

Online survey of visitation and tourist behaviour in a protected territory—the case of Urdini Lakes, Rila National Park

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ABSTRACT

The lack of comprehensive and reliable data regarding visitation and tourist behaviour at local level and especially in vulnerable environment has been acknowledged long ago as an issue by both academics and practitioners. In Bulgaria, this type of data is scarce and inconsistent, regardless of the increased visitor flow in certain mountain areas. The mass adoption of social media, as well as the development of online travel communities, allow research with more ease the target population, as opposed to traditional resource-intensive monitoring methods. This paper presents the results of an online survey of visitors to Urdini Lakes in Rila National Park, Bulgaria. The aim of the study is to identify the overall recognition of the area and the extent of effective visit by mountaineers, as well as the profile of visitors and their behaviour. According to the results of this study, the influence of social media on visitation and tourist behaviour in the case of Urdini Lakes appeared lower than expected and much outweighed by factors like accessibility and trail difficulty. Further research should combine more innovative and mixed methodologies regarding the usage of social media and its influence, which can combine and compare different types of data such as surveys, geolocated big data and visual methods.

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1. Introduction

The lack of comprehensive and reliable data regarding visitation and tourist behaviour at local level and especially in vulnerable nature areas has been acknowledged long ago as an issue by academics, tourism practitioners, and experts involved in tourism policy and planning, nature conservation, and management of protected areas (Gunn 1988; Inskeep 1991; Ceballos-Lascuráin 1996; Middleton and Hawkins 1998; Perkins and Grace 2009; Leung et al. 2018).

Particularly in Bulgaria, a country with rich and diverse natural heritage and opportunities for development of nature-based tourism (Nikolova et al. 2021b), the problem is most evident in small mountain destinations that do not even fall into the scope of the official tourism statistics (Dogramadjieva 2013; Marinov et al. 2016). It refers particularly to specialized types of tourism such as ecotourism (Dogramadjieva and Marinov 2009). Adequate information is of critical importance in terms of protected area planning and management (Dogramadjieva 2018; Mitova 2020), with the need being stressed in literature to capture not only data on the number of visitors, but also their structure, behaviour, requirements, sources of information, satisfaction, etc. (Vodenska 2003; Dogramadjieva and Marinov 2009).

To overcome the existing information deficit, a number of monitoring systems comprising observation of tourist demand and behaviour have been developed and tested (Marinov et al. 2000a; Popova et al. 2005; Marinov et al. 2015a, 2015b), and a lot of empirical studies of tourists have been carried out in different types of destinations (Marinov et al. 2000a, 2000b, 2015a, 2015b;

Popova 2002; Assenova 2008; Dogramadjieva 2003, 2017; Kaloyanov 2018; Alexova 2019; Zagorska 2022). A review regarding research on tourism development and management in the mountain territories of Bulgaria (Assenova 2019) has outlined increasing interest in sustainability aspects of development, including monitoring of tourist demand, though innovation in the methodological toolkit and implementation of new technologies and GIS are still limited or lacking.

However, specific studies on tourist demand and behaviour in protected areas are few in Bulgaria and in most cases their complete results are not publicly accessible. Moreover, even data acquired from field censuses (e.g. in Vitosha Nature Park) has been assessed as scarce and inconsistent (Mitova 2020). On the other hand, the increased tourist traffic in sensitive territories (e.g. the Seven Rila Lakes area) is widely perceived as a reason for serious damage caused to the fragile environment (Mitova 2021; Nikolova et al. 2021a). Yet, neither the true extent of the damage, nor the volume and dynamics of the visitor flow, as well as the patterns of tourist behaviour are really known even in this case of utmost public interest (Mitova 2021).

The development of new technologies and the spreading of online surveys might help a lot in overcoming difficulties to conduct visitor studies. This approach has proved to be highly efficient, especially when it comes to specific types of tourism in less developed destinations where tourists are scattered and therefore difficult to reach on-the-ground (Kaloyanov 2018). Moreover, the online travel communities have developed into an interesting area of research and are already considered a phenomenon leading to big changes in consumer behaviour in the travel sector (Parra-López et al. 2011; Casaló et al. 2011). Thus, investigating a specialised online travel group may make it easier to reach the target population, particularly when the study territory is vast or difficult to access.

Focusing on such protected territory, this paper presents results of an online survey of visitors to the Urdini Lakes in Rila National Park. The case study is of high research interest, as the Urdini Lakes are located between two overpopulated tourist zones in the park—the cirque of the Seven Rila Lakes and the Malyovista valley. Due to their remoteness and difficult accessibility (at least 4–5 hours hiking is required), they have remained isolated and are rarely visited so far. However, a boost in visitation could be expected since the Urdini Lakes seem to be gaining popularity on social media, and the starting points of the trails are just one-and-a-half-hour drive away from the capital Sofia.

The aim of the paper is to identify the overall recognition of the Urdini Lakes and the extent to which they are effectively visited by mountaineers, as well as the profile of visitors and their behaviour in the context of social networks influence. The study is part of a research project, investigating the influence of the most popular social media on visitation to fragile mountain areas. To achieve the study goal, we have conducted an online survey among the “Mountaineers” Facebook (FB) group, which is one of the largest and longest established online travel communities in Bulgaria with more than 52,000 members. Thus, by combining the traditional survey method with the opportunities provided by social media, we have obtained valuable, albeit exploratory, information about a little-known phenomenon, that otherwise would have required a lot of time and extensive resources.

2. Literature review

In recent years there is an increase in visitation to protected territories putting these sensitive areas at risk and increasing the challenges that park authorities are facing (Hadwen et al. 2007).

The negative environmental impacts of mountaineering affect land relief, vegetation, wild animals, and cause pollution (Apollo and Wengel 2021). Therefore, information about tourist preferences and behaviour in these zones becomes of crucial importance for the sustainable management of the protected areas. The required data can be summarised in the following categories—number of visitors, most popular zones within the protected area, most popular activities, and it is also recommended for it to be scale-sensitive (Hadwen et al. 2007).

The traditional methods for gathering visitor information include on-ground visitor count data, direct observations, surveys, expert evaluations, focus groups, interviews, community consultation and choice experiments or even camera traps and infrared sensors (Pickering et al. 2020; Teles Da Mota and Pickering 2020). However, these ways to study tourist behaviour in mountains and remote areas are resource and time intensive, as well as spatially and temporarily limited (Hausmann et al. 2018). Also, due to financial and staff constraints, visitor data in most protected areas is limited and often lacks spatial and temporal dimensions (Norman and Pickering 2019).

On the other hand, social media have recently become an emerging innovative channel for understanding tourist behaviour (Lu et al. 2018; Chen et al. 2022) and proved to be a cost-efficient method for exploration of tourist preferences and activities in protected territories that can be of real use to the park management (Hausmann et al. 2018; Pickering et al. 2020; Teles Da Mota and Pickering 2020). Studies in the field are based on obtaining and analysing metadata through the Application Programming Interfaces (APIs) of the respected platforms (Heikinheimo et al. 2017; Hausmann et al. 2018; Barros et al. 2020; Moreno-Llorca et al. 2020; Pickering et al. 2020; Wilkins et al. 2021) or through downloading tracks and routes from activity platforms (Norman and Pickering 2019; Barros et al. 2020). Research has shown that these methods can provide sufficiently accurate and reliable information to complement the traditional sources (Heikinheimo et al. 2017; Pickering et al. 2020; Wilkins et al. 2021). It should be noted that despite the reported similarities and correlations between social media data and traditional surveys, still differences exist (Teles Da Mota and Pickering 2020; Wilkins et al. 2021). Social media data, as well as the traditional survey methods, has its limitations—the inability to represent all types of mountain tourists (Pickering et al. 2020), the fluctuations in popularity of the specific platform, regulations regarding access to data upon different social media platforms, limited demographic data, as well as ethical considerations (Norman and Pickering 2019; Teles Da Mota and Pickering 2020). Because of these limitations, most studies dealing with protected territories and social media compare other sources of data (primary or secondary) along with the one generated from the platforms (Wilkins et al. 2021). Lu et al. (2018) call for innovative research ideas, exploring different types of online data and adopting new research methods. In the case of protected areas, it is the combination of social media data and visitor surveys that can be used to understand some of the patterns of visitation, already revealed in social media data and can also help to overcome some of its limitations (Moreno-Llorca et al. 2020; Wilkins et al. 2021). Therefore, under resource and time constraints, it may be worth combining the classical survey methodology with the easily accessible new technology.

Along with new possibilities for data gathering and analysis, the impact of social media on the visitation of remote or little-known areas should be acknowledged and therefore closely monitored by park authorities as it may lead to environmental problems, conflicts and even safety issues (Pickering et al. 2020; Barros et al. 2020; Wengel et al. 2022). The increase of visitation may be: 1) direct—

when the availability of information reduces uncertainty and risk; and 2) indirect—when the shared information contributes to image formation, but without immediate effect on visitation (Zeng and Gerritsen 2014; Al-Gasawneh and Al-Adamat 2020; Shang et al. 2021). The frequency of using social media for travel related purposes is strongly influenced by age (Hysa et al. 2021) and the travel and social media experience (Zeng and Garritsen 2014).

3. Study methods

3.1. Case study area

The Urdini Lakes (Fig. 1) are a group of six glacial lakes, lying amphitheatrically at an altitude between 2,348 and 2,278 m a.s.l. Each of the lakes covers a relatively small area—between 0.8 and 2.5 ha. The main entrance to the cirque is from the Urdina River valley, the neighbouring Malyovista valley, the Seven Rila Lakes cirque and the main Malyovitsa ridge. Regardless of the fact that the ecosystem services recreational potential of the subalpine areas in Bulgaria is estimated as medium (Nedkov et al. 2021), the walking routes in the area are of high tourist value as they possess remarkable panoramic views, botanical and geological diversity (Silvestriev et al. 2021).

They are technically not difficult in summer conditions but require a good level of fitness.

The scale of tourism in the cirque of Urdini Lakes is in contrast with the current accessibility, infrastructure and over-tourism in the neighbouring cirque of the Seven Rila Lakes and the Malyovista valley. Although tourism monitoring data have been collected on a monthly basis by the park authorities since 2000, due to administrative and managerial issues, it is limited and probably inaccurate (Stankova and Kirilov 2011). Table 1 provides data for the number of tourists and nights spent in huts in the park region of Govedartsi for 2022.

A report prepared by the Rila National Park (National Park Rila 2023) states that in 2022 compared to 2021 there was an overall 8.5% decrease of visitors and a 10.3% increase of nights spent in the region of the whole park. The annual number of visitors in the area of the Urdini Lakes for the recent years has been reported as follows: in 2019—1875 visitors; in 2020—825; in 2021—2097 and in 2022—315 (National Park Rila 2023). The data is extracted from a monitoring report of the visitors flow on the territory of the park. It is hard to find an explanation for these figures, which once again raises questions about the tourist monitoring data of the protected area, but still, it provides a starting point for further analysis.

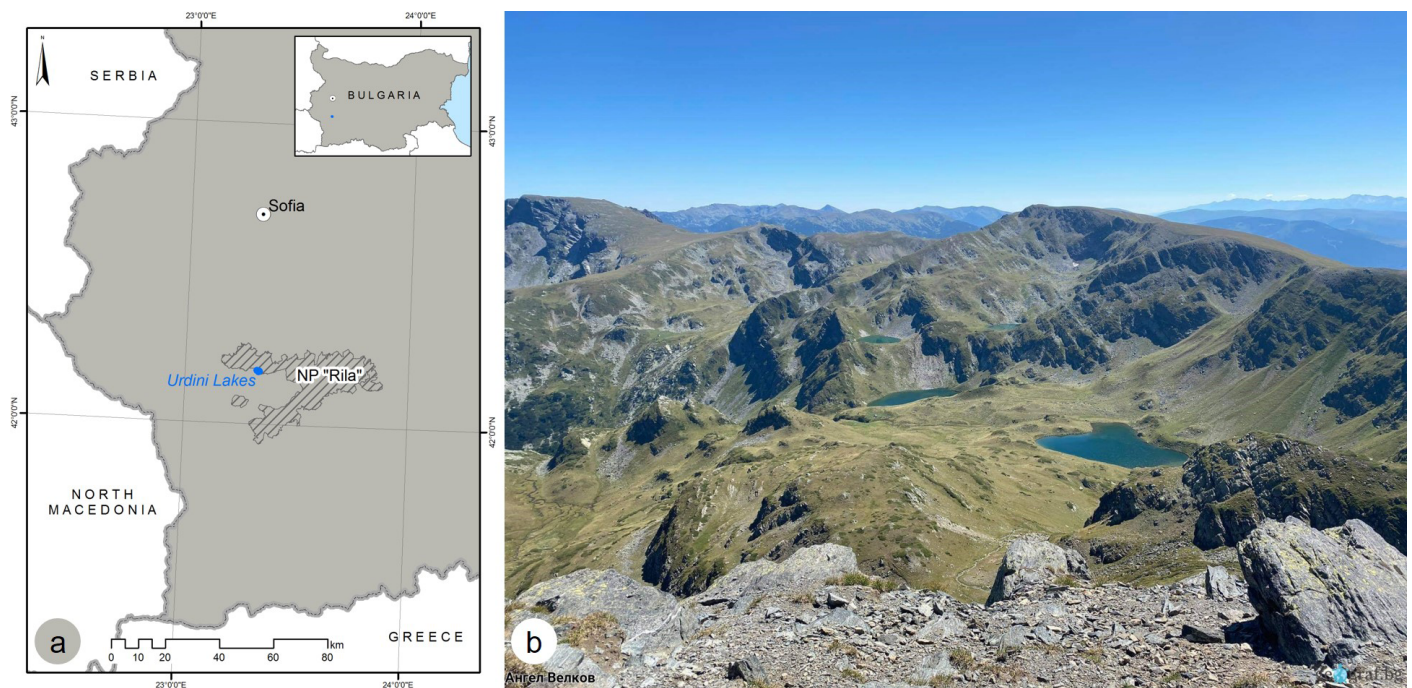


Figure 1. The Urdini Lakes cirque. A Location, B landscape (geograf.bg).

Table 1. Tourist monitoring of NP Rila (National Park Rila 2023).

	N of visitors	N of bed-places	N of nights spent
Rila NP	161103	no data	22882
Park region Govedartsi	39441	90	1776
h. Malyovitsa	25765	65	1296
h. Vada	5790	25	380
h. Mechit	7571	-	100
Urdina river valley and Botanical trail	315	-	-

3.2. Online survey

The aim of the survey was to identify the role social media plays in the visitation of fragile mountain destinations. It had a total of 37 questions, six of them open-ended, in three sections. Section 1 was dedicated to the general role of social media. Section 2 was to be answered only by those who have visited the case study area. Section 3 contained socio-demographic questions about the age of participants, their gender, education, standard of living, mountain experience and the frequency of practicing walking and hiking in the mountains, as well as the frequency of entering Facebook or other social networks, and how long they have been members of the “Mountaineers” group.

The current paper focuses on the answers generated in Section 2. The questions tried to obtain answers on the pattern of tourism in the region of the Urdini Lakes by asking the participants: how many times they have been there; when was the first time they visited the region; in which season they have been there; what were the entrance and exit routes to and from the cirque they have used, as well as if they spent a night in the region. We also asked participants what stimulated them to visit the lakes, with social media being one of the possibilities, as well as if they shared information or pictures on their return from the area.

Our questionnaire was distributed among the members of a specialised Facebook group called “Mountaineers”. Facebook was chosen as it is the most popular social media in Bulgaria—as of August 2023, this platform is used by 70% of the Bulgarian population (NapoleonCat). The group itself was founded in 2009 and currently is one of the biggest Bulgarian specialised travel groups, currently having more than 52,000 members. The online survey took place in April and May 2023 and lasted three weeks. For this period a total of 229 questionnaires were submitted. A relatively small proportion of survey participants had visited the Urdini Lakes, so

only 80 respondents filled in the special section for the Urdini Lakes. The sample of the respondents is presented in Table 2.

The majority of survey participants are 26–55 years of age, which represents the group of population that is most active in the mountains and has the resources and ability to do hiking. Much more women responded to the questionnaire, which is not surprising since females are generally more willing to participate in surveys. As expected for a specialized mountain community, 63% of those who took part in the survey go to the mountains on a regular basis. Similarly, the majority of them have at least some mountain experience, with 32% qualifying themselves as experienced mountaineers.

The close-ended questions were analysed using IBM SPSS Statistics (Version 29). Considering the categorical type of variables under study, descriptive and bivariate data analyses were employed comprising cross-tabulations, Cramer’s V correlation, and Chi-square tests of independence. Thus, associations between variables were found and their statistical significance was tested. Both results with and without statistical significance were discussed in the article as far as they were considered indicative of the tourist demand and behaviour, though not being generalisable in most cases.

The open-ended questions were coded and grouped into categories. When analysing the question investigating the seasons of visitation, we counted as separate answers all the different options provided, no matter if they were given by one and the same respondent. The entrance and exit routes provided in the survey were grouped based on their geographic proximity to one another so as to outline the major directions in and out the cirque.

4. Results

4.1. The visitors of the Urdini Lakes

Only 35% out of all surveyed members of the Facebook mountaineering group, have ever visited the Urdini Lakes (Table 3). Considering the specialization of the Facebook group, this may be treated as a low result. There are many explanations for it from a pure planning and walking point of view, with some of them being the long walking access to the cirque and the difficulty of completing this trek in a day.

Table 3. Answers to the question: “Have you been to the Urdini Lakes?”.

Answers	Frequency	Percent
Yes	80	35
No	146	64
I do not remember	3	1
Total	229	100

The majority of tourists who have been to the Urdini Lakes are in their 40s and early 50s (Fig. 2). If the structure of the overall sample is compared to that of those who have been to the Urdini Lakes, a larger proportion from the older groups have visited the area compared to the younger generations. This can be explained in parallel with their mountain experience—these tourists are also more experienced mountaineers—those with long-standing experience are 52% compared to 32% in the overall sample. Their frequency of going to the mountains is also higher, with a larger proportion of them being in the mountains almost every week. Looking at the gender split, the proportion of men who have visited the Urdini Lakes, is higher compared to the overall sample (33% to 27%). Those who have been

Table 2. Characteristics of survey respondents.

Total		Frequency	Percent
		229	100
Gender	Male	62	27
	Female	167	73
Age	Up to 25	20	9
	26–40	76	33
	41–55	102	45
	Above 55	31	14
Education	High school	43	18
	Bachelor/Masters	180	79
	Higher degree	6	3
Standard of living	High	29	13
	Medium	191	83
	Low	9	4
Frequency of mountain activities	Every week/weekend	69	30
	Once/twice a month	76	33
	Few times a year	75	33
	Maximum once a year/less	9	4
Mountain experience	Long-standing experience	74	32
	Some experience	131	57
	Little or no experience	24	11

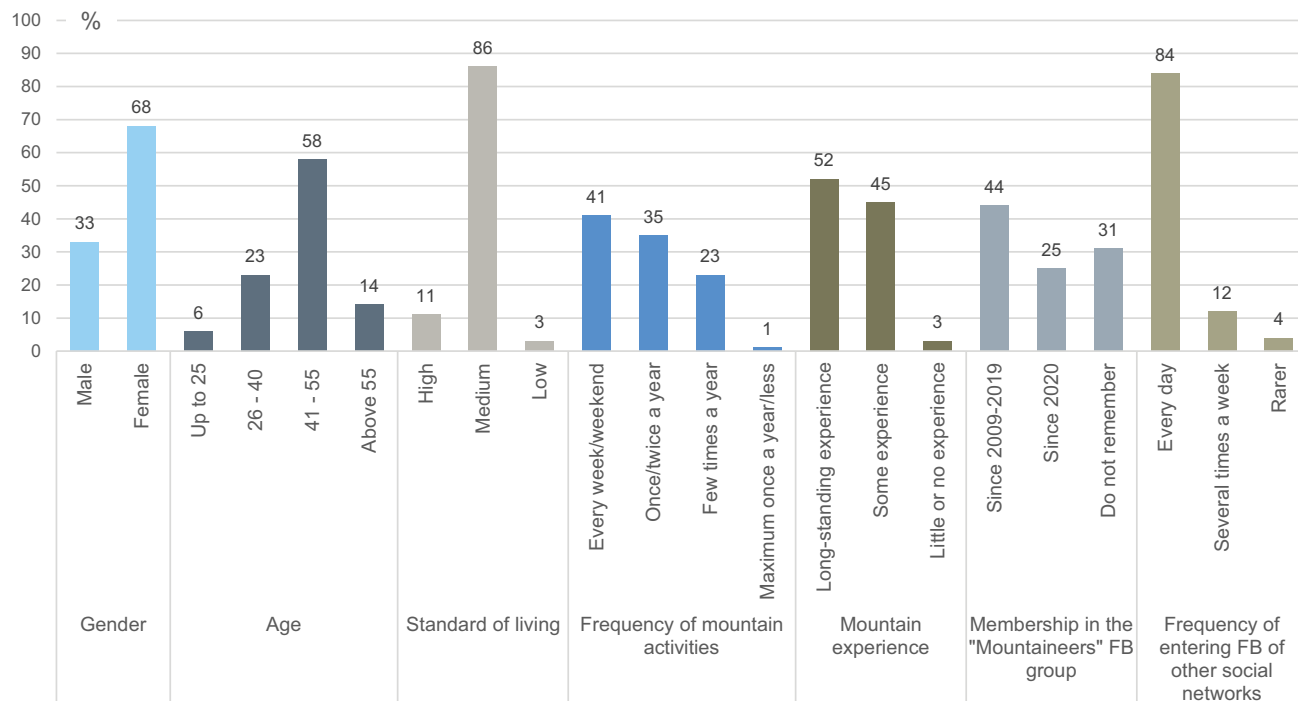


Figure 2. Profile of respondents who have visited Urdini Lakes.

Table 4. Answers to the question: “How many times have you been to Urdini Lakes?”.

		Once	2–3 times	More times	N of Valid Cases	Cramer's V	Approx. Sig.
Total		50%	25%	25%	80		
Membership in the FB group	Between 2009 and 2019	57%	23%	20%	35	0.221	0.098
	Since 2020	65%	20%	15%	20		
	I don't remember	28%	32%	40%	25		
Frequency of mountain activities	Every week/weekend	42%	18%	39%	33	0.254	0.112
	Once/twice a month	61%	21%	18%	28		
	Few times a year	44%	44%	11%	18		
	Maximum once a year or less	100%	0%	0%	1		
Mountain experience	Long-standing experience	45%	21%	33%	42	0.177	0.286
	Some experience	56%	31%	14%	36		
	Little or no experience	50%	0%	50%	2		
Gender	Male	46%	19%	35%	26	0.160	0.359
	Female	52%	28%	20%	54		
Age	Up to 25	80%	20%	0%	5	0.229	0.211
	26–40	50%	22%	28%	18		
	41–55	46%	22%	33%	46		
	Above 55	55%	45%	0%	11		
Standard of living	High	67%	22%	11%	9	0.150	0.461
	Medium	46%	26%	28%	69		
	Low	100%	0%	0%	2		

to the area of Urdini Lakes are among the oldest members of the studied Facebook group (44%) and a very high proportion of them (84%) are utilising social media every day.

4.2. Tourist behaviour at the Urdini Lakes

The results above are further confirmed by analysis of the times respondents have been to the lakes area. The cross tabulation in Table 4 shows differences in relation to the profile of the visitors. Despite the Cramer's V being not statistically significant in any of the cases, an association can be observed between the frequency of going to the mountains, their age and membership in the Facebook group. Half of the visitors of the Urdini Lakes have been there just once, while a quarter could be treated as regular visitors as they have been there more than three times.

The One-off visitors are mainly people who are recent members of Facebook group "Mountaineers" (65%), who have some mountain experience (56%) and go to the mountains one or twice a month (61%). Among them, there are more women than men and a greater share of younger people up to 25 (80%) or from the group above 55 years of age (55%). In this group a larger proportion have declared themselves as having a high standard of living (67%).

The regular visitors do not seem to pay big attention to the FB group (and probably not to the information that they can obtain from it) as 40% do not remember for how long they have been enrolled there. They often go to the mountain (39%) and have long-standing experience (33%). More men than women often visit

the area, with one-third of them being aged 26–40 and 41–55. No regular visitors from the youngest and the oldest age groups have been identified.

A larger proportion of the participants visited the lakes in the period 2009–2019 (Table 5). This result may be related to a number of factors—the age of respondents, the online type of survey, rising popularity of mountain activities, etc. It could be connected to a certain extent also with the rising popularity and importance of social media and, in particular, with the researched mountain Facebook group. Only a quarter of the respondents had visited the lakes before the creation of the group, while half of them went there for the first time in the period 2009–2019 (i.e. prior to the COVID pandemic). The remaining 23% visited the area for the first time in the last three years, a figure, which on its own, is another indicator of recently rising visitation interest.

The answers to this question have a relatively high association (Cramer's $V > 0.200$) with three variables: period of becoming a member of the FB group, gender and age. Statistical significance is only found between the first visit to the lakes and membership of the online community, with 70% of the oldest members visiting the lakes in this period (2009–2019).

Whether social media, or this FB group in particular, actually affects the visitation to the Urdini Lakes is not clear. A large part of respondents who do not remember the year they became members, or who became members since 2020 onwards, visited the lakes for the first time even before 2009 or between 2009 and 2019, i.e. before becoming group members. On the other hand, those who have

Table 5. Answers to the question: "When did you visit the Urdini Lakes for the first time?"

		Before 2009	2009–2019	Since 2020	N of Valid Cases	Cramer's V	Approx. Sig.
Total		25%	53%	23%	80		
Membership in the FB group	Between 2009 and 2019	11%	69%	20%	35	0.251	0.039
	Since 2020	25%	50%	25%	20		
	I don't remember	44%	32%	24%	25		
Frequency of mountain activities	Every week/weekend	27%	52%	21%	33	0.090	0.971
	Once/twice a month	21%	54%	25%	28		
	Few times a year	28%	50%	22%	18		
	Maximum once a year or less	0%	100%	0%	1		
Mountain experience	Long-standing experience	29%	57%	14%	42	0.192	0.208
	Some experience	22%	44%	33%	36		
	Little or no experience	0%	100%	0%	2		
Gender	Male	35%	54%	12%	26	0.209	0.174
	Female	20%	52%	28%	54		
Age	Up to 25	0%	60%	40%	5	0.254	0.111
	26–40	11%	50%	39%	18		
	41–55	33%	48%	20%	46		
	Above 55	27%	73%	0%	11		

visited the lakes for the first time in the recent three years, account for 20–25%, regardless of the time of group membership.

Another interesting result is that the Urdini Lakes seem to be getting more popular among women: 28% of them visited the lakes for the first time in or after 2020 (compared to 20% for the period before 2009). The proportion is different with the male group—only 12% have ‘discovered’ these lakes in recent three years, while 35% had visited them even before 2009. It is not a surprise that the younger participants have visited Urdini Lakes relatively recently, including around 40% - from 2020 onwards. Around a third of the oldest participants first visited the area more than 15 years ago, and only a small part – during the pandemic or after that. It is the more experienced mountaineers who have visited the Urdini Lakes before 2009 (29%) and in the period 2009-2019 (57%), while the proportion of those who have very recently been there for the first time is 33%.

Considering the geographic position of the Urdini Lakes cirque, the pattern of seasonality is not a surprise (Table 6). The majority of visits (60%) happen during the summer, almost a third – in the autumn, whilst winter and spring are the seasons when the region is least visited. Having a shoulder season in the autumn allows for reduced environmental pressure in the region and the fact that it is relatively high (27%) could be considered an advantage. It is worth noting that the winter/spring activities can only be practiced by people with serious mountain experience and may involve ski-touring/snowshoe equipment and skills, which will additionally limit the number of tourists.

Table 6. Seasons of visitation.

Season	Number of responses	Share of responses
Summer	62	60%
Autumn	28	27%
Winter	8	8%
Spring	6	6%
Total	104	100%

An attempt was made to outline the main entrance and exit routes to and back from the cirque by asking the survey participants two similar non-obligatory open-ended questions. We grouped the answers based on the location of the trails and the starting point of the walk (if mentioned by respondents). The results can be seen in Table 7.

The valley of the Urdina River is the main way to enter the cirque (31%). The next two options mean that tourists are coming from the neighbouring much more accessible areas (Malyovitsa valley and Seven Rila Lakes region). Even more tourists preferred to go back down the valley, which is the easiest option (47%). Considering this, in terms of park management, future attention should be paid to monitoring trails in the valley of the Urdina River.

From a park management perspective, it is very important to know where visitors of the Urdini Lakes slept during their trek. There is no hut in the cirque, but there are few very popular ones in the direction of the main entrance and exit routes. It is important to note that as per park regulations, camping is not allowed, except for specially designated areas. According to the survey results, this rule is broken by 18% of the visitors (Table 8).

Staying in a nearby hut (38%) allows the long trek to be split into easier walks, while currently 45% prefer to do the long walks and not to sleep in the region (or maybe not in the mountains at all). Those with the highest standard of living (56%) choose this option—possibly, because the level of accommodation and services in huts do not meet their requirements. This option is also preferred by, theoretically, the groups of stronger walkers—men (58%) and younger aged (up to 25–60%, between 26–40 years old—56%). The same explanation could be given for those with long-standing mountain experience (45%) and those who regularly visit the mountains (54–55%). On the other hand, a night in a hut is considered a better option by female participants (44%), and those who are not regular walkers and only go to the mountains a few times a year (67%). There are no clear tendencies regarding those who camped—their distribution is almost equal among different subgroups. The reason to choose camping may vary from person to person—to break a long trek, to sleep outdoors, to avoid crowds and poor conditions in huts, etc.

Table 7. Entrance and exit routes.

Entrance to Urdini Lakes Cirque	Number	%
Urdina River Valley (Vada Hut, Yavorova Polyana, Complex Malyovitsa)	24	31
Zeleni Rid (Zeleni Rid, Razdela, Seven Rila Lakes)	19	24
Ushite (Ushite, Malyovitsa River Valley, Malyovo Pole)	19	24
Main Malyovista Ridge (Rila Monastery, Mt. Damga, Mt. Dodov, Ivan Vazov Hut)	16	21
Exit from Urdini Lakes Cirque	Number	%
Urdina River Valley (Vada Hut, Yavorova Polyana, Complex Malyovitsa)	34	47
Zeleni Rid (Zeleni Rid, Razdela, Seven Rila Lakes)	16	22
Main Malyovista Ridge (Rila Monastery, Mt. Damga, Mt. Dodov, Ivan Vazov Hut)	12	17
Ushite (Ushite, Malyovitsa River Valley, Malyovo Pole)	10	14

Table 8. Answers to the question: “Where did you sleep during this trek?”.

		Hut	Tent / Camp	No night stays in the region	N of Valid Cases	Cramer's V	Approx. Sig.
Total		38%	18%	45%	80		
Membership in the FB group	Between 2009 and 2019	29%	14%	57%	35	0.254	0.035
	Since 2020	30%	35%	35%	20		
	I don't remember	56%	8%	36%	25		
Frequency of mountain activities	Every week/weekend	27%	18%	55%	33	0.280	0.051
	Once/twice a month	32%	14%	54%	28		
	Few times a year	67%	22%	11%	18		
	Once a year or less	0%	0%	100%	1		
Mountain experience	Long-standing experience	36%	19%	45%	42	0.132	0.590
	Some experience	42%	17%	42%	36		
	Little or no experience	0%	0%	100%	2		
Gender	Male	23%	19%	58%	26	0.212	0.167
	Female	44%	17%	39%	54		
Age	Up to 25	20%	20%	60%	5	0.122	0.882
	26 - 40	28%	17%	56%	18		
	41 - 55	43%	17%	39%	46		
	Above 55	36%	18%	45%	11		
Standard of living	High	22%	22%	56%	9	0.163	0.375
	Medium	38%	17%	45%	69		
	Low	100%	0%	0%	2		

4.3. Social media and popularity

The majority of people who have been to the region of the Urdini Lakes have been brought there by a friend (Table 9). This is an expected result as traditionally this is the way to explore an unknown mountain region. This is to a very big extent valid for women (61%), where the results are statistically significant. It is also true for those who camped in the region—with 71% being led by a friend or/and as part of a group.

The second most important source of information/inspiration to visit the lakes is information obtained from Internet sites, which has gradually increased its significance since 2009, and is more important for people aged 41–55. It can be concluded that Internet sites are now a relatively well-established legitimate source of information that the middle-aged generation are already comfortable using in all spheres, including for mountain walking planning. A recommendation by a friend ranks third, being mentioned by 19% of the valid survey participants. It is considerably stronger amongst the youngest respondents (60%) and those who camped in the region (36%).

An interesting part of this question is the influence social media has on visitation to the Urdini Lakes. Despite having a low overall score (6%), this influence has increased from 5% (for those who visited the lakes in the period 2009–2019) to 17% (for those who

have been there after 2020). It has stimulated the youngest (20%) and some of the oldest participants (9%) but influenced least the most dominant group of those aged 41–55 (only 2%). Men to a higher extent have relied on social media information (12%), compared to women (4%), which might be explained with the feeling of safety being led by somebody experienced “live”, rather than online and from a distance.

All the participants in the study, not only those who have visited the Urdini Lakes, were asked if they recognized a picture of the cirque. Overall, only 18% of them answered positively (Table 10). Interestingly, only 35% of those who had been there were definite that they knew the location, while 41% remained undecided.

In the free answers, which asked respondents to share what they thought was the place, many of them simply guessed that it was somewhere in the Rila Mountains, or mistakenly confused it with a neighbouring region (around the Ivan Vazov hut). Furthermore, it is interesting that the landscape looked familiar for 24% of those who had not been to the Urdini Lakes cirque. It was the regular walkers and the more experienced mountaineers who stated they recognized the place, but even then, a very high share of those were not certain.

Connected to publicity, it is interesting to see how people who have already visited the area of the Urdini Lakes “spread the word”.

Table 9. Answers to the question: “Your visit to the Urdini Lakes was due to:”.

	Total	First visit to the Urdini Lakes			Overnight in the region			Gender		Age			
		Before 2009	Between 2009 and 2019	Since 2020	Hut	Tent/Camp	No night in the region	Male	Female	Up to 25	26–40	41–55	Above 55
Lead by a friend /organised group	51%	50%	57%	39%	53%	71%	42%	31%	61%	20%	39%	57%	64%
Information from Internet sites	23%	10%	26%	28%	27%	0%	28%	27%	20%	20%	17%	26%	18%
Friend recommendation	19%	10%	21%	22%	17%	36%	14%	23%	17%	60%	22%	13%	18%
Information from social media	6%	0%	5%	17%	3%	0%	11%	12%	4%	20%	11%	2%	9%
As a part of a bigger Rila trek	6%	15%	5%	0%	7%	0%	8%	19%	0%	0%	17%	4%	0%
By chance	5%	5%	5%	6%	7%	0%	6%	4%	6%	0%	0%	7%	9%
Other	5%	15%	2%	0%	3%	0%	8%	4%	6%	0%	0%	9%	0%
Number of respondents	80	20	42	18	30	14	36	26	54	5	18	46	11
Chi-square		20.029			18.604			20.504		25.195			
df		14			14			7		21			
Sig.		0.129			0.181			0.005		0.239			

Table 10. Answers to the question: “Do you recognize this place?”.

		Yes	No	Undecided	Total	Cramer's V	Approx. Sig.	N of Valid Cases
Total		18%	47%	35%	100%			
Have you been to Urdini Lakes?	Yes	35%	24%	41%	100%	0.280	0.000	229
	No	10%	58%	32%	100%			
	Undecided	0%	100%	0%	100%			
Frequency of mountain activities	Every week/weekend	30%	29%	41%	100%	0.210	0.003	229
	One/twice a month	18%	53%	29%	100%			
	Few times a year	9%	53%	37%	100%			
	Once a year or less	0%	78%	22%	100%			
Mountain experience	Long-standing experience	34%	32%	34%	100%	0.215	0.000	229
	Some experience	11%	51%	37%	100%			
	Small/None experience	8%	67%	25%	100%			
Gender	Male	32%	37%	31%	100%	0.220	0.004	229
	Female	13%	50%	37%	100%			

Table 11. Answers to the question: “Did you share information/pictures of the Urdini Lakes in the social media?”.

		Yes	No	I don't remember	N of Valid Cases	Cramer's V	Approx. Sig.
Total		39%	51%	10%	80		
Membership in the FB group	Between 2009 and 2019	57%	34%	9%	35	0.244	0.049
	Since 2020	30%	60%	10%	20		
	I don't remember	20%	68%	12%	25		
Frequency of mountain activities	Every week/weekend	64%	30%	6%	33	0.309	0.018
	Once/twice a month	21%	64%	14%	28		
	Few times a year	22%	67%	11%	18		
	Maximum once a year or less	0%	100%	0%	1		
Mountain experience	Long-standing experience	45%	48%	7%	42	0.151	0.456
	Some experience	33%	53%	14%	36		
	Little or no experience	0%	100%	0%	2		
Gender	Male	38%	58%	4%	26	0.149	0.412
	Female	39%	48%	13%	54		
Age	Up to 25	20%	80%	0%	5	0.159	0.670
	26–40	50%	44%	6%	18		
	41–55	39%	50%	11%	46		
	Above 55	27%	55%	18%	11		
Standard of living	High	11%	89%	0%	9	0.248	0.044
	Medium	42%	48%	10%	69		
	Low	50%	0%	50%	2		

The results are related to the visibility of the area in the online world and might have an effect on future visitations, at least to some extent. The statistically valid results tell that it is more the early members of the mountain Facebook group (57%) that have shared pictures of the lakes, not the recent ones (30%) (Table 11). Also, it is typically the regular walkers (64%) who share. No significant differences were found by gender and age. Yet, males are more adamant that they do not share, while females are more likely not to remember. Very surprisingly, it is the younger group (up to 25 years—80%) and those with a higher standard of living (89%) that have least shared information or pictures of the area after they visited it.

5. Discussion

The results from the online survey are helpful in portraying the overall picture of 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 proved to be cost and time efficient as pointed out elsewhere in academic literature (Hausmann et al. 2018; Pickering et al. 2020; Teles Da Mota and Pickering 2020) and therefore appropriate for an exploratory study of a little-known phenomenon. The online survey carried out in the Facebook group “Mountaineers” provided valuable

information regarding tourism in a selected small area, collection of which is considered inefficient to be done via traditional park monitoring (Stankova and Kirilov 2011).

According to the survey results, the typical visitor to the lakes is an experienced mountaineer who regularly goes hiking, is mostly between 26–55 years of age, and of medium living standard. With the raising popularity of mountain activities (Hadwen et al. 2007), but considering the relatively challenging access to the region, this profile will probably shift towards younger and fitter but less experienced visitors. In parallel to this, it is likely that the one-off visitors may increase, or in other words, those who want to “tick off” the region from a bucket list.

Another area of investigation in the current study comprises patterns of visitation and tourist behaviour. A positive feature discovered by the survey is the autumn shoulder season for visits to the area, which may be a factor helping to reduce the chances of a concentration of tourists at one and the same time. The easily accessible and popular areas around Mt. Malyovista and the Seven Rila Lakes are used by tourists for a hop over to the studied area. Still, as these are not the main entrance and exit routes, it can be concluded that the Urdini Lakes are not threatened by an increase of visitation due to the over-tourism experienced in the other nearby zones of the park. In this aspect, the online survey did not

give as accurate information as could be extracted by analysing user-generated content in the form of route tracks and geotagged posts (Norman and Pickering 2019; Barros et al. 2020). The results obtained in the study regarding entrance and exit routes should be treated with caution as some of the answers were not clear as to where exactly walks started and which was the path used. There were also participants who did not remember the route at all which additionally reduced the number of answers.

From a park management perspective, the camping patterns are worth investigating further in accordance with park rules and legislation. The trend to avoid nights spent in the adjacent area, will be a limiting factor for the increase of visitor flow. In order for the cirque and the whole region to be kept as a “hidden jewel”, access to the area should not be further developed as it naturally limits the number of visitors only to fit and experienced walkers.

Clearly nowadays people visiting this part of Rila National Park still prefer to be guided by someone who knows the region well enough. On the other hand, as a result of the constant technological advance, social media will play a more and more important role in the whole travel process—destination planning, while in the region, and post-trip (Lu et al. 2018; Chen et al. 2022). It is the younger tourists who are more influenced by the shared information (Hysa et al. 2021). As these media will continue to develop their functionalities, even less experienced tourists will dare to walk in wild remote regions on their own. This inevitably will lead to an increase in mountain visitation, demonstrated by the slow but existent rise in social media influence. However, our survey has shown that currently the majority of visits to the Urdini Lakes are not related to social media.

Even though very attractive for mountain tourism (Silvestriev et al. 2021) and becoming more popular in the recent years, the region has not yet become a tourist highlight and therefore a “must-go” place. Its popularity remains rather low even among the segment of Bulgarian mountaineers. Despite this, as a result of social media sharing, it will definitely become more and more recognized as a destination, i.e. there will be an indirect impact on visitation with no immediate effect (Zeng and Gerritsen 2014; Al-Gasawneh and Al-Adamat 2020; Shang et al. 2021). How much more visited it will become via the direct impact of social media is to be determined by two other factors: 1) accessibility and 2) popular trends in mountain activities among tourists.

6. Conclusion

The online survey on visitation and tourist behaviour in the Urdini Lakes 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. Besides being an efficient instrument to study tourist demand and behaviour in places of difficult accessibility, another advantage of the online survey is that it allows collecting information for a specific small area of interest which may differ from official park regions that are bigger in territorial scope. This type of research could be used to obtain information on tourist behaviour for any mountain destination, but ideally, in order to get the full picture, data obtained by using different methods should be combined.

Based on the results of this study, the influence of social media on visitation and tourist behaviour in the case of Urdini Lakes appeared lower than expected and much outweighed by factors like accessibility and difficulty of walks. In this case, with the current infrastructure, despite the inevitable increase in visitation,

the Urdini Lakes are less likely to experience overtourism and degradation of landscape compared to other regions.

There are limitations of the study which have to be taken into account. Firstly, using a voluntary online survey meant having a non-probability sample, with a very high proportion of women, which may affect the results. Secondly, the number of participants who have visited the lakes and were able to answer the respective section in the questionnaire was too small to obtain more results showing statistical significance. Thirdly, the online survey did not appear an appropriate tool to accurately identify the routes used within the park due to the imprecise information given in the free answers. Therefore, in future, similar surveys should include larger samples gathered from more of the existing specialised online travel communities and questions related to the routes used should be asked more precisely (as close-ended ones) to avoid misunderstanding and various interpretations.

As pointed above, an online survey has limitations since it cannot provide information about exact geolocation of subjects under study. On the other hand, methods relying purely on big data extraction and analysis lack the demographic, social and psychological aspects of research. Thus, further research should combine more innovative mixed methodologies regarding the usage of social media and its influence, which can combine and compare different types of data such as surveys, geolocated big data and visual methods.

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Conflict of interest

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