



SMART Tourism Skills Initiative

Needs Analysis Report

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Abstract

As part of the international project Erasmus+ “SMARTOUR” will be prepared comprehensive educational materials for adult educators that will allow them to promote and organise smart tourism development among municipalities, tourism organisations and businesses that are active in tourism development. The main purpose of the survey, was determining the needs for refinements in the curriculum and educational methodologies development and consequent course materials development. The diagnostic survey method was used to assess the needs. The survey obtained answers from 165 respondents. Survey information was obtained through the use of an electronic online tool “Google Form”, and all responses remained confidential. Descriptive statistics were used to analyse the data. Results: implementation of the smart tour concept in the majority of respondents associated with activities related to digitization. The suggested course curriculum should contain basic information about the main pillars of the smart tourism concept: Accessibility: „Strategies to increase accessibility of tourism destination” (e.g. smart city cards, „Accessibility of information” (e.g. availability of information on accessibility in tourist destinations, digital accessibility of cities/sites); Sustainability: „Sustainable development” (e.g. importance of technology in enhancement of sustainable tourism, smart and sustainable tourism destinations, preservation and enhancement of the natural environment”; Digitalisation: „Use of technologies in



tourism activity to enhance experiences”, „Smart management”, „Mobile payments”, „Understanding visitors methods”; Cultural heritage & creativity: — „Experiential tourism” (e.g. basics of local gastronomy), „Reviving traditions and cultural heritage sustainably” (e.g. reinvention of the local culture, use of traditional handcrafts and events for tourism); Cooperation & Marketing: „Technology enabled tourism marketing” (e.g. principles of online marketing), „Competitiveness and networking”, „Cooperation in the tourism industry”.

Introduction

Smart Tourism is not a new type of tourism. It is a tourism management concept in tourism areas based on four pillars — sustainability, accesibility, digitization, and cultural heritage & creativity. “Smart” has become an increasingly popular term to describe technological, economic and social development fueled by smart technologies that rely on sensors, big data, open data, new ways of connectivity between humans and machines and multi—device, networked exchange of information (Gretzel, Zhong, Koo, 2019). In recent years therm “smart” has been added to cities and villages to describe the tasks related to increasing the efficiency of management, to provide better quality services to residents through the use of innovative technologies and data analysis. A city’s smartness is determined using a set of characteristics, including: an infrastructure based around technology, environmental initiatives, effective and highly functional public transportation, confident and progressive city plans, people able to live and work within the city, using its resources. In relation to rural areas European Network for Rural Development (ENRD) proposed an initial definition of smart villages: “Villages (local communities, regions) that use digital technologies and innovations in their daily life, thereby enhancing its quality, improving the standard of public services and making better use of local resources” (ENRD, 2017). The mobile revolution, and specifically the role of the smartphone and its many opportunities to support travel experiences (Wang, Park&Fersenmaier, 2012) made the concept of "smart" started to be implemented in the tourism industry and tourist destianations. The concept of smart tourism is a new approach based on technology and the environment, which aims to provide tourists solution take into account the specific needs of travel and the exploitation of the available tourism infrastructure (Iwaniuk, 2020).



in 2020, the European Committee of the Regions developed an opinion “Towards more sustainable tourism for EU cities and regions”. This document points to the importance of using 5G, IoT, AI and Big Data digital technologies to provide innovative, sustainable, scalable smart tourism services, with high added value, capable of promoting new, more efficient, accessible and inclusive tourism models, extended to all regions, with a special focus on rural areas, and to the importance of having telecommunications technologies that provide sufficient connectivity in these areas (ECR, 2020).

European Com The European Commission, conducting activities promoting the concept of smart tourism (including by organizing the "European Capital of Smart Tourism" competition), emphasizes that the development of tourism should take place in four areas (European Commission Directorate General for Internal Market, Industry, Entrepreneurship and SMEs, 2022):

- **Accessibility:** What resources does a city have to be physically and psychologically accessible to travellers with special access needs, regardless of age, their social or economic situation and whether they have disabilities or not?
- **Sustainability:** What opportunities does a city have to preserve and enhance the natural environment and resources while maintaining economic and socio—cultural development in a balanced way? How are natural resources (including innovative environmentally friendly measures) managed in a tourism destination and are there resource—efficiency measures implemented, and actions aimed at combating or adapting to climate change?
- **Digitalisation:** Is the city supporting tourism businesses in the development and use of digital skills and tools? How does the city support digitalisation of tourism services?
- **Cultural heritage & Creativity:** Is the city making resourceful use of its cultural heritage and creative industries for an enriched tourism experience? What actions are implemented to render recognition and to incorporate the tangible and intangible heritage of art, history and culture in its centre and surroundings, in the enhanced tourism offer? How is cultural heritage and creativity used to attract tourists from countries outside the EU in particular and exploit synergies between tourism and cultural and creative industries?



In 2021, an international consortium consisting of: European Wilderness Society (Austria), Regional Development Agency with Business Support Centre for Small and Mediumsized Enterprises (Bulgaria), Instytut Rozwoju Sportu i Edukacji (Poland), Univerzitet u Novom Sadu (Serbia), e-code (Slovakia), Univerzita Mateja Bela v Banskej Bystrici (Slovakia), Zavod Novi turizem (Slovenia) has launched the project “SMART Tourism Skills Initiative Project” co—financed by the European Union under the program Erasmus+ “KA220—ADU — Cooperation partnerships in adult education”. The main objective of the project lays in the production of comprehensive educational materials for adult educators that will allow them to promote and organise smart tourism development among municipalities, tourism organisations and businesses that are active in tourism development. This objective will be achieved by reaching a number of smaller goals, namely — organisation of needs analysis, development of curriculum and educational methodologies, development of course materials in downloadable format, development of e— Learning course and internationalisation of educational materials, i.e. their translation into the languages of the partnership from English.

At the end the course materials on smart tourism development will be available in two major languages (English and German) and the languages of the rest of the consortium (Bulgarian, Polish, Serbian, Slovak and Slovenian). The project will also produce 70 trained adult educators via its learning, teaching, training activities and at least 270 participants of multiplier events where the project results will be disseminated.

Methodology

The main purpose of the survey, was determining the needs for refinements in the curriculum and educational methodologies development and consequent course materials development.

For the empirical part study that guided the work, there has been a data collection part from the six countries: Poland, Slovakia, Slovenia, Serbia, Bulgaria, Austria. The respondents have been randomly selected in order to get a rough representation of the relevant population. The questionnaire has been distributed by personal emails to the recipients: adult learning organizations, municipalities, tourism businesses and non-profit organizations wishing to implement smart strategies in tourism development. The respondents were given sufficient time



to respond (almost a month) and they either filled in the survey electronically (google forms). The questionnaire did not take more than 15-20 minutes of time for the participants.

As a result of the research, 165 questionnaires were obtained. The questionnaire included 35 questions in total and the results were collected and were set up in tables, to give an overview of the answers received. Each question was summarized and presented as a percentage or as a net number (of total votes) of the choices given.

Results and Discussion

According to the survey results the largest group of respondents were lecturers / teachers (21%), employees in tourism business (18%) and tourism experts (14%) — figure 1.

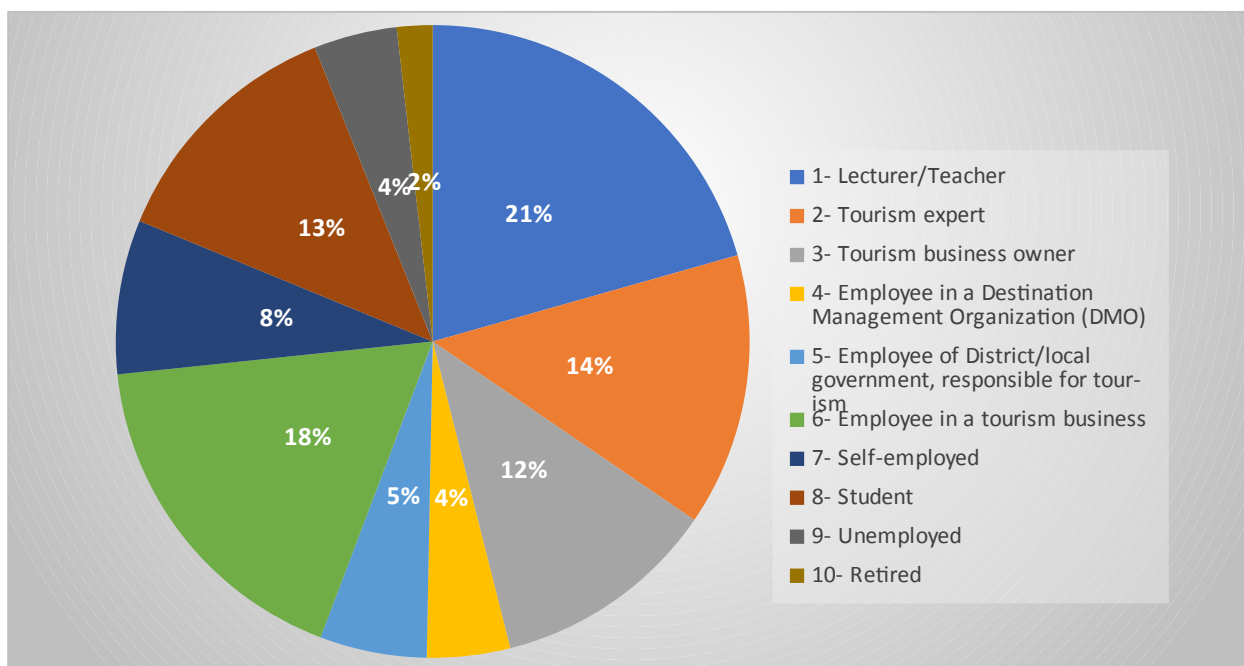


Figure 1. Question: "Which of the listed activities best describes what you are doing at present?"

Source: Own study based on the research carried out.

Most of the respondents replied that they had not participated in educational programs concerning the implementation of the smart tourism concept (62%)— figure 2.

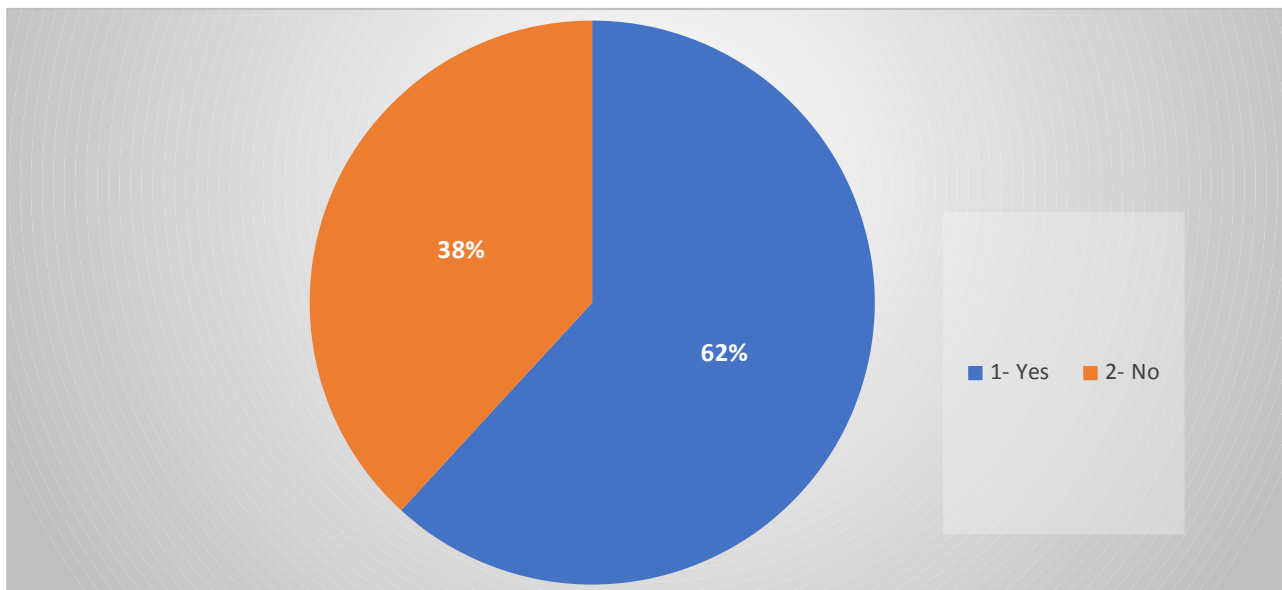


Figure 2. Question: “Do the (tourism) educational programs that you are involved in include smart tourism?”. Source: Own study based on the research carried out.

This result indicates the need to implement this training project among representatives of the tourism industry. It should be noted that the level of knowledge of smart tourism in individual countries participating in the project is disproportionate. The largest group of people who participated in smart tourism training lives in Slovenia (approx. 70%), the lowest was recorded in Bulgaria and Slovakia (approx. 70%)— table 1.

	Bulgaria	Austria	Serbia	Poland	Slovakia	Slovenia
Yes	29,2%	40,0%	41,9%	42,1%	28,6%	62,1%
No	70,8%	60,0%	58,1%	57,9%	71,4%	37,9%

Table 1. Question: “Do the (tourism) educational programs that you are involved in include smart tourism?”. Analysis of the responses obtained in individual countries. Source: Own study based on the research carried out.

The respondents determined which terms, according to their current knowledge, are associated with the concept of smart tourism— figure 3. The results indicated that digitization is in the first place (approx. 54,5% respondents indicates this term is very much related to smart tourism). On the next place, the respondents indicated marketing (41,8%), sustainability (37,0%) and creativity in tourism (36,4%). On the next place, the respondents indicated marketing (41,8%) and creativity in tourism. the rutting places, marketing was indicated (approx. 41,8%) and accessibility in tourism



(app. 32,1%). Safety and hygiene is indicated by the respondents as a concept not related to smart tourism (app. 8%). At the same time, it should be noted that the knowledge of the terms related to the concept of smart tour among the majority of respondents is at the basic and intermediate level.

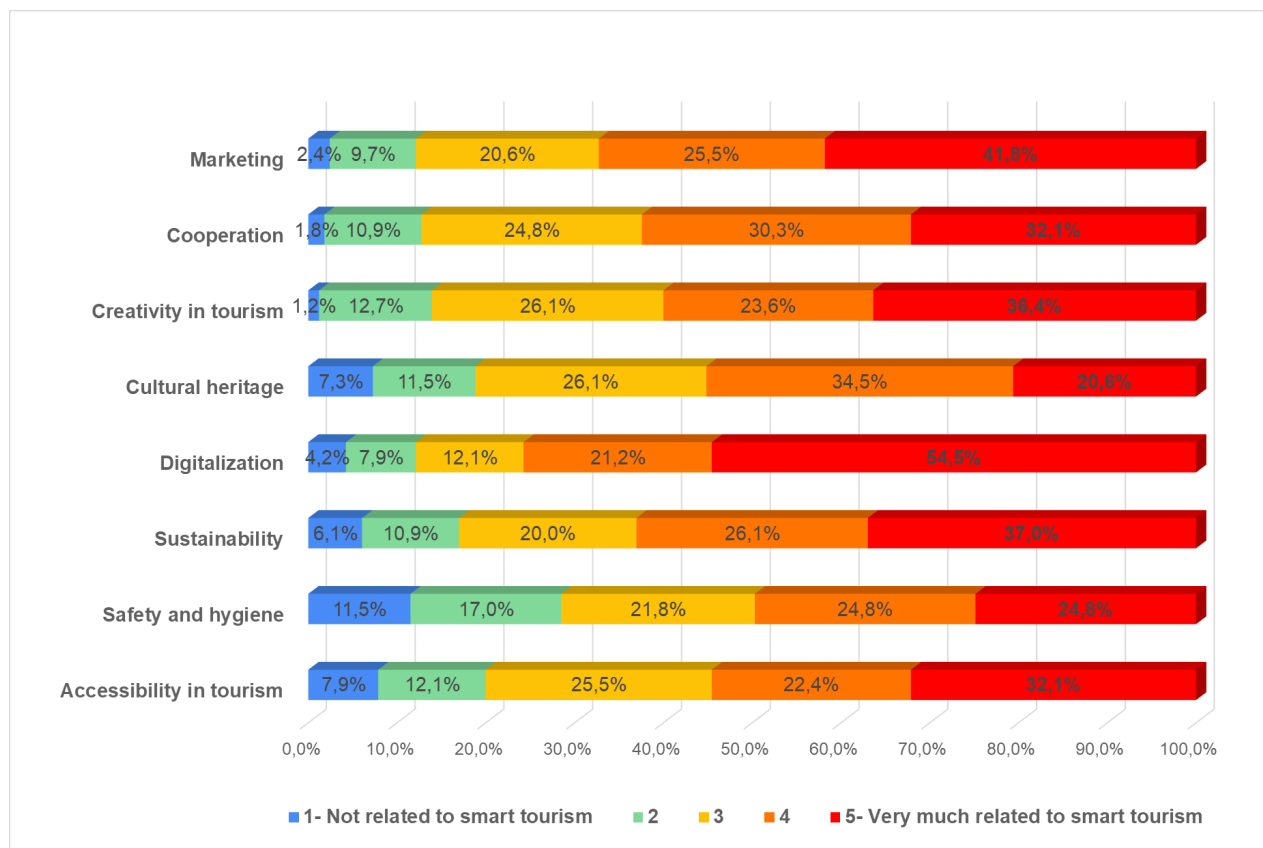


Figure 3. Question: “To what extent do you associate the following concepts with smart tourism? Are you aware of a municipality problem that could be solved via a smart city approach?”

Source: Own study based on the research carried out.

Research shows that the knowledge of terms related to smart tourism in most respondents is at an average level. Among the respondents, the highest level of knowledge of the concepts concerned the concepts of: sustainability. The lowest level of knowledge of the respondents concerned concept cultural heritage— figure 4.

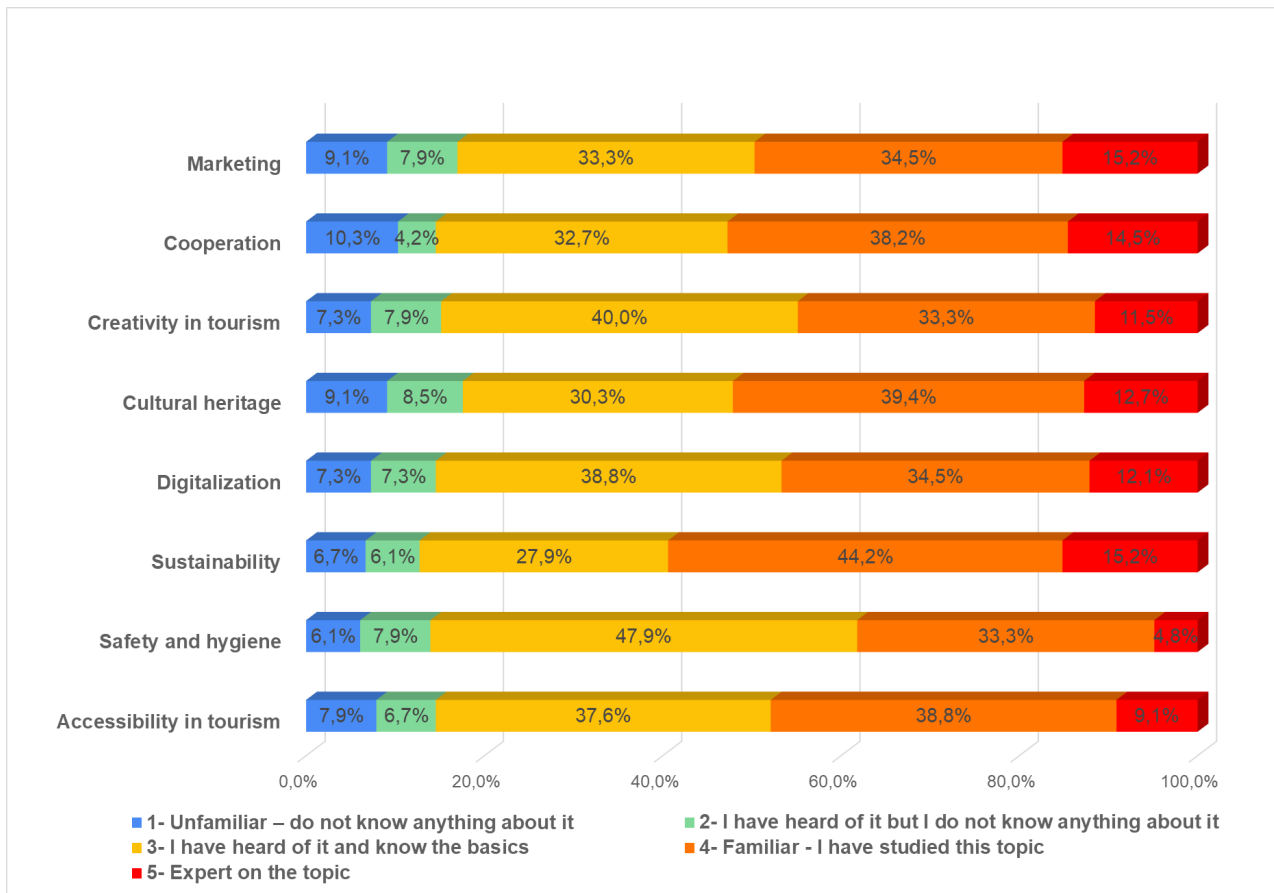


Figure 4. Question: "How knowledgeable/familiar are you with the following topics? Mark the option for each topic that is most".

Source: Own study based on the research carried out.

In figure 5, it is seen that most of the respondents prefer educational methods that combine: theoretical lectures, best practice examples (the lecture is based on examples of good practices) and interactive lectures (where they are actively engaged e.g. quiz).

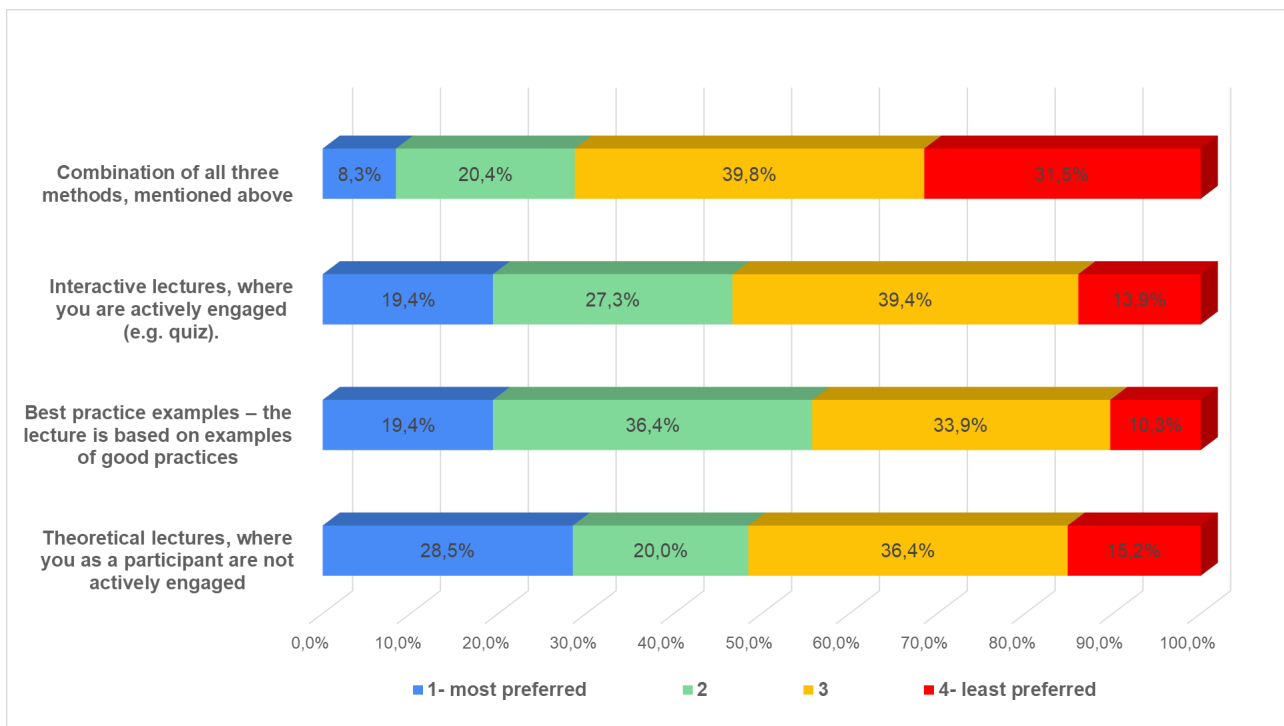


Figure 5. Question: „Which educational methods do you prefer? Please rank the following methods on a scale from 1 (most preferred) to 4 (least preferred)“.

Source: Own study based on the research carried out.

The next questions in the questionnaire concerned the educational needs in terms of getting to know the main pillars of the smart tourism concept, which are: accessibility and safety, sustainability, digitalization, cultural heritage and creativity, cooperation and marketing. The answers to these questions are particularly important for determining the topics of the training courses carried out under this project. Due to the fact that there may be differences in the level of knowledge of particular topics in individual countries, this report presents the collective results and the results obtained in individual countries.

1. Accessibility and safety

Research indicates that accessibility training should first include the following topics— figure 6:

- Strategies to increase accessibility of tourism destinations— smart city cards (multifunctional cards which integrate more service)— 44,2% respondents, who pointed out that the topic is very useful.



- Accessibility of information— Availability of information on accessibility in tourist destinations— 41,8%
- Digital accessibility of cities/sites— 37,0 %.

These responses confirm that, according to the respondents, the key concept related to the implementation of the smart tourism concept is digitization.

Open-ended questions followed in the survey asking the participants to describe are there other topics, related to accessibility or safety in tourism, that would be interesting. Respondents indicates additional topics that should be included in training programs:

- terrorist threat,
- accessibility for excluded people,
- accessibility for people with autism.

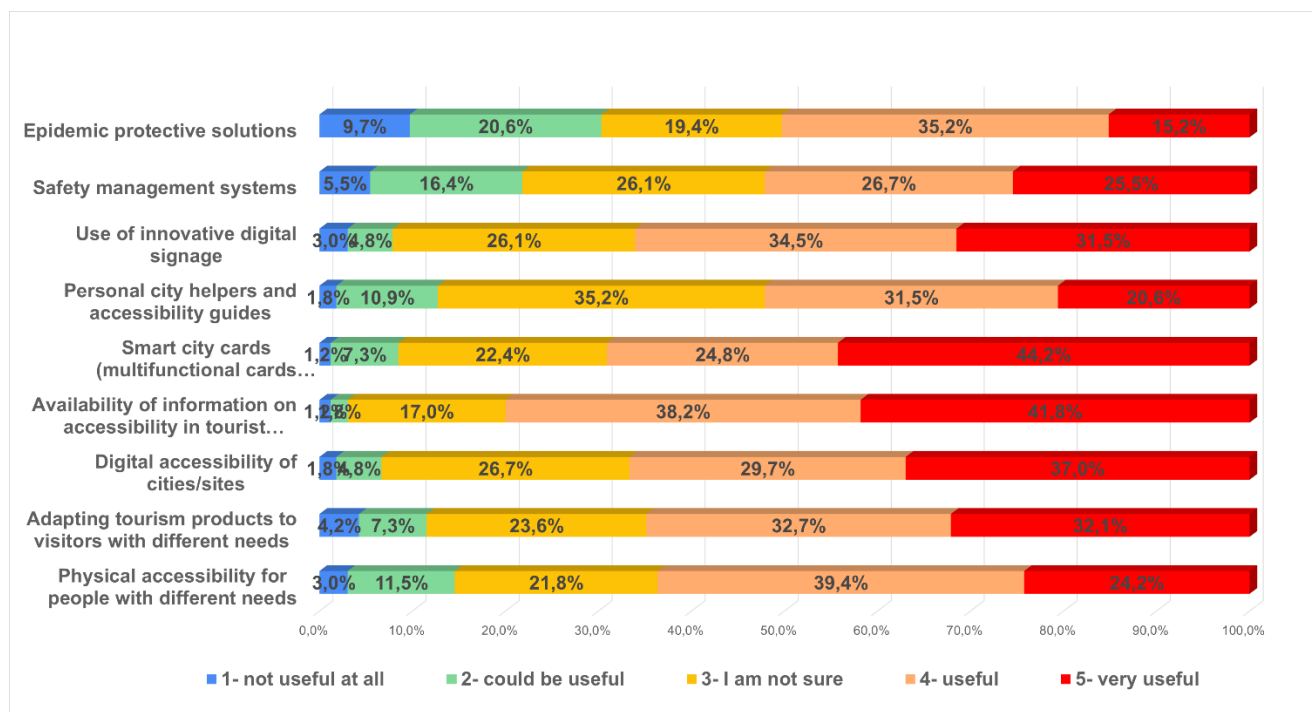


Figure 6. Question „Accessibility and safety— How useful would it be for you to learn more about the topics below?“

Source: Own study based on the research carried out.



The analysis carried out in individual countries indicates that training programs should be supplemented with the following topics— Figure 7:

Serbia:

- Accessible tourism: “Adapting tourism products to visitors with different need” — 54,8%.
- Smart solutions for increasing safety and hygiene standards: “Safety management systems” (41,9%) and “Personal city helpers and accessibility guides” — 41,9%, respondents, who pointed out that the topic is very useful.

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Bulgaria:

- Strategies to increase accessibility of tourism destinations: “Use of innovative digital signage” (50%).

Austria:

- Strategies to increase accessibility of tourism destinations: “Use of innovative digital signage” (50%).

Slovenia:

- Smart solutions for increasing safety and hygiene standards: “Safety management systems” (41,4%).

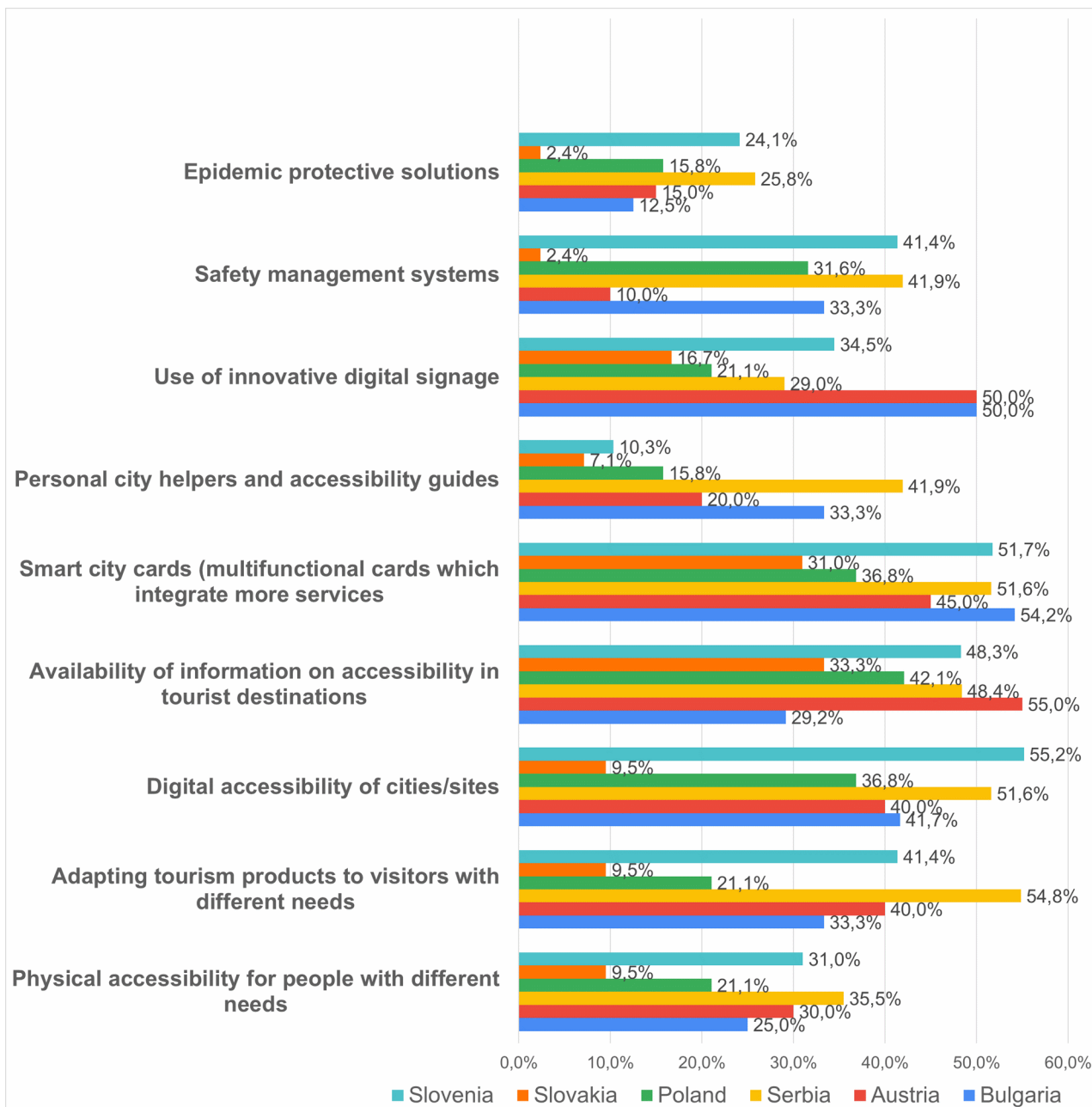


Figure 7. Question: “Accessibility and safety— How useful would it be for you to learn more about the topics below?”. Analysis of the responses obtained in individual countries. Source: Own study based on the research carried out.



2. Sustainability

Research indicates that accessibility training should first include the following topics— figure 8:

- Sustainable development: “Importance of technology in enhancement of sustainable tourism” (32,1%), “Smart and sustainable tourism destinations” (30,3%), “Preservation and enhancement of the natural environment” (30,3%)

Open—ended questions followed in the survey asking the participants to describe are there other topics, related to sustainability, that would be interesting for respondents. Respondents indicates additional topics that should be included in training programs:

- eco village
- revitalization and use of post—industrial areas
- Sustainable rural development
- Sustainable education, but it is perhaps more general than the topic of this survey
- How to efectively promote sustainability to tourists (marketing approach to communication)

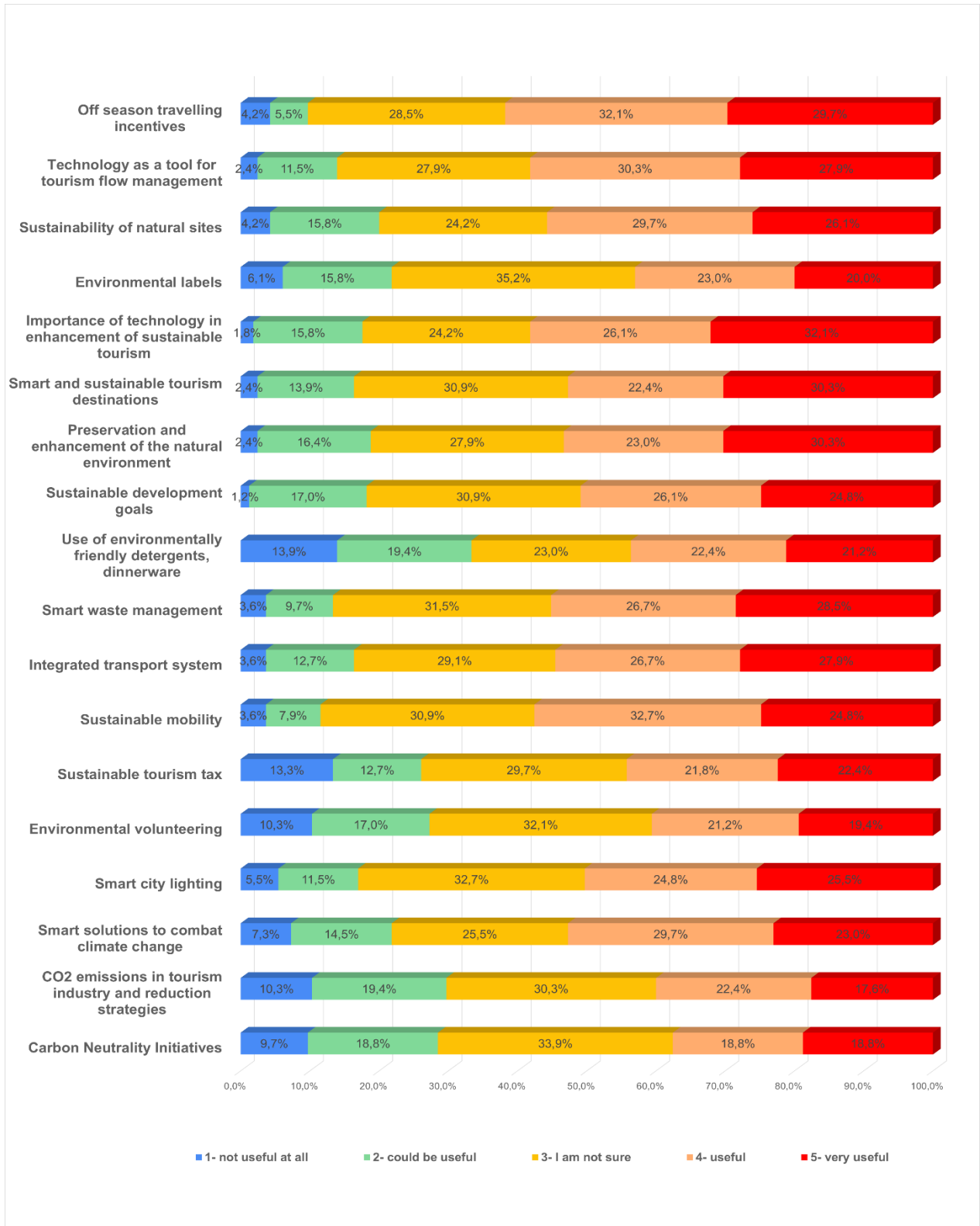


Figure 8. Question „Sustainability — How useful would it be for you to learn more about the topics below?“

Source: Own study based on the research carried out.



The analysis carried out in individual countries indicates that training programs should be supplemented with the following topics— Figure 9:

Serbia:

- Sustainability and environment certification— “Sustainability of natural sites” — 54,8%,
- Sustainability policies and practices— “Environmental volunteering” — 48,4%
- Accessible tourism: “Adapting tourism products to visitors with different need” — 54,8%.
- Smart solutions for increasing safety and hygiene standards: “Safety management systems” (41,9%) and “Personal city helpers and accessibility guides” — 41,9%, respondents, who pointed out that the topic is very useful.

Slovenia:

- Sustainable development— “Preservation and enhancement of the natural environment” (58,6%),
- Combating and adapting to climate change— “Carbon Neutrality Initiatives” (51,7%) and “CO2 emissions in tourism industry and reduction strategies” (44,8%).

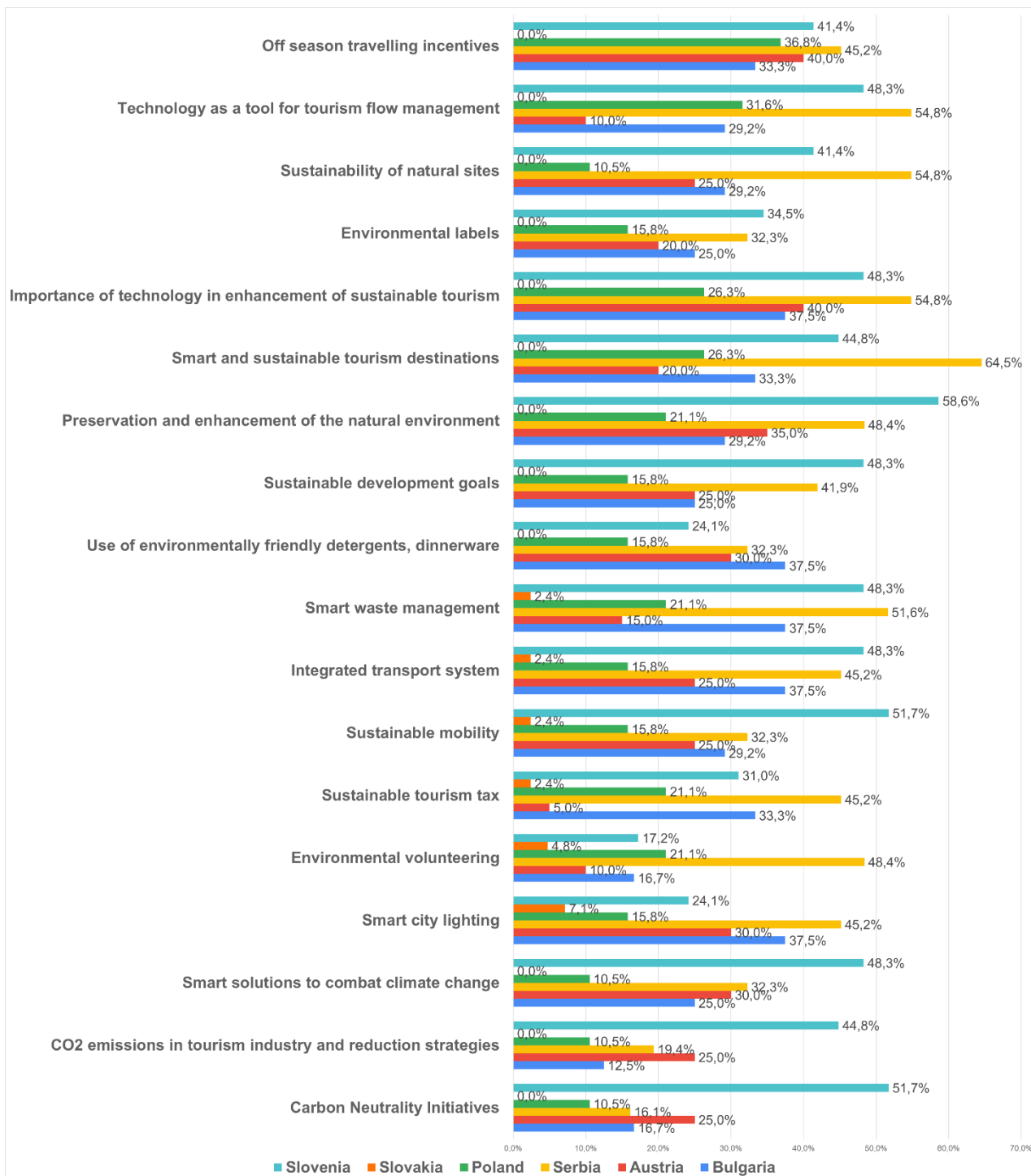


Figure 9. Question: "Sustainability— How useful would it be for you to learn more about the topics below?". Analysis of the responses obtained in individual countries
 Source: Own study based on the research carried out.



3. Digitalization

Research indicates that accessibility training should first include the following topics— figure 10:

- Use of technologies in tourism activity to enhance experiences [Innovation in tourism]— 50,3%
- Smart management [Smart tourism management]— 41,2 %
- Mobile payments— 39,4%
- Understanding visitors (38,8%)

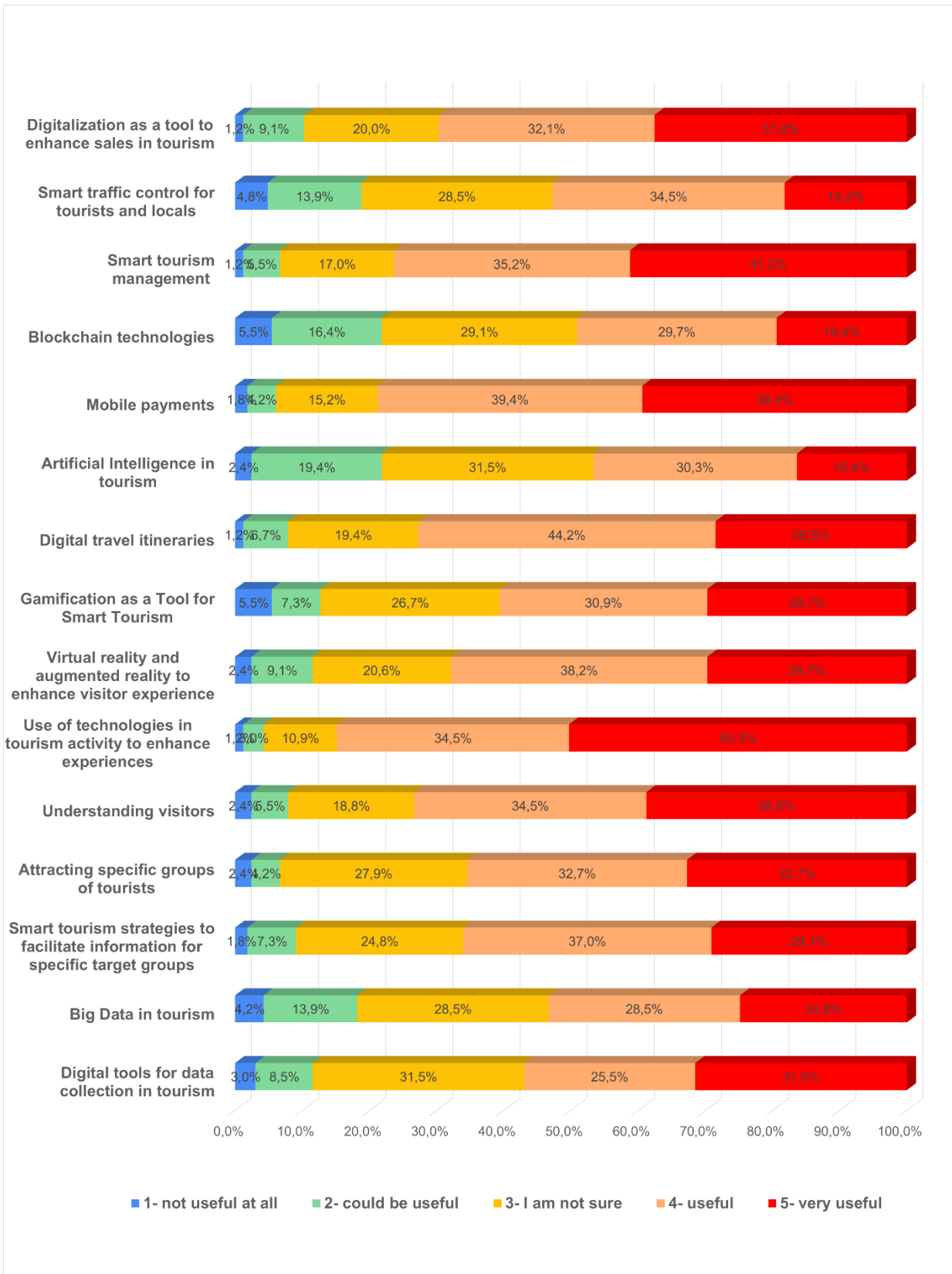


Figure 10. Question: “Digitalization— How useful would it be for you to learn more about the topics below?”.

Source: Own study based on the research carried out.



The analysis carried out in individual countries indicates that training programs should be supplemented with the following topics— Figure 11:

1. Serbia

- Use of technologies in tourism activity to enhance experiences: “Gamification as a tool for Smart Tourism” (64,5%),
- Data collection in tourism: “Digital tools for data collection in tourism” (56,1 %).

2. Slovenia

- Use of technologies in tourism activity to enhance experiences – “Innovation in tourism” (65,5%),
- Personalization of tourism experiences— “Understating visitors” (58,6%).

3. Bulgaria

- Use of technologies in tourism activity to enhance experiences: “Virtual reality and augmented reality to enhance visitor experience” (50,3%) and “Artificial Intelligence in tourism” (45,8%).

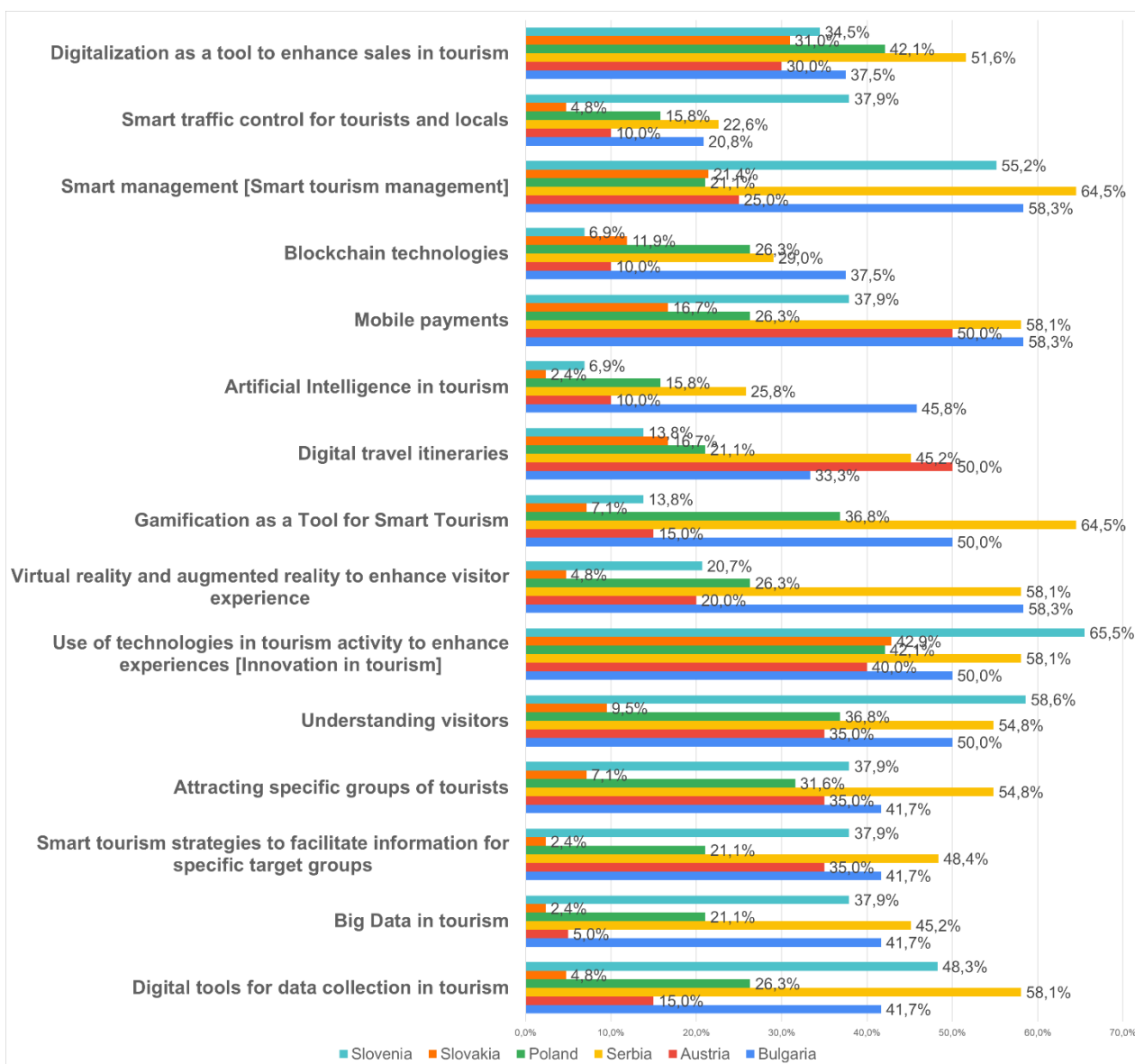


Figure 11. Question: “Digitalization— How useful would it be for you to learn more about the topics below?”. Analysis of the responses obtained in individual countries
 Source: Own study based on the research carried out.



4. **Cultural heritage and creativity**

Research indicates that accessibility training should first include the following topics— figure 12:

- Experiential tourism: “Gastronomy” (45,5%),
- Reviving traditions and cultural heritage sustainably: “Reinvention of the local culture” (40,0%) and “Use of traditional handcrafts and events for tourism”(40,0%).

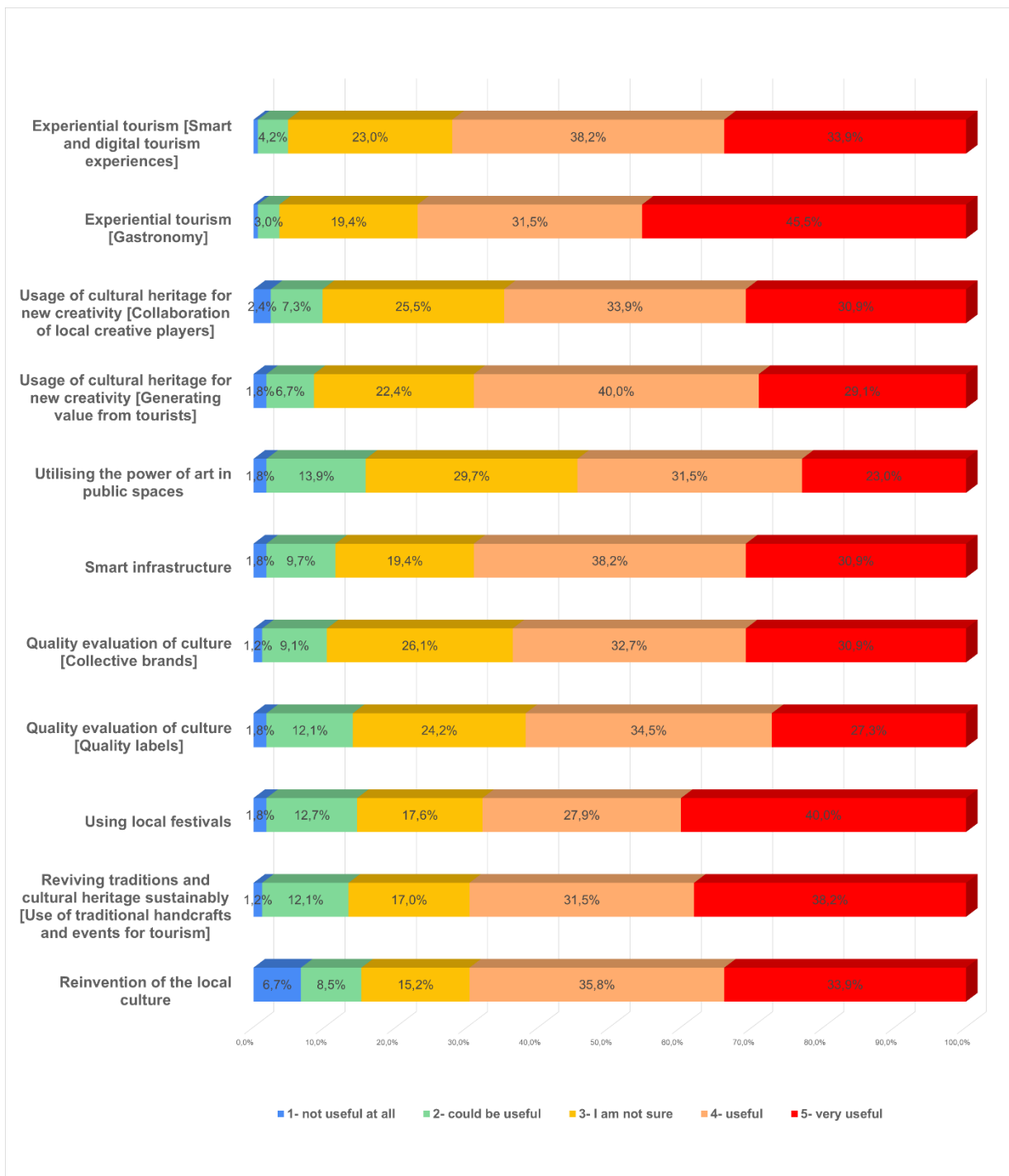


Figure 12. Question: “Cultural heritage and creativity— How useful would it be for you to learn more about the topics below?”.

Source: Own study based on the research carried out.



The analysis carried out in individual countries indicates that training programs should be supplemented with the following topics— figure 13:

1. Bulgaria
 - Experiential tourism [Smart and digital tourism experiences]— 74,5%

2. Slovenia
 - Usage of cultural heritage for new creativity [Generating value from tourists]— 40,4%

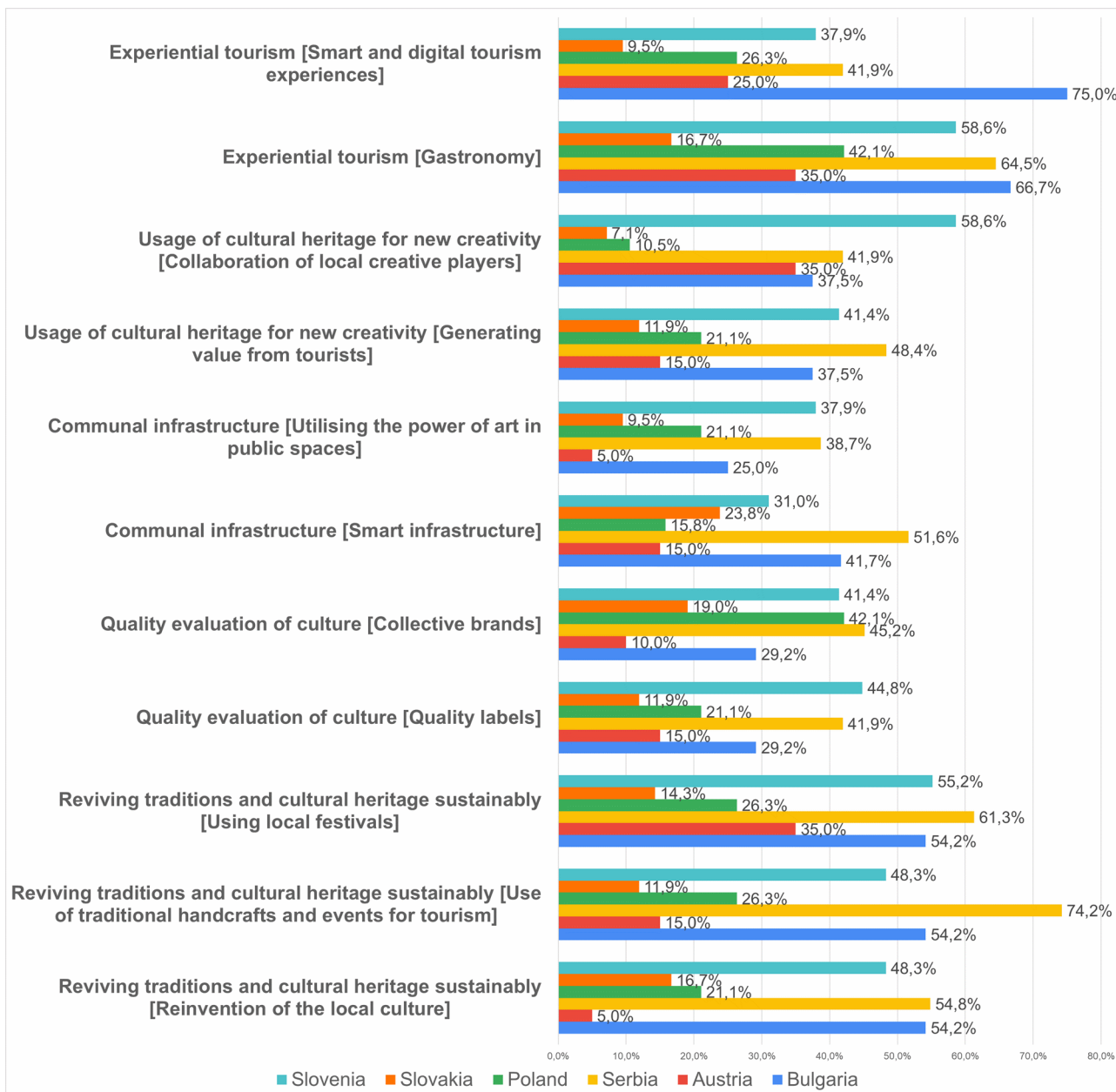


Figure 13. Question: “Cultural heritage and creativity— How useful would it be for you to learn more about the topics below?”. Analysis of the responses obtained in individual countries.

Source: Own study based on the research carried out.



4. Cooperation and marketing

Research indicates that accessibility training should first include the following topics— figure 14:

- Technology enabled tourism marketing: “Principles of online marketing” (43,0%),
- Competitiveness and networking: “Networking in tourism” (41,8%),
- Cooperation in the tourism industry: “Cooperation of municipalities” (40,6%).

Open—ended questions followed in the survey asking the participants to describe are there other topics, related to cooperation and marketing, that would be interesting for respondents.

Respondents indicates additional topics that should be included in training programs:

- territorial marketing

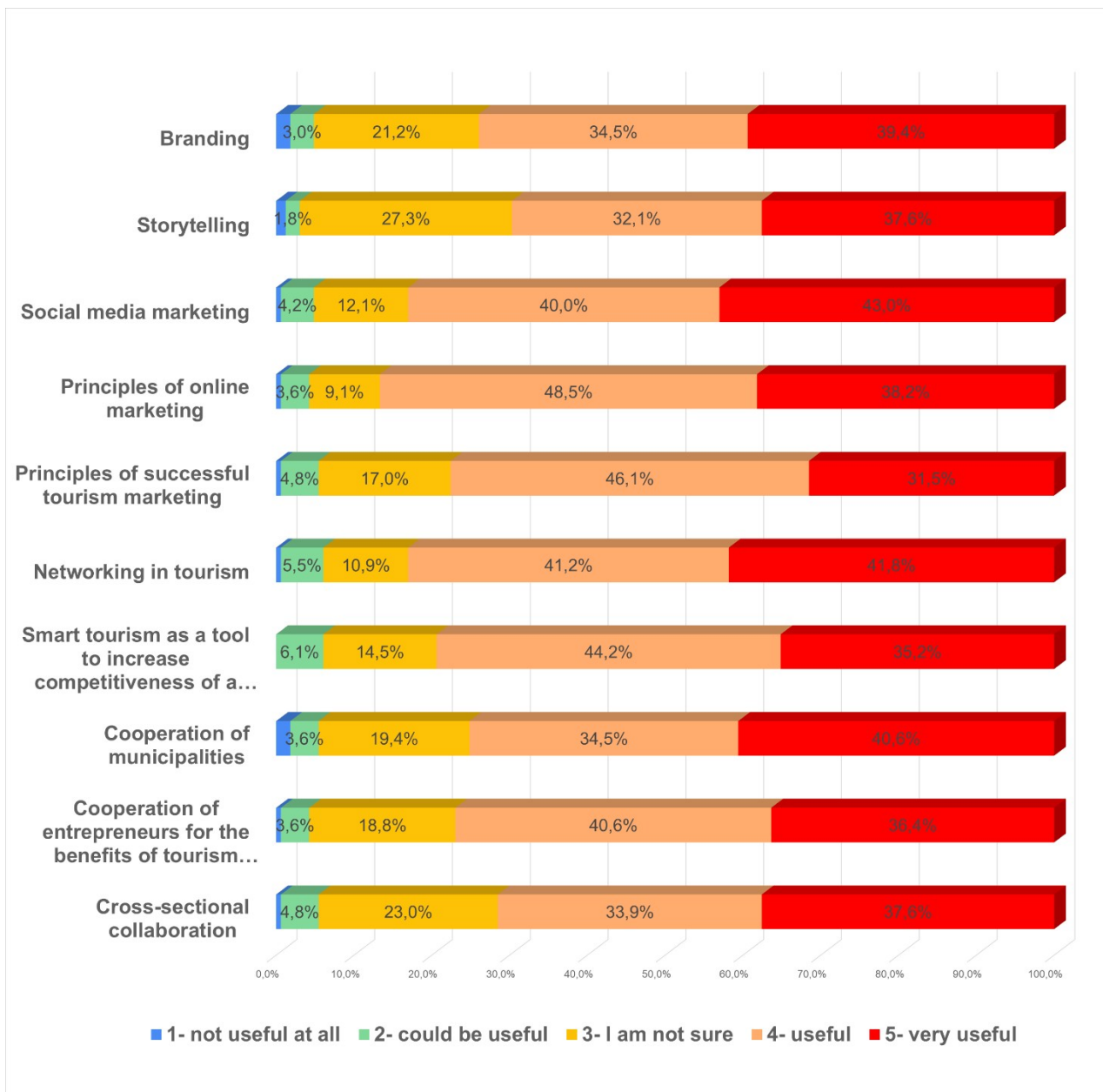


Figure 14. Question: “Cooperation and marketing— How useful would it be for you to learn more about the topics below?”.

Source: Own study based on the research carried out.



The analysis carried out in individual countries indicates that training programs should be supplemented with the following topics— figure 15:

1. Serbia

- Marketing: “Storytelling” (71,0%),
- Competitiveness and networking: “Smart tourism as a tool to increase competitiveness of a destination” (61,3 %),

2. Austria

- Cooperation in the tourism industry: “Cross—sectional collaboration” (55,0%) and “Cooperation of entrepreneurs for the benefits of tourism growth” (55,0%).

3. Bulgaria

- Technology enabled tourism marketing: “Social media marketing” (57,9%),

4. Slovenia

- Marketing: “Branding” (58,6%).

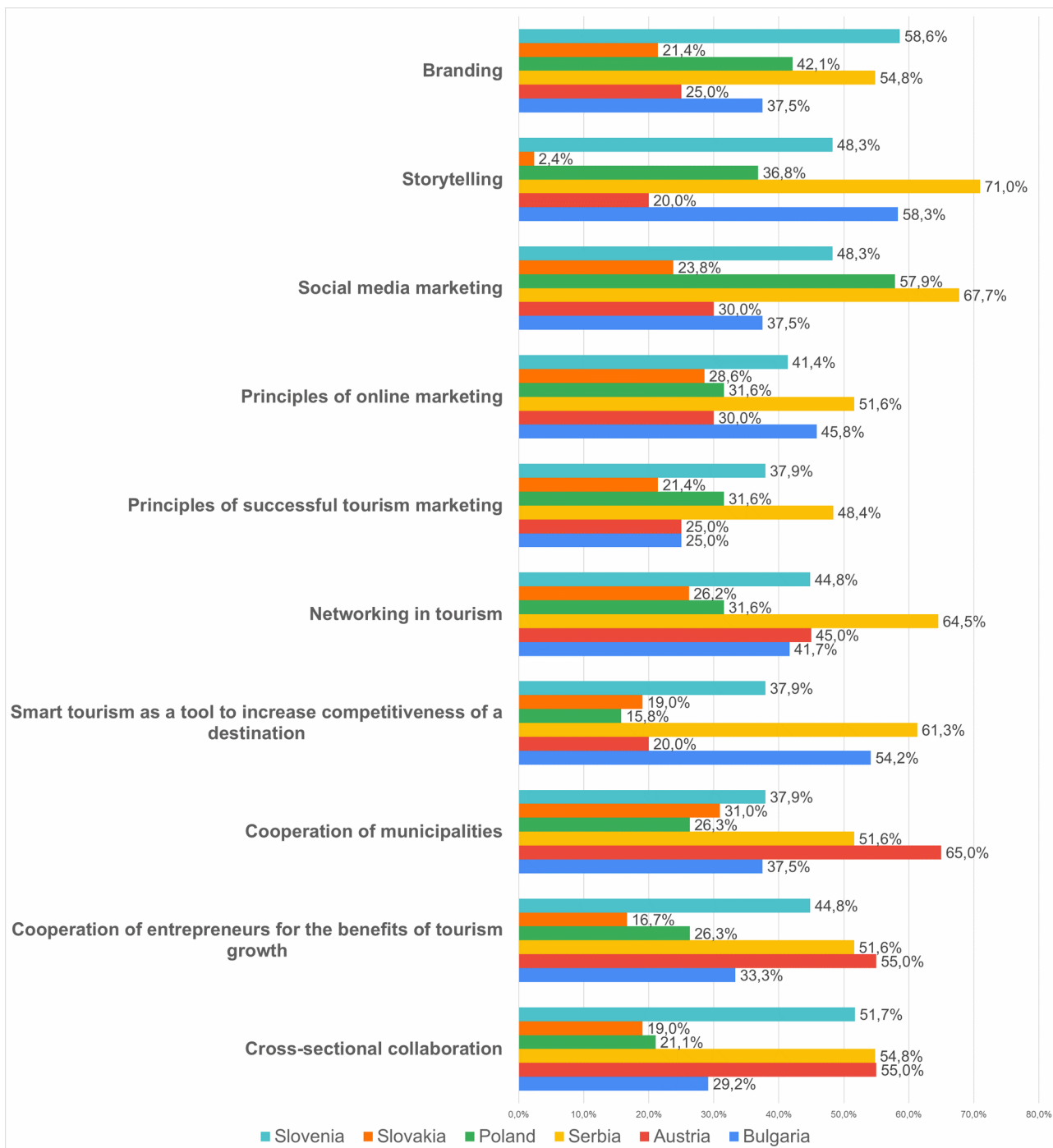


Figure 15. Question: “Cooperation and marketing— How useful would it be for you to learn more about the topics below?”. Analysis of the responses obtained in individual countries.
Source: Own study based on the research carried out.



Conclusions

This study was focused on registering the needs of the target groups, especially the adult educators in tourism. The study took place in six countries and answers were collected by respondents from Austria, Bulgaria, Poland, Serbia, Slovakia, Slovenia on the matter.

In general, it was revealed that there is need for further training in the implementation of the smart tourism concept.

Moreover it is worth to underline the most important conclusions coming from this research in short constructive points:

- Digitization is on the first place as the term the most related with smart tourism. The next one are marketing, sustainability and creativity in tourism.
- The knowledge of terms related to smart tourism is at an average level according to responses from survey. The most recognised concept is sustainability, when the lowest level of knowledge is about cultural heritage concept.
- In case of education methods there are preferences to combine together – theoretical lectures, best practice examples and interactive lectures.

Furthermore it is important to underline, that in the last part of survey there appeared questions about the educational needs in terms of getting to know the main pillars of the smart tourism concept, which are: accessibility and safety, sustainability, digitalization, cultural heritage and creativity, cooperation and marketing. Results shows that there are visible differences in the level of knowledge of particular topics in individual countries, so in this report there is both presentation of the collective results and the results obtained in individual countries – as the point of start for next actions – especially for determining the topics of the training courses carried out under this project.



References

Leading examples of smart tourism practices in Europe— report, 2022, European Commission, DG Growth Internal market, Industry, Entrepreneurship and SMEs

Tripathy A.K., Tripathy P.K., Ray N.K., Mohanty S.P., *iTour The Future od Smart Tourism*, 2018, • • IEEE Consumer Electronics Magazine

Rudwiarti L.A., Pudianti A., Emauel A.W.R, Vitasurya V.R., Hadi P., *Smart tourism village, opportunity, and challenge in the disruptive era*, 2020, IOP Conference Series: Earth and Environmental Science, Volume 780, 3rd International Seminar on Livable Space, 27 August 2020, Jakarta, Indonesia

Iwaniuk E., *Koncepcja inteligentnej turystyki (smart tourism)*, 2020, Studia Ekonomiczne, Uniwersytet Ekonomiczny w Katowicach nr 39/2020

Gretzel U., Zhong L., Koo C., *Application of Smart Tourism to Cities— Introduction to the Special Issue*, 2016, International Journal of Tourism Cities 2(2)

Opinion “*Towards more sustainable tourism for EU cities and regions*”, 2020, The European Committee of the Regions, 141st plenary session, 8—10 December 2020

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