The Current Situation of Tourism in the Countries of the Visegrad Four and Their Connection to Sustainability Expressed by Selected Indexes

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Abstract. Through tourism, countries can make their cultural heritage available to the whole world. It offers job opportunities and brings money to the regions but can also damage culture, monuments, and the environment. The object of the tourism industry is to strive for the sustainable competitiveness of the tourism industry in addition to making a profit. Economic, social, cultural, and environmental development must reconcile economic growth with sustainable development. The structure of the paper consists of an introduction, a methodology containing the work process, which was presented, the theoretical starting points of tourism and the results of the work, where our main objective was to identify the current situation of tourism in the Czech Republic, Hungary, Poland, and the Slovak Republic and identify the environmental and economic performance of four countries in connection with the eco-innovation index, the environmental performance index, and an overall score according to sustainable development goals.

Keywords: Tourism, Tourism Sustainability, V4 Countries

JEL classification: *O10, L80, L83*

1   Introduction

Due to its uniqueness, tourism of countries of the Visegrad Four, represented by the Czech Republic, Hungary, Poland, and the Slovak Republic, attracts many tourists

yearly. Their fascinating nature, uniqueness of different cultures, historical monuments, and cultural experience in the form of traditional cuisine have become their main attraction. However, it is essential to note that tourism is destroying natural biodiversity. The mentioned fact can be seen as a paradox, given that tourism depends on natural beauty. According to the UNWTO (2023), tourism should fully account for its current and future economic, social, and environmental impacts, which are also linked to the needs of visitors, the environment, host communities and industry. Considering the sustainability of environmental quality, economic growth and consumption, tourism sustainability is among the most critical topics.

2 Methodology

In the results of this study, we focused on identifying the current situation of tourism in V4 countries - the Czech Republic, Hungary, Poland, and the Slovak Republic, where we used available data from Eurostat. The main objective of this study is to identify the current situation of tourism and to evaluate the sustainable development of tourism in V4 expressed by the selected indexes. We used analysis, synthesis, comparison, data prediction, and graphic display for an understandable presentation. We predict the possible development of the number of tourists and visitors in the monitored countries from March 2023 to August 2023, when the number of visitors should peak, and we expect the peak of the tourist season. The data were identified for January 2021 - February 2023, where, in addition to the number of arrivals to tourism facilities in selected countries, we also identified and predicted the number of nights spent in those accommodation facilities. We identified the time series, stationarity and trend of selected data obtained from Eurostat in the period January 2021 - February 2023 for visits and the number of nights spent in accommodation facilities of the V4 countries and, using the Exponential smoothing model, we identified the properties, cyclicality, seasonality, and series of data, where we attempted to predict the upcoming semi-annual cycle based on weighted averages of previous observations. To approximate the current situation of the countries in connection with sustainability, in the results of the work, we also pointed out the situation in indicators such as the Environmental Performance Index and the Eco-innovation Index. We also pointed out the current situation of fulfilling the seventeen sustainable goals. At the end of the paper, we brought the evaluation of the examined data.

3 Theoretical background

Tourism has significantly contributed to the economy of many communities worldwide due to its ability to generate income and employment. We are seeking new forms of tourism planning, management, and development. Although tourism is a source of significant economic benefits, its unplanned growth has contributed significantly to environmental degradation and negative social-cultural impacts. These undesirable side effects have raised concerns about conserving and preserving natural resources, human well-being, and long-term economic viability (Álvarez-García et al., 2018). That is why

the sustainability of tourism is a crucial area of its future. It is essential to mention that the issue of tourism sustainability is increasingly in demand. Author Han (2021) considers environmental sustainability the main topic of contemporary tourism because he believes that environmentally sustainable consumer behaviour is essential for protecting the environment. According to Palacios-Florencio and others (2021), tourist destinations mustn't be overcrowded. Nowadays, the author even considers it as a significant factor. According to the authors Janusz and Bajdor (2013), tourism has no negatives. However, let's turn our attention to the vital tourism industry. The authors believe this industry can significantly worsen the environment and negatively affect the local community.

Due to the arrival of hundreds of tourists to the destination, there is a possibility that the tourists will bring something unknown to the destination, for example, it may cause obesity or other problems for the community (Janusz and Bajdor, 2013). Since tourism is closely related to the environment, the authors Díaz and Gutiérrez, (2010) believe environmental protection is essential. Yang et al. (2023) highlight the importance of maintaining a high level of consumer satisfaction, significantly raising awareness of sustainability issues, and expanding strategies that ensure sustainability. To ensure sustainability, we must balance the needs of society's environmental, economic, and social sectors. The importance of tourism sustainability is reflected in environmental protection, economic benefits and socio-cultural protection (Yang et al., 2023). According to the Global Sustainable Tourism Council (2022), sustainable tourism includes sustainable practices that seek to identify the impacts of tourism, with the primary objective of minimizing negative and maximizing positive impacts. It should be noted that responsible travel refers to the behaviour of individual travellers who seek to make choices in line with sustainable tourism practices.

Tourism has a long tradition of sustainability-related initiatives, and different indexes or indicators measuring the environment's situation point to its connection with influencing the current and future state. The sector can be credited with moving quickly from its initial focus on economic benefits to a position of recognizing its broader sustainability implications.

The weight of indicators is a significant issue when measuring the sustainability of tourism. Its importance stems from the fact that the weights can significantly impact the evaluation of the analyzed regions and subsequent policymaking (Mikulic et al., 2015).

Long-term economic and environmental health points to the quality of the environment. V4 countries are constantly developing in this area, although, according to the author, tourism sustainability assessment indicators need to be more applicable. It needs to be sufficiently explored.

Table 1. Selected destination Indicators

Criteria	Indicator	Unit of Measure
Sustainable Tourism Management in Tourism Enterprises	Percentage of tourism enterprises/establishments in the destination using a voluntary certification/labelling for environmental/quality/sustainability and/or Corporate Social Responsability measures	%
Tourism Flow at the Destination	Number of tourist nights per month	Number of nights
	Relative contribution of tourism to the destination's economy (% GDP)	%
	Daily spending per overnight tourist	Local currency
Tourism Enterprise Performance	Average length of stay of tourists (nights)	Number of nights
	Occupancy rate in commercial accommodation establishments per month and average for the year	%
Inclusion/Accessibility	Percentage of rooms in commercial accomodation establishments accessible for people with disabilities	%
	Percentage of commercial accommodation establishments participating in recognised accessibility information schemes	%
	Percentage of public transport that is accessible to people with disabilities and with specific access requirements	%
Protecting and Enhancing Cultural Heritage, Local Identity and cultural Assets	Percentage of residents that are satisfied with the impacts of tourism on destination's identity	%
	Percentage of the destination's events that are focused on traditional/local culture and heritage	%
Solid Waste Management	Waste production per tourist night compared to general population waste production per person (kilos)	kg
	Percentage of tourism enterprises separating different types of waste	%
	Percentage of total waste recycled per tourist compared to total waste recycled per resident per year	%
Sewage Treatment	Percentage of sewage from the destination treated at least at secondary level prior to discharge	%
Water Management	Water consumption per tourist night compared to general population water consumption per resident night	Litres
	Percentage of tourism enterprises taking actions to reduce water consumption	%
	Percentage of tourism enterprises using recycled water	%
Energy Usage	Energy consumption per tourist night compared to general population energy consumption per resident night	%, coefficient
	Percentage of tourism enterprises that take actions to reduce energy consumption	%
	Percentage of annual amount of energy consumed from renewable sources (Mwh) compared to overall energy consumption at destination level per year	%
Landscape and Biodiversity Management	Percentage of local enterprises in the tourism sector actively supporting protection, conservation, and management of local biodiversity and landscapes.	%

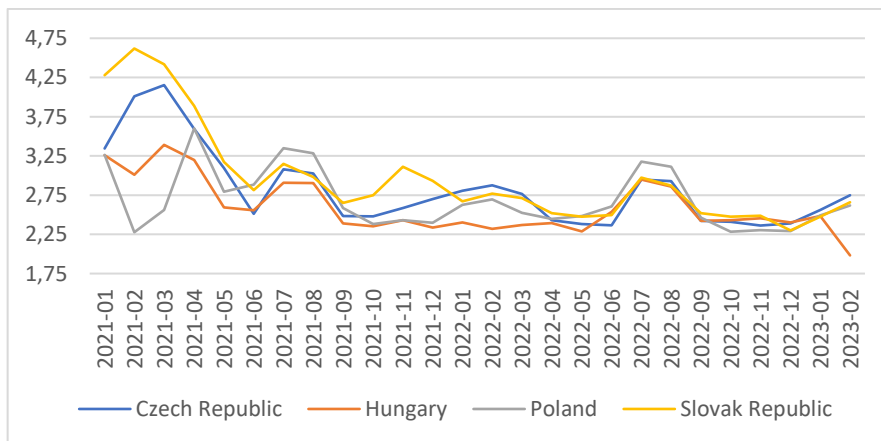Source: own processed based on the European Commission, 2016

4 Results

In this chapter, we identify the current situation of tourism in the countries of the Visegrad Four, the average number of nights spent by tourists, the prediction of the development of visitors and their number of nights spent, the development and forecast of arrivals and the number of nights spent by tourists in accommodation facilities for the period January 2021 - August 2023, Eco-innovation index, Epi Score and an overall score while achieving Sustainable Development Goals in connection with tourism.
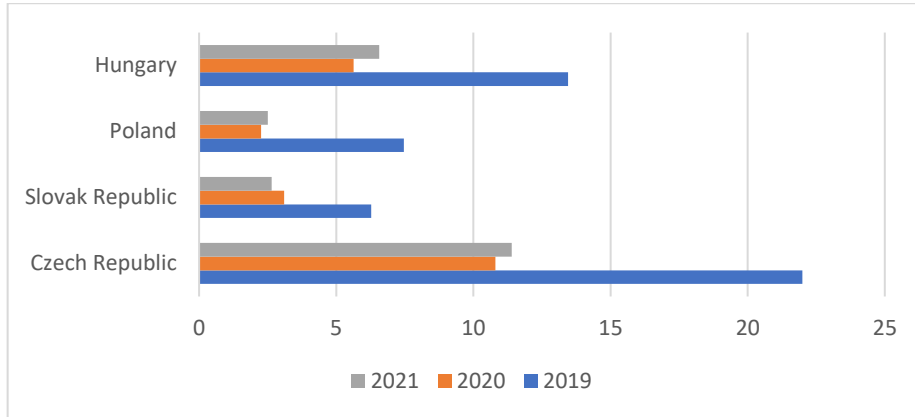
Graph 1. Number of arrivals in tourist accommodations the Visegrad Four, 2019-2021
Source: own processed based on the Statista, 2023

The graph 1. shows the number of arrivals in tourist accommodation in the Czech Republic, the Slovak Republic, Poland, and Hungary from 2019 to 2021. Values are expressed in millions. The last accessible data was available for 2021. The highest number of tourists was reached in 2019. The Czech Republic took the first place with a value of 22 million, Hungary took the second place with a value of 13.45 million, third was Poland with a value of 7.47, and fourth was the Slovak Republic with a value of 6.27. In 2020, the number of arrivals to the countries decreased. One of the main reasons was the pandemic caused by the Covid-19 disease. Pandemic measures have started to ease. The year 2021 brought better results as values started to rise again. The Czech Republic took the first place with a value of approximately 11 million. A significantly lower number of arrivals was recorded in Hungary, with a value of 6.57 million. The Slovak Republic moved to third place and reached a value of 2.64 million. The fourth place was occupied by Poland, which reached 2.51 million.

Graph 2. Average number of nights spent by tourists
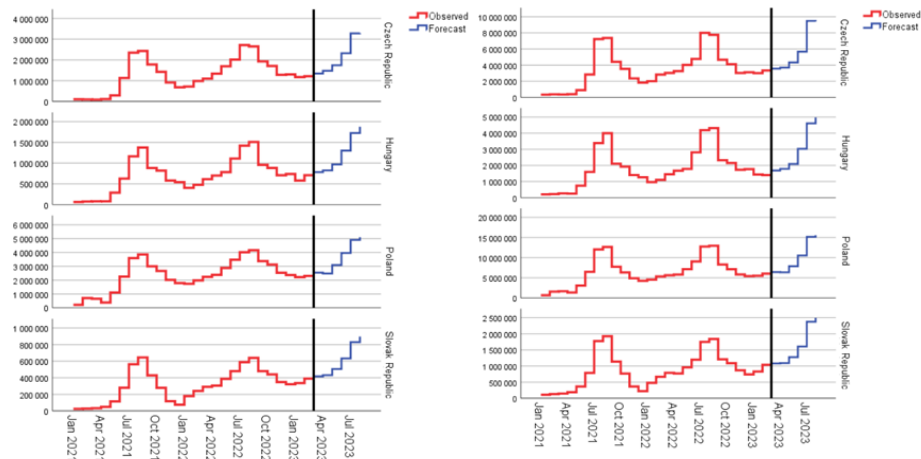Source: own processed based on the Eurostat, 2023

Graph 2. shows the average number of stays by tourists in V4 countries. In the monitored period of the last 26 months, tourists visiting the V4 countries spent an average of 2.5 - 3 nights in their facilities.

Table 2. Prediction of the development of visitors and their number of nights spent

TIME	Expected arrivals at accommodation facilities				Expected number of days spent in facilities			
	Czech Republic	Hungary	Poland	Slovak Republic	Czech Republic	Hungary	Poland	Slovak Republic
2023-03	1 344 544	781 101	2 542 539	416 496	3 566 377	1 687 417	6 420 076	1 080 965
2023-04	1 475 998	823 658	2 479 335	431 225	3 693 836	1 788 005	6 360 657	1 092 082
2023-05	1 743 624	968 762	3 088 871	505 216	4 333 040	2 090 665	7 880 433	1 274 917
2023-06	2 323 185	1 301 830	3 963 856	633 587	5 668 319	3 029 131	10 542 861	1 604 815
2023-07	3 281 669	1 725 294	4 905 838	829 306	9 482 633	4 606 956	15 165 357	2 372 946
2023-08	**3 289 102**	**1 876 518**	**5 108 297**	**896 112**	**9 419 401**	**4 977 092**	**15 573 535**	**2 492 066**

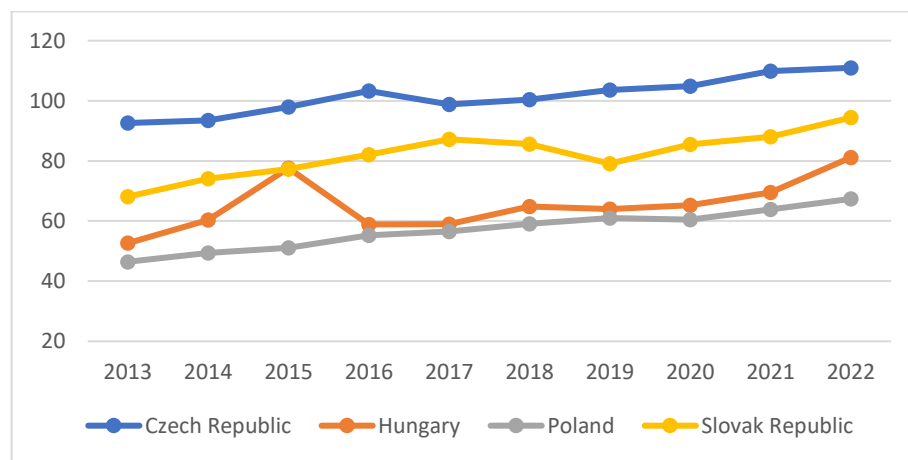Source: own processed based on the Eurostat, 2023

Table 2 shows our six-month statistical predictions for forecasting tourism development in the V4 countries. We can expect the season's peak in August, followed by a tourist decrease. This year, the biggest rush of tourists is expected since the outbreak of the Covid-19 pandemic.

Graph 3. Development and forecast of arrivals and the number of nights spent by tourists in accommodation facilities for the period January 2021 - August 2023
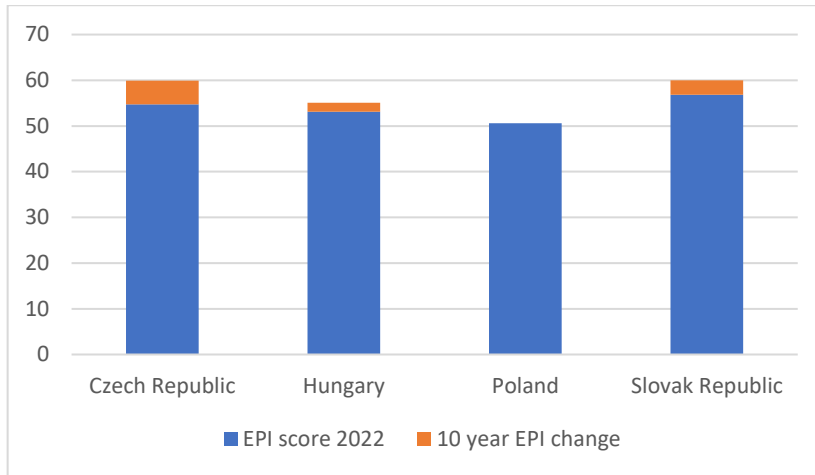Source: own processed based on the Eurostat, 2023

Graph 3. shows the development of visits and the number of nights spent in hotels, short-term accommodation, etc. We illustrated the development in January 2021 - February 2023 and subsequently predicted the development in the next six months. At the end of the forecasted period, the number of tourists should reach the annual peak. From the predicted values, we can conclude that this year, the peak of visits and the number of nights spent in accommodation facilities will be reached in all monitored countries. Among the monitored countries - the Czech Republic, Hungary, Poland and the Slovak Republic, the most popular tourist country is Poland, followed by the Czech Republic, Hungary, and the Slovak Republic.

Graph 4. Eco-innovation index
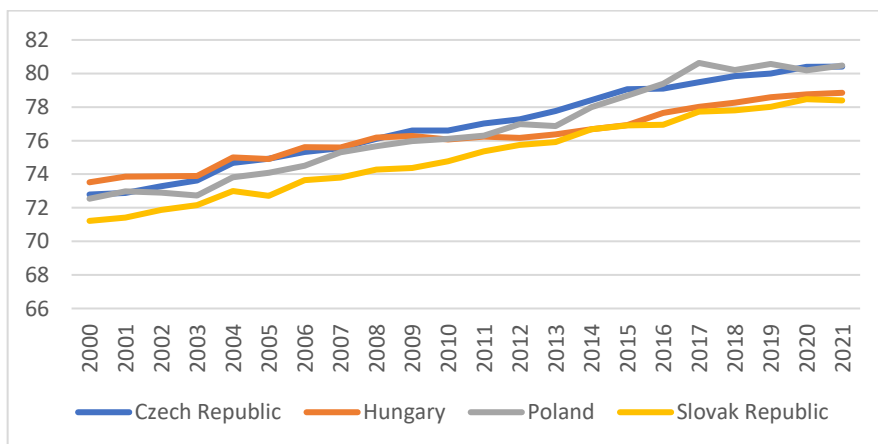Source: own processed based on the European Commission, 2023

The Eco-innovation index shows the performance of the V4 countries in the field of ecological innovation. Its task is to expand a holistic view of social, environmental, and economic performance. The indicator is based on sixteen sub-indicators in five thematic areas, which include socio-economic results, results of efficient use of resources, ecological innovation inputs, outputs, and activities. In this indicator, the Czech Republic took first place, ahead of Slovakia, Hungary and Poland. Ecological innovations impact the sustainability of tourism and its prosperity.

Graph 5. Epi Score
Source: own processed based on the epi.yale.edu, 2023

EPI as Environmental Performance Index shows a view of ecological innovations' economic, environmental, and social performance. The index serves as a tool for evaluating the performance of ecological innovations. The graph also shows the 10-year change, which is positive in Czech, Hungary, and the Slovak Republic. According to this indicator, there was no change in Poland. This index uses 32 performance indicators in 11 categories across the environment and the vitality of ecosystems. The index analyzes in-depth environmental performance by many categories and provides guidelines for moving towards a sustainable future related to tourism. The total score can reach a maximum value of 100. Among the V4 countries, the Slovak Republic was ranked best this year. Ranking: the Slovak Republic 18, the Czech Republic 19, Hungary 33 and Poland 46.

Graph 6. Overall score while achieving Sustainable Development Goals
Source: own processed based on the Sustainable Development Report, 2022

Graph 6. shows the overall score, which measures the incremental progress towards achieving all 17 Sustainable Development Goals. The tourism industry has an impact on the achievement of these SDGs. The score can be interpreted as a percentage of Sustainable Development Goals achievement. A score of 100 indicates that all SDGs have been achieved.

5   Conclusion

A high-quality and clean environment is the biggest attraction for tourists. However, it is necessary for the tourists themselves to feel responsible and take care of nature. Every individual should understand that this is a critical factor that can contribute to a better environment. The Czech Republic reached approximately 22 million arrivals in tourist accommodation, meaning it reached the highest number within the V4. In 2021, the Slovak Republic reached almost 3 million tourist arrivals. Hungary is the second most visited country, and Poland is the least visited country within the V4. Many tourists look for accommodation facilities in Poland and the Czech Republic. In Hungary and the Slovak Republic, the number of visitors who use accommodation for tourism is the lowest among the V4 countries. The size of countries and infrastructure, the number of monuments, the situation of the environment, country innovations and ecological prosperity influence this factor. Our results will serve for further research in this complex area of sustainability.

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