

## Article

# Perception of the Impacts of Tourism by the Administrations of Protected Areas and Sustainable Tourism (Un)Development in Slovakia

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**Abstract:** Sustainable tourism development within protected areas has been a subject of interest for professionals. The effective development of nature-based tourism can be beneficial to both the environment and people. This work presents the results of research on the positive and negative impacts of tourism in protected areas of Slovakia as perceived by the administrations of individual protected areas of the country. Subsequently, the paper highlights the major issues affecting sustainable tourism development in protected areas in Slovakia, based on a review of recent legislation and strategic documents. The results of the study indicate that the status of a large-scale protected area does not play a role in the perception of the impact of tourism. The most significant impacts of tourism in protected areas, according to their administrations' perceptions, include an increase in waste production, informing local people about the value of the natural and cultural heritage, the education of visitors, the conflict of interest in using natural resources when doing business in a protected area, and the destruction of natural habitats. However, when linking the impacts of tourism to sustainable tourism development in these areas, current Slovak legislation does not allow for the sufficient development of nature-based tourism in protected areas in Slovakia. In this regard, appropriate measures are required to positively change the recent situation in this field.

**Keywords:** tourism impact perception; sustainable tourism; development; protected area; Slovakia



**Citation:** Štrba, L.; Kolačková, J.; Kršák, B.; Sidor, C.; Lukáč, M. Perception of the Impacts of Tourism by the Administrations of Protected Areas and Sustainable Tourism (Un)Development in Slovakia. *Sustainability* **2022**, *14*, 6696. <https://doi.org/10.3390/su14116696>

Academic Editors: Pablo Díaz, Alberto J. Rodríguez Darías and Cecilia Arnaiz Schmitz

Received: 4 May 2022  
Accepted: 27 May 2022  
Published: 30 May 2022

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## 1. Introduction

Nature protection and the development of tourism have a long and partly common history. Budowski [1] and Romeril [2] distinguish three forms of the relationship between nature conservation and tourism: coexistence, conflict, and symbiosis. Coexistence means that actors' views on nature conservation and tourism are different, and their interactions are limited. This form can transform into either conflict or symbiosis. Conflict arises when tourism has a negative impact on the environment. Symbiosis is a complex relationship, but the important thing is that it leads to the protection of the environment through tourism. At present, many countries apply criteria that have a positive effect on sustainable tourism. The main prerequisite for the sustainability of tourism in protected areas is its beneficial impact on the development, conservation, and protection of the natural environment, communities, species, or processes in combination with the development of tourism activities in a form beneficial to local communities. The subject of interest is a protected area, the quality and attractiveness of which is at a maximum, provided there is consistent protection. On the other hand, in the case of exploitation or excessive use by visitors, there is a degradation or even loss of its quality. The sustainable development of tourism must always respect the environment and refer to the accepted principles of sustainability. Sometimes it can be difficult to quantify the limits, but these are essential for sustainable tourism. Sustainable

tourism seeks to strike the best balance between the economic, social, and environmental impact on the environment.

Nature provides the space and conditions for human life and activities, and satisfies people's needs. Man transforms nature by using it. It must constantly adapt to the changes that have arisen. The impact of his activities on nature and biodiversity has increased significantly in the last century [3]. Environmental degradation affects not only biodiversity but also geodiversity. According to Ložek [4], the rich natural heritage is a victim of today's ruthless civilization. What is worse, it is happening in places where there are no economic justifications. Zweckbronner [5] adds that the relationship of man and technology to nature at the turn of the 17th and 18th centuries can be described as "use", later as "exploitation" and currently "empowerment and manipulation".

Definitions of nature protection have evolved differently depending on the dynamics of the development of the relationship between man and nature in certain socio-political and economic conditions. Some definitions give priority to the rational use of natural resources, others emphasize the protection of species and natural monuments, or there are definitions that consider nature conservation to be a science or social activity. According to the International Union for Conservation of Nature (IUCN), nature conservation is the conscious direction of the use of the environment so that the human race can benefit from natural resources. Benefits are divided into ecological, economic, intellectual, scientific, emotional, cultural, recreational, and ethical [6].

The growing interest in nature tourism is attracting more and more visitors to many protected areas of the world [7]. Tourists visit protected areas to understand and appreciate the values for which the area was created [8,9]. It is likely that a higher number of visitors will strengthen, e.g., the economic sustainability of local communities in the protected area, but this can also lead to an increased pressure on the environment. Based on a review of several expert articles [8,10–13], environmental impacts in rare areas are considered to be most serious in tourism as they have the potential to adversely affect all elements of the ecosystem: soil, water, air, vegetation, and more. The effects of tourism on the natural environment are often long-term and are systematically monitored in comparison with its impacts on the socio-cultural sphere [14,15], although the results of individual studies are usually not possible due to the ecological diversity of the area.

Protected areas can take a variety of forms—from strictly protected non-intervention areas to various types of traditionally cultivated land, which has been formed by men into its present form, and which at the same time ensures a high degree of diversity. Identifying the main goal in a protected area does not mean that other goals are not important. Almost all protected areas have multiple values. The orientation of the value of tourism to the management of all categories of IUCN protected areas is summarized by Leung et al. [16]. Although there is a strong consensus within the conservation community that the main role of protected areas is nature conservation, in practice, these areas are expected to make much broader environmental, social, and economic contributions to human society.

The aim of this paper is to analyze the perception of the impacts of tourism by the administrations of protected areas and to point out the main aspects affecting sustainable tourism development in protected areas of Slovakia.

## 2. Theoretical Background

The tourism industry is directly related to the environment [17]. Tourism is almost wholly dependent on the environment [10]. The environment in which tourism takes place can be diverse. Knowing its important characteristics can contribute to an understanding of developments and their impacts on the destination. Lew [18] identifies three approaches that reveal the characteristics of the tourism environment. The most important is the ideographic approach, which is focused on the uniqueness of the "environment" and emphasizes the distinction between nature-orientated attractions and human-orientated attractions. The spatial characteristics of scale and size, including the carrying capacity of

the site, focus on the organizational approach. Finally, the cognitive approach stresses the attributes related to the perception of tourists and their experiences [19].

Tourism has the ability to provide people with contact with nature and the environment. This confrontation can spread awareness of environmental issues and the value of nature and leads to environmental behavior and activities [18]. Tourists visit the protected areas to understand and appreciate the values for which the area was established [8]. The ecosystem of protected areas is crucial here [9]. Currently, national parks and protected areas help to increase the level of tourism and recreation [20]. They are an indispensable part of tourism. They mainly help to regenerate people, and this is most effective in a clean and an unbroken natural environment [21]. Everything suggests that the trend of interest in protected areas will continue to increase in the following years [8,22,23].

The reciprocal relationships between tourism and the environment are much more complicated. Tourism embraces many activities that can have adverse effects on the environment. The degradation of primary sources of the environment can lead to the downgrade of tourism. In addition to primary sources, visitors also require support for secondary sources that are the result of economic activity. Many of these negative impacts are linked to secondary sources and their activities [16,17]. Based on a review of several expert articles, environmental impacts can be considered the most important in tourism [8,10,12]. However, the social and economic impacts of tourism can also significantly affect protected areas.

### *2.1. Environmental Impacts of Tourism*

Environmental impacts in protected areas resulting from tourism are divided into direct, indirect, and cumulative. Direct impacts are directly caused by tourism in these areas. Indirect impacts are usually related to tourism but can bring about deeper consequences than direct impacts. Unlike the direct ones, the consequences of which are obvious, easily judged, and controlled, the indirect effects are “invisible” and therefore difficult to measure. The cumulative effect is the result of several interrelated issues. These three categories can be further distinguished according to their positive and negative, random and predictable, local or supraregional, temporary and permanent, short and long-term nature [24,25].

Possible negative impacts include the loss of aesthetic value, increased noise levels, emissions generation, solid waste and littering, deforestation due to building construction or for the purpose of fueling, soil erosion, pollution of surface and underground waters and air pollution, ecosystem disruption, destruction of national parks due to use of vehicles, and landscape change [17,19].

On the other hand, tourism has the potential to generate beneficial effects by creating protection for natural areas and wildlife. Moreover, it reevaluates the ecological values of local residents and tourism authorities, increases environmental awareness among tourists, rehabilitates and oftentimes transforms old buildings and sites into new facilities, and introduces planning and management. In addition to environmental impacts, tourism in protected areas brings many other benefits. It strengthens economic opportunities in terms of more job opportunities for local people, increases income, stimulates new tourism businesses, supports the local production of different goods, improves living standards, generates local tax revenue, empowers employees to acquire new skills, and increases funding for protected areas and for local communities. Furthermore, tourism in protected areas provides protection for the natural and cultural heritage. This means protecting ecological processes, preserving biodiversity, improving local infrastructure, transport, and communication, transmitting the values of the protected area through education and interpretation, creating economic value and protecting resources that are otherwise not perceived as valuable, helping to interpret natural and cultural heritage to visitors and to the inhabitants of the visited areas, and creating a new generation of responsible consumers. Protected areas are also involved in improving the standard of living. They promote aesthetic, spiritual, and other values linked to the improvement of well-being, support the environmental education of visitors and locals, create an attractive environment for destinations as well as for visitors, improve intercultural understanding,

promote the development of culture, crafts, and art, encourage people to learn languages and to recognize the culture of foreign tourists, and encourage local people to appreciate their local culture and environment [8,9].

In order to achieve the values and benefits that the protected area can offer, the tourism industry must invest in maintaining the natural environment to preserve the main elements on which it is based, and which are attractive to people [17]. The quality of natural attractions is a part of the overall quality of a destination [12,26–28]. The destination attractiveness, according to Mihalič [12], represents eleven elements: natural features, climate, cultural and social characteristics, general infrastructure, basic services infrastructure, tourism superstructure, access and transportation facilities, attitudes towards tourists, cost/price levels, economic and social ties, and uniqueness, such as unique geography. Loss of attractiveness can be caused by a deteriorated state of water quality, fresh air, and the water system, but also the loss of species diversity. These natural components also refer to the quality of the environment. Quality of the environment is essential for tourism [17]. It becomes a competitive factor in selecting different tourist areas with different environmental qualities. However, they must not lack information on the quality of the environment, as this would mean the loss of environmental image or even the loss of potential visitors. We cannot provide excessive or inappropriate qualities. Therefore, it is necessary to work with true and proper information [12].

## 2.2. Social Impacts of Tourism

Wolf [29] states that social effects are the effects on people in their environment and their direct and indirect relationships with visitors. A general topic based on research is that tourism has great potential to affect the lives of the inhabitants of such areas. A number of studies have focused on documenting the effects of tourism on communities and their attitudes toward tourism [30–35]. Compared to the environmental impacts of tourism, the social impacts are usually less pronounced and immediate. They are less identifiable, measurable, and less publicized. As stated by Jurowski et al. [33], as the place suddenly becomes a tourist destination, the lives of the inhabitants of the community can be affected in both worse or better ways. Kim [36] mentions that if people are convinced that tourism can generate new job opportunities and improve the quality of life, they are more likely to support the development of tourism. According to Eagles et al. [8], negative impacts are most common when communities do not have a choice or any control over their involvement in tourism.

Improperly planned tourism development can lead to overcrowding by tourists which can cause stress for local people and can lead to vandalism and crime. Some authors [37–39] state that tourism can have a negative impact on residents' quality of life, cause changes in their way of life, and lead to a decline in traditions and a loss of authenticity. One of the most common tourism-induced effects is the demonstration effect [40–43]. This negative social effect consists of mimicking the patterns of behavior of visitors by residents. Another effect is the dualization of society to which tourism contributes. It is a process in which society is divided into two different socio-economic classes. They are typical especially for intensively visited destinations, where tourism entrepreneurs benefit from the intensity of tourism, while local communities tend to suffer, for example, increase in the cost of living [40]. In this context, there is often a marginalization of the population which consists of the expulsion of residents from important parts (e.g., historical, mountain), while the satisfaction of their needs is often postponed [25]. Another social impact concerns the negative development of residents' relationship with visitors to the destination, also called tourist irritation [44]. As an indicator of this relationship, the Doxey's irritation index [45] is used. The four-point scale consists of the following attitudes of residents: euphoria, apathy, disgust, and antagonism. The attitude of residents to the development of tourism gradually evolves depending on the form and intensity of their connection with visitors. Ryan [41] adds that the development of local attitudes is also related to tourism activities, the degree of the diversity of visitor and resident cultures, and the quality of infrastructure.

However, it most often changes in the direction from euphoria through apathy and disgust to antagonism.

On the other hand, tourism can lead to local community development in various ways [8,46–48]. With the right tourism planning in place, positive returns can be significant. Tourism in protected areas has a role to play in improving the quality of life of the population. This can be achieved through many initiatives, including improving infrastructure and telecommunications, education, training, and healthcare [49,50]. In addition, tourism promotes aesthetic, spiritual, and other values related to improving “well-being”. It ensures sustainable growth in the local community by emphasizing the value of local art and culture. It encourages residents to appreciate the local culture and environment [8,9]. It strengthens the feeling of pride, respect for the collective heritage, and stimulates the return to traditions and their maintenance. The positive social impacts of tourism can also indirectly benefit protection. Education on conservation issues in specific protected areas aimed at visitors and local people can increase their support for nature conservation. For visitors and residents, engaging in tourism activities can raise awareness of local threats, conservation issues, and management solutions [51–53].

### *2.3. Economic Impacts of Tourism*

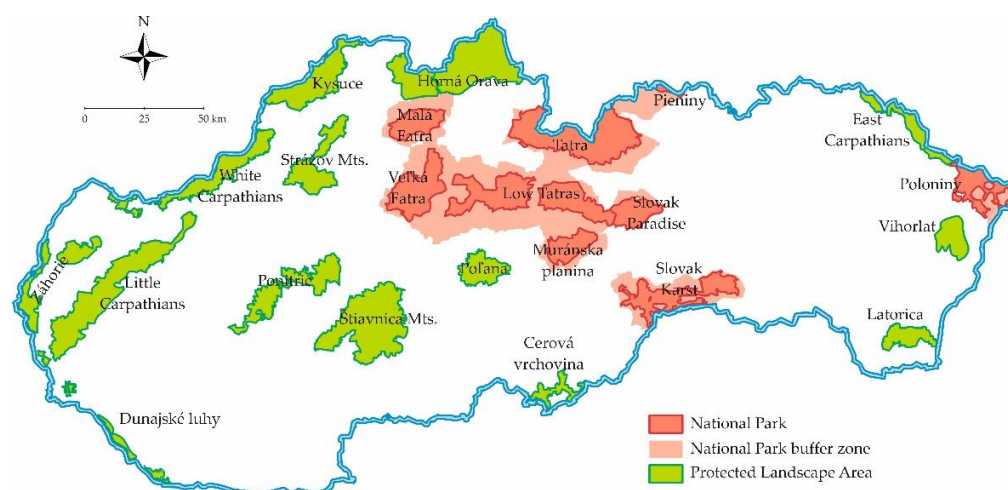
Many studies have shown the positive and negative economic effects of tourism on protected areas and local communities. Studies have generally reported positive effects, such as an improved economic quality of life and more job opportunities [54–57]. Tourism boosts economic opportunities in terms of more jobs for local people, increased incomes, although often tourism in protected areas requires only seasonal employment, which means that the population is unemployed out of season. Furthermore, tourism supports the local production of various goods, generates local dap income, enables employees to acquire new skills, and increases funding for protected areas and local communities [58–62]. As tourism grows, new opportunities for investment, development, and infrastructure are created. Tourism has an impact on improving public benefits such as sewerage, sidewalks, lighting, parking, public toilets, waste disposal, and landscape planning. It also supports the development of transport infrastructure, which is reflected in the renewal of roads and public transport. Such positive changes may benefit tourists as well as residents. At the same time, however, it turned out that the population perceived an increase in the prices of goods and services [63–65]. In some cases, costs can rise so much that locals can no longer afford to live there. This is especially true in destinations where local people have lower incomes than visitors. For example, wealthy foreign visitors can see economic opportunities in protected areas and can take control or buy local businesses. Tourism can thus lead to an increase in foreign ownership and property values.

## **3. Materials and Methods**

### *3.1. Nature Protection in Slovakia*

In Slovakia, nature protection is ensured via Act No. 543/2002 Coll. on Nature and Landscape Protection [66]. According to this act, nature protection means the limitation of interventions that may endanger, disrupt, or destroy living conditions and forms, natural heritage, the nature of the landscape, or adversely affect its ecological stability, as well as the elimination the effects of such interventions. Territorial protection is provided in the national system of protected areas. This consists of 9 national parks (NP), 14 protected landscape areas (PLA) (Figure 1), 448 nature reserves (NR), 200 national nature reserves (NNR), 270 natural monuments (NM), 60 national natural monuments (NNM), 193 protected areas, and 1 protected landscape feature. There is a total of 23 large-scale protected areas and 1183 small-protected areas in Slovakia. The territories of national parks and protected landscape areas and their protection zones include 562 small-scale protected areas. The total area of this system is 1,148,958 ha, which represents 23.43% of the total area of the Slovak Republic [67].





**Figure 1.** Protected areas within the territory of Slovakia.

The national system of protected areas in Slovakia is defined by five protection levels [66]. The highest of them always applies in areas where several protected areas with different degrees of protection overlap [19,20,68,69]. Declared protected areas face a number of different challenges. Only about 20% can provide adequate care for nature and the landscape. It threatens, for example, logging, deforestation, raw material extraction, the construction of dams, water management, the construction of recreational facilities, the colonization of land, the development of the urban environment, agricultural use, overgrazing, poaching, construction of roads, landfills, air and water pollution, insufficient care related to lack of time and finance, and many others [21,70].

### 3.2. Data Collection

Based on the character of the study, the quantitative questionnaire method was used. Questionnaires are one of the most popular methods of obtaining data for various types of studies, including studies in tourism. This is mainly because it is a multifaceted method of gathering information about people's activities and attitudes. On the other hand, it is the most abused method because questions may be biased or incorrectly formulated in ducks, or the sample may not represent the core set. The advantage of the questionnaire is its general use and its undemanding, inexpensive, and fast processing [71].

The survey was conducted through the online platform Google Forms. Respondents, all 23 administrations of large-scale protected areas (9 NPs and 14 PLAs) (Figure 1), were contacted by e-mail and phone to participate in the survey.

The questionnaire consisted of two major parts. The first part was aimed at the predominant forms of tourism in the protected area. In the second part, respondents (representatives of the administrations of individual protected areas) assessed tourism impacts using five-point Likert scale [72] ranging from 1 (no or minimum impact) to 5 (the strongest impact). Based on the literature review, as summarized in the theoretical background of this article, statements on fourteen environmental, seven social, and twelve economic tourism impacts in protected areas were assessed by the employees of individual administrations. As they spend a considerable part of their working time in the field, they have direct contact and experience with the various aspects affecting the protected areas in different forms, including tourism and its impacts, visitors, and local people. So, the respondents had sufficient competences to perform the assessment used in our study.

Among the environmental impacts of tourism in protected areas, respondents assessed the following statements:

- Tourism protects and preserves the natural and cultural heritage. (En1);
- Tourism increases the aesthetic value of the area. (En2);

- Tourism educates and interprets the values of natural and cultural heritage to visitors. (En3);
- Tourism informs local people about the value of natural and cultural heritage. (En4);
- Tourism provides greater care for the environment. (En5);
- Tourism reduces the diversity of flora and fauna. (En6);
- Tourism disrupts and destroys natural habitats. (En7);
- Tourism causes a conflict of interest in doing business using natural resources. (En8);
- Tourism decreases water and air quality. (En9);
- Tourism increases noise level. (En10);
- Tourism causes an increase in soil erosion. (En11);
- Tourism increases waste production. (En12);
- Tourism causes traffic congestion. (En13);
- Tourism causes the loss of natural landscape and agricultural land. (En14)

Assessment of statements on the economic impacts of tourism in protected areas included:

- Tourism creates new job opportunities. (Ec1);
- Tourism reduces the migration of local people. (Ec2);
- Tourism is an opportunity to engage in the entrepreneurial activities of local people. (Ec3);
- Tourism supports the development of crafts and local production of goods. (Ec4);
- Tourism supports protected areas with funds. (Ec5);
- Tourism uses the local workforce and its expertise. (Ec6);
- Tourism stimulates investment in public and civic infrastructure. (Ec7);
- Tourism improves the quality of life of local people. (Ec8);
- Tourism increases the cost of living of local people. (Ec9);
- Tourism causes leakage of profits outside the region. (Ec10);
- Tourism increases the cost of road maintenance, the transport system, and additional infrastructure. (Ec11);
- Tourism increases people's participation in local development. (Ec12);

Social impacts of tourism in protected areas were assessed via the following statements:

- Tourism contributes to the preservation of local traditions and customs. (S1);
- Tourism builds local patriotism. (S2);
- Tourism changes the image of the region into a more attractive one. (S3);
- Tourism displaces local people in favor of tourism development. (S4);
- Tourism causes stress to locals. (S5);
- Tourism reduces the cohesion of local communities. (S6);
- Tourism increases the interest of locals mainly in the economic perspective compared to the protection of the area. (S7);

Each category of statements included both positive and negative impacts of tourism. As the questionnaires were filled electronically via devices with an internet connection, no further explanation of the assessed statements was given to the respondents.

### 3.3. Data Processing and Analysis

Basic statistical tools were used to analyze the results. The analysis of the relationship between the responses of individual respondents was performed using the Pearson correlation coefficient. Subsequently, the coefficient of determination was used to evaluate the degree of dependence.

One factor analysis of variance (ANOVA) (see, e.g., Sahai and Ageel [73]) was used to analyze the differences in the responses between the administrations of the protected landscape areas and the administrations of the national parks and between the groups of the protected areas where soft forms of tourism or hard forms of tourism predominated.

#### 4. Results and Discussion

In total, responses from 17 administrations (six NPs and 11 PLAs) were obtained and processed within this study. Administrations of three NPs (Muranská planina NP, Poloniny NP, Slovak Paradise NP) and three PLAs (Štiavnické vrchy Mts. PLA, Malé Karpaty PLA, Dunajské Luhy PLA) did not provide any response. In five protected areas (four NPs and one PL), hard tourism forms were assigned to be predominant in their territories. Administration of Horná Orava PLA selected a combination of hard and soft tourism forms. In 11 protected areas (two NPs and nine PLAs), soft tourism forms prevail.

The total number of identified tourism impacts (positive and negative) in the individual protected areas is shown in Table 1 and Figure 2. The highest number of positive environmental impacts was perceived by the administration of Pieniny NP, Biele Karpaty PLA, Ponitrie PLA, and Cerová vrchovina PLA. On the other hand, Poľana PLA and PLA Záhorie did not find any positive environmental impact of tourism in their areas. Administrations of Malá Fatra NP, Pieniny NP, Low Tatras NP and Horná Orava PLA assigned the highest number of negative environmental tourism impacts. In these protected areas, hard tourism forms prevail. The lowest number of negative environmental tourism impacts was identified in five protected areas (Veľká Fatra NP, Záhorie PLA, Latorica PLA, Poľana PLA, Biele Karpaty PLA). Administrations of Veľká Fatra NP, Low Tatras NP, Biele Karpaty PLA, Záhorie PLA, and Ponitrie PLA identified all the positive impacts of social tourism to be present in their territories. By contrast, the lowest number of social impacts of tourism were identified in Slovak Karst NP and Cerová vrchovina PLA. Protected areas with prevailing hard forms of tourism (Malá Fatra NP, Low Tatras NP, Tatra NP and Ponitrie PLA) were the territories with the greatest presence of negative social impacts of tourism. The rest of the NPs and PLAs mostly did not perceive the presence of these negative impacts. The highest number of economic benefits were perceived by the administrations of two NPs and three PLAs (Veľká Fatra NP, Nízke Tatry NP, Horná Orava PLA, Strážovské vrchy PLA, Biele Karpaty PLA). The lowest number of economic benefits from tourism was present in Cerová vrchovina PLA, Poľana PLA, and Vihorlat PLA. The majority of respondents mentioned no negative economic impacts. Administrations of four NPs (Malá Fatra NP, Pieniny NP, Tatra NP, and Low Tatras NP) perceived some negative economic impacts of tourism in their territories.

Based on the assessment of the positive and negative environmental, social, and economic impacts of tourism by protected area administrations, it can be assumed that soft forms of tourism are associated with low attendance and the consequent fact that protected areas are little known among people. Soft forms of tourism are not associated with the fact that they are, e.g., promoted and supported by regional tourism organizations. This finding is also supported by the fact that nature-friendly forms of tourism are currently being developed in Slovakia conceptually and in partnership with only a few destination management organizations. In this regard, the administrations of Latorica PLA, Eastern Carpathians PLA and the Kysuce PLA mentioned in the questionnaire that they are little known from a tourist point of view. Therefore, soft forms of tourism in protected areas do not bring the benefits associated with them and which would be expected of them. Moreover, if there are minimal negative impacts in these protected areas, this is mainly due to the low number of visitors and not the benefits of soft forms of tourism which can minimize the negative impact.



**Table 1.** Numbers of identified positive and negative impacts of tourism in the protected areas of Slovakia.

| Protected Area            | Tourism Form | Environmental Impacts |          | Social Impacts |          | Economic Impacts |          |
|---------------------------|--------------|-----------------------|----------|----------------|----------|------------------|----------|
|                           |              | Positive              | Negative | Positive       | Negative | Positive         | Negative |
| Malá Fatra NP             | hard         | 2/5                   | 8/9      | 2/4            | 4/4      | 4/8              | 3/3      |
| Slovak Karst NP           | soft         | 4/5                   | 4/9      | 0/4            | 0/4      | 3/8              | 0/3      |
| Pieniny NP                | hard         | 5/5                   | 8/9      | 2/4            | 2/4      | 5/8              | 2/3      |
| Veľká Fatra NP            | soft         | 3/5                   | 3/9      | 4/4            | 1/4      | 6/8              | 1/3      |
| Nízke Tatry NP            | hard         | 4/5                   | 9/9      | 4/4            | 3/4      | 6/8              | 2/3      |
| Tatra NP                  | hard         | 2/5                   | 6/9      | 2/4            | 3/4      | 3/8              | 2/3      |
| Eastern Carpathians PLA   | soft         | 3/5                   | 7/9      | 1/4            | 1/4      | 3/8              | 0/3      |
| Horná Orava PLA           | hard/soft    | 4/5                   | 9/9      | 3/4            | 2/4      | 8/8              | 1/3      |
| Vihorlat PLA              | soft         | 3/5                   | 4/9      | 2/4            | 1/4      | 1/8              | 0/3      |
| Latorica PLA              | soft         | 3/5                   | 2/9      | 3/4            | 1/4      | 4/8              | 1/3      |
| Záhorie PLA               | soft         | 0/5                   | 1/9      | 4/4            | 1/4      | 4/8              | 0/3      |
| Poľana PLA                | soft         | 0/5                   | 1/9      | 2/4            | 1/4      | 1/8              | 1/3      |
| Biele Karpaty PLA         | soft         | 5/5                   | 3/9      | 4/4            | 2/4      | 7/8              | 2/3      |
| Kysuce PLA                | soft         | 3/5                   | 5/9      | 1/4            | 0/4      | 3/8              | 0/3      |
| Ponitrie PLA              | hard         | 5/5                   | 5/9      | 4/4            | 4/4      | 4/8              | 1/3      |
| Strážovské vrchy Mts. PLA | soft         | 3/5                   | 6/9      | 1/4            | 0/4      | 7/8              | 0/3      |
| Cerová vrchovina PLA      | soft         | 3/5                   | 4/9      | 0/4            | 0/4      | 0/8              | 0/3      |

Analysis of the survey results (Table 2, Figure 3) shows that tourism in the protected areas had the strongest impact on:

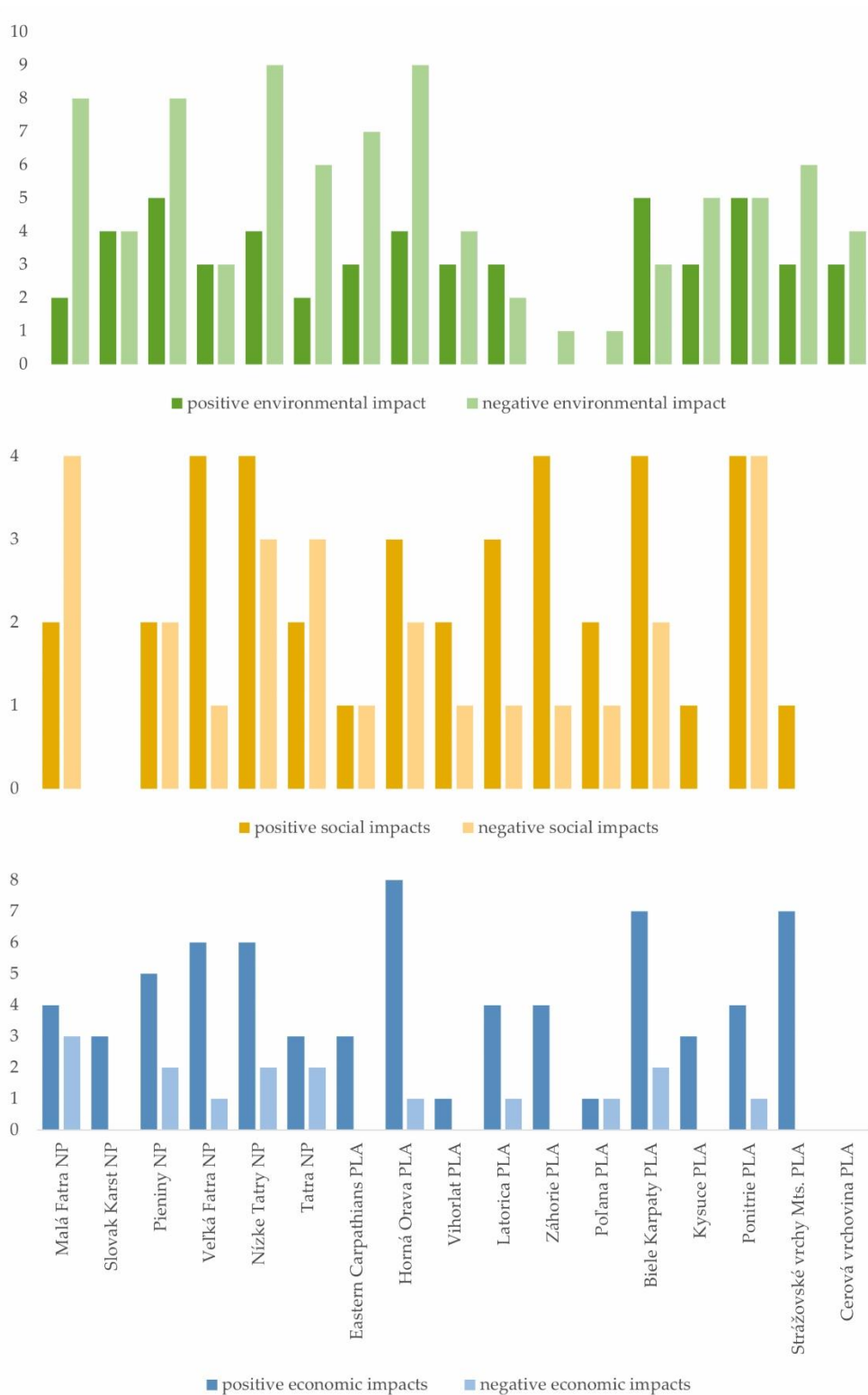
- Increase in waste production (88%);
- Informing local people about the value of the natural and cultural heritage (76%);
- Education and interpretation of the values of natural and cultural heritage to visitors (71%);
- Causing a conflict of interest in doing business using natural resources (71%);
- Disruption and destruction of natural habitats (59%).

The minimal impact of tourism in the protected areas was assigned to the following statements:

- Tourism causes a leakage of profits outside the region (18%);
- Tourism reduces the cohesion of local communities (24%);
- Tourism displaces local people in favor of tourism development (29%);
- Tourism supports protected areas with funding (29%);
- Tourism reduces local migration (29%).

Increase in the waste production was assessed as the most significant negative impact of tourism in protected areas of Slovakia. This finding is in accordance with previous studies (e.g., [74]) where the increase in the volume of waste produced was assigned as one of the main negative impacts related to touristic activities on protected areas.

According to Saviano et al. [75], protected areas represent a way to promote sustainability. Based on this, D'Arco et al. [76] argue that specific educational programs should be adopted to engage different actors in pro-environmental behavior and develop communication strategies.



**Figure 2.** Numbers of positive and negative impacts of tourism identified in protected areas of Slovakia.

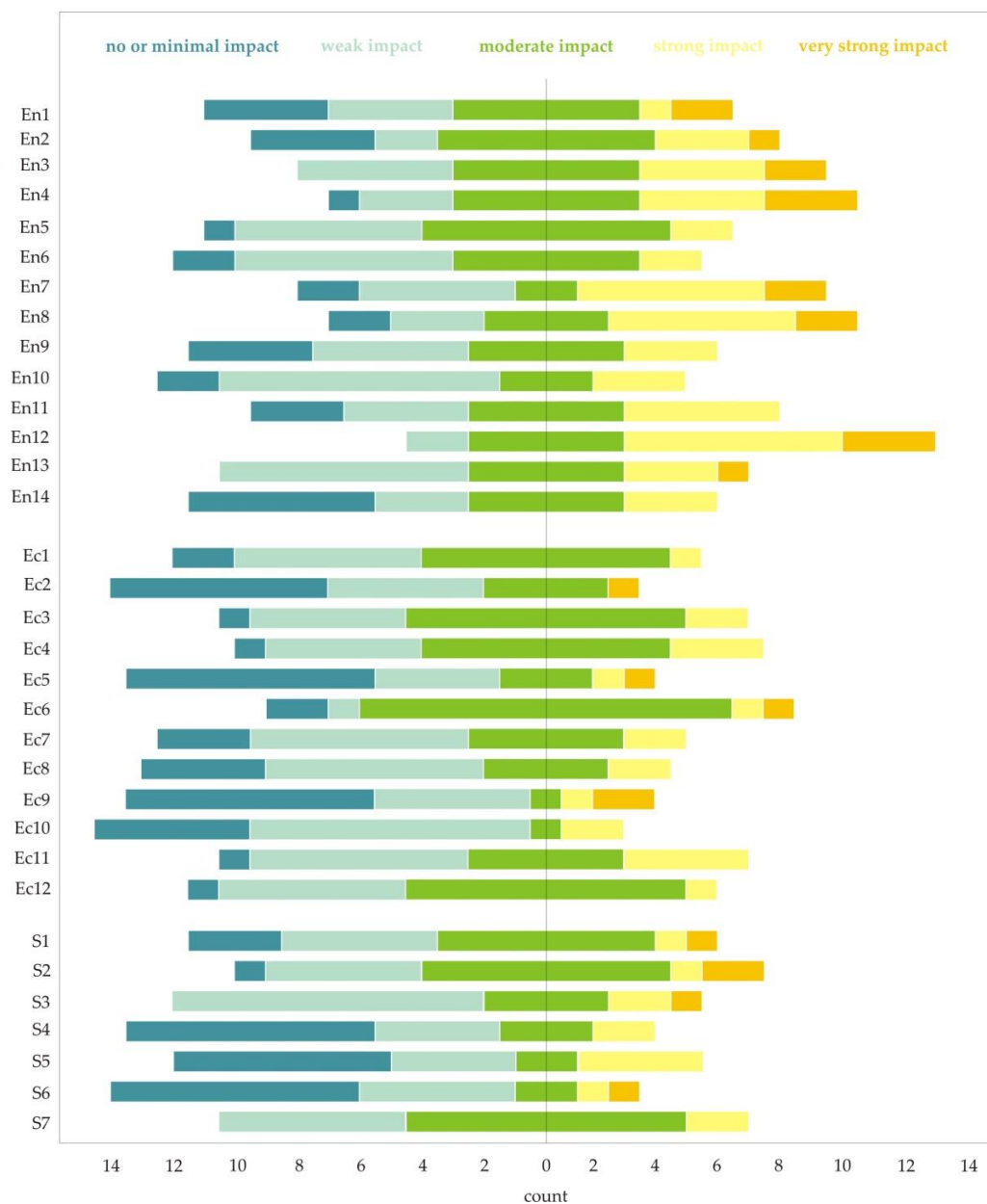


Figure 3. Visualization of the assessment of the impacts of tourism in protected areas.

Table 2. Assessment of the impacts of tourism in protected areas as perceived by their administrations.

| Statements on Tourism Impact in Protected Areas   | Importance |   |   |   |   | Average |
|---|------------|---|---|---|---|---------|
|   | 1          | 2 | 3 | 4 | 5 |         |
| Tourism protects and preserves the natural and cultural heritage                        | 4          | 4 | 6 | 1 | 2 | 2.59    |
| Tourism increases the aesthetic value of the area                                       | 4          | 2 | 7 | 3 | 1 | 2.71    |
| Tourism educates and interprets the values of natural and cultural heritage to visitors | 0          | 5 | 6 | 4 | 2 | 3.18    |
| Tourism informs local people about the value of natural and cultural heritage           | 1          | 3 | 6 | 4 | 3 | 3.29    |
| Tourism provides greater care for the environment                                       | 1          | 6 | 8 | 2 | 0 | 2.65    |
| Tourism reduces the diversity of flora and fauna  | 2          | 7 | 6 | 2 | 0 | 2.47    |
| Tourism disrupts and destroys natural habitats  | 2          | 5 | 2 | 6 | 2 | 3.06    |
| Tourism causes a conflict of interest in doing business using natural resources         | 2          | 3 | 4 | 6 | 2 | 3.18    |
| Tourism decreases water and air quality   | 4          | 5 | 5 | 3 | 0 | 2.41    |
| Tourism increases noise level   | 2          | 9 | 3 | 3 | 0 | 2.41    |
| Tourism causes an increase in soil erosion  | 3          | 4 | 5 | 5 | 0 | 2.71    |
| Tourism increases waste production  | 0          | 2 | 5 | 7 | 3 | 3.65    |
| Tourism causes traffic congestion   | 0          | 8 | 5 | 3 | 1 | 2.82    |
| Tourism causes the loss of natural landscape and agricultural land                      | 6          | 3 | 5 | 3 | 0 | 2.29    |

Table 2. Cont.

| Statements on Tourism Impact in Protected Areas               |  | Importance |    |    |   |      | Average |
|---|--|------------|----|----|---|------|---------|
|   |  | 1          | 2  | 3  | 4 | 5    |         |
| Economic  | Tourism creates new job opportunities  | 2          | 6  | 8  | 1 | 0    | 2.47    |
|   | Tourism reduces the migration of local people  | 7          | 5  | 4  | 0 | 1    | 2.00    |
|   | Tourism is an opportunity to engage in the entrepreneurial activities of local people                              | 1          | 5  | 9  | 2 | 0    | 2.71    |
|   | Tourism supports the development of crafts and local production of goods   | 1          | 5  | 8  | 3 | 0    | 2.76    |
|   | Tourism supports protected areas with funds  | 8          | 4  | 3  | 1 | 1    | 2.00    |
|   | Tourism uses the local workforce and its expertise   | 2          | 1  | 12 | 1 | 1    | 2.88    |
|   | Tourism stimulates investment in public and civic infrastructure   | 3          | 7  | 5  | 2 | 0    | 2.35    |
|   | Tourism improves the quality of life of local people   | 4          | 7  | 4  | 2 | 0    | 2.24    |
|   | Tourism increases the cost of living of local people   | 8          | 5  | 1  | 1 | 2    | 2.06    |
|   | Tourism causes leakage of profits outside the region   | 5          | 9  | 1  | 2 | 0    | 2.00    |
|   | Tourism increases the cost of road maintenance, the transport system, and additional infrastructure                | 1          | 7  | 5  | 4 | 0    | 2.71    |
| Tourism increases people's participation in local development | 1  | 6          | 9  | 1  | 0 | 2.59 |         |
| Social  | Tourism contributes to the preservation of local traditions and customs  | 3          | 5  | 7  | 1 | 1    | 2.53    |
|   | Tourism builds local patriotism  | 1          | 5  | 8  | 1 | 2    | 2.88    |
|   | Tourism changes the image of the region into a more attractive one   | 0          | 10 | 4  | 2 | 1    | 2.65    |
|   | Tourism displaces local people in favor of tourism development   | 8          | 4  | 3  | 2 | 0    | 1.94    |
|   | Tourism causes stress to locals  | 7          | 4  | 2  | 4 | 0    | 2.18    |
|   | Tourism reduces the cohesion of local communities  | 8          | 5  | 2  | 1 | 1    | 1.94    |
|   | Tourism increases the interest of locals mainly in the economic perspective compared to the protection of the area | 0          | 6  | 9  | 2 | 0    | 2.76    |

1—no or minimal impact, 2—weak impact, 3—moderate impact, 4—strong impact, 5—very strong impact.

The results of the survey indicate that the financial support of protected areas via tourism was one of the less perceived impacts of tourism by the protected area administrations. This finding is in contrast to other findings, e.g., by Buckley [77] who notes that tourism generates substantial financial support for conservation in protected areas. This is probably the result of the fact that, in Slovakia, only recent activities have widely reflected the support of nature conservation via tourism as, e.g., “Nature Protection Programme” launched in 2020 and financially supported by the Environmental Fund. One part of this programme is directly devoted to the infrastructure and support of sustainable tourism forms. Wiezik et al. [78] mention that the existing system of protected areas can be beneficial for regional economies for several reasons. Protected areas offer opportunities for regional economic development, with many of the benefits remaining in the local community and region. The example of the Bavarian Forest National Park in Germany shows that incomes from tourism can significantly exceed traditional forestry and wood processing incomes and direct employment can double [79,80]. Local development based on nature protection enables the diversification of the economy. An economy based on the consistent protection of valuable areas and sensitively regulated tourism can be viable and profitable in the long run because its implementation does not deplete resources [78].

A one-way analysis of variance ANOVA was applied to compare (1) the differences between the responses of the PLA administrations and NP administrations, and (2) between the groups of protected areas where soft forms of tourism predominate and groups where hard forms of tourism predominate. The ANOVA results show that there were statistically significant differences between the PLA administrations and the NP administrations, although these differences represented only 12% of the total number of possible differences.

Based on these results (Table 3), it can be concluded that the administrations of PLAs and NPs in Slovakia perceived the impacts of tourism similarly. Statistically significant differences were observed within the assessment of the following statements:

- Tourism causes traffic congestion;
- Tourism causes a leakage of profits outside the region;
- Tourism increases the cost of road maintenance, transport systems, and additional infrastructure;
- Tourism displaces local people in favor of tourism development.

These negative impacts of tourism were more intensively perceived by the administrations of NPs, where, in the majority of these protected areas, the tourism infrastructure is developed at a higher level and compared to many PLAs, a much higher number of visitors is present per year which is directly connected to traffic congestion, an increase

in road maintenance, the transport system, and additional infrastructure. In some cases, the tourism development initiatives of investors coming from outside the territory of the protected area may lead to the displacement of local people, (e.g., as a result of extensive land acquisition or an increased number of “foreign” people including, e.g., builders or visitors and the subsequent loss of the original character of the area) and a leakage of profits outside the region. In this regard, Andries et al. [81] highlight the importance of ensuring that both the social and economic benefits of tourism flow to the communities, as well as the environmental conservation. They emphasize the need for a plan, discussed within the communities to consider all possible stakeholders and social actors and to minimize future conflicts to guarantee the correct implementation of a possible tourism development in the protected area. However, several studies [82–84] from various regions of the world indicate that protected areas fail to create positive links with local people. Poorly planned tourism in protected areas may cause serious negative impacts on the natural and social environment. Planning should be based on the principles of sustainable tourism [85] so that tourism contributes to the environmental, economic, and social development of protected areas that are tourist destinations [86,87].

In Slovakia, according to the most recent Tourism Development Strategy [88], the long-term conservation and sustainable use of natural resources is one of its essential parts, as an attractive environment is a significant force in the development of tourism. One of the tasks of is the creation of tourism products using the natural potential of the country with regard to the limits according to the protection status. In this context, the strategy defines the elaboration of the methodology of carrying the capacities of the territories of individual regions and the creation of the principles of the development of sustainable tourism in protected areas. Another intention in the framework of competitiveness is the creation of specific regional tourism products with a focus on soft forms of tourism, experience programs for visitors, typical local activities, and the creation and maintenance of quality educational trails. No further attention is paid to a more specific explanation, nor to efforts to, for example, support local artisans small and medium-sized enterprises, and the multiplier effect of tourism. Slovakia lacks a financial mechanism to support small/start-ups providing products and services based on sustainability or entrepreneurial activity in less developed regions.

**Table 3.** Results of analysis of variance (ANOVA) analyzing the differences between the NP and PLA administrations’ assessment of statements on the impacts of tourism in protected areas.

| Statements on Tourism Impact in Protected Areas               |   | F        | p Value  |
|---|---|----------|----------|
| Environmental   | Tourism protects and preserves the natural and cultural heritage                                    | 0.041577 | 0.841169 |
|   | Tourism increases the aesthetic value of the area   | 0.254825 | 0.621033 |
|   | Tourism educates and interprets the values of natural and cultural heritage to visitors             | 1.064909 | 0.318451 |
|   | Tourism informs local people about the value of natural and cultural heritage                       | 1.509774 | 0.238103 |
|   | Tourism provides greater care for the environment   | 0.310688 | 0.585481 |
|   | Tourism reduces the diversity of flora and fauna  | 0.217263 | 0.647830 |
|   | Tourism disrupts and destroys natural habitats  | 1.077013 | 0.315808 |
|   | Tourism causes a conflict of interest in doing business using natural resources                     | 0.619524 | 0.443483 |
|   | Tourism decreases water and air quality   | 1.500893 | 0.239424 |
|   | Tourism increases noise level   | 0.668689 | 0.426308 |
|   | Tourism causes an increase in soil erosion  | 3.448586 | 0.083051 |
|   | Tourism increases waste production  | 0.003853 | 0.951324 |
|   | Tourism causes traffic congestion   | 6.223529 | 0.024763 |
|   | Tourism causes the loss of natural landscape and agricultural land                                  | 2.147319 | 0.163465 |
| Economic  | Tourism creates new job opportunities   | 0.011765 | 0.915064 |
|   | Tourism reduces the migration of local people   | 0        | 1        |
|   | Tourism is an opportunity to engage in the entrepreneurial activities of local people               | 0.022480 | 0.882814 |
|   | Tourism supports the development of crafts and local production of goods                            | 0.121872 | 0.731865 |
|   | Tourism supports protected areas with funds   | 0.162731 | 0.692346 |
|   | Tourism uses the local workforce and its expertise  | 1.055525 | 0.320521 |
|   | Tourism stimulates investment in public and civic infrastructure                                    | 1.941176 | 0.183845 |
|   | Tourism improves the quality of life of local people  | 0.929155 | 0.350366 |
|   | Tourism increases the cost of living of local people  | 6.257669 | 0.024432 |
|   | Tourism causes leakage of profits outside the region  | 5.543125 | 0.032599 |
|   | Tourism increases the cost of road maintenance, the transport system, and additional infrastructure | 0.141176 | 0.712375 |
| Tourism increases people’s participation in local development | 1.105151  | 0.30978  |          |



Table 3. Cont.

| Statements on Tourism Impact in Protected Areas |  | F        | p Value  |
|---|--|----------|----------|
| Social  | Tourism contributes to the preservation of local traditions and customs  | 1.075638 | 0.316106 |
|   | Tourism builds local patriotism  | 2.800667 | 0.114945 |
|   | Tourism changes the image of the region into a more attractive one   | 0.003853 | 0.951324 |
|   | Tourism displaces local people in favor of tourism development   | 5.206643 | 0.037519 |
|   | Tourism causes stress to locals  | 2.931815 | 0.107439 |
|   | Tourism reduces the cohesion of local communities  | 4.053494 | 0.062384 |
|   | Tourism increases the interest of locals mainly in the economic perspective compared to the protection of the area | 0.191816 | 0.667651 |

Note:  $F_{crit} = 4.4531$ , if  $F > F_{crit}$  we reject the hypothesis that the means of both populations are equal; there is a statistically significant difference between compared group means.

Due to the geographical and geological diversity and richness of Slovakia, the potential of geoparks and geotourism in particular was highlighted in the strategy. According to the document, the establishment of geoparks and their networks has three goals primarily:

- use of the natural heritage as an educational and training tool in geological and environmental sciences for the broadest parts of society;
- contribute to the sustainable development of the territory and its immediate surroundings;
- ensure an appropriate level of protection and preservation of the geopark content for future generations.

Achieving these goals, at least partially, may also lead to a positive change in the perception of the importance of the protection and preservation of natural values by the general public. This could be beneficial in finding compromise solutions for the development of tourism in NPs and PLAs in line with sustainable development.

However, as shown in Table 4, there are some key issues negatively affecting effective sustainable tourism development in protected areas in Slovakia.

The tourism development strategy draws sufficient attention to the use and protection of natural resources. From a broader international perspective, it recalls the adoption of the Framework Convention on the Protection and Sustainable Development of the Carpathians (Carpathian Convention) [89] and the associated regional development (better quality of life, strengthening local economies and communities, and the protection of natural and cultural heritage). More than 70% of the territory of the Slovak Republic belongs to the Carpathian region and the provisions of the Convention are highly relevant for this country. With its adoption, Slovakia has made certain commitments in terms of tourism as a prerequisite for sustainable development. Cooperation between the Ministry of the Environment and the tourism sector in addressing the issues of sustainable tourism development is also a positive step towards sustainable tourism development.

Despite the presence of various cultural–historical heritage in protected areas of Slovakia, the tourism development strategy has little interest in the use and protection of this heritage, compared to the sufficient attention paid to the natural environment. For example, there is no list of necessary activities for the repair and reconstruction of historic buildings, or the goal of strengthening their attractiveness and making them accessible to the public. Hsu et al. [90] conclude that tourists are attracted by various features of the visited place, including natural and ecological features, well-planned transportation, and unique local culture and events, but are usually deterred by poor recreational facilities and architectural planning, merchandise lacking characteristics, high tourist consumer expenditure, smoke and pollution from motor vehicles, and unpleasant encounters with locals.

A key step in the development of sustainable tourism in the area is the cooperation of private and public sector entities and the local population (public private partnership—PPP) [91,92] and the related education of the local population which unfortunately is also not addressed in protected areas of Slovakia.

According to Gúčik et al. [93], the success and attractiveness of a country as a tourist destination depends on the following three points: (1) successful tourism businesses, (2) perfect competitiveness, and (3) sustainable tourism development.

**Table 4.** Overview of the major deficiencies within valid documents and legislation on tourism development and nature protection in Slovakia.

| Text from the Examined Document   | System Deficiencies, Valid Legislation of the Slovak Republic  |
|---|--|
| Creating job positions in tourism   | Guides:<br>Act no. 543/2002 Coll. on Nature and Landscape Protection: § 65a—guide activities in protected areas should be performed only by the SOP SR.<br>Act 544/2002 Coll. On the Mountain Rescue Service limits the possibilities of escorting in mountain and alpine environments by introducing sections on mountain guides<br>Act no. 170/2018 Coll. on Tours—guiding anywhere: guides in tourism must have a tied trade.<br>Act 326/2005 Coll. on Forests—the consent of the owner in the protected areas for the permission of the guide. |
| In cooperation with the Ministry of the Environment to address issues of sustainable tourism development  | Insufficient influence of the Ministry of the Environment of the Slovak Republic on the functioning of state administration bodies for nature and landscape protection.  |
| Creation of tourism products using the natural potential of the country with regard to the limits of areas requiring protection   | Act no. 543/2002 Coll. on Nature and Landscape Protection does not allow movement outside the marked hiking trails from the third degree of protection, movement at night and sleeping in nature (consent of the nature protection authority—ambiguity of the system—which factor actually decides the given proceedings).   |
| Geotourism and geoparks support   | The majority of geosites are not listed in the national parks management plan, nor in their educational publications and promotional materials.  |
| Conservation legislation rarely concerns geoconservation, due to a lack of awareness of geodiversity and recognition of the link between biotic and abiotic elements and processes. | The inventory of geosites in Slovakia does not identify their potential use for education or geotourism.   |
| Elaboration of the methodology of the bearing capacities of individual regions and the creation of principles of development of sustainable tourism in protected areas.             | Missing methodology for monitoring, zoning in protected areas, and setting limits, regulations as a basis for defining the visitor carrying capacity of localities—administrations of protected areas are only one of the organizational units of SOP SR, without land management, without real powers, and without its own budget, and undersized; lack of a concept for networking and cooperation between nature conservation institutions and tourism operators.   |

For this reason, it should be a matter of course that the tourism development strategy first clearly identifies the issues of sustainable tourism development. In connection with this, activities are also intended to reduce or eliminate them. In general, when drawing up concept papers, it is extremely important that they focus on all three dimensions of sustainable tourism [94], including the environmental, socio-cultural, and economic dimensions. Thus, the principles of sustainable tourism are becoming increasingly incorporated into the strategic planning documents of various destinations [95]. Attention needs to be paid to increasing the positive social, economic, and environmental impacts of tourism on the natural and cultural heritage and local people and eliminating negative impacts [29–31]. Informing and educating visitors about the effects of their behavior on the environment also plays an key role. To achieve the goals of sustainable tourism, Šaparnienė et al. [96] highlight the need for a more active dissemination of information and involvement of young people. Additionally, Zheng et al. [97] point out the importance of transforming environmental education into environmental behavior. Similarly, informing local people about the possibilities of conserving resources for future generations is important. The direction of the protection and sustainable use of natural and cultural heritage depends on the decisions of the authors of the strategies and other stakeholders in tourism; therefore, their competence is also a justified element. However, it is important to note, as concluded by Marinello et al. [98] that, despite the great interest of researchers, progress in the development of sustainable tourism is slow and fragmented in territories. Table 5 summarizes the mentioned necessary tasks, in terms of shortcomings in what has been proposed in the recent sustainable tourism development strategy in Slovakia.

**Table 5.** Sustainable development of tourism according to the Tourism Development Strategy until 2020 and its shortcomings.

| Text from the Tourism Development Strategy until 2020   | Shortcomings   |
|---|--|
| Creation of job positions in tourism  | Lack of support for job position creation, support for local craftsmen, and small and medium-sized enterprises.  |
| Creation of tourism products focusing on soft tourism forms and typical local activities  | Lack of interest in the use and protection of cultural heritage—a list of necessary activities for the repair and reconstruction of historic buildings, the goal of strengthening their attractiveness and making them accessible to the public.   |
| Creation of tourism products using the natural potential of the territory with respect to the limits of areas requiring protection                                      | Insufficient informing and educating visitors about the effects of their behavior on the environment and informing local people about the possibilities of conserving resources for future generations;<br>No or insufficient education for employees and the local population on sustainable tourism and cooperation between private and public sector entities and the local population. |
| Elaboration of the methodology of the bearing capacities of individual regions and the creation of principles of development of sustainable tourism in protected areas. | No identification of problems of sustainable tourism development and activities to reduce or eliminate them.<br>Lack of focus on increasing the positive social, economic, and environmental impacts of tourism on the natural and cultural heritage and local people and eliminating negative impacts.  |

## 5. Conclusions

This paper analyzed the perception of the impacts of tourism in Slovak protected areas by their administrations, based on the assessment of specific statements on the impacts of tourism using a five-point Likert scale, and the results were put within the context of the sustainable tourism development strategy in the country.

The survey results showed that the most significant tourism impacts in NPs and PLAs included an increase in waste production, informing local people about the value of the natural and cultural heritage, the education of visitors, the conflict of interest using natural resources when doing business in a protected area, and the destruction of natural habitats. In general, it can be concluded that the status of large-scale protected area does not play a role in the perception of the impacts of tourism. Administrations of both NPs and PLAs perceived tourism impacts similarly. Among 33 statements on tourism impacts in protected areas, only 4 were perceived differently in NPs and PLAs.

The impacts of tourism, both positive and negative, significantly affect sustainable tourism development. The findings presented in this paper show that for sustainable tourism development, linked to maximizing positive tourism impacts and minimal or no negative tourism impacts, systemic and legislative changes are required. Adopted measures should effectively eliminate the shortcomings and system deficiencies listed in this paper in Tables 4 and 5.

The findings presented in this paper may contribute to future research in this field, especially in the territory of Slovakia, and may contribute to mutual effective cooperation between the academic, public, and private sectors.

The results of the study presented in this paper include the perception of tourism impacts in protected areas from one country only. Additionally, administration of six protected areas (three NPs and three PLAs) did not participate in the survey. A larger number of responses will increase the credibility of presented results.

In various countries, the results of such a study may significantly differ depending on various variables, including, e.g., legislation, tourism development strategy, visitors, etc. However, the findings of such studies from various countries may be source of valuable information and of high importance for tourism development in protected areas under specific conditions.

**Author Contributions:** Conceptualization, L.Š., J.K., B.K., C.S. and M.L.; methodology, J.K.; formal analysis, L.Š. and M.L.; investigation, J.K.; resources, B.K.; data curation, L.Š. and J.K.; writing—original draft preparation, J.K. and L.Š.; writing—review and editing, L.Š. and B.K.; supervision, L.Š. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research received no external funding.

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Oral consent was obtained from all subjects involved in the study.

**Data Availability Statement:** The data that support the findings of this study are available from the corresponding authors upon reasonable request.

**Conflicts of Interest:** The authors declare no conflict of interest.

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