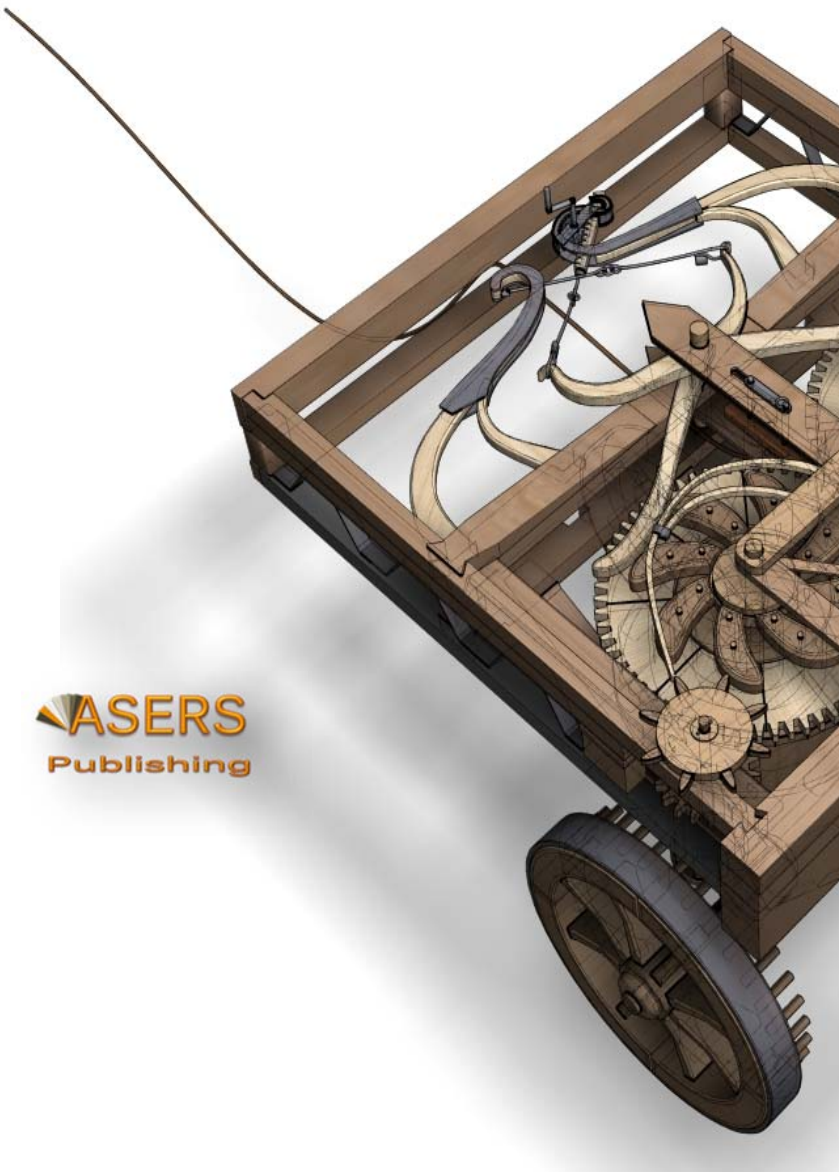
ASERS

Journal of Environmental Management and Tourism



Quarterly
Volume XI
Issue 2(42)
Spring 2020
ISSN 2068 – 7729
Journal DOI
https://doi.org/10.14505/jemt

ASERS Publishing

Spring 2020
Volume XI
Issue 2(42)

ASERS Publishing
http://www.asers.eu/asers-publishing
ISSN 2068 – 7729
Journal DOI: https://doi.org/10.14505/jemt

Table of Contents:

Spring 2020
Volume XI
Issue 2(42)

ASERS Publishing
http://www.asers.eu/asers-publishing
ISSN 2068 – 7729
Journal DOI: https://doi.org/10.14505/jemt

Call for Papers
Summer Issues 2020
Journal of Environmental Management and Tourism

Journal of Environmental Management and Tourism is an interdisciplinary research journal, aimed to publish articles and original research papers that should contribute to the development of both experimental and theoretical nature in the field of Environmental Management and Tourism Sciences.

Journal will publish original research and seeks to cover a wide range of topics regarding environmental management and engineering, environmental management and health, environmental chemistry, environmental protection technologies (water, air, soil), pollution reduction at source and waste minimization, energy and environment, modeling, simulation and optimization for environmental protection; environmental biotechnology, environmental education and sustainable development, environmental strategies and policies, etc. This topic may include the fields indicated above, but are not limited to these.

Authors are encouraged to submit high quality, original works that discuss the latest developments in environmental management research and application with the certain scope to share experiences and research findings and to stimulate more ideas and useful insights regarding current best-practices and future directions in environmental management.

Journal of Environmental Management and Tourism is indexed in SCOPUS, RePEC, CEEOL, ProQuest, EBSCO and Cabell Directory databases.

All the papers will be first considered by the Editors for general relevance, originality and significance. If accepted for review, papers will then be subject to double blind peer review.

Deadline for submission:	29th May 2020
Expected publication date:	June 2020
Website:	https://journals.aserspublishing.eu/jemt
E-mail:	jemt@aserspublishing.eu

To prepare your paper for submission, please see full author guidelines in the following file: JEMT_Full_Paper_Template.docx, then send it via email at jemt@aserspublishing.eu.

DOI: http://doi.org/10.14505/jemt.v11.2(42).23

Expert's Perceptions towards Management of Tourist Traffic in Protected Areas Based on the Tatra Mountains

Anna DELEKTA
Institute of Geography, Pedagogical University of Cracow, Poland
anna.delekta@up.krakow.pl

Joanna FIDELUS-ORZECHOWSKA
Institute of Geography, Pedagogical University of Cracow, Poland
joanna.fidelus-orzechowska@up.krakow.pl

Anna CHROBAK
Institute of Geography, Pedagogical University of Cracow, Poland
anna.chrobak@up.krakow.pl

Suggested Citation:

Delekta, A., Fidelus-Orzechowska, J., Chrobak, A. (2020). Expert's Perceptions towards Management of Tourist Traffic in Protected Areas Based on the Tatra Mountains. *Journal of Environmental Management and Tourism*, (Volume XI, Spring), 2(42): 443 – 459. DOI:10.14505/jemt.v11.2(42).23

Article's History:

Received January 2020; *Revised* February 2020; *Accepted* March 2020.

Abstract

Increasing human impact in mountain areas may constitute a challenge to national park authorities. Therefore, interdisciplinary research is important in order to address the various aspects of the functioning of protected areas.

The purpose of the present study was to analyze perceptions of infrastructure and tourist traffic in the Tatra Mountains by tourist experts.

Data were collected using the diagnostic survey method and in-depth interviews with experts. Statistical analysis included the use of the U-Mann-Whitney Test and the nonparametric Chi Square Test.

Research has shown differences in the way both local transportation and restaurant services are viewed in the Polish and Slovakian parts of Tatras. Experts indicate that the main reason for increasing tourist traffic is that the Tatras are in fashion, while the key problem is excess litter generation.

Keywords: experts' perceptions; national park; local management; Tatra Mts.; increased tourist traffic; qualitative and quantitative research.

JEL Classification: Z32; Q56.

Introduction

Tourism in mountain areas is a primary form of human impact. The granting of access to highly valuable high mountain areas via the marking of numerous tourist trails along with the construction of tourist cableways and uncontrolled growth in tourism-related infrastructure including lodging facilities and restaurants may yield significant and irreversible changes in the local natural environment. This is known to be a fact based on research in some of the first tourist areas in the Grindelwald Valley (Bernese Alps) and in the Four Valees (Pennine Alps) (Kurek 2004).

Tourist foot traffic is a basic form of tourist impact on the natural environment of high mountain area, which may lead to the triggering and acceleration of numerous morphogenetic processes. This has been shown to be true in the following studies: Monts Dore massif area (Krzemień 1997, 2010), Tatra Mts. (Gorczyca and Krzemień 2002, 2009, 2010, Fidelus 2016, Fidelus-Orzechowska *et al.* 2017) and the Alps (Pelfini and Santilli

2006). Tourist traffic patterns in high mountain areas often vary spatially and over time, as shown on the example of studies in Tatra National Park (TNP) (Pociask-Karteczka *et al.* 2008, Fidelus 2014, Fidelus-Orzechowska *et al.* 2017). TNP is one of the smaller national parks in Europe, but it is known for its high volume of tourist traffic (Pociask-Karteczka *et al.* 2008). Hence, it is very important for TNP to pursue sustainable monitoring and management practices that allow for control over tourist volumes in sensitive areas of the park. This is particularly true of tourist capacity in each given geographic area in an ecological and psychological context (Dzwonkowska 2011).

The determination of the tourist capacity of a given geographic area is a complex process that requires a variety of research efforts. These may include analysis of perceptions of the functioning of a given national park by tourists who visit mountain areas frequently. Such individuals may contribute a host of valuable observations concerning various aspects of this issue including perceptions of tourist traffic and evaluations of tourist-related infrastructure. These types of data may be useful in efforts to improve the management of protected areas (*Noe et al.* 1997, Arabatzis and Grigoroudis 2010, Moore *et al*. 2012, Leask 2016, Pickering *et al.* 2020). One of the key components of effective management of visitor attractions is visitor satisfaction and experience (Bigné *et al.* 2020, Zuo *et al.* 2020), as shown by the model produced by Leask (2010). There exists an array of studies focused on the identification and understanding of visitor attractions at various levels at many popular tourist destinations, as shown by Leask (2016). The multiplicity and broad scope of these works as well as their diverse array of approaches to visitor attractions make it possible to understand just how important effective management of attractive tourist areas including national parks is.

Tourist views in TNP were examined in terms of the identification of tourist pressure in the view of survey participants visiting the Polish Tatras (Buchwał and Rogowski 2007), evaluation of mountain lodge accommodations' quality and service quality in the Polish Tatras (Zarzycki 2007), identification of the reasons for visiting the Polish Tatras (Kowalski *et al.* 2007), perception of forest protection efforts in the Tatras (Giergiczny and Zwijacz-Kozica 2018), and perception of bark beetle infestation problems in Tatra National Park (Švajda *et al.* 2016).

Social perception of mountain ecosystems was also studied in other geographic areas including Choapa, San Francisco, and Tinguiririca – the three main valleys of Central Chile (Filp *et al.* 1983), along with the relationship between perception of restorative natural environments, specialization in mountain hiking and flow experience at eight mountain lodges in the Austrian Alps (Wöran and Arnberger 2012), perception of ecosystem service (ES) in three Alpine regions in Austria and Italy (Haida *et al.* 2016), perception regarding deadwood in forests in the Italian Alps (Genova Valley) and Balkan Mountains (Pastorella *et al.* 2016), visual quality preferences, landscape factors, and semantic factors in Kackar Mountains National Park (Turkey) (Acar *et al.* 2006), and tourist perception of crime, safety, and attitudes towards risk while visiting Table Mountain National Park (TMNP) in Cape Town (George 2010) as well as landscape perception in the Swedish mountains (Hedblom *et al.* 2020). In most cases, these studies clearly show that more educational and information efforts are needed in key mountain areas with the purpose of increasing social awareness of the functioning of mountain areas in terms of biotic and abiotic local conditions.

Research in mountain areas is most often conducted basing on surveys completed by random tourists. There exists a lack of studies focused on individuals who frequently visit mountain areas and may provide valuable observations on this subject. In our study, we examine the views of tourists that we call expert tourists due to their frequent visits to the study area. Our social perception study was conducted in an especially valuable area – Tatra National Park (TNP) – which experiences a very high volume of tourist traffic relative to other Alpine-type national parks (Pociask-Karteczka *et al.* 2008). According to TNP statistics, tourist traffic in the park has further increased in recent years to a substantial extent (Fidelus-Orzechowska *et al.* 2017, TNP statistics). This is why it is immensely important to learn why tourist traffic has increased in recent years – in the view of experts. It is also important to learn how the area is being developed for tourists, how it is managing problems associated with large tourist volumes, and what steps are being taken to reduce the magnitude of these problems. Tourists who visit the study area frequently were asked to participate in our survey. The results were analyzed for content as well as used to determine the profile of the experts participating in the study. Common characteristics were identified along with main areas of difference.

A growth pattern in tourist traffic is also noted by the World Tourism Organization (UNWTO). Its estimate of annual growth in tourist traffic for the most recent decade was only half of actual growth. The magnitude of underestimation of growth in tourist traffic by a specialized analytical body makes it reasonable to suspect that its growth in the next decade is also likely to be underestimated (UNWTO, Tourism Highlights 2018 Edition).

The main purpose of the study was to examine the perception of tourist infrastructure and traffic in the Tatras by expert tourists. Individual objectives of the study were the following:

a. To compare lodging and restaurant facilities, local transportation options such as city buses and private local buses, and state and accessibility of tourist trails in the Polish and Slovakian Tatras in the opinion of experts.

b. To determine and analyze trends in tourist traffic in the Tatras for the last decade along with an analysis of reasons for this increase in tourist traffic.

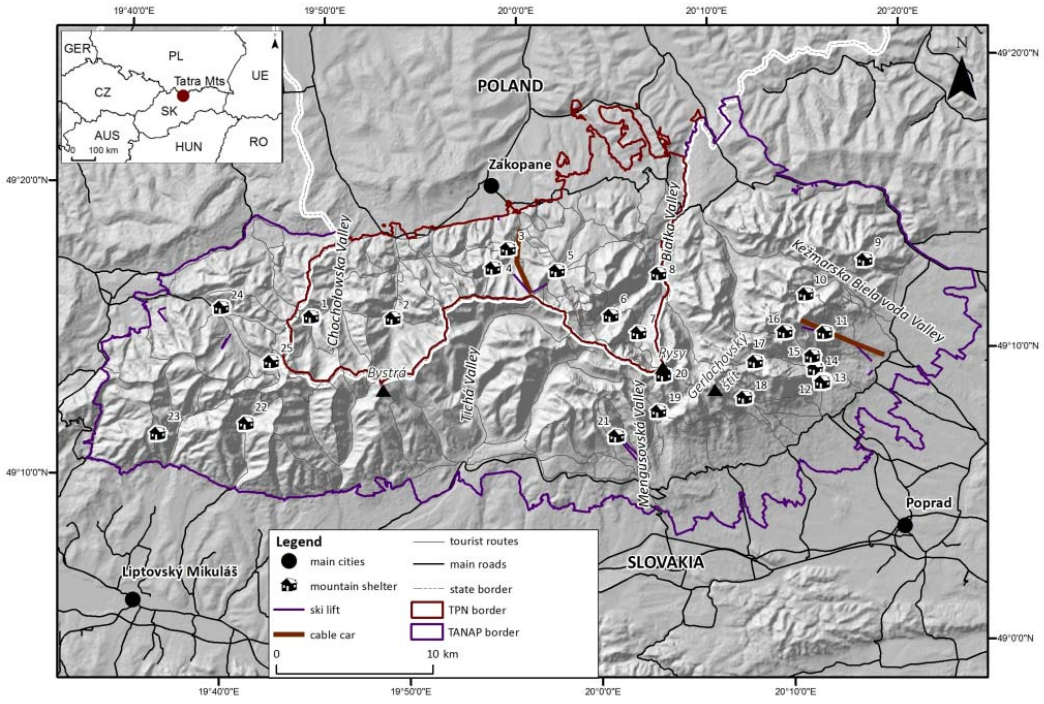
c. To identify threats resulting from the increase in tourist traffic in the Tatras.

1. Study Area

The Tatras as the highest mountain range in the Carpathian chain. The highest peak – Mount Gerlach (Gerlachovský štít) – is 2,655 meters high. The Tatras lie along the Polish-Slovakian border. About 78% of the range is found on the Slovakian side of the border. The highest peak on the Polish side is called Mount Rysy (2,499 m high). Two national parks are found in the Tatra Range: (1) Tatra National Park (TNP) in Poland (est. 1954), (2) Tatranský národný park (TANAP) in Slovakia (est. 1949, expanded 1987). The Polish part of the Tatras has an area of 211.64 km², while the Slovakian part 742.84 km² (Figure 1).

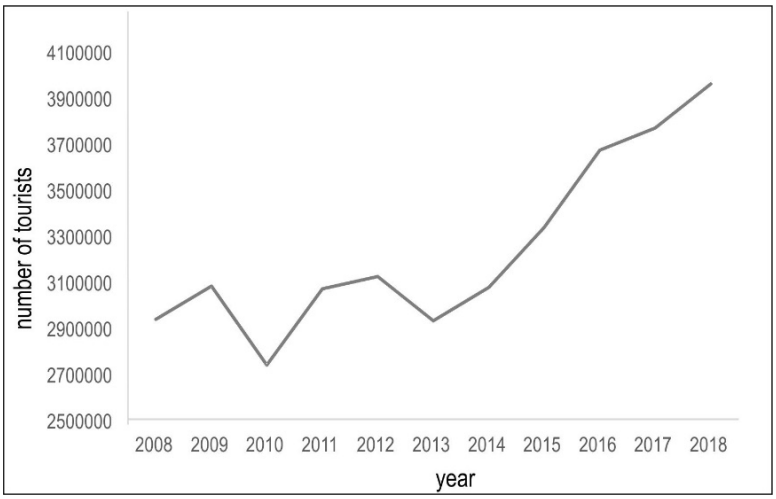
The Tatras, as the highest mountain range in both Poland and Slovakia, have been explored for a very long time. The first excursion into the Tatras was recorded in 1565 – in the Kieżmarska Valley (Nyka 2017). The number of excursions into the Tatras increased over the centuries leading to tourism-related development in the form of tourist trails for a total of 275 km of trails in the Polish part and 600 km of trails in the Slovakian part of the mountain range. The Tatras also include 8 mountain lodges on the Polish side and 17 mountain lodges on the Slovakian side. The area is also home to two cableway systems carrying thousands of tourists per year to the summit of Mount Kasprowy Wierch and Mount Łomnica the context of your research paper the literature review should be a critical synthesis of previous research in the subject field. The evaluation of the literature leads logically to the research question. Who is doing what? Who has done what? Who first did it or published it? Taken from published papers, research monographs, catalogues etc. Based on primary sources. Offering a, probably new, structured view of the field of study.

Figure 1. Geographic location of the study area



Source: Compiled by authors.

Figure 2. Tourist changes in TNP between 2008 – 2018



Source: Compiled by authors.

Tourist volumes on the Polish side of the Tatras are very high. Ticket sales data show a constant increase in tourist volume in recent years (Figure 2). In 2008 a total of 2,948,702 tourists visited TNP, while in 2018 that number increased to 3,970,298 tourists. The 10-year increase in the number of tourists was 1,021,596 based on TNP statistics and accompanying estimates.

2. Research Methods

The study was conducted using both qualitative and quantitative methods. Data were collected using a diagnostic survey as well as via in-depth interviews with experts. The two approaches are viewed as complementary and were integrated using the logic of triangulation (Bryman 1992). The quality of the results was checked by comparing the free responses of experts with quantitative data.

Survey participants were selected in via a partially random process on the basis of an analysis of groups closely associated with Tatra exploration efforts. Both mountain guides and enthusiasts were considered. Personal interviews showed that one place that brings together the largest number of Tatra experts is the Internet portal Tatromaniak, with 95,082 members as of June 17, 2019.

The survey sample was selected via two stages. The first stage consisted of a random selection of survey participants from the population as a whole. All members of the Tatromaniak portal and other experts in Tatra-related issues (*e.g.* tourist guides, TNP staff, Tatra enthusiasts) were given the chance to complete a survey between June and November 2018. The survey was available online. It was also e-mailed to groups associated with professional Tatra exploration.

The second stage consisted of the selection of individuals who had completed the survey and in addition met the following special criteria:

- they visit the Tatras, on average, several times per year
- they had visited the Tatras in the year preceding the survey study: on single-day trips – at least 5 times, or weekend trips – at least 3 times, or trips lasting more than two days – at least once – or some combination of the above-described travel patterns.

Survey participants who met the above criteria were deemed experts, and were assigned to the study sample. In line with the non-probabilistic approach, the selection of a study sample from a general population is based on at least one characteristic typical of the entire studied group. The most relevant common characteristic in this study is the survey participants' higher than average level of tourist or professional activity in the Tatras. Survey participant data such as gender, age, place of residence, level of education, university major, social activity level, and marital status were used to yield a profile of each selected expert. The next stage of research consisted of in-depth interviews with selects experts.

The study was conducted on the basis of the following statistical analyses:

a. Polish and Slovakian tourist infrastructure was evaluated using questions based on the Likert scale. The statistical analysis of data was performed using the nonparametric U-Mann-Whitney Test, which is the equivalent of the t-test used to compare two independent samples (Table 1).

b. Free responses provided by experts were used to determine reasons for the increase in tourist traffic over the last 10 years in the Tatras. The outcome of this analysis consisted of a narrowing of free responses and

a formulation of 16 keywords and key phrases based upon them. Common characteristics were then identified for each group of keywords and key phrases. The characteristics were then systematized and assigned to 5 groups of factors.

Table 1. Research questions and general study design

Research question (RQ)	Method	Data analysis	Interview question (IQ)
RQ1: Is there a difference in perception of tourist infrastructures in the Polish and Slovakian Tatras in the opinion of Polish experts?	Basic research: questionnaire (Likert scale), interviews.	Nonparametric equivalent of the t-test for the U-Mann-Whitney test for comparing two independent samples (assuming $p \leq 0.05$).	IQ1: How do you perceive tourist infrastructure in the Polish and Slovakian Tatras?
RQ2: Is an increase in tourist traffic observed in the Tatras in the last 10 years? If so, what is the cause of this increase?	Basic research: questionnaire (Likert scale), interviews. Follow-up work: analysis of tourist traffic data for TNP.	Analysis of survey responses, processing of free responses in order to yield keywords and key phrases. Non-parametric test for independence: chi square (assuming $p \leq 0.05$).	IQ2: Have you noticed changes in the number of tourists visiting the Tatras in the last 10 years? What is the reason for the increase in the number of tourists?
RQ3: What types of threats are experts reporting in relation to the increase in tourist traffic?	Basic research: questionnaire (Likert scale), interviews.	Non-parametric test for independence: chi square (assuming $p \leq 0.05$). Analysis of experts' free responses.	What are the threats linked to the increase in the number of tourists visiting the Tatras? Free responses obtained in the course of in-depth interviews.

Source: Compiled by authors.

It was decided to divide the analysis of perception of reasons for increased tourist traffic based on the age of experts due to differences in tourist interests based on age, as described by Winiarski and Zdebski (2008). Thus, two groups of survey participants were considered. The first group included individuals in the spontaneous tourist activity and stabilized tourist activity phase, which translates into persons up to 40 years old. The second group included survey participants in the involution and revival phase, which translates into persons over the age of 40. This separation based on age made it possible to use the chi square test for independence and to check if there exists a statistically significant relationship between reasons given for the increase in tourist traffic versus age and the experience level of surveyed tourists.

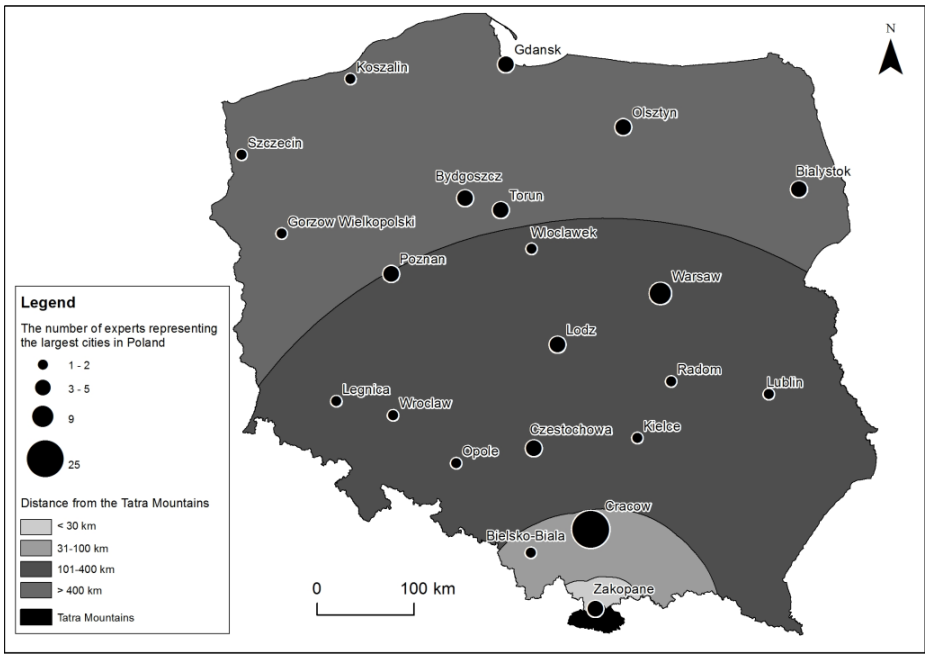
c. Responses of survey participants and free responses of interviewed experts were analyzed in order to determine types of threats associated with increases in tourist traffic. Additionally, experts were given the opportunity to choose the following responses – noise, littering, trampling of tourist trails, illegal hiking beyond marked trails, presence of human waste, reduction in safety due to inability to behave properly in the mountains, which may include inappropriate dress and careless behavior in relation to other tourists on the trail. In addition, experts had the opportunity to speak out on any other threat deemed to exist in the study area (Table 1).

3. Results

3.1 Profile of Expert Tourists

Our survey was completed by 192 individuals including 34 who did not meet the criteria for expert tourists. Hence, 158 survey respondents were selected for analytical purposes.

Figure 3. Number and place of residence of experts participating in our study versus distance to the Tatra



Source: Compiled by authors.

Table 2. Descriptive characteristics of surveyed expert tourists

gender	female	Number [n]	82	[%]	51.9	100
	male		76		48.1	
age	<40		93		58.9	100
	>40		65		41.1	
education level	primary		2		1.3	100
	vocational		3		1.9	
	secondary		36		22.8	
	higher		117		74.1	
field of study (education)	general		35		22.2	100
	humanistic/social		46		29.1	
	technical/economics		42		26.6	
	natural/medical/tourism		35		22.2	
marital status	married/partner relationship		95		60.1	100
	single		63		39.9	
monthly income	below national average		56		35.4	100
	above national average		37		23.4	
	no answer		65		41.1	
do you work professionally?	yes		135		85.4	100
	no		23		14.6	
are you socially active?	yes		45		28.5	100
	no		113		71.5	

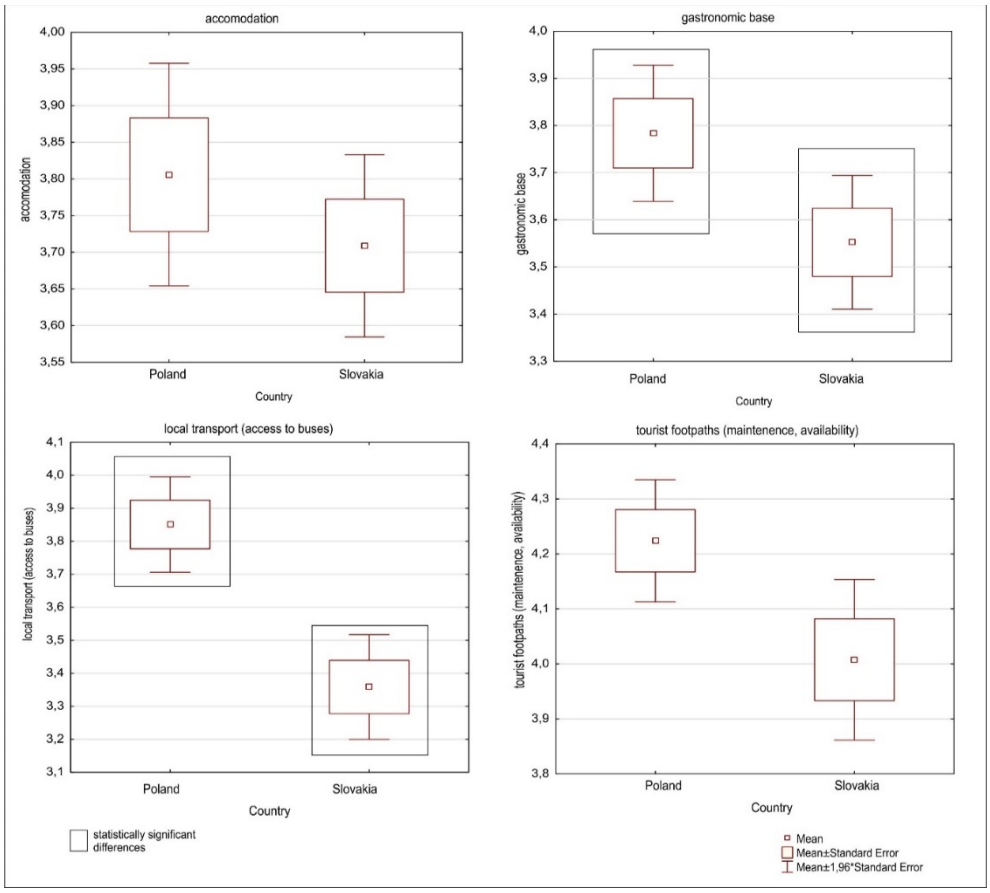
Source: Compiled by authors.

Most of the survey participants originated from localities found between 100 and 400 km away (46%) from the Tatras (Figure 3). The smallest share of the participants came from the local community – less than 30 km away from the Tatras (6%). The share of men and women was roughly the same. The share of individuals under the age of 40 was slightly larger than that over 40. Most individuals were university graduates, although no single major was predominant among them. Most of the studied persons were either married or living with a partner, and gainfully employed (Table 2). About 28.5% of the studied expert tourists were found to be engaged in some sort of community activity (Table 2).

3.2. Perception of Tourist Infrastructure by Expert Tourists

Our research on the perception of tourist infrastructure by experts has shown that there is a statistically significant difference in the assessment of restaurant services ($p<0.05$) and local transportation ($p<0.05$) in the Polish and Slovakian Tatras.

Figure 4. Expert analysis of tourist infrastructure in the Polish and Slovakian Tatras



Source: Compiled by authors.

On the other hand, in the opinion of experts, there exists a lack of a statistically significant difference between the perception of lodging facilities and the general state and maintenance level of tourist trails in the studied parts of the Tatras ($p>0.05$ in both cases). In the case of the assessment of tourist trails, the p value used to calculate statistical significance was slightly different from the accepted level ($p=0.058$). The mean assessment value for the analysed features of tourism-related infrastructure in the Polish part of the Tatras was 3.9, while for the Slovakian part 3.6 (Figure 4, Table 3).

Table 3. Assessment of tourist infrastructure found in the Polish and Slovakian Tatras, explanation: mean (M), standard deviation (SD), statistically significant differences (p)

Tourist infrastructure in Tatra Mts.	Mean value		Standard deviation		p
	Poland	Slovakia	Poland	Slovakia	
Accommodation base	3.81	3.71	0.90	0.73	0.1843
Gastronomic base	3.78	3.55	0.85	0.84	0.0097
Local transport	3.85	3.36	0.85	0.94	0.0000
Tourist footpaths	4.22	4.01	0.66	0.86	0.0576

Source: Compiled by authors.

In the qualitative part of the research study, survey participants noted the lack of a convenient public transportation connection between Poland and Slovakia. Two respondents explained it this way:

"*I see the need to improve public transportation from Poland to Slovakia" (woman, age: 41 to 50, from Mazowieckie Voivodeship). "Our Tatras are completely jammed with cars. There should be a better connection to Slovakia in order to reduce traffic congestion on our side of the border…*" (woman, age: 41 to 50, Łódź Voivodeship).

Qualitative research also provided us with information on other problems including:

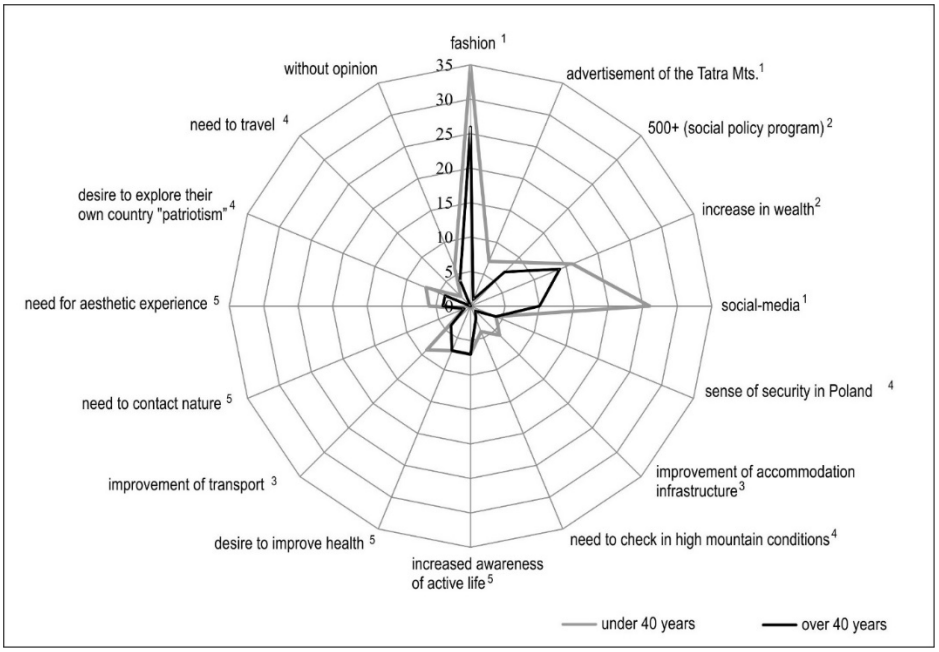
"*The problem of parking and driving to the city of Zakopane in itself" (man, age: 41 to 50, Małopolskie Voivodeship). "Prices at Tatra lodges are too high" (woman, age: 41 to 50, Małopolskie Voivodeship). "Mountain lodges are not tourist-friendly. At the Murowaniec Lodge, one can no longer sleep on the floor. The perfect lodge in the Tatras is the Five Ponds Lodge where people can sleep on the floor and if floor space runs out, then people can sleep next to the lodge, and no one makes this into a problem. Murowaniec Lodge and Hala Kondratowa Lodge want to function as commercial facilities and have ceased to function as mountain lodges*" (man, age: 41 to 50, Wielkopolskie Voivodeship). "*There is also a lack of modern toilet space. Portable toilets smell so bad that just walking next to them is disgusting. Other solutions are needed in this area*" (woman, age: 41 to 50, Łódź Voivodeship).

3.4. Perception of Tourist Traffic in the Tatras

Of the experts interviewed, 94% observed a meaningful increase in tourist traffic, and provided a number of different reasons for this increase (Figure 5).

Experts' statements provided as part of our qualitative study led to the identification of 16 main reasons for constantly increasing tourist traffic in the Tatras over the last decade. The most important of the reasons was that the Tatras are in fashion – this according to all the surveyed experts. The second most important reason varied depending on the age group of the surveyed experts. Experts under the age of 40 tended to identify social media, while experts over 40 increasing consumer wealth. The subsequent reasons listed in this study illustrate the homogeneity of the studied group of experts (Figure 5).

Figure 5. Reasons for increased tourist traffic in the Tatras in the view of experts age 40 or less and 40 or more (explanation, type of factors: 1 - socio-cultural, 2 - economic, 3 - industrial, 4 - psychological, 5 - health)



Source: Compiled by authors.

Table 4. Factors determining the increase in tourist traffic in the Tatras, in the opinion of experts

Factors:	up to 40	above 40
socio-cultural	49%	45%
economic	17%	23%
industrial	10%	5%
health	14%	21%
psychological	9%	7%
	100%	100%

Source: Compiled by authors.

Research has shown that there does not exist a difference in the perception of the reasons for the increase in Tatra tourists traffic based on the age of the studied experts (p=0.34) (Figure 5). A grouping of the reasons provided in the study made it possible to identify 5 main factors driving changes in Tatra tourist traffic. The experts surveyed in the study agree that the increase in tourist traffic in the Tatras is determined mainly by social and cultural factors (Table 4).

The free responses of experts provide insight into the various aspects of tourist traffic including the following issues:

"*The increase in the number of tourists in itself is not a problem. The problem is that tourists are often unprepared for mountain tourism, both physically and in terms of basic training such as reading maps. Many tourists choose trails which they are not prepared for. This reduces their safety level and that of other tourists*" (man, age: 31 to 40, Mazowieckie Voivodeship).

The survey participants noted the great importance of social media portals that set trends and promote certain tourist destinations.

"*There is pressure in social media. Everyone wants to boast a picture with a bear or with the cross on Mount Giewont or crocuses growing in valleys*" (woman, age: 25 to 30, Kraków, Małopolskie Voivodeship).

Experts note that despite higher incomes in most Polish households, the Tatras remain in fashion and are even becoming more fashionable.

"… people are making more money that can be used for vacation purposes. Why do they choose the Tatra and Podhale regions for their vacation? While these destinations are attractive in themselves, they are often chosen because tourists are simply not familiar with other attractive destinations. There is a large number of other attractive destinations in Poland, including environmentally attractive ones. Going to the Tatras means sitting in traffic and then hiking amidst a crowd of people" (woman, age: 31 to 40, Kraków, Małopolskie Voivodeship).

The mass media share some of blame for growing interest in the Tatras by reporting on mountain adventures that often involve dramatic experiences and sensational images. This is confirmed by many experts, one of which stated the following:

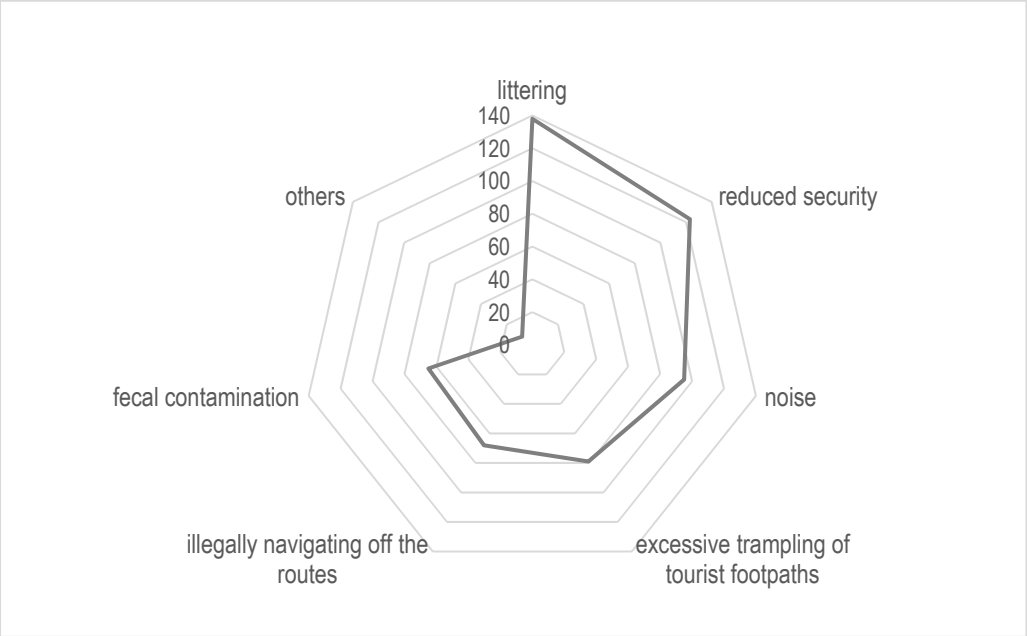
"*In my view the media have helped promote tourist traffic in the Tatras. Here is an example related to my own friends. Many of my friends would give me a pitiful look when I would talk about my climbing and my love of the mountains or when I would encourage them to read about the history of Tatra area exploration or the successes of Polish climbers in the Himalayas. However, then I observed a major change in their attitudes last year when Tomasz Mackiewicz died climbing K2 and the whole country was touched by this event… These new attitudes represent a threat not only to themselves, but also to the rescue teams that search for missing hikers. These 'new' hikers go into the mountains for a weekend and leave behind tons of garbage including beverage containers. I even once noticed a small barbecue grill in the middle of a tourist trail. It appears to me that the media have created a trend – that going into the mountains is 'in' right now. The effects of this are observed on the trails*" (woman, age: 25 to 30, Kujawsko-Pomorskie Voivodeship).

Threats associated with increasing tourist traffic

The main problem, according to experts, associated with "excessive" tourism in the Tatras is littering. Reduced safety is another leading problem (Figure 6). The main problem areas listed here are hiking while under the influence, excessive bravado, other types of irresponsible behavior while hiking, and risky behaviors designed to secure a great photograph.

In their free responses, experts also note damage to the natural environment including excess trampling of tourist trails, damage to vegetation in picnic areas (mountain passes, summits, observation points), and graffiti on rocks, wooden features, and tree trunks. Experts also note that tourists are not following official national park rules both in Poland and Slovakia, especially during the vacation period and during long weekends as well as when crocuses are in bloom (Photo 1, 2).

Figure 6. Threats associated with "excess" tourism in the Tatras, in the view of experts



Source: Compiled by authors.

Experts also note the lack of preparation on the part of some tourists traversing hiking trails.

"*Many people visiting mountain areas for the first time are completely unprepared for hiking trails. I think that government subsidies such as 500 Plus have largely contributed to this new trend. These are families with multiple children running around pointlessly in Zakopane and its vicinity. They seem to be surprised to be here. These changes are easily observable over the long term (16 years)*" (woman, age: 51 to 60, Pomorskie Voivodeship).

Experts also suggest that there are certain consequences of this lack of preparation:

"*Rescuing people in flipflops and other irresponsible people should be followed by rescue charges*" (man, age: 41 to 50, Western Pomorskie Voivodeship).

"*Mandatory insurance designed to finance rescue efforts and financial support for the equipment and training of the Tatra Volunteer Rescue Service (TVRS)*" (man, age: 18 to 24, Warmińsko-Mazurskie Voivodeship).

"*There should be patrols on tourist trails. Officers should enforce bans on swimming in lakes, smoking cigarettes in Tatra National Park, and bringing animals to the national park*" (woman, age: 41 to 50, Śląskie Voivodeship).

Discussion

The Tatras are the only high mountain area in Poland. Tatra National Park receives the largest number of visitors of any national park in Poland (Partyka 2010). TNP ticket sales since 1993 show a constant increase in tourist traffic in recent years (Skawiński 2010, TNP statistics). Relative to other natural, protected areas in Europe, TNP receives some of the highest tourist volumes (Kurek 2004). There exists a body of research that shows that tourist traffic is substantially responsible for the initiation and acceleration of morphogenetic processes, which may lead to irreversible degradation of natural, protected areas (Olive and Marion 2009, Fidelus-Orzechowska *et al.* 2017). Excess human impact may in some mountain areas lead to changes in relief. In other areas, it may alter the manner in which they are experienced, and their overall aesthetic (Leask 2010).

The research literature provides studies on tourists' preferences in relation to many key issues. These studies are based mostly on surveys completed by randomly selected tourists (Noe *et al.* 1997). This type of survey work was conducted in TNP by Buchwał and Rogowski (2007) and Hibner (2012). However, it is difficult to discern certain things using these types of studies. This is why we decided to strongly narrow down the group of respondents in our present study. We selected individuals who are familiar with and frequently visit TNP. We figured that differences in the way a given issue is perceived may be affected by the choice of survey participants in light of their primary characteristics. In this study these are frequency of visits, level of experience, and age of

respondents. A well-planned selection of survey participants is one of the more important parts of the research process, as noted by Moore *et al.* (2012) and Haida *et al.* (2016).

The present study may provide helpful information to individuals managing national parks in the area of management effectiveness. The level of experience, opinion, and ways of perceiving tourist traffic and threats associated with it associated with persons frequently visiting a given geographic area may enhance the development of certain skills and may lead to the creation of management tools in the area of effective tourist area management (Arabatzis and Grigoroudis 2010, Leask 2010, 2016, Grilli 2020).

a.Analysis of tourist area management makes it possible to observe differences between the part of the Tatras in Poland and that in Slovakia. The Polish part of the Tatras is perceived as better in terms of restaurant services and transportation services. One reason for this perception may be due to how these services are deployed (Kowalczyk and Derek 2010). TNP lodges operate year-round and not just seasonally, as is the case with some parts of the Slovakian Tatras and other national parks such as Berchtesgaden National Park in Germany (Prus 2011). The same is true of tourist trails, which are closed in Slovakia from November 1 to June 15. This may also affect how they are perceived.

Transportation accessibility is an important part of tourism development in any region (Downward and Lumsdon 2004, Więckowski *et al.* 2012a, Więckowski *et al.* 2012b). Surveys completed by Polish and Slovakian tourists indicate that transportation options along the national border are limited, which does discourage tourists from crossing the border. The mode of transportation most often used in this region is the private automobile (Więckowski *et al.* 2012a).

Studies on local transportation in Moors National Park in the United Kingdom show that type of transportation may affect the type of travel pursued and its course (Downward and Lumsdon 2004). In another study, researchers examined transportation options in Dartmoor National Park and Lake District National Park in the United Kingdom, where they found that public transportation is important. Herein they argue that it is important to encourage visitors to use public transportation instead of private cars (Cullinane and Cullinane 1999). The use of public transportation in and near national parks may strongly reduce congestion and the negative impact of private vehicles on the natural environment.

b.Capacity thresholds as well as the scale and rate of tourism development should remain in line with the nature of a given geographic area, as noted by Ferreira and Harmse (2014). Increases in tourist traffic in the Tatras are observed by most of the experts interviewed for the present study. The trend towards visiting the Tatras, noted by most experts, applies most substantially to specific sites in the Tatras such as Morskie Oko Lake, Mount Giewont, and Mount Kasprowy Wierch. In the free response section of the study, experts expressed the following views:

"*The only place in our Tatras that breaks my heart to go back to is the Morskie Oko Lodge because it is now a restaurant with a nice view for beer drinkers but not for tourists who love the Tatras*" (woman, age: 41 to 50, Mazowieckie Voivodeship).

The concentration of tourist traffic in these places is shown in studies by Pociask-Karteczka *et al.* (2008) and Fidelus-Orzechowska *et al.* (2017).

Increasing tourist traffic has also become a problem in Kruger National Park in the last 14 years in South Africa (Ferreira and Harmse 2014). Excess tourist traffic in the park, especially on weekends and on holidays substantially affects the quality of the visitor experience with nature, which is becoming an increasing problem for park authorities (Ferreira and Harmse 1999, 2014). An increase in tourist traffic in national parks in Finland has also been observed. Survey studies show that tourists' nature experiences are being disturbed during peak tourist season. While tourist traffic in national parks in Finland is not yet a substantial problem, the issue of limits on tourist traffic is being discussed (Puhakka 2008).

A significant increase in tourist traffic has also been observed around Mount Everest and Mount Annapura, with 5,836 tourists and 14,300 tourists noted in 1980, respectively. By 1998 the number of tourists around both mountains had increased fourfold (Nepal 2003). The increase in tourist traffic also is generating related problems for the Himalaya region including degradation of the natural environment and littering. The Himalayas are now sometimes described as the world's highest junkyard or a garbage trail – which illustrates the scale of the problem. Garbage left behind by climbers includes equipment and empty gas cylinders (Nepal 2003). In response to some of these problems, a committee was formed in 1991 called the Sagarmatha Pollution Control Committee (SPCC) which is tasked with management of waste in the Himalaya region. It is also supposed to improve recycling systems and more effectively manage the waste management process. Finally, it

is designed to provide ecological education for the local community in order to make it more aware of problems and threats associated with littering as well as excess human impact in mountain areas (www.spcc.org.np).

In light of the threats posed by increasing tourist traffic, it is important to introduce solutions in order to reduce the negative impact of human presence. One such effort in the Tatras is called Crocus Action, which represents a novel approach to tourism and ecology in Tatra National Park (Photo 1, 2). The project is realized in conjunction with Kościelisko Commune. The project is executed during one of the peak seasons in the park – in the early spring when the snow cover is melting and crocuses are blooming on Tatra area meadows. The crocus is a protected species, which is why Crocus Action is meant to not only protect the crocus, but also to promote aware tourism and environmental education in the community (http://hokuskrokus.pl/en/). The local community takes part in this endeavor by directing car traffic and showing proper ways to park a car as well as by supervising tourist traffic in TNP (Photo. 1).

Photo. 1. Traffic jam in the Chochołowska Valley during the crocus bloom season

Source: Rafał Raczyński

Volunteers are a key part of the project, who in 2019 in the number of several dozen people helped and supported the activities of TPN employees. In the words of the TNP head of the Active Education Team, Jan Krzeptowski-Sabała:

"*It is important to remember that when photographing or observing crocuses, one should not trample them. It is also vital to known that when walking around a national park we are traversing a space with many different species of plants and animals – and here we are the guests."*

What is also noteworthy is the substantial role of the project "Volunteers for the Tatras" realized based on the model of the "Volunteers in Parks" program operating at the National Park Service in the United States (https://tpn.pl/wspieraj/wolontariat).

c. The part of our research focused on risk assessment has shown that experts have observed many different negative impacts of improper use of the studied area. Similar risks have been studied from a theoretical perspective (McHugh 1968) as well as an empirical perspective (Noe *et al.* 1997). The theoretical work focused on the acceptability of garbage and tourist crowds in attractive tourist areas (McHugh 1968). Perception of threats was studied for national parks in the southeastern United States (Noe *et al.* 1997). This study focused on the level of acceptability of littering in various parts of protected areas including parking lots, visitor centers, tourist trails, rivers, lakes, and lodges. Studies have shown that the degree of acceptability of garbage varies depending on physical location in protected natural areas (Noe *et al.* 1997). Research conducted in Lake Johnson Park in an attractive region of the United States also shows that the littering problem is viewed as an important problem by park visitors (Moore *et al.* 2012).

Photo. 2. Traffic jam in the Chochołowska Valley during the crocus bloom s Tourist traffic in the Chochołowska Polana Meadow during the crocus bloom season

Source: Jan Krzeptowski-Sabała

Other survey studies targeting randomly selected tourists were designed to identify their views on selected TNP tourist trails and have shown that most tourists are aware of the negative impacts of tourist foot traffic on nature. In the view of tourists, the negative impact mostly takes the shape of waste material left behind along or nearby tourist trails – both garbage and food waste (Buchwał and Rogowski, 2007). None of the above-mentioned studies were conducted on groups of experts. However, the experts surveyed in the present study were also keen to note that the main human impact issue in national parks is excessive littering. TNP is making an effort to combat this problem by overseeing Clean Tatra days, which is an effort where thousands of volunteers collect garbage left behind by tourists in the national park (https://czystapolska.org.pl/). However, it is important to remember that systematic efforts to help keep the Tatras clean are more effective than garbage collection events held from time to time. These systematic efforts are managed by TNP volunteers on a daily basis who perform this work due to their high level of ecological awareness and desire to keep the national park clean.

Human excrement is yet another major problem in high mountain areas, as shown by Apollo on the example of several summits of the Crown of the Earth (Apollo 2014, 2016). The study showed that human excrement may strongly contaminate water and soils leading to an epidemiologic problem. Carr *et al.* (2002) found that many climbers become ill as a result of water contaminated with human excrement.

Mountain areas are characterized by diversity resulting from their size and accessibility as well as degree of human impact. However, what they all have in common is the problem of managing large numbers of tourists in overexploited areas. The negative impact of tourist presence may contribute to a host of irreversible changes in the natural environment and consequently to changes in the perception of a geographic area. Hence, it is very important to introduce programs designed to improve the state of the natural environment and enhance the level of awareness among tourists and the local community. In Poland, one example of such a program is Crocus Action, which is designed to save the crocus. Another program is that executed by the Sagarmatha Pollution Control Committee (SPCC) in Nepal. Regardless of the size or duration of such a program, even the smallest effort to protect the mountain environment is relevant and helpful.

The research results discussed herein may be used to create educational programs raising the level of awareness in children, young people, and adults in the area of mountain area preservation. The goal is to send the message that mountain area tourism is not always a well-thought out activity and is not necessarily a means to relax or learn more about the mountains. It is often a by product of fads and trends and social media activity

focused on boasting through photographs taken with a summit in the background. The research shows that educational efforts are of the highest importance, especially when it comes to the younger generation. The goal is to teach a better approach to national parks and protected areas in general. We strive to not let nature become merely a background for photographs. We wish that tourists will be able to see the pure value of mountain areas in themselves. The role of education is seen in research work on the effects of recreational endeavors on the natural environment (Chen *et al.* 2009).

Further research is needed in order to produce a good method of examining the causes of tourist traffic increases and threats resulting from these increases, not just in the Tatras, but in other regions of the world and in other social and economic contexts. New studies will attempt to develop a stronger link between science and practical ends via an interdisciplinary approach based mostly on a comparison of the opinions of expert tourists and regular tourists as well as the opinions of local decision makers, for example, a report on the design and execution of a set of experiments, the development of an innovative software system or the making of innovative art works. If so, this chapter will illuminate it by explaining, at the very least, what is important and new about it.

Conclusion

A comparison of the results of qualitative and quantitative research shows the following:

1.There exist differences in the perception of tourist infrastructure in two neighboring national parks found in the Tatras, especially in the area of restaurant services and transportation.

2.The main cause of increased tourist traffic in the Tatras is their trendiness among visitors who exchange information and photographs via social media platforms.

3.The main problem, in the view of expert tourists, is tourists littering in protected natural areas.

In-depth interviews with experts revealed an urgent need for ecological education to combat excess human impact in the Tatras and the need for higher fines for tourists behaving inappropriately in high mountain areas. The views provided by experts may be useful to authorities managing protected areas in their decision-making process.

Acknowledgements

We would like to sincerely thank Jan Krzeptowski-Sabała the head of the Active Education Team in TNP for his comments.
We would like to thank Jan Krzeptowski-Sabała and Rafał Raczyński for allowing us to use their photos.
We would like to especially thank all the people who responded to our survey.

References

[1] Acar, C., Kurdoglu, B. C., Kurdoglu, O. and Acar, H. 2006. Public preferences for visual quality and management in the Kackar Mountains National Park (Turkey). *International Journal of Sustainable Development & World Ecology*, 13(6): 499–512. DOI: https://doi.org/10.1080/13504500609469699

[2] Apollo, M. 2014. Zanieczyszczanie środowiska gór wysokich ekskrementami ludzkimi na przykładzie wybranych szczytów Korony Ziemi. *Prace Komisji Krajobrazu Kulturowego*, 26: 199–214.

[3] Apollo, M. 2016. Mountaineer's Waste: Past, Present and Future. *Annals of Valahia University of Targoviste, Geographical Series*, 16(2): 13–32. DOI: https://doi.org/10.1515/avutgs-2016-0002

[4] Arabatzis, G. and Grigoroudis, E. 2010. Visitors' satisfaction, perceptions and gap analysis: The case of Dadia–Lefkimi–Souflion National Park. *Forest Policy and Economics*, 12(3): 163–172. DOI: https://doi.org/10.1016/j.forpol.2009.09.008

[5] Bigné, E., Zanfardini, M. and Andreu, L. 2020. How online reviews of destination responsibility influence tourists' evaluations: an exploratory study of mountain tourism. *Journal of Sustainable Tourism*, 28(5): 686–704. DOI: https://doi.org/10.1080/09669582.2019.1699565

[6] Bryman, A. 1992. Quantitative and qualitative research: futher reflections on their integration. In J. Brannen (Ed.), *Mixing Methods. Quantitative and Qualitative Research* (pp. 57–80). Aldershot: Avebury.

[7] Buchwał, A. and Rogowski, M. 2007. Wpływ ruchu turystycznego na środowisko geograficzne w świetle badań ankietowych. In J. Pociask-Karteczka *et al.* (Eds.), *Stan i perspektywy rozwoju turystyki w Tatrzańskim Parku Narodowym, Studia i Monografie Nr 46* (pp. 309–319). Kraków: Akademia Wychowania Fizycznego. (in Polish)

[8] Carr, E., Berris, M., Hilstad, M. and Allen, P. 2002. *Water Quality and Fecal Contamination on Mt. Aconcagua: Implications for Human Health and High Altitude*. Cambridge, Massachusetts: Massachusetts Institute of Technology.

[9] Chen, L.-J., Chen, J. S. and Basman, C. 2009. Investigation on Visitors' Perceptions of Recreation Impacts in Sun Moon Lake National Scenic Area in Taiwan. *Asia Pacific Journal of Tourism Research*, 14(3): 241–253. DOI: https://doi.org/10.1080/10941660903023937

[10] Cullinane, S. and Cullinane, K. 1999. Attitudes towards traffic problems and public transport in the Dartmoor and Lake District National Parks. *Journal of Transport Geography*, 7(1): 79–87. DOI: https://doi.org/10.1016/S0966-6923(98)00027-1

[11] Downward, P. and Lumsdon, L. 2004. Tourism transport and visitor spending: A study in the North York Moors National Park, UK. *Journal of Travel Research*, 42(4): 415–420. DOI: https://doi.org/10.1177/0047287504263038

[12] Dzwonkowska, D. 2011. Zasada zrównoważonego rozwoju w turystyce. *Studia Ecologiae et Bioethicae*, 2: 23-41. (in Polish)

[13] Ferreira, S. L. A. and Harmse, A. C. 1999. The social carrying capacity of Kruger National Park, South Africa: Policy and practice. *Tourism Geographies*, 1(3): 325–342. DOI: https://doi.org/10.1080/14616689908721325

[14] Ferreira, S. L. A. and Harmse, A. C. 2014. Kruger National Park: tourism development and issues around the management of large numbers of tourists. *Journal of Ecotourism*, 13(1): 16–34. DOI: https://doi.org/10.1080/14724049.2014.925907

[15] Fidelus, J. 2014. The differentiation of tourist traffic in the Western part of the Tatra Mountains. *Folia Turistica*, 33, 173–192.

[16] Fidelus, J. 2016. Slope transformations within tourist footpaths in the northern and southern parts of the Western Tatra Mountains (Poland, Slovakia). *Zeitschrift Für Geomorphologie, Supplementary Issues*, 60(3): 139–162. DOI: https://doi.org/10.1127/zfg_suppl/2016/00265

[17] Fidelus-Orzechowska, J., Gorczyca, E. and Krzemień, K. 2017. *Geomorfologiczne skutki gospodarki turystycznej w Tatrach.* Kraków: Uniwersytet Jagielloński. (in Polish)

[18] Filp, J., Fuentes, E., Donoso, S. and Martinie, S. 1983. Environmental perception of mountain ecosystems in central Chile: An exploratory study. *Human Ecology*, 11(3): 345–351. DOI: https://doi.org/10.1007/BF00891380

[19] George, R. 2010. Visitor perceptions of crime-safety and attitudes towards risk: The case of Table Mountain National Park, Cape Town. *Tourism Management*, 31(6): 806–815. DOI: https://doi.org/10.1016/j.tourman.2009.08.011

[20] Giergiczny, M. and Zwijacz-Kozica, T. 2018. Jak chronić tatrzańskie lasy? Badanie preferencji. In J. Bodziarczyk (Ed.), *Ochrona ścisła w parkach narodowych i rezerwatach* (pp. 137–159). Kraków: Uniwersytet Rolniczy. (in Polish)

[21] Gorczyca, E. and Krzemień, K. 2002. Wpływ ruchu turystycznego na rzeźbę Tatrzańskiego Parku Narodowego. In W. Borowiec *et al.* (Eds.), *Przemiany środowiska przyrodniczego Tatr* (pp. 389–394). Zakopane: Wydawnictwo Tatrzańskiego Parku Narodowego. (in Polish)

[22] Gorczyca, E. and Krzemień, K. 2009. Rola antropopresji w przekształcaniu obszarów wysokogórskich na przykładzie Tatr i Monts Dore. *Prace i Studia Geograficzne*, 41: 89–106. (in Polish)

[23] Gorczyca, E. and Krzemień, K. 2010. Rola dróg i ścieżek turystycznych w modelowaniu rzeźby gór strefy umiarkowanej. *Roczniki Bieszczadzkie,* 18: 228–242. (in Polish)

[24] Grilli, G. 2020. Assessing price sensitivity of forest recreational tourists in a mountain destination. *Bio-Based and Applied Economics Journal*, 8(1), 63-74. DOI: https://doi.org/10.22004/ag.econ.302122

[25] Haida, C., Rüdisser, J. and Tappeiner, U. 2016. Ecosystem services in mountain regions: experts' perceptions and research intensity. *Regional Environmental Change*, 16(7): 1989–2004. DOI: https://doi.org/10.1007/s10113-015-0759-4

[26] Hedblom, M., *et al.* 2020. Landscape perception: linking physical monitoring data to perceived landscape properties. *Landscape Research*, 45(2): 179-192. DOI: https://doi.org/10.1080/01426397.2019.1611751

[27] Hibner, J. 2012. Zróżnicowanie ruchu turystycznego w Tatrzańskim Parku Narodowym na wybranych przykładach. *Problemy Ekologii Krajobrazu*, 34: 41–47. (in Polish)

[28] Kowalczyk, A. and Derek, M. 2010. *Zagospodarowanie turystyczne*. Warszawa: PWN. (in Polish)

[29] Kowalski, R., Biernacki, W. and Pociask-Karteczka, J. 2007. Motywy wyjazdów w polskie Tatry. In J. Pociask-Karteczka *et al*. (Eds.), *Stan i perspektywy rozwoju turystyki w Tatrzański Parku Narodowym, Studia i Monografie Nr 46* (pp. 281–289). Zakopane: Tatrzański Park Narodowy. (in Polish)

[30] Krzemień, K. 1997. Morfologiczne skutki gospodarki turystycznej w obszarze wysokogórskim na przykładzie masywu les Monts Dore (Francja). In B. Domański (Ed.), *Geografia, człowiek, gospodarka* (pp. 277–290). Kraków: Uniwersytet Jagielloński. (in Polish)

[31] Krzemień, K. 2010. Les transformations contemporaines du relief du massif du Mont-Dore. In D. Ricard (Ed.), *Developpment durable des territories: de la mobilisation des acteurs aux demarches participatives* (pp. 353–378). Clermont-Ferrand: Presses Universitaires Blaise Pascal.

[32] Kurek, W. 2004. *Turystyka na obszarach górskich Europy*. Kraków: Uniwersytet Jagielloński. (in Polish)

[33] Leask, A. 2010. Progress in visitor attraction research: Towards more effective management. *Tourism Management,* 31(2): 155–166. DOI: https://doi.org/10.1016/j.tourman.2009.09.004

[34] Leask, A. 2016. Visitor attraction management: A critical review of research 2009–2014. *Tourism Management*, 57: 334–361. DOI: https://doi.org/10.1016/j.tourman.2016.06.015

[35] McHugh, P. 1968. *Defining the situation*. New York: The Bobbs-Merrill Co.

[36] Moore, R. L., Leung, Y.-F., Matisoff, C., Dorwart, C. and Parker, A. 2012. Understanding users' perceptions of trail resource impacts and how they affect experiences: An integrated approach. *Landscape and Urban Planning*, 107(4): 343–350. DOI: https://doi.org/10.1016/j.landurbplan.2012.06.016

[37] Nepal, S. K. 2003. *Tourism and the environment Perspectives from the Nepal Himalaya*. Nepal: Himal Books.

[38] Noe, F. P., Hammitt, W. E. and Bixler, R. D. 1997. Park user perceptions of resource and use impacts under varied situations in three national parks. *Journal of Environmental Management*, 49(3): 323–336. DOI: https://doi.org/10.1006/jema.1995.0093

[39] Nyka, J. 2017. *Tatry Słowackie. Przewodnik*. Latchorzew: Trawers. (in Polish)

[40] Olive, N. D. and Marion, J. L. 2009. The influence of use-related, environmental, and managerial factors on soil loss from recreational trails. *Journal of Environmental Management*, 90(3): 1483–1493. DOI: https://doi.org/10.1016/j.jenvman.2008.10.004

[41] Partyka, J. 2010. Ruch turystyczny w polskich parkach narodowych. *Folia Turistica*, 22: 9–24. (in Polish)

[42] Pastorella, F., Borges, J. and De Meo, I. 2016. Usefulness and perceived usefulness of Decision Support Systems (DSSs) in participatory forest planning: the final users' point of view. *IForest - Biogeosciences and Forestry*, 9(3): 422–429. DOI: https://doi.org/10.3832/ifor1356-008

[43] Pelfini, M. and Santilli, M. 2006. Dendrogeomorphological analyses on exposed roots along two mountain hiking trails in the Central Italian Alps. *Geografiska Annaler: Series A, Physical Geography*, 88(3): 223–236. DOI: https://doi.org/10.1111/j.1468-0459.2006.00297

[44] Pickering, C., Walden-Schreiner, C., Barros, A. and Rossi, S. D. 2020. Using social media images and text to examine how tourists view and value the highest mountain in Australia. *Journal of Outdoor Recreation and Tourism*. 29(100252). DOI: https://doi.org/10.1016/j.jort.2019.100252

[45] Pociask-Karteczka, J., Baścik, M. and Czubernat, S. 2008. Ruch turystyczny w Tatrzańskim Parku Narodowym w latach 1993-2005. In W. Kurek and M. Mika (Eds.), *Studia nad turystyką. Tradycje stan obecny i perspektywy badawcze* (pp. 271–279). Kraków: IGiGP UJ. (in Polish)

[46] Prus, M. 2011. Udostępnianie turystyczne Tatrzańskiego Parku Narodowego i Parku Narodowego Berchtesgaden. *Państwo i Społeczeństwo*, 11(1): 149–169. (in Polish)

[47] Puhakka, R. 2008. Increasing role of tourism in Finnish national parks. *Fennia-International Journal of Geography*, 186(1): 47–58. Available at: https://fennia.journal.fi/article/view/3711

[48] Skawiński, P. 2010. Zarządzanie ruchem turystycznym w Tatrzańskim Parku Narodowym. *Folia Turistica*, 22: 25–35. (in Polish)

[49] Švajda, J., Korény, S., Zięba, A. and Adamski, P. 2016. Perceptions of natural disturbance in Tatra National Park, Poland. *Forestry Journal*, 62(2): 105–109. DOI: https://doi.org/10.1515/forj-2016-0011

[50] UNWTO, *Tourism Highlights 2018 Edition*. Available at: https://www.e-unwto.org/doi/pdf/10.18111/9789284419876

[51] Więckowski, M. *et al.* 2012a. *Pogranicze polsko-słowackie. Dostępność transportowa a turystyka*. Warszawa - Bratysława: Instytut Geografii i Przestrzennego Zagospodarowania Polska Akademia Nauk, Geografický ústav Slovenská akadémia vied. (in Polish)

[52] Więckowski, M. *et al.* 2012b. *Możliwości poprawy dostępności i rozwoju turystyki na pograniczu polsko-słowackim. Warunki rozwoju, rekomendacje i dobre praktyki*. Warszawa - Bratyława: Instytut Geografii i Przestrzennego Zagospodarowania Polska Akademia Nauk, Geografický ústav Slovenská akadémia vied.

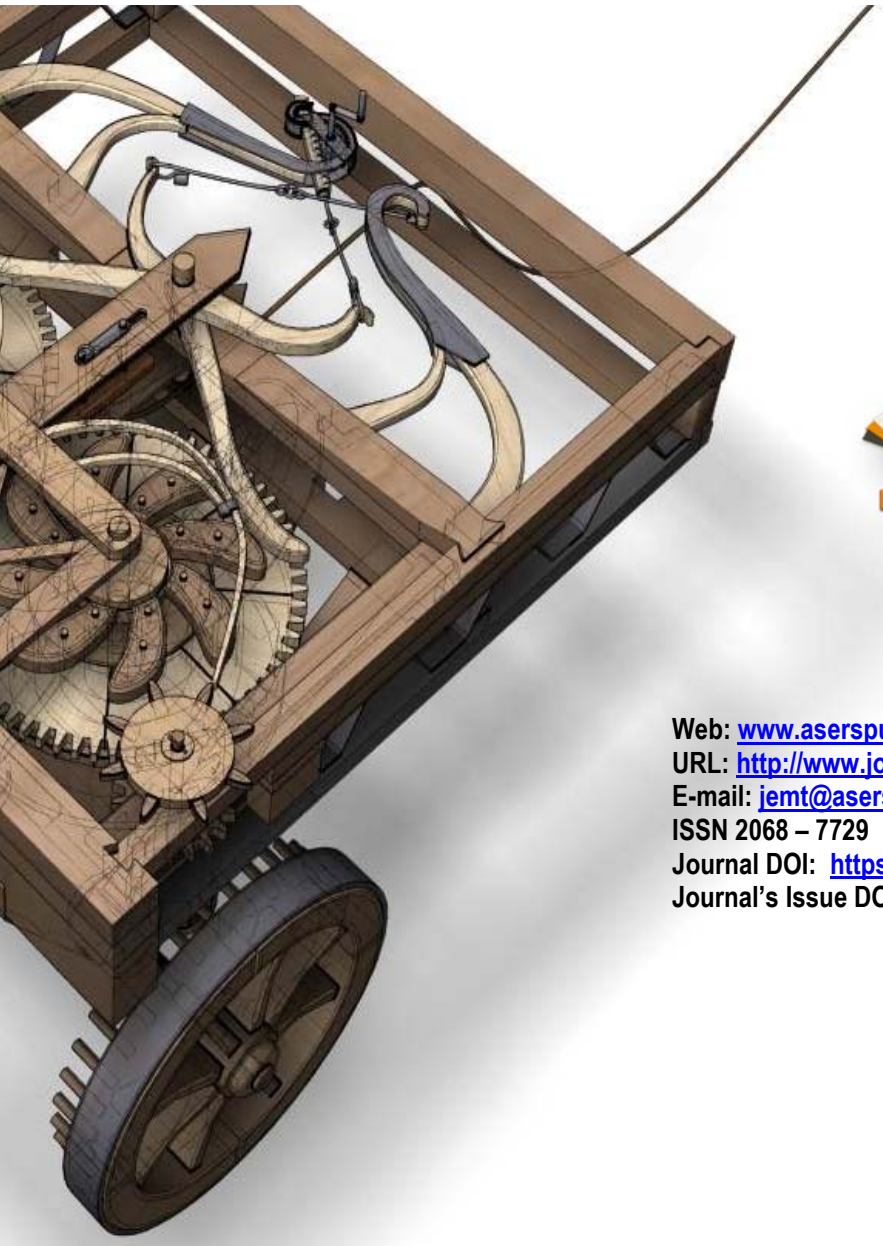
[53] Winiarski, R. and Zdebski, J. 2008. *Psychologia turystyki*. Warszawa: Wydawnictwa Akademickie i Profesjonalne. (in Polish)

[54] Wöran, B. and Arnberger, A. 2012. Exploring Relationships Between Recreation Specialization, Restorative Environments and Mountain Hikers' Flow Experience. *Leisure Sciences*, 34(2): 95–114. DOI: https://doi.org/10.1080/01490400.2012.652502

[55] Zarzycki, P. 2007. Tatrzańskie schroniska górskie w opinii turystów, w: Stan i perspektywy rozwoju turystyki w Tatrzańskim Parku Narodowym. In J. Pociask-Karteczka *et al*. (Eds.), *Stan i perspektywy rozwoju turystyki w Tatrzański Parku Narodowym, Studia i Monografie Nr 46* (pp. 291–308), Zakopane: TPN. (in Polish)

[56] Zuo, L., *et al.* 2020. The transition of soundscapes in tourist destinations from the perspective of residents' perceptions: A case study of the Lugu Lake scenic spot, Southwestern China. *Sustainability,* 12(3), 1073. DOI: https://doi.org/10.3390/su12031073

ASERS



Web: www.aserspublishing.eu
URL: http://www.journals.aserspublishing.eu/jemt
E-mail: jemt@aserspublishing.eu
ISSN 2068 – 7729
Journal DOI: https://doi.org/10.14505/jemt
Journal's Issue DOI: https://doi.org/10.14505/jemt.v11.2(42).00