



SOCIAL MEDIA AND MOUNTAIN VISITS – IS THIS ‘FRIENDSHIP’ SUSTAINABLE?

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ABSTRACT

The role of social media in tourism has already been acknowledged in the academic literature but still little is known about its specific influence on mountain tourism in the context of the growing popularity of outdoor activities that threaten to harm fragile areas. The aim of this article is to find out the effect of social media on such visits, to outline patterns of tourist behaviour, as well as to reveal social media-induced effects, both negative and positive, regarding the sustainability of mountain tourism. Using an online survey among the members of a Bulgarian mountaineering Facebook group, we found out that it was information of practical use that was mostly searched for by its members, and which in turn can be easily converted into real visits to the area, and as such mainly attracting novice mountaineers. The study uncovered purely pragmatic perceptions in terms of sharing information and pictures about places in the mountains, with limited awareness about the possible negative environmental effects from the over-popularisation of these areas. This could be classified as a consumerist attitude towards the mountains that is nurtured by social media. On the positive side, such unawareness can be tackled by social media due to its mass informative power.

KEYWORDS

mountain tourism, Facebook, overtourism, online groups, protected areas, social media

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1. INTRODUCTION

The creation of user-generated content (UGC) is a unique feature of the so-called social media, or applications based on Web 2.0, allowing the exchange of information and communication between individuals, communities and organisations, with an effect on their real-life behaviour (Öz, 2015; Zeng & Gerritsen, 2014).

Starting being mainly text-based, social media nowadays presents much more visual and live content (Gretzel, 2019). The mass usage of smartphones and access to the mobile Internet have also contributed to the importance of social media in everyday life, including tourism (Amaro et al., 2016). It should be noted that there are differences in social media use and its impacts between different nationalities because of varying



cultural, social and economic backgrounds (Gretzel et al., 2008; Zeng & Gerritsen, 2014).

The role of social media in tourism decision-making has already been defined as very important (Hays et al., 2013), with tourist behaviour being its most studied element (Lu et al., 2018). Social media impact has been now acknowledged in two aspects: in travellers' decision making, and in tourism management and operations (Leung et al., 2013; Lu et al., 2018). Social media reduces uncertainties in travel planning, thus making tourism more accessible. On the other hand, platforms like Facebook (FB) and Instagram could be blamed for increasing the so-called 'last-chance' tourism – overexposing endangered destinations, which on its own stimulates further environmental deterioration (Aldao & Mihalic, 2020).

Despite the rising popularity of studies on social media's impact on tourism, limited research has been done on the effect of these platforms in the context of outdoor activities in the mountains. Taking into account the various health and safety risks and physical challenges involved in mountain tourism, it is interesting to uncover if social media have the same influence on it as on other forms of tourism. Also, the impact of social media on the visits to these areas should be acknowledged and monitored as it may lead to environmental problems, conflicts or even safety issues (Barros et al., 2020; Pickering et al., 2020).

Mountain tourism is defined as a type of tourism activity which takes place in hills or mountains with specific characteristics in terms of landscape, topography, climate, biodiversity and local community (Food and Agriculture Organization of the United Nations and World Tourism Organization [FAO/UNWTO], 2023). These activities can be classified into two main subgroups: (a) leisure (standard) – like camping, cycling, walking, hiking, wildlife observation and skiing and (b) sport (extreme) – like alpinism, canoeing, caving, climbing, mountain biking, trail running, trekking and ski-mountaineering (FAO/UNWTO, 2023).

Although mountain tourism is estimated to represent between 9% and 16% of total international tourism arrivals, lack of data remains a key challenge (FAO/UNWTO, 2023). Despite the fact that adequate information is of critical importance in terms of protected area planning and management (Dogramadjieva, 2018; Mitova, 2020), particularly in Bulgaria, neither the volume and dynamics of the visitor flow, nor the patterns of tourist behaviour are really known even for places of very high natural and landscape value that have attracted the utmost public interest because of serious environmental degradation and pollution (Mitova 2021). As the authors of the article have previously pointed out (Cholakova & Dogramadjieva, 2023, p. 130), this research gap can be partially filled by obtaining and analysing metadata

through the application programming interfaces of social media platforms (Barros et al., 2020; Hausmann et al., 2018; Heikinheimo et al., 2017; Moreno-Llorka et al., 2020; Pickering et al., 2020; Wilkins et al., 2021) or through downloading tracks and routes from activity platforms (Barros et al., 2020; Norman & Pickering, 2019). 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). Gössling (2017) states that a wide range of information technology implications for sustainability in tourism are insufficiently understood, giving an example with the potential of technologies to contribute to education and environmental learning, despite the lack of correlation between environmental knowledge and awareness on the one hand, and behavioural change on the other. Furthermore, the development of new technologies and the spreading of online surveys might be very helpful in overcoming difficulties in conducting visitor studies. The mass adoption of social media, as well as the development of online travel communities, allow easier access particularly to the target population of mountain tourists as opposed to traditional resource-intensive monitoring methods (Cholakova & Dogramadjieva, 2023).

The aim of this article is to find out the effect of social media on mountain visits, to outline patterns of tourist behaviour specific to this particular context, as well as to reveal social media-induced effects, both negative and positive, regarding the sustainability of mountain tourism. To achieve this, we have conducted an online survey among a Bulgarian mountaineering Facebook group. This online community is one of the largest in the country and currently has approximately 52,000 members. Thus, we were able to reach a relevant target audience and obtain valuable, albeit exploratory, information about a specific aspect of the relationship between social media and tourism.

2. LITERATURE REVIEW

2.1. SOCIAL MEDIA IMPACT ON TOURISM

The user-generated content, or electronic word-of-mouth (e-WOM), differs from the traditional word-of-mouth (WOM) mainly by the fact that it offers non-commercial, i.e. relatively unbiased, information to be received not only by the close social network, but also from internet users all around the world (Leung et al., 2013; Yoo & Gretzel, 2011). Due to technology, the e-WOM provided by social media, could be considered even more practical and useful to travellers because of the different formats in which the information could be

presented (Yoo & Gretzel, 2011). According to Tham et al. (2013), e-WOM is to be treated as a unique entity and differing from traditional WOM by the source-receiver relationship, with options for extra questions and answers, varied types of presentation, as well as the varied motivations for sharing the information. Among the factors that determine the power of e-WOM are perceived usefulness, the ability to provide current and diverse information, as well as the travel experience of the UGC creator (Leung et al., 2013; Yoo & Gretzel, 2011; Yoo et al., 2009). To these factors, Zeng & Gerritsen (2014) add the knowledge other users have of the UGC author and their own travel and social media experience. Trustworthiness is also assessed by users on the basis of message content, style, extremity and available personal information (profile picture, registration date, experience, online activity) of the UGC author (Filieri, 2016). Those who more often use social media in their daily life, take much greater advantage of it for travel related purposes and have higher income and education (Öz, 2015). An interesting finding is that less experienced users trust the online reviews and comments much more, compared to those with a greater degree of travel experience (Filieri, 2016) who tend to be more confident and spontaneous in their choices (Aldao & Mihalic, 2020).

There are conflicting results in the literature regarding which WOM – the traditional or the electronic – is more trusted by travellers (Leung et al., 2013; Sultan et al., 2021; Tham et al., 2013; Zeng & Gerritsen, 2014). The same is valid for the comparison of e-WOM and other traditional sources of information like official or governmental tourism websites (Cox et al., 2009; Jog & Alcasoas, 2023; Zeng & Gerritsen, 2014). Tham et al. (2013) argue that e-WOM is less credible than WOM, but this is compensated for by its easier accessibility. While Cox et al. (2009) see the UGC only as an additional source of information for travellers, Leung et al. (2013) predicted that e-WOM trustworthiness would increase in future as it is so widely accepted. The main issue with the trustworthiness of e-WOM is the relative anonymity of users (Yoo & Gretzel, 2011), while its main advantage is the fact that it provides unbiased and relevant information (Öz, 2015), tested by real people (Burgess et al., 2009) with no commercial interest (Casaló et al., 2011; Sultan et al., 2021). Trust in the shared content is also influenced by the perceived value and enjoyment of the users (Kitsios et al., 2022). Overall, Xiang et al. (2015) claim that social media does not substitute traditional travel information sources, but rather adds to their variety. The factors that mostly determine the frequency of using social media for travel related purposes are age (Hysa et al., 2021; Tešin et al., 2022), gender (Tešin et al., 2022), travel and social media experience (Tešin et al., 2022; Zeng & Gerritsen, 2014) and income (Hausmann et al., 2018).

Social media users turn the uploaded images both into a perceived and emitted image of tourism destinations (Pickering et al., 2020). The spread of information via UGC leads to destination image formation and potential future visits (Joo et al., 2020; Leung et al., 2013; Shang et al., 2021; Sultan et al., 2021; Tham et al., 2013). Liu et al. (2020) define two main roles of social media, direct and indirect, with the indirect being the major one in the choice of travel destination. The direct effect happens when the availability of information reduces uncertainty and risk, while the indirect is when the shared information contributes to image formation, but without immediate effect on visits (Shang et al., 2021; Zeng & Gerritsen, 2014). Social media is found to increase awareness and as a result leads to action in the long run, rather than immediate visits (Fotis et al., 2011; Kane et al., 2012; Zeng & Gerritsen, 2014). Additionally, social media could be the final stimulating factor for people to visit 'bucket list' destinations (Liu et al., 2020). Further on, the degree of influence on destination choices is higher in the context of strong social media engagement, novel destinations and travel planning complexity (Tham et al., 2020).

None of the results discussed above have been tested in the context of mountain or any other adventure type of tourism. Still, they provide a solid ground for comparison.

2.2. ONLINE GROUPS

Casaló et al. (2011) define online communities as a phenomenon that leads to changes in consumer behaviour in the travel sector. They determine the factors affecting a consumer to follow advice from a travel community: attitude toward the advice, trust in the community, result of perceived honesty, benevolence and competence, usefulness of information, susceptibility to interpersonal influence (Casaló et al., 2011). Further on, membership of online travel groups fortifies self-identification (Leung et al., 2013) and a sense of belonging to a community which leads to knowledge sharing, community promotion and behavioural changes (Qu & Lee, 2011). Social aspects like user interaction and relationships increase UGC influence (Huertas, 2018), and members' demographic characteristics have been shown to have an impact on the type of need and participation in online travel communities (Wang & Fesenmaier, 2004).

2.3. SOCIAL MEDIA AND OVERTOURISM

Usually, overtourism is seen as mainly an urban issue, but it can be observed, often seasonally, in other spaces like parks, beaches and other attractions (Gössling et al., 2020). A bibliometric analysis of research on mountain tourism (Ng, 2022) revealed that despite issues such as

sustainable development and tourism management being among the most studied areas, overtourism is still not a major theme. Few recent studies cast light on specific observations in different parts of the world that are related to this topic in the context of mountain tourism. In the case of a wilderness area in Iceland, overtourism has led to lower visitor satisfaction (Sæþórsdóttir & Hall, 2020). Gamba (2024) provides examples of mountain destinations in USA, Italy and Switzerland where overcrowding has occurred as a result of sudden popularity on social media.

In general terms, social media has been linked in the public domain to the phenomenon of overtourism, although its relationship with tourism is not so direct or simple (Gretzel, 2019), and exploratory studies only confirm a possible correlation (Alonso-Almeida et al., 2019). On the contrary, Vandenberg (2023) states that in many of the examples of overtourism, the number of visitors began to escalate rapidly after the establishment of the most popular social media platform after 2010. Gretzel (2019) concludes that social media use is not the only, and likely not the most important, reason for overtourism, but it certainly encourages behaviours that lead to crowding, and it perpetuates images that influence others to travel to certain places.

On a positive note, some researchers see social media itself as able to lead to environmentally-friendly patterns of behaviour and perceptions in its users (Kane et al., 2012). It can be used, in conjunction with other measures, as a tool to combat overtourism by promoting sustainable tourism behaviour, by educating stakeholders and the public about the causes and consequences of overtourism, as well as by providing data for an early-warning system to trigger crowd management (Gretzel, 2019).

3. STUDY METHODS

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.

Our questionnaire was distributed among members of a specialized Facebook group called 'Mountaineers'. Facebook was chosen because it is the most popular

social media platform in Bulgaria – as of August 2023, 70% of the Bulgarian population uses it (NapoleonCat). The group was founded in 2009 and is currently one of the largest specialized travel groups in Bulgaria, with over 52,000 members (Cholakova & Dogramadjieva, 2023, p. 132). Using Google Forms to create the questionnaire, an online survey was posted as a link in the group in April 2023 and was closed in three weeks. For this period of time, we gathered 229 submissions and the study sample is presented in Table 1. Our questionnaire was filled in online mostly by people aged 26–55, i.e. by the most active group in the mountains. A significantly bigger proportion of women participated, which is not uncommon in surveys (Dogramadjieva & Terziyska, 2022). As expected for such a target group, 63% of the respondents hike in the mountains regularly and 32% qualify themselves as experienced mountaineers.

Table 1. Characteristics of survey respondents

Major categories	Sub-categories	Frequency	Percent
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
Total		229	100

Source: authors.

As mentioned above, the article analyses the answers from section 1 of the survey. Based on the main themes

uncovered in the literature review, these questions aimed to uncover the benefits obtained from FB group membership, how important was the trust in shared information, the types of stimuli to visit a certain mountain area, the most popular sources of information and their effect on visits. Finally, a group of four questions examined attitudes towards the sharing of pictures and mountain routes related information in social media. Answers to these questions were cross-tabulated with the socio-demographic information obtained from section 3, thus outlining differences by various subgroups of respondents.

Answers were analysed using the SPSS software. Considering the categorical type of the variables under study, the authors applied descriptive and bivariate data analysis – similar to their previous research (Cholakova & Dogramadjieva, 2023, p. 132). Using Cramér's *V* correlation and the chi-square test of independence, associations between variables were found and their statistical significance was tested. Both significant and insignificant results are discussed in

the article because they are indicative of the patterns of tourist demand and behaviour, despite not always being generalisable.

4. RESULTS

4.1. SOCIAL MEDIA, E-WOM AND THE MOUNTAINS

To start with, we wanted to know why people joined the specialized FB group under study. Results on Table 2 reveal that being able to receive useful information is seen as the most important benefit, highlighted by 81% of the survey participants. Although social media is usually picture-focused, in the case of this Facebook group, access to beautiful pictures of mountain areas is rated in second place but supported by a significantly lower share of respondents (13%). The ability to communicate online with like-minded people appears least important (2%).

Table 2. Perceived benefits from the membership in the 'Mountaineers' Facebook group – share by selected subgroups of respondents

Perceived benefits	Total	Membership benefit evaluation*					Mountain experience			Gender	
		Very low	Rather low	Average	Rather high	Very high	Long-standing experience	Some experience	Little / No experience	Male	Female
Useful information (%)	81	14	64	86	86	78	74	84	88	74	84
Access to beautiful landscapes and pictures (%)	13	14	36	11	12	14	16	12	8	15	13
Other (%)	3	71	0	0	1	4	8	2	0	6	2
Communication with interesting people (%)	2	0	0	3	1	4	1	2	4	5	1
No. of respondents	229	7	11	74	86	51	74	131	24	62	167
Cramer's <i>V</i>		0.397					0.142			0.155	
<i>p</i> -value		0.000					0.163			0.137	

Note: * association significant at least at the 0.05 level.

Source: authors.

There is a direct connection between the positive appraisal of the benefits of membership and the useful information pointed out as the most important. Though not statistically significant, some association is found with the respondents' mountain experience and gender (Table 2). Results show that the information regarding trails, huts, weather, etc., is more valued by those participants with little or no mountain experience (88%) and by women (84%). The pictures are more frequently valued by the experienced mountaineers (16%) compared to those with little or no mountain experience (8%).

Trust in the shared information is a key topic in research into the influence of social media on tourism. When it comes to mountain tourism, this aspect becomes even more important, considering the element of risk in the activities practised. In our study, a very large proportion of respondents (80%) trust highly the information their fellow members share, but still would make an extra check (Table 3). Only 2% completely believe everything that is published in the FB group, while the share of those who do not believe is also relatively low at 7%.

Table 3. Extent of trust in the information shared in the Facebook group – share by selected subgroups of respondents

Extent of trust	Total	Membership benefit evaluation*					The most important benefit from the Facebook group*				Visiting a place based only on Facebook recommendation*		
		Very low	Rather low	Average	Rather high	Very high	Useful information	Communication with interesting people	Access to beautiful landscapes & pictures	Other	Yes	No	Not certain (depends on the place)
I trust to a big extent, but check additionally (%)	80	43	45	78	86	84	83	80	63	63	88	47	74
I can't tell, depends on the occasion (%)	10	0	27	14	9	6	10	20	17	0	7	21	14
I'd rather disbelieve and check other sources (%)	7	57	27	8	3	2	5	0	17	38	3	26	11
Completely believe (%)	2	0	0	0	1	8	2	0	3	0	2	5	1
No. of respondents	229	7	11	74	86	51	186	5	30	8	134	19	76
Cramer's V		0.275					0.170				0.228		
p-value		0.000					0.019				0.001		

Note: * association significant at least at the 0.05 level.

Source: authors.

Results revealed in Table 3 indicate statistically significant association between the extent of trust regarding the information shared in the FB group and membership-benefit evaluation, as well as with the type of expected benefits and intentions to visit a place based only on FB recommendations. Logically, the lower appraisal of membership benefits is related to a lower level of trust and vice versa. Furthermore, 83% of those who see useful information as the biggest benefit from the FB group express a lot of trust in the information shared there, while relatively high proportions of distrust are observed among the limited number of respondents who have become members mainly for the ability to look at landscape pictures in their news feed (17%) or for other reasons (38%). It is not a surprise that visiting a place just because it has been recommended in the FB group is tightly related to the high level of trust (88%). On the other hand, respondents who would not pay such a visit are much more hesitant about the information shared there. While 47% of them trust the provided information to a great extent, they would not 'go blind' to a certain destination. Still, despite that a considerable number of respondents are not certain whether they would go somewhere based only on FB advice, 74% of them rank their trust relatively high.

Related to trust are answers to the question whether Facebook group members would follow an idea to visit a new place in the mountains (Table 4). Study results

indicate that most of the respondents would follow some sort of online recommendation (59%), while for 33% of them it would depend on the place and only 8% stated that social media would not influence their travel plans.

With statistical validity, these answers are related to the extent of perceived benefits of group membership – positive stands are expressed by 71% and 67% of those who rate it 'rather high' and 'very high'. On the contrary, the largest share of negative responses is observed (43%) among those who rate membership benefits as very low. The highest share of undecided (45%) is found among those who rate the benefits from group membership as rather low or average or have concerns about the quality of information that can be obtained by fellow members. An interesting result is that 28% of those who have already visited or planned to visit a place they learned about from the FB group are undecided if they would go somewhere based only on online recommendations, while 45% of respondents who have not visited such a place are positive about doing so merely because it is promoted in the group. No significant association of answers is found with reference to respondents' mountain experience, gender or age. Still, the results show, similar to the answers in Table 2, that people with little or no mountain experience (75%), female (62%) and younger (70%) respondents are those who would visit a place entirely due to Facebook recommendation.

Table 4. Willingness to go somewhere, only because it was recommended by members of this Facebook group (by pictures, comments, etc.) – share by selected subgroups of respondents

Willingness	Total	Membership benefit evaluation*					Already visited / planned to visit a place, learned about from the Facebook group*		Mountain experience			Gender		Age			
		Very low	Rather low	Average	Rather high	Very high	Yes	No	Long-standing experience	Some experience	Little / No experience	Male	Female	Up to 25	26–40	41–55	Above 55
Willing (%)	59	29	36	45	71	67	67	45	55	57	75	50	62	70	58	59	52
Undecided (depends on place) (%)	33	29	45	45	24	29	28	42	34	34	25	39	31	25	36	31	39
Unwilling (%)	8	43	18	11	5	4	5	13	11	8	0	11	7	5	7	10	10
No. of respondents	229	7	11	74	86	51	138	91	74	131	24	62	167	20	76	102	31
Cramer's V		0.245					0.232		0.098			0.110		0.074			
p-value		0.001					0.002		0.358			0.252		0.868			

Note: * association significant at least at the 0.05 level.

Source: authors.

When it comes to mountain tourism, various factors may stimulate a visit to a destination, including limiting factors like the physical ability of tourists to perform the planned walk. Therefore, we tried to rate the importance of social media among other factors (Table 5). The results show that social media is among

the least important factors (3%), while the highest priority factors is given to the place being new and unvisited (84%), as well as the technical difficulty of the walk (52%). However, beautiful pictures of the area would attract 40% of the respondents so it remains questionable what proportion of such pictures are

Table 5. Factors determining the decision whether to visit a place in the mountains – share by selected subgroups of respondents

Decision factors	Total	Frequency of visits to the mountains*				Mountain experience*			Gender*	
		Every week/ weekend	Once or twice a month	Few times a year	Maximum once a year or less	Long-standing experience	Some experience	Little / No experience	Male	Female
A place not visited so far (%)	84	93	90	75	56	93	83	63	95	80
Difficulty of the walk (%)	52	48	54	55	44	41	55	71	39	57
Beautiful pictures of the area (%)	40	39	34	43	78	42	37	50	29	44
Duration of the walk (%)	37	28	42	40	44	23	42	54	34	38
Place popularity on social media (%)	3	1	3	5	0	1	3	8	2	4
Other (%)	3	0	8	1	0	5	2	0	7	2
No. of respondents	229	69	76	75	9	74	131	24	62	167
Chi-square		39.240				38.468			22.263	
Degrees of freedom (<i>df</i>)		18				12			6	
p-value		0.003				0.000			0.001	

Notes: a multiple response question – the sum of percentages exceeds 100% as the respondents could give more than one answer; * differences significant at least at the 0.05 level.

Source: authors.

Table 6. Effect of shared information in the Facebook group on the planning of mountain walks – share by selected subgroups of respondents

Effects	Total	Trust in the shared information in the Facebook group*				Frequency of visits to the mountains*			
		I'd rather disbelieve and check other source	I can't tell, depends on the occasion	I trust to a great extent, but I check additionally	Completely believe	Every week / weekend	Once or twice a month	Few times a year	Maximum once a year or less
Consider visiting the place (%)	79	82	63	83	40	77	80	87	33
No itinerary ideas taken from FB group so far (%)	11	18	33	8	20	9	9	9	67
Visit as soon as possible (%)	9	0	4	10	40	14	11	4	0
No. of respondents	229	17	24	183	5	69	76	75	9
Cramer's V		0.224				0.271			
p-value		0.001				0.000			

Note: * association significant at least at the 0.05 level.

Source: authors.

Table 7. Sources of information about places visited / to be visited – share by selected subgroups of respondents

Sources of information	Total	Mountain experience*			Age*				Impact on information shared in Facebook group*			The most important benefit from the membership in the Facebook group*			
		Long-standing experience	Some experience	Little / No experience	Up to 25	26-40	41-55	Above 55	Visit as soon as possible	Consider visiting the place in future	No itinerary ideas taken from FB group so far	Useful information	Communication with interesting people	Access to beautiful landscapes and pictures	Other
Online maps / stories / blogs on internet sites (%)	72	80	68	67	80	72	77	48	57	76	50	75	40	57	63
Friends and acquaintances (%)	69	69	72	54	55	66	72	77	67	68	77	67	100	80	50
Social media (%)	48	45	47	63	70	58	40	36	62	52	8	50	40	47	25
Maps and guidebooks (%)	40	54	34	25	20	49	36	42	33	41	35	41	40	27	63
Other (%)	2	3	2	0	0	3	2	0	0	2	4	1	0	0	25
No. of respondents	229	74	131	24	20	76	102	31	21	182	26	186	5	30	8
Chi-square		19.835			32.605				32.742			45.168			
Degrees of freedom (df)		10			15				10			15			
p-value		0.031			0.005				0.000			0.000			

Notes: a multiple response question – the sum of percentages exceeds 100% as the respondents could give more than one answer; * differences significant at least at the 0.05 level.

Source: authors.

actually viewed on social media. Social media is slightly more used by people who visit the mountains a few times in a year (5%) and have little or no mountain experience (8%).

Data in Table 6 indicate that the majority of respondents will put the idea of a new mountain destination taken from the FB group in a 'bucket list' and go there in the future, when it is possible or convenient (79%). Considering a future visit to the recommended place is the preferred option regardless of the extent of personal trust in the FB group and the frequency of mountain visits. This general tendency of a 'postponed' visit is probably a result of the specifics of mountain tourism compared to other forms of travel and type of destination when extra factors like suitable season and weather have to be taken into account. Despite the generally low share of people who would visit a place recommended by the FB group as soon as possible (9%), results reveal a higher proportion of such respondents among those who believe the information shared on Facebook completely or to a great extent as well as those who are regular walkers (Table 6).

The growing importance of social media for visits to mountain areas can be clearly seen in the answers to the question regarding the most popular sources of information tourists use when they design their routes (Table 7). Traditional forms of mountain information (maps and guidebooks) are chosen by 40% of participants while their electronic versions are selected by 72%. A similar share of respondents uses

information from friends and acquaintances (69%) which is a classical WOM channel for learning about an interesting route in the mountains. Social media (48%) appears more important than printed materials, but still less significant than specialised internet sites where the information is better structured and easier to search and find. Social media is used to a greater than average extent by those with little mountain experience (63%) and who are likely to visit a new place as soon as possible (62%). A clear relationship is found with age: the younger the tourists, the higher the share of those who use social media as a major source of information. Despite being ranked in third place by those who seek useful information, social media is still considered important by 50% of them. Those respondents who are group members because of the opportunity to see beautiful pictures, would mostly rely on traditional WOM by friends and acquaintances (80%).

4.2. OVER-TOURISM AND OVER-PUBLICITY

It was interesting to explore the perceptions of the Facebook group members on the possible threats that social media might present to fragile mountain areas (Table 8). Most of the respondents approve the mass sharing (i.e. popularisation) of information and pictures about mountain areas (55%) while only 16% are negative towards this trend. Hesitation on the question is expressed by almost one third of the survey participants. The approval is related to the appraisal of

Table 8. Approval of the mass sharing of pictures / discussions regarding certain mountain areas – share by selected subgroups of respondents

Opinion	Total	Benefit evaluation*					Visiting a place based only on Facebook recommendation*			Trust in the shared information in the Facebook group*				Gender*	
		Very low	Rather low	Average	Rather high	Very high	Yes	No	Not certain (depends on the place)	I'd rather disbelieve – I question and check other sources	I can't tell, depends on the occasion	I trust to a great extent, but I check additionally	Completely believe	Male	Female
Approve (%)	55	43	45	41	58	76	67	47	37	18	42	60	100	37	62
Undecided (%)	29	29	27	35	30	18	21	21	45	35	38	28	0	35	26
Disapprove (%)	16	29	27	24	12	6	12	32	18	47	21	13	0	27	11
No. of respondents	229	7	11	74	86	51	134	19	76	17	24	183	5	62	167
Cramer's V		0.209					0.224			0.224				0.246	
p-value		0.010					0.000			0.001				0.001	

Note: * association significant at least at the 0.05 level.

Source: authors.

benefits members get from the travel group which is higher among those who ranked these benefits as high (58%) or very high (76%). A similar correlation is valid for those who have a high level of trust the information in the group who highly approve the popularisation, in contrast to those who trust group information less. Those who welcome sharing pictures and information are also more inclined to visit a new destination based only on online recommendations (67%). It is women who support the sharing of pictures (62%) compared to only 37% of male respondents.

The vast majority of participants in the survey (92%) approve the naming (or positioning) of the locations shared as pictures in FB (Table 9). With statistical significance, answers to this question are associated with the trust the members of the group have in the

shared information as those who believe it are much more for the provision of full data regarding interesting locations in the mountains. The same relation is valid for membership benefits appraisal: the higher the perceived benefits, the greater the share of positive responses.

The questions above are related to social media users' actions and responsibility regarding the protection of the mountains. Results clearly indicate that respondents do not see any personal fault in the process of over-popularization of certain mountain areas. The perceptions are different when it comes to the impact of social media in general (Table 10). A greater share of group members (46%) agree that social media might contribute to overcrowding in the mountains. The greatest share is among those who least trust the information published in the FB group (76%) and who have

Table 9. Approval of the naming of the places on the landscape pictures shared on social media – share by selected subgroups of respondents

Opinion	Total	Benefit evaluation					Trust in the shared information in the Facebook group*				
		Very low	Rather low	Average	Rather high	Very high	I'd rather disbelieve and check other source	I can't tell, depends on the occasion	I trust to a great extent but I check additionally	Completely believe	
Approve (%)	92	86	91	91	92	94	88	83	93	100	
Undecided (%)	5	0	9	5	5	6	0	17	4	0	
Disapprove (%)	3	14	0	4	3	0	12	0	3	0	
No. of respondents	229	7	11	74	86	51	17	24	183	5	
Cramer's V		0.114					0.167				
p-value		0.655					0.046				

Note: * association significant at least at the 0.05 level.
Source: authors.

Table 10. Expressed opinions if sharing of places on social media makes them too popular and crowded – share by selected subgroups of respondents

Opinion	Total	Trust in the shared information in the Facebook group				Mountain experience*			Gender	
		I'd rather disbelieve and check other source	I can't tell, depends on the occasion	I trust to a great extent, but I check additionally	Completely believe	Long-standing experience	Some experience	Little / No experience	Male	Female
Yes (%)	46	76	50	43	20	57	43	29	53	43
No (%)	33	24	33	33	60	32	34	33	34	33
Undecided (%)	21	0	17	23	20	11	24	38	13	24
No. of respondents	229	17	24	183	5	74	131	24	62	167
Cramer's V		0.151				0.154			0.126	
p-value		0.106				0.028			0.161	

Note: * association significant at least at the 0.05 level.
Source: authors.

Table 11. Opinion whether some places must be 'protected' from over popularity – share by selected subgroups of respondents

Opinion	Total	Trust in the shared information in the Facebook group				Membership in the Facebook group			Mountain experience			Age			
		I'd rather disbelieve and check other sources	I can't tell, depends on the occasion	I trust to a great extent, but I check additionally	Completely believe	Between 2009 and 2019	Since 2020	I don't remember	Long-standing experience	Some experience	Little / No experience	Up to 25	26–40	41–55	Above 55
Yes (%)	56	71	58	56	20	57	48	66	62	54	50	60	62	58	35
No (%)	28	24	33	27	80	28	32	25	24	33	17	15	26	28	42
Undecided (%)	15	6	8	17	0	15	20	9	14	13	33	25	12	14	23
No. of respondents	229	17	24	183	5	86	79	64	74	131	24	20	76	102	31
Cramer's V		0.149				0.107			0.140			0.143			
<i>p</i> -value		0.120				0.264			0.062			0.155			

Source: authors.

long-standing mountain experience (57%), as well as by male respondents (53%).

Table 11 indicates that the share of those who think that some places in the mountains might eventually need 'protection' from being popular is even higher (56%). No statistically significant differences by subgroup of respondents are found in this regard. Yet, results reveal that those who sense such a threat prevail most strongly among the ones who trust the Facebook group least (71%), but are among its oldest members (57%) and are experienced mountaineers (62%). Participants in the highest age group see social media and publicity as a danger for the mountains considerably less than other groups.

5. DISCUSSION

Even though social media nowadays is associated with visual ways of presentation (pictures, videos), the survey demonstrates that in the case of Facebook users with a special interest in mountain tourism, clearly the main focus is on useful practical information that may contribute to a safe walk. This appears to be the main strength of UGC and a reason for its popularity in general as discussed in the literature (Leung et al., 2013; Yoo & Gretzel, 2011; Yoo et al., 2009). Therefore, it can be concluded that the main beneficiaries are users with little travel (in our case – mountain) experience, as found in Filieri (2016).

Still, a very high proportion of mountaineers were found to prefer traditional WOM (information from friends and acquaintances). This finding corresponds

to the results from Leung et al. (2013), Zeng and Gerritsen (2014), Tham et al. (2013) and Sultan et al. (2021). Nowadays, tourists prefer to receive information in electronic form, but the UGC, or the information received from social media, is still a compliment to information obtained elsewhere, as in Cox et al. (2009), or presents it in another form as in Xiang et al. (2015). One of the reasons for this could be the fact that it is not rich and detailed enough, due to the format in which it is presented (Zhou et al., 2020). This currently low usage of social media information can be due to the nature of mountain tourism, as it involves sometimes risky outdoor activities and therefore requires even more secure information compared to other forms of tourism. Of course, it can also be specific to the studied population as pointed out by Leung et al. (2019).

Our findings indicate that the information shared in the mountain travel group is very much trusted, which goes in line with previous research by Leung et al. (2013). This is especially true for women, and the younger participants who presumably are less experienced in mountain conditions, similar to Filieri (2016). The trust in the shared information correlates with a high proportion of people following or planning to follow the advice. In the case of a mountain trip, they still require an extra source of information, so it is not considered completely credible (Tham et al., 2013). According to our results, the majority of respondents will not visit places recommended in the group immediately but will create a future 'wish list'. As in Kitsios et al. (2022) our survey also shows that trust is strongly related to the anticipated benefits and the usefulness of the information received. Similar to other tourism studies (Hysa et al., 2021; Tešin et al., 2022; Zeng

& Gerritsen, 2014), we indicate that those who are most likely to visit a new place in the mountains because it was somehow recommended in the social media, are inexperienced tourists, women, and the youngest Facebook group members.

In the case of mountain tourism there are technical limitations (like difficulty and duration of the walk) that should be taken into account when a trip is planned and organized. However, even though social media are rated very low as a factor for choosing a place to go, we argue that the popularity of a new place, seen online in beautiful landscape pictures, can still be traced to the indirect influence of social media as in Liu et al. (2020). It is confirmed in the literature on tourism in general (Fotis et al., 2011; Kane et al., 2012; Zeng & Gerritsen, 2014) that the effect of social media on mountain tourism is also indirect, with no immediate impact on visits. In our survey, the only exclusion from this rule refers to regular tourists for whom social media is a source of constant new ideas for mountain walks, similar to Tešin et al. (2022). The study did not observe any connection regarding levels of income and education as in Öz (2015) because our sample almost entirely consisted of highly educated respondents of at least a medium standard of living.

The two main stimuli for Facebook group members to visit the mountains are pictures of the area and practical information. Pictures provide inspiration to experienced mountaineers, while the detailed instructions shared online stimulate visits among the less experienced mountain lovers and therefore contribute to the increase in visits of those areas to a higher degree (Tham et al., 2020). Being highly rated by the less experienced and new mountaineers, without a real-life social circle where they can acquire this specialized valuable information, it is not surprising that these respondents do not see social media and the popularization of fragile mountain areas as a problem. Since social media is seen mainly as an important and trusted information source (Leung et al., 2013; Yoo & Gretzel, 2011), the vast majority of Facebook group members in our study consider it right that it should provide the maximum possible information required. In the case of mountain tourism then, the overcrowding effect of social media (Gretzel, 2019) will be generated more as a result of distributing practical information, than sharing images of the destination.

On the other hand, the social media threat of overpopularization is recognized to a high degree among the respondents, though much more as a general perception of the effect from social media, rather than demonstrating real understanding of the possible effects on the mountain environment. A possible response to this danger, as stated by Kane et al. (2012) and Gretzel (2019), is to promote sustainable ways of practicing tourism using the information power of social

media. One of the big advantages is that it can reach and educate the two main groups of users who are most influenced by social media – the younger and less experienced. Social media can also be used as a research tool on tourist behaviour in mountain areas in order to prevent signs of overtourism (Barros et al., 2020; Cholakova & Dogramadjieva, 2023).

In more general terms, by seeking to uncover the major effects of social media on mountain visits and patterns of tourist behaviour in a fragile environment influenced by this powerful communication channel, our study can be framed within the paradigm of 'moral geography' (Brunn, 2021) which raises morality and ethical questions regarding various pressing issues that the present world faces. This concept aims to explore in greater depth philosophical questions regarding human behaviour, institutional structures, environmental conditions and public policy. As Brunn (2021) stresses, the sustainability issues, along with media worlds and cyberspaces (social media included) are themes worth having serious discussion about, through the moral geography prism.

6. CONCLUSION

The online survey among members of a Facebook mountaineering group revealed that the attitude of tourists towards user-generated content shared through social media is purely pragmatic. The group members seek mainly trusted information that will be useful for them to plan their future trips. Clearly, there is a lack of awareness among social media users who do not realise the potential risks that the spreading of information may cause to fragile areas in the mountains. This attitude can be classified as consumerist and clashes with the sustainability paradigm. While preventing beautiful places from becoming too popular is not taken as a personal responsibility, the negative role of social media in general seems to be perceived more highly. Yet, it is hard to tell whether this is related simply to an anticipated negative tourist experience as a result of overcrowding or reveals an increased environmental concern. Nevertheless, it is possible to turn the defect into an effect and turn the information powers of social media and their technological opportunities into modern tools to enhance nature protection.

The limitations of this study refer mostly to the non-probability sample which is inevitable when conducting an online survey. The results cannot be automatically transferred to other populations, and if so, probably some cultural and national differences will be observed. The impact of social media on mountain visits has its own specifics compared to other forms of tourism which are still not examined in depth. To do so, the

technological opportunities these platforms provide should be maximised by employing a mixed methods approach comprising online surveys, geolocated big data and visual methods. This way future research could obtain valuable information on actual visits to specific mountain areas and develop forecasts for patterns and trends in tourist behaviour. Both of them would be very useful for protected area management.

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