment of the tourist infrastructure in Shumen Plateau Nature Park (%).

<table>
<thead>
<tr>
<th>Status of tourist infrastructure</th>
<th>Very good</th>
<th>Good</th>
<th>Sufficient</th>
<th>Neither good nor bad</th>
<th>Unsatisfactory</th>
<th>Bad</th>
<th>Very bad</th>
<th>I have no opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information boards</td>
<td>25.2</td>
<td>29</td>
<td>29</td>
<td>5.3</td>
<td>7.6</td>
<td>0.8</td>
<td>1.5</td>
<td>0.8</td>
</tr>
<tr>
<td>Signposts</td>
<td>26.7</td>
<td>28.2</td>
<td>27.5</td>
<td>9.9</td>
<td>3.8</td>
<td>1.5</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Information available on the Internet</td>
<td>21.4</td>
<td>29</td>
<td>27.5</td>
<td>6.1</td>
<td>6.1</td>
<td>3</td>
<td>0.8</td>
<td>5.3</td>
</tr>
<tr>
<td>Access to qualified local guides and information service</td>
<td>15.2</td>
<td>19.8</td>
<td>23.7</td>
<td>7.6</td>
<td>9.9</td>
<td>2.3</td>
<td>3.8</td>
<td>16.8</td>
</tr>
<tr>
<td>Transport accessibility</td>
<td>28.2</td>
<td>30.5</td>
<td>19.8</td>
<td>10.7</td>
<td>3.1</td>
<td>3.1</td>
<td>2.3</td>
<td>1.5</td>
</tr>
<tr>
<td>Condition of the road network on the territory of the park</td>
<td>24.4</td>
<td>23.7</td>
<td>26.7</td>
<td>10.7</td>
<td>8.4</td>
<td>2.3</td>
<td>3.1</td>
<td>-</td>
</tr>
<tr>
<td>Parking lots</td>
<td>28.2</td>
<td>42</td>
<td>16</td>
<td>6.9</td>
<td>2.3</td>
<td>1.5</td>
<td>1.5</td>
<td>0.8</td>
</tr>
<tr>
<td>Coverage of mobile operators</td>
<td>16.8</td>
<td>30.5</td>
<td>24.4</td>
<td>12.2</td>
<td>5.3</td>
<td>3.1</td>
<td>2.3</td>
<td>4.6</td>
</tr>
<tr>
<td>Hiking trails</td>
<td>35</td>
<td>28.2</td>
<td>18.3</td>
<td>8.4</td>
<td>5.3</td>
<td>3.1</td>
<td>0</td>
<td>0.8</td>
</tr>
<tr>
<td>Lighting of the pedestrian walkways</td>
<td>10.7</td>
<td>16.8</td>
<td>19</td>
<td>13.7</td>
<td>9.9</td>
<td>6.1</td>
<td>6.1</td>
<td>16.8</td>
</tr>
<tr>
<td>Shelters, alcove, picnic areas</td>
<td>17.6</td>
<td>30.5</td>
<td>26</td>
<td>8.4</td>
<td>6.1</td>
<td>6.9</td>
<td>3.8</td>
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<tr>
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<td>26</td>
<td>25.2</td>
<td>11.5</td>
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<td>7.6</td>
<td>5.3</td>
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<td>17.6</td>
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<td>9.9</td>
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<td>3.1</td>
<td>14.5</td>
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recreational ecosystem services attributes, with a stronger public willingness to pay (WTP) for aesthetic attributes over natural ones (Ge et al. 2023).

The survey assessed also the quality of service at five restaurants in the area of the nature park. These are Orbita restaurant, Borovets restaurant, Shumen Plateau—Stakloto restaurant, Chupkata bistro, and Visitor Center cafe at the Founders of the Bulgarian State monument. The best reviews were given to restaurant Borovets, restaurant Orbita and restaurant Shumensko Plateau—Stakloto. It is noteworthy that the highest percentage of the respondents gave good and sufficient marks and, less often, very good (Fig. 6).

In the survey, the respondents were also asked for their opinion about the quality of service in the accommodation facilities (Park Hotel Kioshkovete, Orbita complex, Shumensko plato—Stakloto complex, Stariyat Grad Hotel, Pazachnitsa villa, The Municipality villa, Bukatsite hut). Most of the respondents, however, did not have direct observations, as they are from the region and have undertaken one-day visits to the park, which does not require an overnight stay. The rest of the respondents assessed the quality of service in the facilities as good and satisfactory (Fig. 7).
The answers to Question No. 9 rank by degree of importance according to the personal judgment of the respondents the main problems in the territory of Shumen Plateau Nature Park. In the foreground are the problems of pollution with the garbage left by tourists, insufficient tourist infrastructure (gazebos, information boards, signposts, benches, bins, etc), and poor condition of the available facilities, alleys and paths. Less reported problems are the great number of cars, buggies, ATVs and their negative consequences, not enough attractions and interesting places to visit, illegal logging, noise pollution by tourists, poor spatial planning, zoning and distribution of activities.

To the question “What is your overall assessment of your satisfaction with the visit/s to Shumen Plateau Nature Park?” 71% of the respondents answered satisfied, 19.8%—completely satisfied, 6.9%—dissatisfied, 1.5%—very dissatisfied, and 0.8%—could not judge (Fig. 8).
To the question "Would you visit the Shumen Plateau again?" all respondents answered "yes". To the question "Why would you repeat your visit to Shumen Plateau Nature Park?" 80% of the respondents answered that this is the closest nature park, 31.5%—my friends (including family, relatives, colleagues) would take me again, 23.1%—it is one of the most attractive nature parks I have visited. Therefore, the reasons for new visits are mainly related to the accessibility and social environment of the respondents. Only about ¼ define the park as one of the most attractive. Of all those surveyed, 97% answered that they would recommend the nature park to their friends, relatives or colleagues. 2.3% would not recommend it for various reasons. Among the reasons are that people with special needs have difficulties to access the park; some people don't like the social environment and the landscaping of the park; there is nothing interesting for their friends and relatives; its remoteness and lack of interesting places to visit.

The specific recommendations of the respondents to improve the environment for tourism and recreation in Shumen Plateau Nature Park, in summary, are: to provide a guided tour in the park, to develop a tourist product for organized groups with guides, to update the signs and facilities along the hiking trails more often, so as not to mislead the tourists, to mow and clean the lawns regularly and to treat them against insects, to clean regularly the bushes and self-growths around the footpaths, and to remove fallen trees from the paths. Additionally, recommendations include putting more information signs about the birds that can be observed in the park, as well as about the unique plant species and animals, limiting the access of cars to the park only to the parking lots at both ends of the panoramic road and the roads to the villages of Novosel and Lozevo, closing completely the panoramic road between the parking lot of the Information Center and Pazachnitsa hut for motor vehicles (the currently valid ban for the hours between 6 a.m. and 9 a.m. and between 6 p.m. and 9 p.m. is not observed). Among the recommendations made are also: to prohibit the access of ATVs and motorcycles to the park, to set up a permanent police post in order to control and impose legal sanctions and fines, to improve the road infrastructure in general, to carry out better maintenance of the forest park "Kioshkovete", to improve the accessibility for disabled peo-
ple, to ensure an easier way of visiting Biserna cave (at the moment it is only possible to enter after prior registration by phone and in organized groups), to repair and renew the existing playgrounds and to create new ones, to allocate more financial means for maintenance and cleaning, to enable the construction of more food and entertainment facilities.

4. Discussion

The results from the survey help clarify visitation and tourist behaviour in a previously unstudied protected area that is considered attractive but also vulnerable to potentially intensified tourism activities. The method used is efficient and appropriate for an exploratory study.

The results of the survey indicate that the profile of tourists visiting Shumen Plateau Nature Park is diverse in terms of age and professional realization. The results of the processed surveys suggest that women and individuals with higher education are predominant among the visitors. However, it is essential to complement these findings with observations on the ground providing a comprehensive understanding of visitor demographics. Observations on the ground revealed a diverse range of visitors, reflecting a more nuanced picture of visitor demographics beyond what is captured solely through surveys. While surveys provide valuable quantitative data, ground observations offer qualitative insights into the characteristics and behaviors of visitors in their natural settings. These discrepancies are due to the small sample size, which cannot guarantee a high representativeness of the study. The majority of visitors come from the city of Shumen and its region. Therefore, the Shumen Plateau Natural Park has regional importance for tourism development and can be defined as a natural tourist resource of regional importance. This feature is a positive and not a negative of the park. Greater popularity would increase the flow of visitors, and this would lead to greater anthropogenic pressure on the small territory of the park. Therefore, we think it is good for Shumen Plateau Nature Park to retain its regional importance for recreation in a natural environment. However, we can expect a gradual increase in interest in Shumen Plateau Nature Park due to the high satisfaction of visitors and their tendency to share their positive impressions. Despite the existing problems, Shumen Plateau Nature Park has the potential for the protection and effectively management of natural processes. Its territory offers conditions for preserving, protecting and maintaining natural ecosystems and landscape.

The limitations of the study are related to the requirement that the respondents have visited the nature park and therefore have direct observations of its environment and can evaluate it. This requirement limits the range of respondents, especially those living in more remote parts of the country, who have not visited the nature park. However, this condition guarantees the reliability and representativeness of the obtained results.

The questionnaire used in this study can be adapted and used for other similar studies in other nature and national parks. This will allow the obtained results to be compared and analyzed in a comparative.

The insights gained from surveys and on-site observations can be highly valuable for developing and managing the tourist infrastructure of natural parks. This information can help the park directorate plan and create visitor
centers, trails, recreational facilities, and accommodations that cater to the diverse interests of visitors.

By understanding visitor demographics and behavior patterns, the park directorate can optimize the park’s functioning by adjusting staffing levels and visitor services. This demographic data can also inform targeted marketing strategies that are aimed at attracting specific visitor segments to the natural park.

Furthermore, the results of this research can guide the park’s tourism activities towards sustainable practices. By promoting responsible tourism and minimizing environmental impacts, the park and its directorate can establish a reputation for developing sustainable tourism practices.

5. Conclusion

Based on the conducted survey, the following conclusions can be drawn:

- Shumen Plateau Nature Park is popular mainly among the residents of the city of Shumen;
- visitors are well aware of the possibilities for tourism and sports, but they do not take advantage of all the possibilities, only the ones that are a priority for them;
- when assessing the various elements in the park environment, visitors mostly use a good and sufficient mark to assess the infrastructure in the park and primarily a very good mark to assess the natural environment;
- most visitors are satisfied with their visit to the park and would visit it again and recommend it.

As the similar survey about Urdini lakes in Rila National Park (Cholakova and Dogramadjieva 2023) the survey on visitation and tourist behaviour in the Shumen Plateau Nature Park cirque obtained quick and cost-free data, which normally is not acquired by park authorities. It did not count the exact volume of demand (which should be done as part of traditional monitoring in protected territories) but revealed important trends and visitation patterns. With the current infrastructure, despite the inevitable increase in visitation, the Shumen Plateau Nature Park is less likely to experience overtourism and degradation of landscape compared to other regions.

More efficient use of existing tourism resources can provide increased economic benefits for the local population and other stakeholders. Future environmental improvements can undoubtedly further increase this appeal. The development of alternative forms of tourism, combined with the development of traditional agricultural practices and opportunities to offer ecologically clean products, are a prerequisite for the economic revitalization of the area. So far, alternative ways of generating economic benefits without negative impacts on the environment are not implemented, but there is potential to initiate new forms of use of natural resources through EU programs and the launch of environmentally sustainable enterprises. At the same time, this is extremely important for forming a correct attitude of the local people towards the protection of the natural complex.
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Additional information

Conflict of interest

No conflict of interest was declared.

Ethical statement

No ethical statement was reported.

Funding

No funding was reported.

Author contributions

Conceptualization: DK. Data curation: SS. Formal analysis: SS, DK. Investigation: SS. Methodology: VV. Resources: DK. Supervision: VV. Validation: ME, DK. Writing - original draft: VV. Writing - review and editing: VV, ME.

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Data availability

All of the data that support the findings of this study are available in the main text or Supplementary Information.