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*Experience design and nature conservation via
Visitor **M**onitoring and **M**anagement in protected areas*



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PROJECT IDEAS AND GOALS

- ✓ *to develop the framework of methodology for visitor monitoring and management*
- ✓ *to share experience and knowledge in terms on visitor monitoring through 5 thematic workshops*
- ✓ *to make protected areas more efficient in nature conservation and visitor management.*



CONSORTIUM

The consortium is formed of experts in fields of nature-based tourism from different countries:

- ✓ *Jagiellonian University (Poland) - Joanna Hibner*
- ✓ *University of Novi Sad (Serbia) - Djordjije Vasiljevic*
- ✓ *CEEweb for Biodiversity (Hungary) - Adam Varga, Thor Morante*
- ✓ *Matej Bel University (Slovakia) - Juraj Svajda*
- ✓ *Mendel University in Brno (Czech Rep.) - Alice Kozumplikova*



WORKSHOPS

- ✓ *Workshop 1: Visitor surveys - Tool for identifying motivations and perceptions of natural and recreational area visitors - Cracow, Poland*
 - *main goal is to train all participants on tools and techniques for indentifying visitors motivations and perception*
 - *EXPERTS: dr Bernadetta Zawilińska (EU in Cracow), dr Joanna Hibner (JU)*
- ✓ *Workshop 2: Monitoring visitors methodologies - Brno, Czech Rep.*
- ✓ *Workshop 3: Heritage interpretation and experience design for boosting visitors satisfaction - Novi Sad, Serbia*
- ✓ *Workshop 4: Communications tools and approaches to promote natural areas and attract visitors - Budapest, Hungary*
- ✓ *Workshop 5: Visitor impact monitoring in protected areas - Banska Bistrica, Slovakia*



NEEDS → MOTIVATIONS

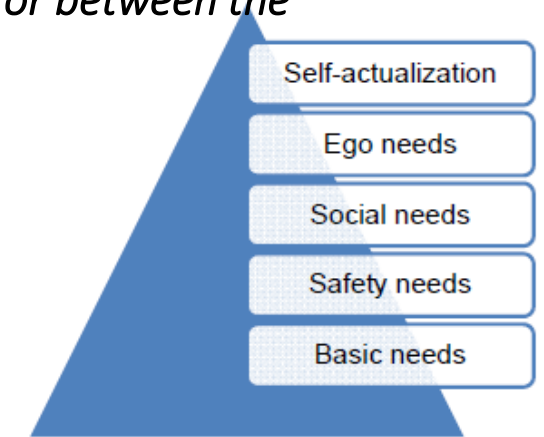
Needs are deficiency, it could be describe as the lack of something that causes actions to be taken to eliminate this deficiency; unfulfilled state, a state of dissatisfaction caused by an imbalance in the body or between the body and the environment

The motivation is seen to derive from the individual needs of a person. The motivation process starts with a need, continues by action to satisfy the need and ends to the fulfillment of the need (Wright 2006).

KNOWLEDGE ABOUT MOTIVATIONS

– why it is important?

- ✓ *it is perceived as the starting point on undertaking any recreational activities*
- ✓ *motivations affects all aspects related to visitors decision making process – it is a tool to understand visitors needs and behaviour;*
- ✓ *to support communication (management of PA vs visitors)*
- ✓ *to create an efficient marketing strategy for PAs and its surrounding*



Maslow's Theory



TOURIST TYPOLOGIES

- ✓ *visitors segmentation is considered to be one of the methods of understanding and gaining knowledge on visitors behaviour and their decision making process*
- ✓ *the purpose of segmentation is to divide tourists into homogeneous groups that are both different from other categories and internally consistent*
- ✓ *theoretical tourist typologies as base for empirical studies – e.g. creating cafeterias responses in questionnaires*



THEORETICAL TOURIST TYPOLOGIES

PRZEĆLAWSKI (1996)

Cognitive type

- *contact with nature*
- *contact with heritage*
- *contact with people*

Integrative type

Active type

Rest & entertainment type

Task oriented type

Contemplative type

Health oriented type

Recreation Experience Preference (REP) scales; Driver & Tocher (1970)

autonomy/leadership; risk taking;

family togetherness; similar people;

new people;

learning; enjoy nature; introspection;

creativity;

nostalgia; physical fitness; physical rest;

escape personal-social pressures;

escape physical pressure;

social security; escape family;

teaching/leading

WINIARSKI (1991)

Hedonistic & active type

Relaxation oriented type

Health oriented type

Social oriented type

Adventure seeker

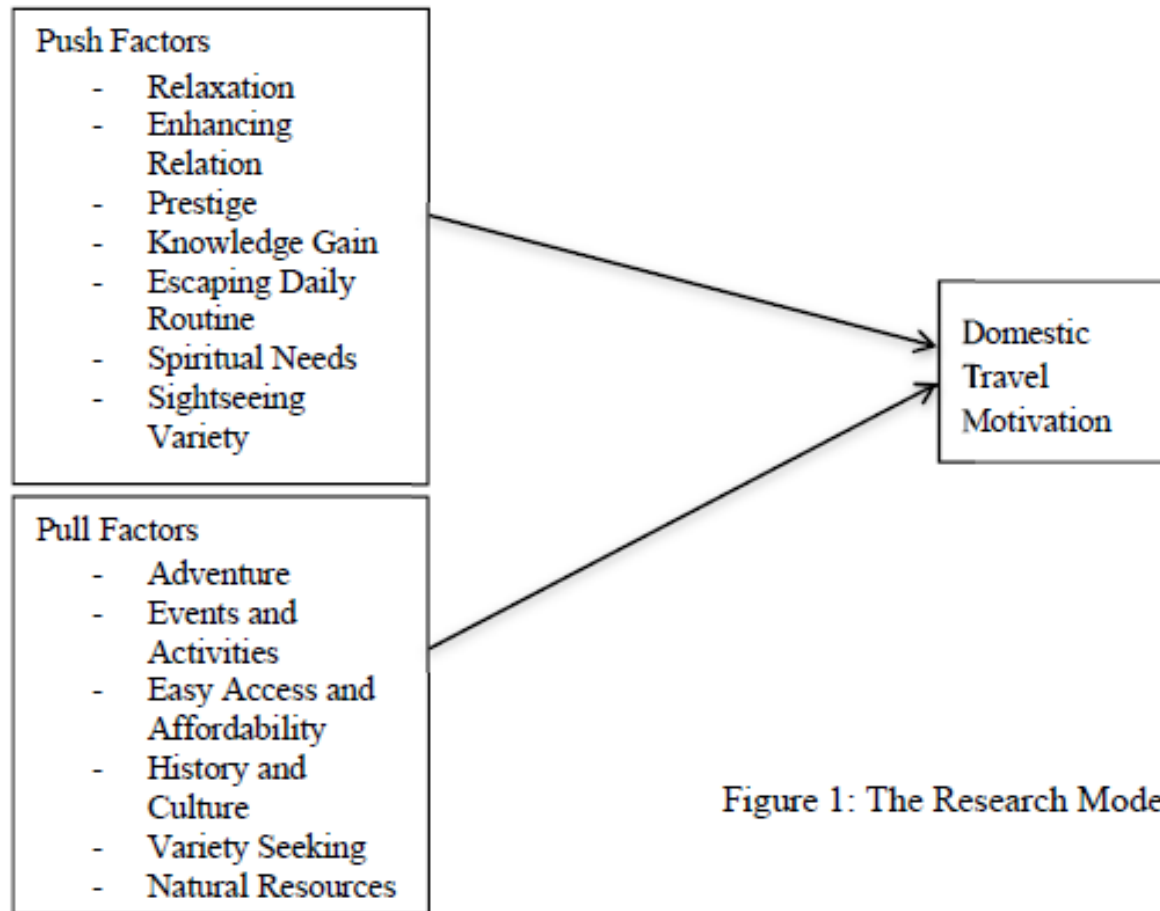
Ambitious type

Cognitive type



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THEORETICAL TOURIST TYPOLOGIES



Banly et al. 2016
based on Dann 1977

Figure 1: The Research Model

TOURIST TYPOLOGIES

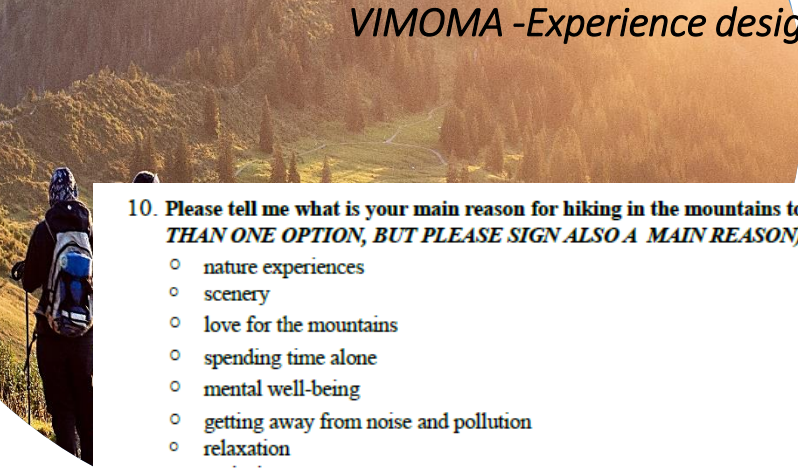


Theoretical typologies based on K. Przeclawski (1996)	Motives categories used in cluster analysis	Motives listed in the questionnaire
cognitive type	contact with nature	contact with nature
		observation of wild animals
contemplative type	scenery	admiring views, scenery
	solitude	solitude
rest and entertainment type	rest / well-being	well-being
		escape from noise and pollution
		relax
		recreation
		escape from urban lifestyle
		recovery from stress
contemplative type		silence
cognitive type	education	sightseeing Tatra National Park
		learning about geography and nature of Tatra Mountains
active type	sport	improving hiking skills
		keeping fit
		physical activity
integrative type	time with family and friends	time with family and friends

Statement	REP dimension
Nature experiences	Enjoy nature (Driver 1977, 1983)
Scenery	Enjoy nature (Driver 1977, 1983)
Being on my own	Autonomy/leadership, Escape physical pressure, Reduce tension (Driver 1977, 1983)
Mental well-being	Escape personal-social pressures (Driver 1977, 1983)
Getting away from noise and pollution	Escape physical pressure (Driver 1977, 1983)
Relaxation	Physical rest, Escape personal-social pressures (Driver 1977, 1983)
Meeting new people	New people (Driver 1977, 1983)
Being together with own group	Family togetherness, Similar people (Driver 1977, 1983)
Pleasant old memories	Nostalgia (Driver 1977, 1983)
Getting to know the area	Learning (Driver 1977, 1983)
Learning about nature	Learning (Driver 1977, 1983)
Improving my own skills	Achievement/stimulation (Driver 1977, 1983)
Keeping fit	Physical fitness (Driver 1977, 1983)
Experiencing excitement	Achievement/stimulation (Driver 1977, 1983)

Hibner et al. 2018

Konu&Kajala 2012



10. Please tell me what is your main reason for hiking in the mountains today? (YOU CAN CHOOSE MORE THAN ONE OPTION, BUT PLEASE SIGN ALSO A MAIN REASON)

- nature experiences
- scenery
- love for the mountains
- spending time alone
- mental well-being
- getting away from noise and pollution
- relaxation
- curiosity
- being together with own group (family/friends)
- meeting new people
- pleasant old memories
- getting to know the new places
- learning about nature or geography of Tatra Mountains
- improving my own skills
- keeping fit
- experiencing excitement
- it's a challenge for me
- others,.....

Hibner (own research example of questionnaire)

SECTION II: MOTIVATIONS

6. Why did you choose Skalnaté Pleso for your today's excursion? (YOU CAN CHOOSE MORE THAN ONE OPTION, BUT PLEASE SIGN ALSO A MAIN REASON)

- I've wanted to ride a cablecar someday
- I decided to come to this area because of the ease in reaching that place (you can ride a cablecar or you can choose an easy trail)
- because I can eat or drink something in the restaurant near the lake
- it is the another place in the mountain which I wanted to see
- I come back here because I like this place
- Skalnaté Pleso it's a one of the stages of today's excursion
- I treat input or descent from Skalnaté Pleso as a training before the more difficult mountain trails.
- others,.....

Hibner (own research example of questionnaire)

8. What was or is important to you during this visit to the Pyhätunturi National Park? (please respond to each alternative)

(5 = very important, 4 = fairly important, 3 =neither, 2 = of little importance, 1 = not important at all)

	very important	5	4	3	2	1	not important at all
nature experiences		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
scenery		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
being on my own		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
mental well-being		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
getting away from noise and pollution		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
relaxation		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
meeting new people		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
being together with own group		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
pleasant old memories		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
getting to know the area		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
learning about nature		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
improving my own skills		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
keeping fit		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
experiencing excitement		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
getting to know the cultural heritage of the area		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Konu & Kajala 2012



SEGMENTATION BY MOTIVATIONS

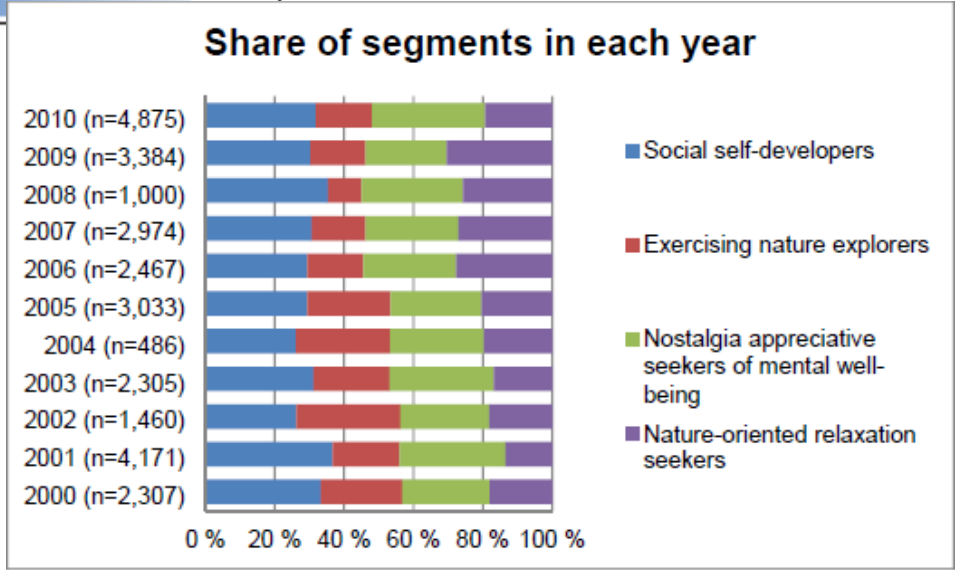
Motive categories/segments	Nature oriented	Family / friends & well-being oriented	Sports oriented	Mixed segment with multiple motivations
contact with nature	50%	7%	20%	88%
scenery	87%	28%	66%	96%
solitude	4%	1%	3%	10%
well-being	56%	60%	58%	93%
education	17%	9%	11%	49%
sport	0%	4%	100%	73%
time with family & friends	3%	54%	7%	75%

Hibner et al. 2018

CLUSTER SEGMENTS:

-  **SPORT AND SKI ORIENTED GROUP (43%)**
-  **NATURE AND WELL-BEING ORIENTED GROUP (28%)**
-  **FUN AND ENTERTAINMENT ORIENTED GROUP (14%)**
-  **MIXED TYPE WITH MULTIPLE MOTIVATIONS (15%)**

Hibner & Tacznowska 2016



Konu & Kajala 2012



SEGMENTATION BY MOTIVATIONS

<i>Bieger & Laesser (2002)</i>	<i>Swiss tourists</i>	<i>Compulsory travel; Cultural hedonism; Family travel; Me(a)et marketing</i>
<i>Stearl et al. (2006)</i>	<i>Tourists from Donau Auen NP.</i>	<i>Family&Friends; Sport; Nature; Recreation</i>
<i>Park & Yoon (2009)</i>	<i>South Korea (rural tourists)</i>	<i>Family togetherness seeker; Passive tourist; Want-it-all seeker; Learning and excitement seeker</i>
<i>Rid et al. (2014)</i>	<i>Gambia (rural tourists)</i>	<i>Multiexperiences&beach seeker; multiexperiences seeker; heritage and nature seeker; sun & beach seeker</i>



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ECOLOGICAL AWARENESS

TABLE I. Revised NEP Statements

-
1. We are approaching the limit of the number of people the Earth can support.
 2. Humans have the right to modify the natural environment to suit their needs.
 3. When humans interfere with nature it often produces disastrous consequences.
 4. Human ingenuity will insure that we do not make the Earth unlivable.
 5. Humans are seriously abusing the environment.
 6. The Earth has plenty of natural resources if we just learn how to develop them.
 7. Plants and animals have as much right as humans to exist.
 8. The balance of nature is strong enough to cope with the impacts of modern industrial nations.
 9. Despite our special abilities, humans are still subject to the laws of nature.
 10. The so-called "ecological crisis" facing humankind has been greatly exaggerated.
 11. The Earth is like a spaceship with very limited room and resources.
 12. Humans were meant to rule over the rest of nature.
 13. The balance of nature is very delicate and easily upset.
 14. Humans will eventually learn enough about how nature works to be able to control it.
 15. If things continue on their present course, we will soon experience a major ecological catastrophe.
-

Source: Dunlap et al. (2000).



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PERCEPTION

"Perception" is understood as a set of stimuli - information, which reach the brain and it is processed in it into impressions, ideas, associations, etc., determining the behavior of the human
Krzymowska-Kostrowicka (1999)

"Perception" is also understood as a sum of perceiving, recognizing, comparing, classifying, evaluating. Thus, perception is not complete without adding value to perceived and classified objects ...
Jałowiecki (1988) za Krzymowska-Kostrowicka (1999)





LANDSCAPE PERCEPTION

- ✓ *research on landscape perception become very popular in the 70's (geography; psychology; landscape architecture; sociology, ecology etc.*
- ✓ *Tourism & recreation vs landscape research – common elements (Pietrzak 1998):*
 - *landscape changes caused by tourism*
 - *planning and designing recreational areas*
 - *landscape valorization and perception*



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PERCEPTION - METHODS

- ✓ *there is around 50 different techniques used for perception research*
- ✓ *The most frequently used methods are: surveys, landscape preferences research with the use of photography and mental maps (Pietrzak 2010)*
- *SBE - Scenic Beauty Estimation - study of respondents' preferences in relation to various landscapes presented in the photograph (Daniel et al. 1989; Hull & Revell 1989; Eleftheriadis et al. 1990; Real et al. 2000)*
- *VEP - Visitor Employed Photography - respondents are asked to take some photos on their own and describe it (Cherem & Driver 1983; Hull & Revell 1989; Taylor et al. 1996, Pietrzak 2000; Piechota 2006); e.g. EPICOLLECT*
- *Q-sort - scaling, ranking "landscapes" by the respondent based on a prepared set of photos (Pietrzak 1986; Brown 1996; Watts & Stenner 2003; Piechota 2006)*
- *VCP - Visitor Crowding Perception - respondents are asked to assess the level of acceptable crowding in selected areas (Heberlein, Vaske 1977; Shelby & Vaske 2007; Nasa & Emphandhu 2010; Schamel 2012)*
- *PAOT - People At On Time - a method of visual simulation of crowding (Manning 2002; Sterl et al. 2004; Wyttenbach et al. 2012)*

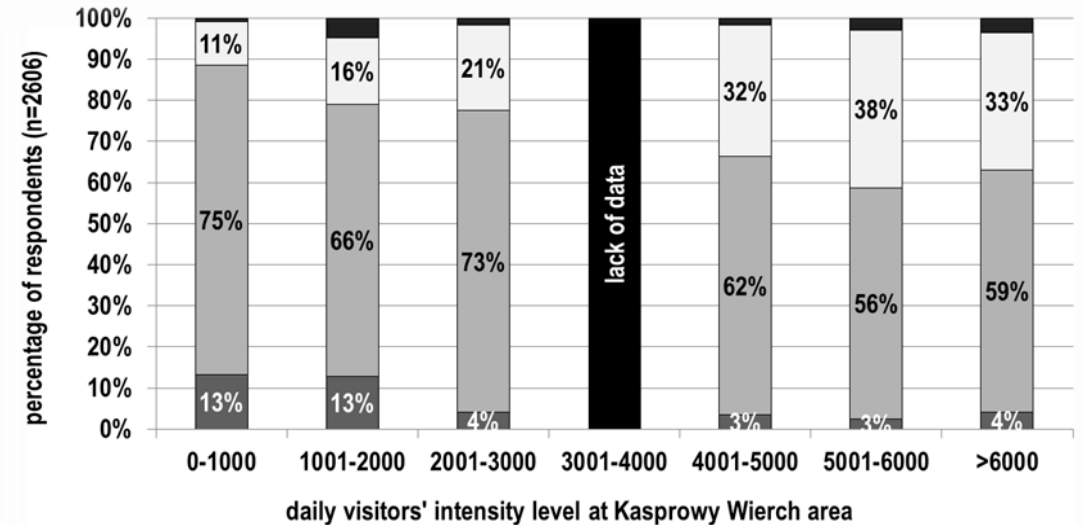


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VISITOR CROWDING PERCEPTION

✓ Heberlein and Vaske (1977)

1	2	3	4	5	6	7	8	9
Not at all Crowded			Slightly Crowded		Moderately Crowded		Extremely Crowded	



In my opinion there is:

- too few visitors
- adequate number of visitors
- too many visitors
- hard to say
- lack of data

Karolina Taczanowska et al. – research from Tatra NP



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PEOPLE AT ON TIME

Streberova & Juskova (2015)



0 people



2 people



6 people



10 people



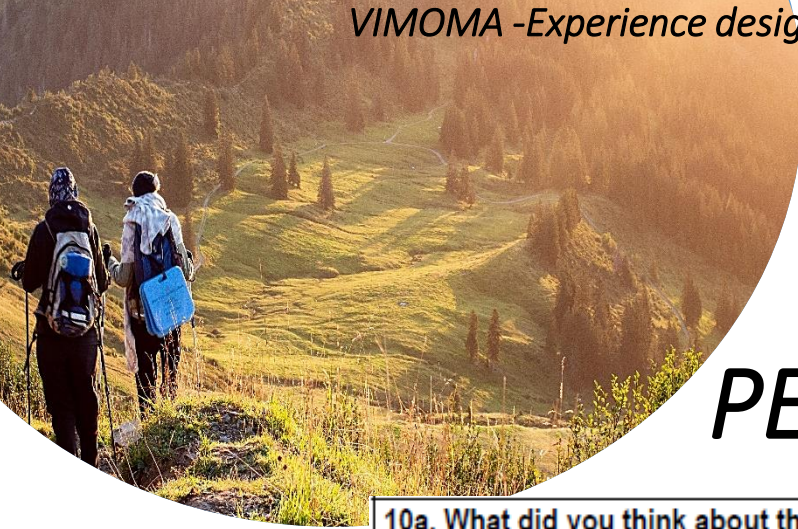
14 people



18 people



22 people



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PERCEPTION - OPINIONS

10a. What did you think about the quality and the quantity of the services, facilities and environment during your current visit to the **Pyhäunturi National Park?** Please answer each question and estimate the **quality** of the services or facilities that you used during your visit. If you did not use the service or facility this time, just cross the alternative "did not use". Please always evaluate the **quantity** of services and facilities.

Quality assessment scale 5 = very good , 4 = fairly good, 3 = neither, 2 = fairly poor, 1 = very poor

Quantity assessment scale 3 = too many, 2 = suitable, 1 = too few, or no opinion

	Quality of the environment and of the service and facility I used					did not use	The current quantity of services and facilities						
	very good	5	4	3	2		1	very poor	too many	3	2	1	too few
parking places	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>
road network	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>
signposts on the routes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>
trail and/or skiing track network	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>
signposts at the trails and/or skiing tracks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>
campfire sites and lean-tos	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>
firewood in cabins and at maintained campfire places	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>
public latrines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>
realization and guidance of the waste disposal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>
paying attention to special needs (accessibility of routes, safety, signposts/information boards etc..)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>



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OTHER ISSUES:

- ✓ *Activities*
- ✓ *Knowledge on park regulations;*
- ✓ *Spatial distribution (GPS Loggers; Mapping (e.g. Mapptionaire); Survey)*
- ✓ *Socio - economic factors*



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Monitoring of tourism in national parks

Tourism monitoring methodology manuals and guidelines

- Kajala, L., Almik, A., Dahl, R., Dikšaitė, L., Erkkonen, J., Fredman, P., Jensen, F.S., Karoles, K., Sievänen, T., Skov-Petersen, H., Vistad, O.I., Wallsten, P. (2007). Visitor monitoring in nature areas – a manual based on experiences from the Nordic and Baltic countries. Stockholm: TemaNord, Swedish Environmental Protection Agency.
- Hornback, Kenneth E. & Eagles, Paul F. J. 1999. Guidelines for public use measurement and reporting at parks and protected areas. IUCN, Gland, Switzerland and Cambridge, UK. iv + 90 pp. www.iucn.org ISBN: 2–83
- Muhar, A., Arnberger, A., Brandenburg, Ch. (2002). Methods for visitor monitoring in recreational and protected areas: an overview. W: A. Arnberger, Ch. Brandenburg, A. Muhar, (red.), *Monitoring and Management of Visitor Flows in Recreational and Protected Areas. Conference Proceedings*. Vienna: Bodenkultur University

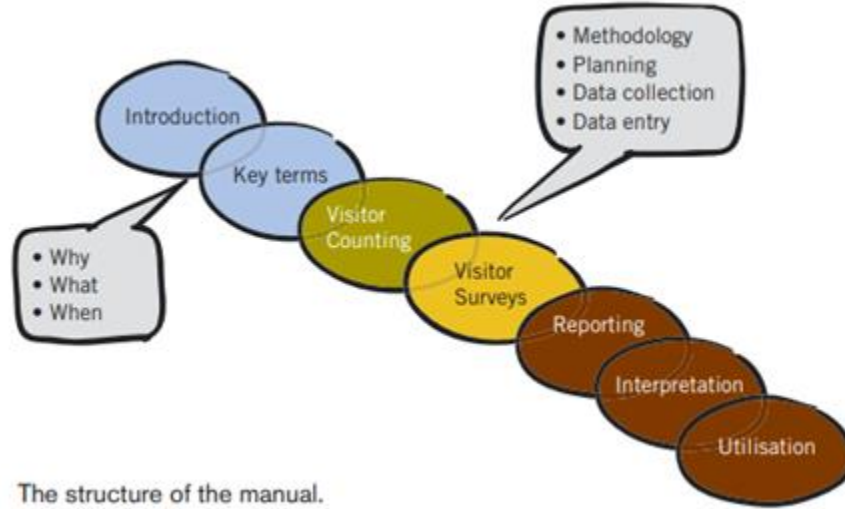


VISITOR MONITORING IN NATURE AREAS

– a manual based on experiences
from the Nordic and Baltic countries

Visitor monitoring in nature areas

– a manual based on experiences from the Nordic and Baltic countries



The structure of the manual.

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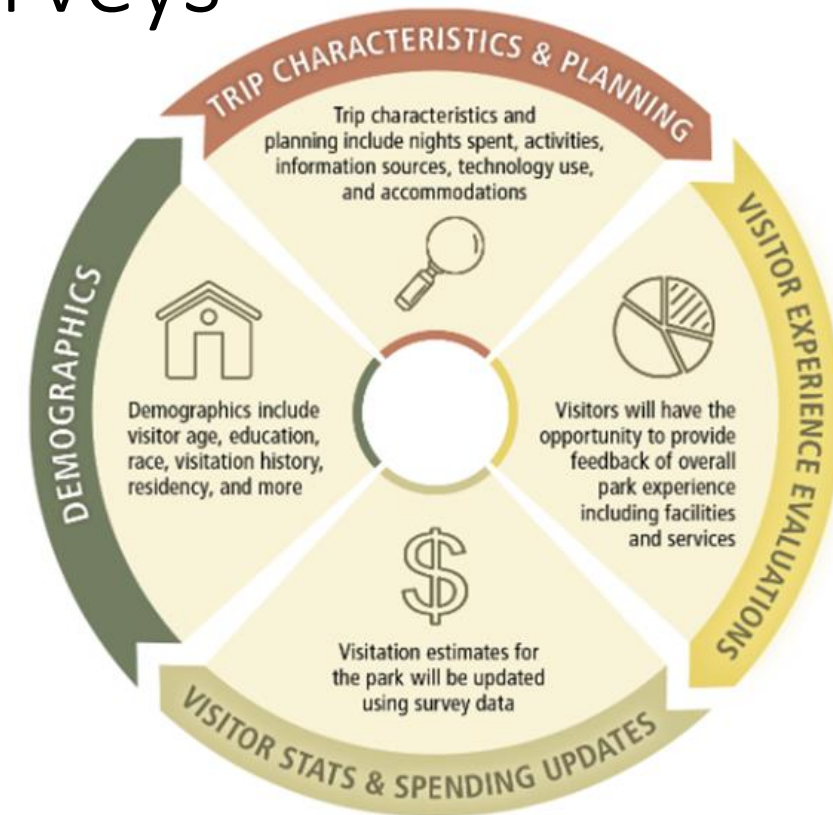
Examples of tourist surveys in US protected areas

NPS | SOCIOECONOMIC MONITORING Visitor Survey

The Socioeconomic Monitoring (SEM) Visitor Survey is an important component of research designed by the NPS Social Science Program (SSP).

The SEM Visitor Survey positions the NPS to better understand socioeconomic trends over time at a national scale. The Visitor Survey is designed to provide managers of the NPS with social science research, which will include data collection at a minimum of 24 NPS parks of varying types and sizes annually. This will result in visitor use data that can be aggregated across the agency to produce representative systemwide estimates annually, a first for the NPS.

From the top: Isle Royale National Park, National World War II Memorial, and Chaco Culture National Historical Park.



Data types from the Socioeconomic Monitoring Visitor Surveys
NPS Social Science Program



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Presentation of research results to the public



National Park Service
U.S. Department of the Interior
Natural Resource Stewardship and Science
2021 National Park Visitor Spending Effects
Economic Contributions to Local Communities, States, and the Nation
Natural Resource Report NPS-NRSS-EQD-NRR—2022-2195



How NPS visitor spending supports jobs and business activity in local economies



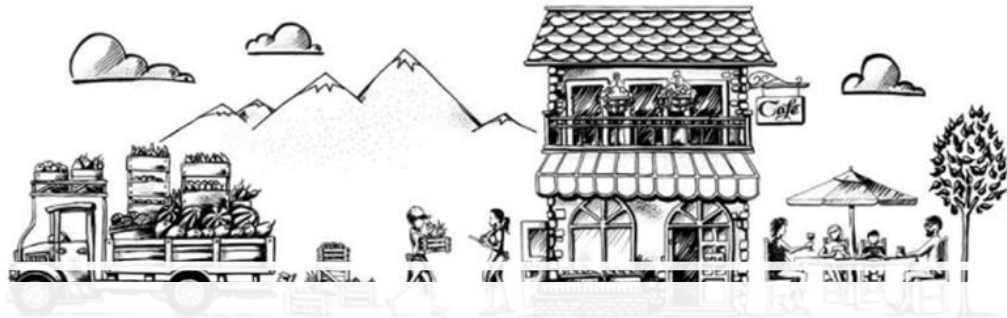
Communicating the benefits of protected areas to the public



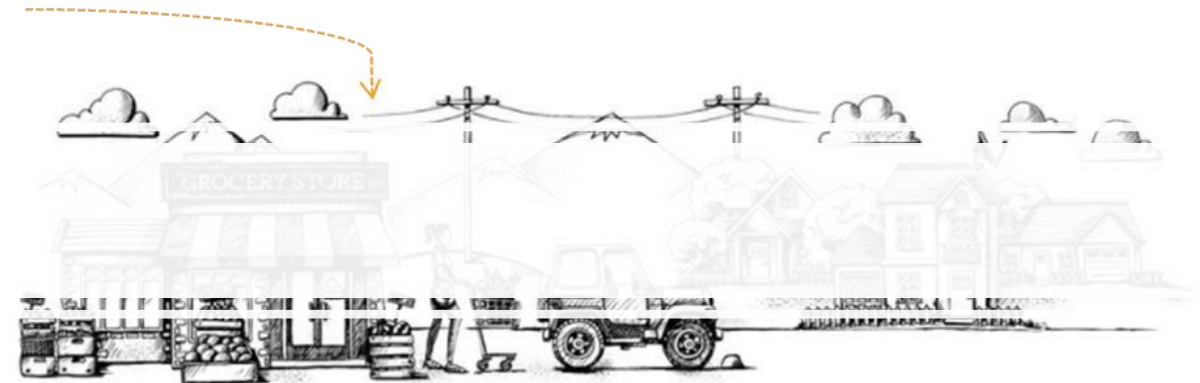
Over 300 million visitors travel to National Park Service sites across the US every year.



National Park Service visitors spend money in local communities. The sales, income and jobs resulting from these purchases represent the direct effects of visitor spending.



Additional jobs and economic activity are supported when businesses purchase supplies and services from other local businesses thus creating indirect effects of visitor spending.



Employees use their income to purchase goods and services in the local economy, generating further induced effects of visitor spending.

Presentation of data using online tools

Economic benefits to the economy nationwide, individual states and individual protected areas in the United States



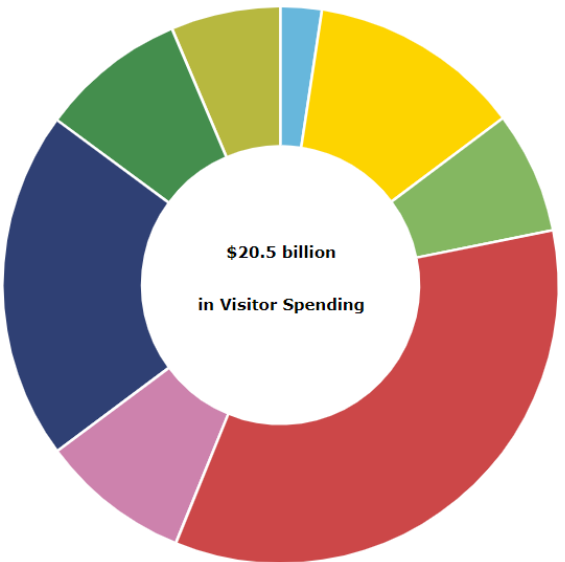
Select an economy to get started:

- NATIONAL ECONOMY
- STATE ECONOMIES
- PARK ECONOMIES
- MORE INFORMATION

Economic Contributions to the National Economy

In 2021, 297 million park visitors spent an estimated \$20.5 billion in local gateway regions while visiting National Park Service lands across the country. These expenditures supported a total of 323 thousand jobs, \$14.6 billion in labor income, \$24.3 billion in value added, and \$42.5 billion in economic output in the national economy.

- Visitor Spending
- Jobs
- Labor Income
- Value Added
- Economic Output

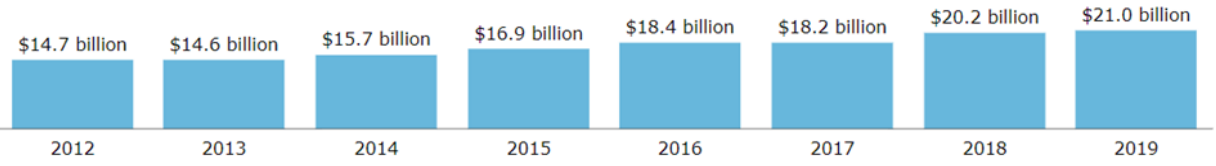


Directly Affected Sectors

- Camping
- Gas
- Groceries
- Hotels
- Recreation Industries
- Restaurants
- Retail
- Transportation

- 328 mln visitors
- 21 billion USD – visitor spending
- 341 tous. - jobs

Total Visitor Spending (All Parks)

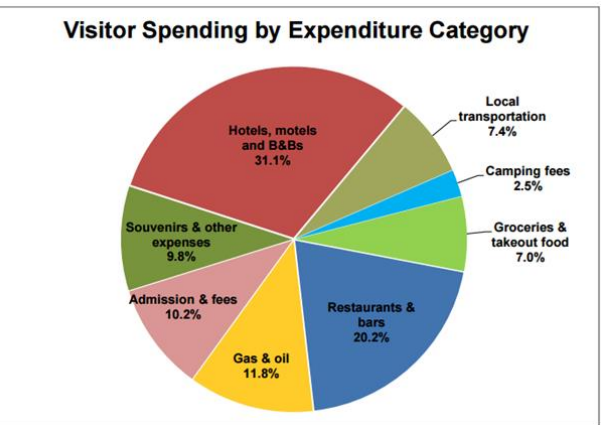
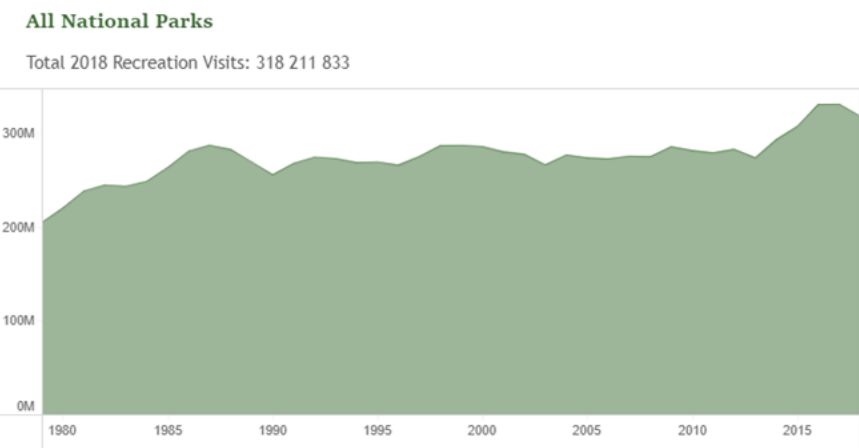


Total Visitor Spending (All Parks)

Presentation of data using online tools

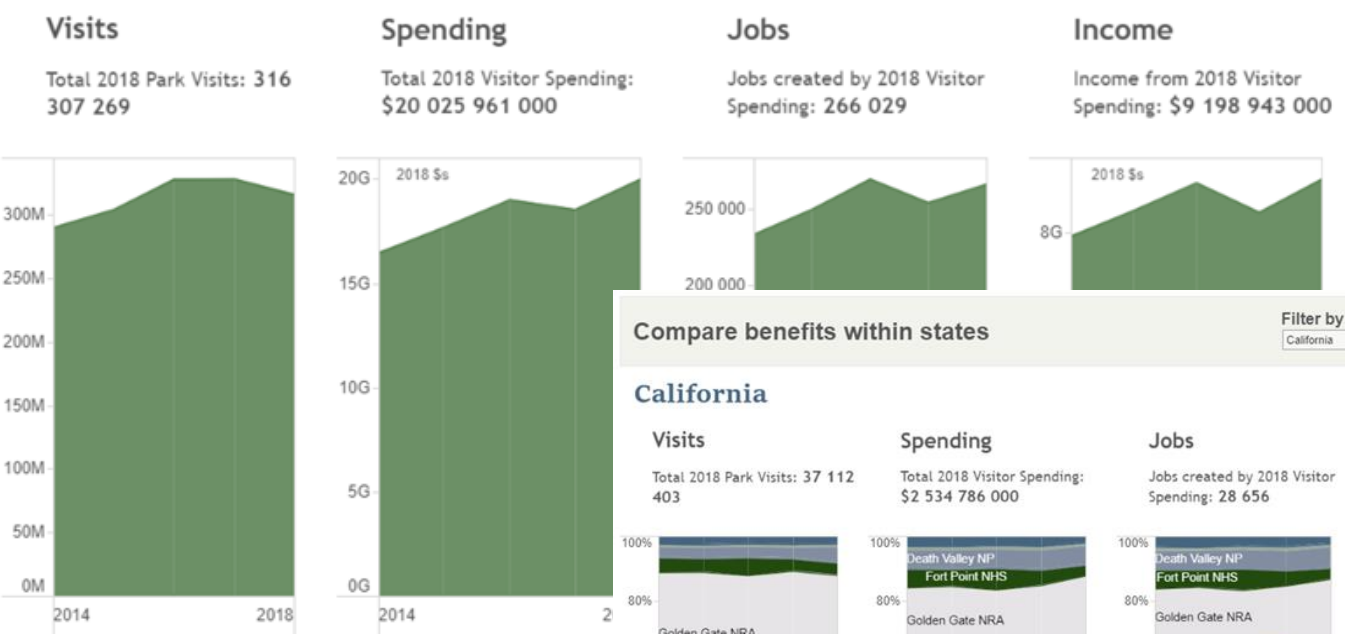
Economic benefits to the economy nationwide, individual states and individual protected areas in the United States

Explore visitation by park Filter by National Park Service Unit
(All)

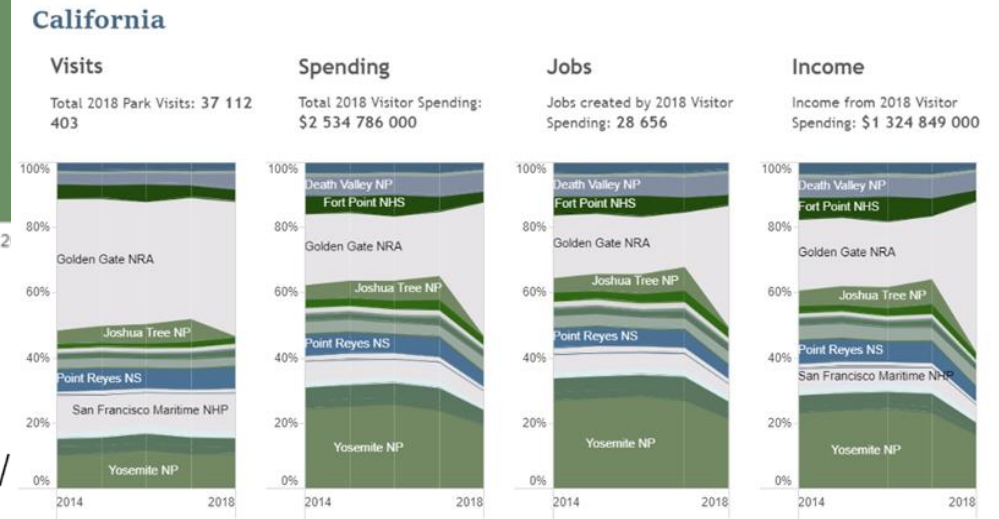


Explore benefits by park Filter by National Park Service Unit
(All)

All National Park Units



Compare benefits within states Filter by State
California



Źródło: <https://headwaterseconomics.org/dataviz/national-park-service-units/>

For multi-state parks, the reported values represent the state's share of visits and economic benefits.



Comprehensive monitoring system for tourism in the national park

1. Visitor counting - measurement of the volume, spatial and temporal distribution of tourist traffic, broken down into different forms of tourism and mobility modes (walking, cycling, skiing, horse riding, car traffic)
2. Monitoring the profile of tourists, their motivations, behaviour, preferences and opinions (perceptions)
3. Monitoring the impact of tourism
 - a) impact on the natural environment and landscape
 - b) social and economic impact

Methods and tools for monitoring tourism in national parks

1. Visitor counting

- based on data from the sale of entrance tickets and other fees for providing access to the park,
- automatic measurements (pyroelectric sensors)
- direct counting of visitors
- based on studies of accommodation infrastructure

There is no common methodology in Polish national parks , each national park counts tourists in a different way, which in practice means that the results are not comparable - the general principles of measurement should be standardised

Most parks use mixed methods and use different data sources to estimate the total number of tourists
Only some national parks have full data on the number of tourists, most have only estimates

Complete data on spatial and temporal distribution of tourist traffic is not available in most parks

Methods and tools for monitoring tourism in national parks

2. Monitoring the profile of tourists, their motivations, behaviour, preferences and opinions (perceptions)



surveys and interviews with tourists

3. Monitoring of the social and economic impact of tourism



- surveys and interviews with tourists (including surveys of tourist expenditure)
- surveys and interviews of residents
- surveys and interviews among entrepreneurs (including managers of tourist facilities)
- analyses based on spatial and socio-economic data

Problems of tourism monitoring in Polish national parks

- Lack of coordinated surveys among tourists at the scale of all national parks
- There is no coordination between parks in terms of survey methodology and therefore it is not possible to compare results
- Regular visitor surveys are conducted in five parks. In the others, such research was carried out incidentally by the management, universities cooperating with the park (as part of research projects, research projects, student internships and field classes or activities of student scientific organisations) and students preparing their theses.

different goals, different methodology, different questions

- no possibility of comparing the results of research in individual parks and the results of different research in a given park

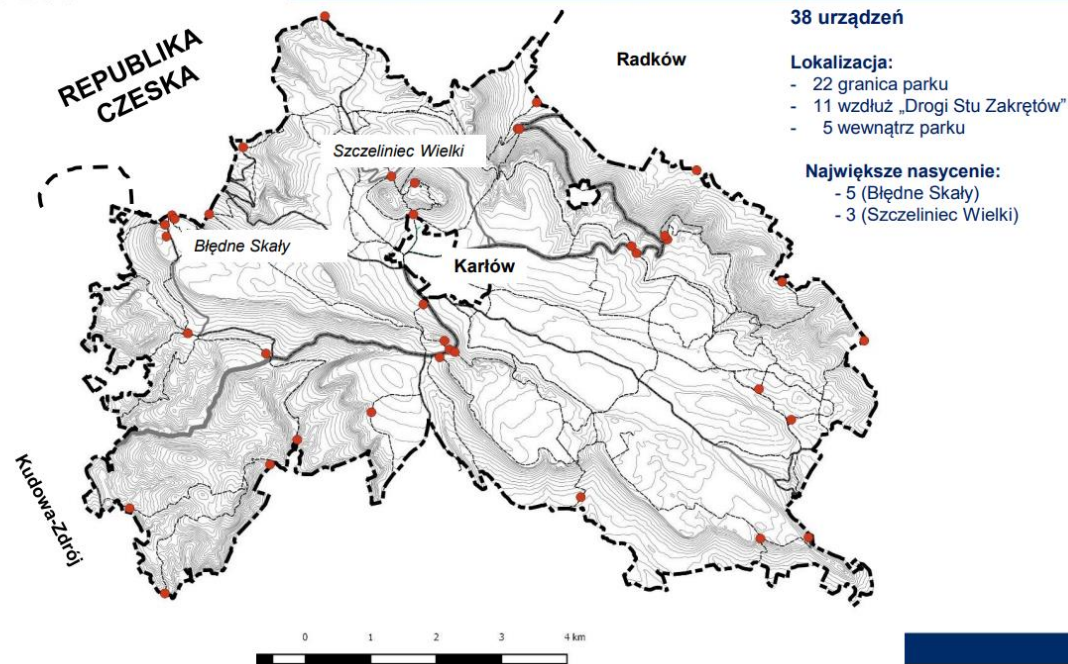
- Research results are not made available at all, or they are published in scientific articles. Residents, local authorities and tourists do not have the opportunity to easily get to know them

Monitoring system of tourist traffic in Stołowe Mts. National Park

Dr Mateusz Rogowski
(Adam Mickiewicz University Poznań)



System monitoringu ruchu turystycznego (SMRT)
w Parku Narodowym Gór Stołowych



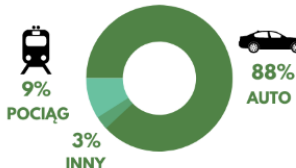
- 38 pyro-electric counters
- Tourist surveys (from 2016) aimed at identifying the socio-economic structure of tourists, as well as their motivations, preferences and behaviours



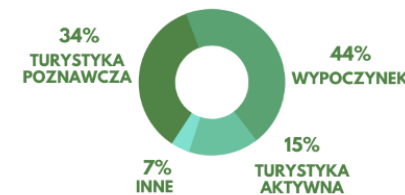
TURYSTYKA W PARKU NARODOWYM GÓR STOŁOWYCH
W CZASIE PANDEMII COVID-19 (2020)



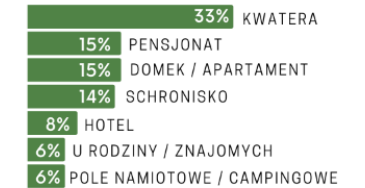
SPOSÓB DOTARCIA W GÓRY STOŁOWE



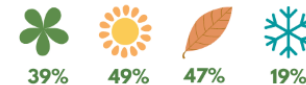
CEL GŁÓWNY PRZYJAZDU



BAZA NOCLEGOWA - RODZAJ



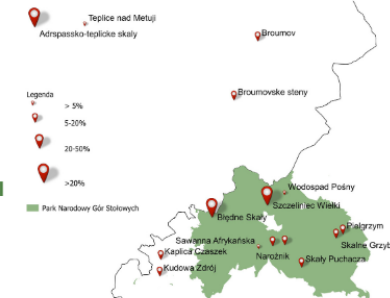
OKRES POBYTU*



DŁUGOŚĆ POBYTU



ODWIEDZANE ATRAKCJE



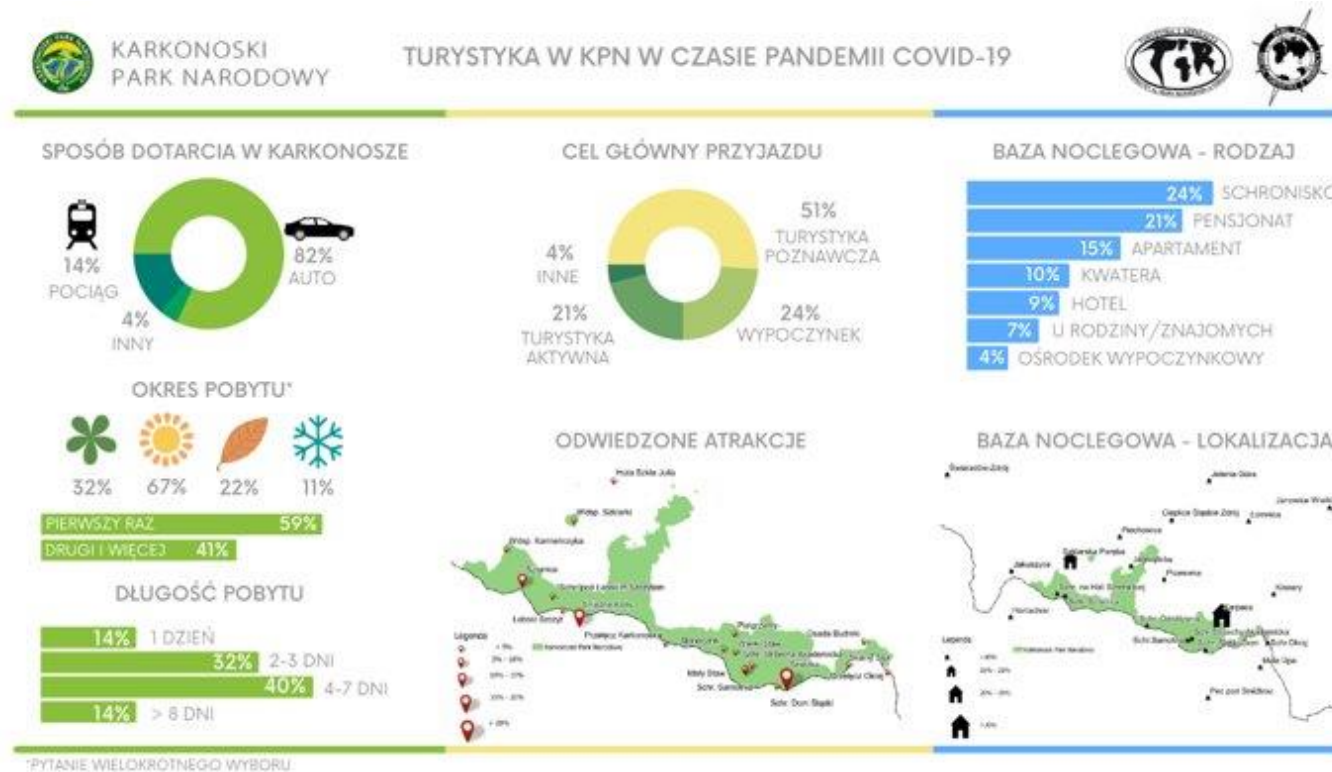
BAZA NOCLEGOWA - LOKALIZACJA



Źródło: System Monitoringu ruchu turystycznego (SMRT)

*Pytanie wielokrotnego wyboru

Karkonosze National Park - online survey




Dr Mateusz Rogowski
(Adam Mickiewicz University Poznań)



Turystyka w Karkonoskim Parku Narodowym podczas pandemii koronawirusa - 2020 r.

Celem badania jest poznanie motywów i preferencji turystów w okresie trwającej pandemii koronawirusa

 bernadetta.zawilinska@gmail.com (nieudostępniony)
[Przełącz konto](#)

*Wymagane

1. Czy odwiedził/a Pan/Pani Karkonoski Park Narodowy w 2020 roku? *

- Tak
 Nie

Jeśli tak, w jakim okresie? *

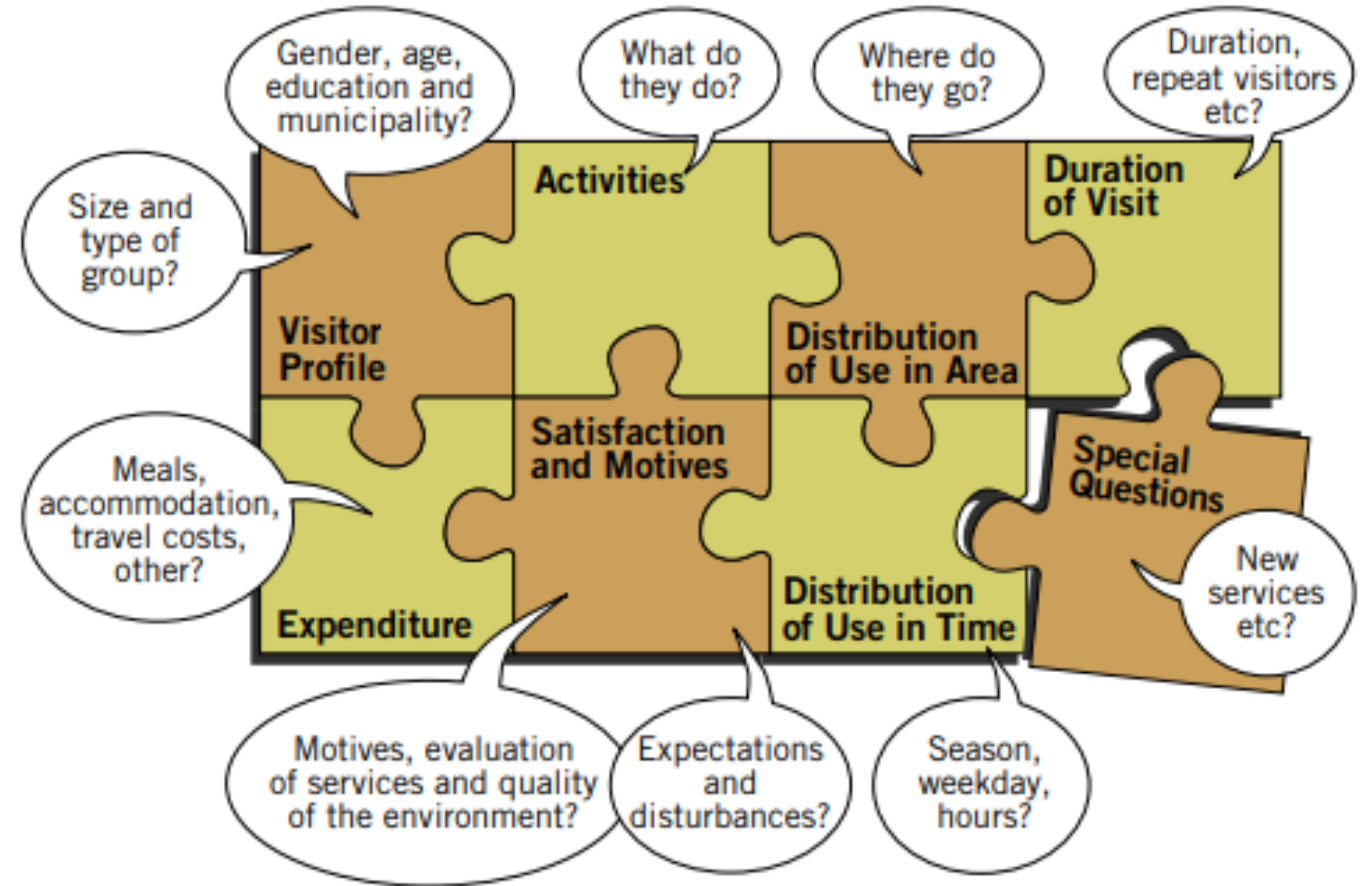
- Wiosna
 Lato
 Jesień
 Zima

2. Czy przed pandemią koronawirusa planował/a Pan/Pani urlop ... *

- w kraju

Visitor surveys

- Choice of survey technique – CAWI (*Computer-Assisted Web Interview*, online survey), CAPI (*Computer-Assisted Personal Interview*) or PAPI (*Paper & Pen Personal Interview*)
- selection of issues
- sample size
- spatial and temporal distribution of surveys



Key issues to be clarified by a visitor survey, with the variables that depict them. (modified from Erkkonen & Sievänen 2001).

The size of the research sample

- Depends on the number of tourists in the national park and on what precision we want to obtain and how detailed we want to analyze the data, broken down by groups of respondents
- Most of the research carried out in Polish national parks the size of the research sample is not calculated, but it is rather the result of the time the interviewers (e.g. students) have to carry out the research

Sample size calculated by statistician for the study of economic impact of tourism in the Tatra Mountains

Sample size – 3 000 people

Confidence level 97%; Maximum error (precision) - 2%

confidence level		80%	90%	95%	99%
α		0,1	0,05	0,025	0,005
Population size (annual number of tourists):					
Precision d=1%	3 000000	4105	6761	9598	16570
	3 500000	4105	6761	9599	16573
	4 000000	4105	6762	9599	16575
Precision d=2%	3 000000	1026	1691	2401	4146
	3 500000	1026	1691	2401	4146
	4 000000	1026	1691	2401	4146
Precision d=3%	3 000000	456	752	1067	1843
	3 500000	456	752	1067	1843
	4 000000	456	752	1067	1843
Precision d=4%	3 000000	257	423	600	1037
	3 500000	257	423	600	1037
	4 000000	257	423	600	1037
Precision d=5%	3 000000	164	271	384	663
	3 500000	164	271	384	663
	4 000000	164	271	384	663

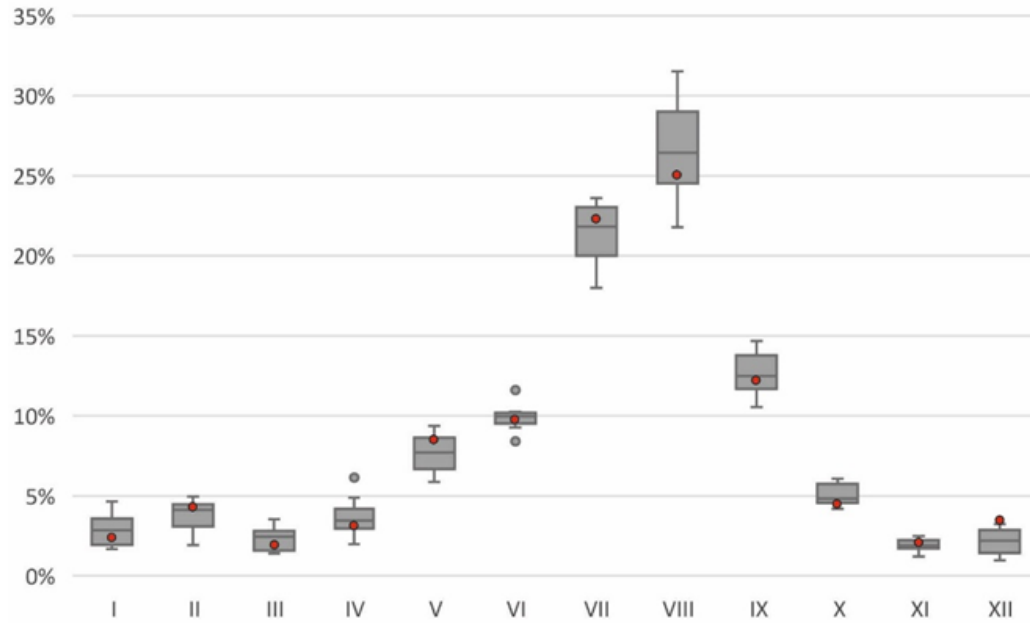
Survey sampling methodology

- how to select respondents?

- Not only the size of the research sample is important, but also the methodology of selecting respondents
- The sample should be representative, i.e. it should reliably reflect the studied population
- Fully random selection of respondents is not possible (no random sampling)

Spatial and temporal distribution of surveys

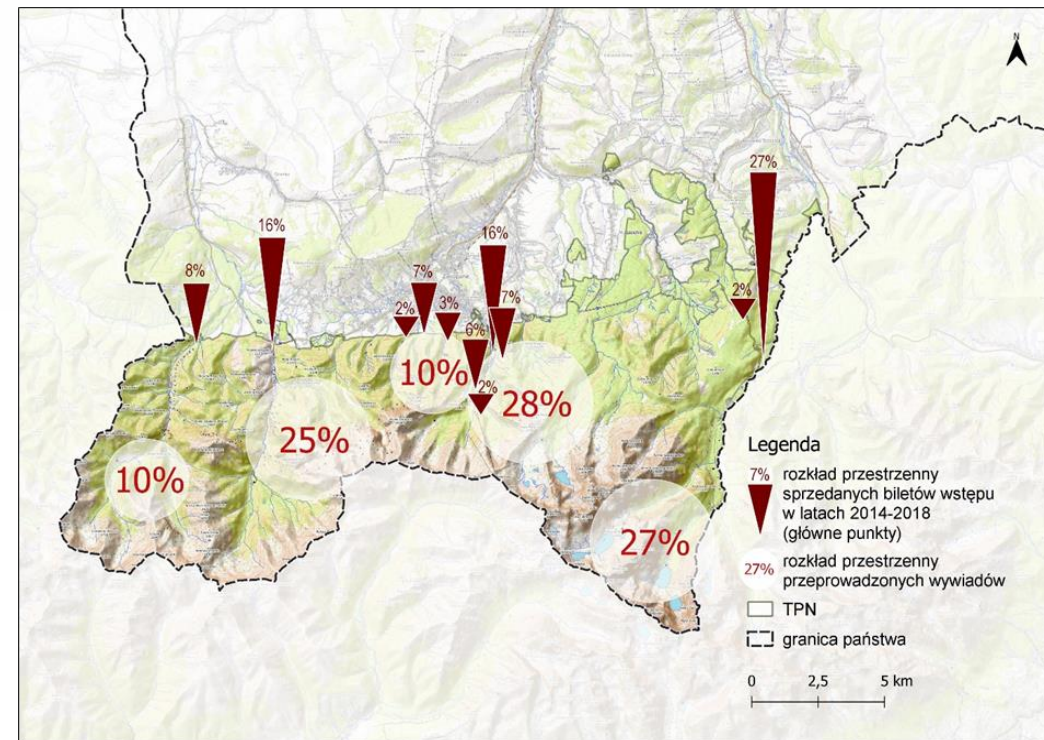
Economic impact of tourists' expenses
Tatra National Park



• Rozkład czasowy przeprowadzonych ankiet
 ■ Rozkład ruchu turystycznego w latach 2009 - 2018

2019 – 2020
N=3047
131 days

The aim was to maintain the time and spatial distribution of the interviews conducted, analogous to the distribution of tourist traffic in the Tatra National Park.



Types of questions

- In quantitative surveys with large samples - only questions with a closed list of answers

Open-ended questions are possible with small survey samples, as it is time-consuming to enter responses into the database and analyse them.

They can be used in supplementary (extension) research, which will be qualitative in nature and conducted on a small group of respondents

Multiple choice questions

Rating scale questions

Likert scale questions

Matrix questions

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree Don't know

2. How satisfied or dissatisfied are you with each of the following?

	Very satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied
The interaction with the sales staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your experience at the register	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The organization of the store	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The products offered in the store	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The price of the products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The sizes available at the store	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Questions on arrival motivations - examples from Polish national parks

EXAMPLE FROM GORCE NP

What made you come to Gorce National Park?

- cognitive desire
- willingness to contact nature
- habits, social considerations
- quick access
- other

EXAMPLE FROM BIEBRZA NP

1 - relaxation and health, 2 - leisure and health (passive), 3 - recreation and health (active), 4 - cognitive, 5 - altruistic, 6 - service, 7 - creative,
8 - sentimental, 9 - entertainment, 10 - sports,
11 - utility and recreational, 12 - other

Questions on arrival motivations - examples from Polish national parks

What made you decide to choose the Krkonosze Mountains as your destination? Please tick ONE main objective and a maximum of TWO secondary objectives. Please leave the others blank.

Willingness to relax

Spa treatment

Natural beauties of inanimate nature (rocks, glacial cirques, lakes, views)

The beauty of animate nature (flora, peat bogs, animals)

Learning about and admiring historic buildings and participating in cultural events

Active and qualified tourism and participation in sporting events

Rich and well-developed range of accommodation

Recommendations from friends

6. Co zdecydowało o wyborze Karkonoszy jako celu przyjazdu? Proszę zaznaczyć JEDEN cel główny i maksymalnie DWA cele drugorzędne. Pozostałe proszę pozostawić puste.

	Cel główny	Cel drugorzędny
Chęć wypoczynku	<input type="checkbox"/>	<input type="checkbox"/>
Leczenie/profilaktyka uzdrowskowa	<input type="checkbox"/>	<input type="checkbox"/>
Piękno przyrody nieożywionej (skały, kotły polodowcowe, jeziora, widoki)	<input type="checkbox"/>	<input type="checkbox"/>
Piękno przyrody ożywionej (szata roślinna, torfowiska, zwierzęta)	<input type="checkbox"/>	<input type="checkbox"/>
Poznanie i podziwianie obiektów zabytkowych i uczestnictwo w wydarzeniach kulturalnych	<input type="checkbox"/>	<input type="checkbox"/>
Uprawianie turystyki aktywnej i kwalifikowanej i uczestnictwo w eventach sportowych	<input type="checkbox"/>	<input type="checkbox"/>
Bogata i rozwinięta oferta noclegowa	<input type="checkbox"/>	<input type="checkbox"/>
Rekomendacje znajomych	<input type="checkbox"/>	<input type="checkbox"/>

