ASPECTS OF TOURISM PERFORMANCE IN V4 COUNTRIES UNDER THE INFLUENCE OF THE COVID 19 PANDEMIC FOR FUTURE MANAGEMENT AND QUALITY

Tünde DZUROV VARGOVÁ
The University of Prešov, Faculty of Management and Business, Department of Tourism and Hotel Management,
Konštantínova, Prešov, Slovakia, e-mail: tunde.dzurovvargova@unipo.sk

Daniela MATUŠÍKOVÁ[*]
The University of Prešov, Faculty of Management and Business, Department of Tourism and Hotel Management,
Konštantínova, Prešov, Slovakia, e-mail: daniela.matusikova@unipo.sk

Ivana ŠAFFOVÁ
The University of Prešov, Faculty of Management and Business, Department of Tourism and Hotel Management,
Konštantínova, Prešov, Slovakia, e-mail: ivana.saffova@smail.unipo.sk

Abstract: Tourism is a very dynamic industry and can change rapidly under the influence of various factors. This causes pressure for flexible solutions in terms of managing tourism at the national level and ensuring its quality, and thus its sustainable attractiveness for both domestic and foreign tourism. Tourism performance has changed significantly under the influence of the Covid-19 pandemic, and based on this, the aim of this paper was to analytically evaluate the development of tourism performance in the Visegrad Four countries. Based on the use of the approximation method and the regression method, it evaluates the performance in the period 2013-2021 (latest available data) with the TTCI and TTDI Indexes and predicts the possible performance for the next year 2023 under the influence of the aforementioned pandemic. The results of the study point to different performance within the four countries. The country with the most stable tourism management potential and potentially the best performance appears to be the Czech Republic, and the worst performing is the Slovak Republic.

Key words: Tourism, tourism management, V4 countries, tourism performance

* * * * * *

INTRODUCTION

Tourism is considered a sector with great potential worldwide (Kyrylov et al., 2023), and service quality is perceived as a key strategy for its sustainable development (Alhazmi, 2018). Published studies by authors De Bernardi and Arenas (2022) and Gburová et al., (2023) have demonstrated that countries in developing regions (Hronec et al., 2022), such as the Visegrad Group countries, need an effective business environment for the growth of their economies and achieving positive economic indicators (De Bernardi and Arenas, 2022; Gburová et al., 2023). According to research from the World Bank Group (2022), components of an effective business environment include stable political and legal conditions, a friendly business environment, and access to financing. Another study highlights the importance of investments in infrastructure, education, and innovation as key factors for economic growth in the V4 countries (Mátyás et al., 2020; Mura and Stehlikova, 2023). These studies indicate that successful economic development requires a comprehensive approach that includes not only internal reforms but also cooperation and integration at the regional and international levels (Gallo et al., 2019; Volchek et al., 2020). In this context, tourism becomes an important tool for economic development (Bazargani and Kiliç 2021) and is supported not only by the private sector but increasingly also by government initiatives and policies (Kozmenko et al., 2015).

Management of tourism in individual countries varies, with each country striving to develop its unique strategies and approaches (Kumar and Dhir, 2020; Ministry of Transport of the Slovak Republic, 2020; Beresecká and Svetlíková, 2022; Gburová and Lukáč 2023). Tourism requires a comprehensive and multidisciplinary approach (Banerjee et al., 2016; Bădulescu et al., 2018), which includes not only the support and development of infrastructure but also cultural and natural attractions (Czuczor et al., 2023). Within the V4 countries, there is significant development of tourism infrastructure, which increases their attractiveness and competitiveness in the international market (Zemanová, 2022). Competition in the field of tourism is high (Deb et al., 2023), and therefore it is essential for the V4 countries to continuously innovate and improve the quality of services provided (Kvitková and Petru, 2021). The V4 countries are characterized by a common history, culture, and geographical location, which allows them to cooperate and create joint tourist offers and strategies (Antošová et al., 2020). The tourism sector in these countries is a significant source of income, with its contribution to GDP and total employment ranging from 4.7% to 8.3%, and from 5% to 10%

---

[*] Corresponding author

respectively (World Travel & Tourism Council, 2022). Due to similarities in geography, climate, and economic focus, the V4 countries have the opportunity to utilize synergistic effects in tourism, with joint marketing and promotional campaigns further enhancing their attractiveness and visibility on the international stage (Štrba et al., 2022). The development of tourism in the V4 countries thus exemplifies successful regional cooperation, yielding positive economic and cultural impacts not only for the individual countries but for the entire region as well (ETC, 2021).

THEORETICAL BACKGROUND
Cooperation at the level of V4 countries

Countries of the Visegrad Group evaluate the development of tourism based on various indicators (Šambronská and Matušíková, 2020), such as total tourism expenditure, which results from a combination of the number of arrivals, daily expenses, length of stay, tourism revenues, occupancy rates of accommodation facilities, tourist satisfaction, the share of tourism in GDP, as well as the number of jobs in tourism and many others (Šenková et al., 2020; Zemanová, 2022). These factors form the basis for strategies and management of tourism policies, allowing various destinations to focus either on increasing the number of tourists or promoting a specific tourism profile (Shen et al., 2022; Stepchenkova and Li, 2014). The V4 countries are successful not only in economic development but also in international cooperation (Visegrad Cooperation, 2023a). This cooperation is also visible in the economic relations between the V4 countries, which are important trading partners to each other and invest mutually. The V4, as a regional alliance, is flexible and institutionalized, and complements the national policies and diplomatic efforts of its member states. It is a significant example of regional integration and cooperation that evolves and adapts to changing global conditions to provide support in areas most important to its citizens. V4 cooperation in the field of tourism dates back 18 years and includes joint promotional activities worldwide (Visegrad Cooperation, 2023b). Global tourism was severely limited due to COVID, but the reopening of borders allows residents of the grouping and other visitors to (re)discover the unique natural, cultural, and tourism treasures of this region in the heart of Europe, which attracts tourists from around the world (Hakseung et al., 2022; Gössling et al., 2021; Deb and Ahmed, 2022).

Tourism has successfully stabilized since the most significant economic crisis in the years 2008-2010, and its performance indicated the fulfillment of forecasts made by the World Tourism Organization (UNWTO, 2020). Already in 2018, forecasts expected to happen in 2020 were achieved, and the year 2019 further confirmed that the tourism industry has its significant justification in the global economy. Tourism performance has grown globally and even regions that previously showed the lowest performances have started to make significant progress thanks to their flexible response to the needs of tourism participants. However, with the arrival of the Covid-19 pandemic, the situation changed markedly. Global restrictions related to the intention to reduce the rate of infection have crippled the industry. This industry has become one of the most affected industries due to the spread of the pandemic. As a result, there have been many travel restrictions and the slow disappearance of international tourism, which has seriously affected not only the companies but also the tourism-driven economies themselves (Shin et al., 2022). The COVID-19 pandemic has undoubtedly been one of the biggest challenges the tourism sector has faced so far. The prosperity of businesses was shaken, as was the well-being of tens of millions of employees, local communities, and entire economies around the world. Fortunately, positive signs are visible, and the recovery of the industry is progressing, although not at the same pace or in the same market segments. This was also confirmed by the overall performance of tourism, which in each of the world's regions showed an unprecedented dimension. The countries of the Visegrad Four were no exception.

For this reason, the aim of the study was to find out through research questions:

RQ1 How did tourism performance in the V4 countries change over a 10-year horizon?

RQ2 Does the year 2023 have the potential to bring a change in tourism performance?

RQ3 Which of Visegrad countries have the potential for the greatest development?

MATERIALS AND METHODS

Knowledge of developments and potential forecasts is important for flexible preparation for managing tourism and its services. Therefore, the intention was to analyse the performances in the selected research sample of countries and to estimate the potential future development of their performances.

The aim of the paper is based of 10-year performance data predict the development of tourism performance in Visegrad four countries under the impact of Covid-19 pandemics for the purpose of the effective future management.

The main aim of the research based on the results of globally recognized TTDI index (Travel & Tourism Development Index) as well as TTCI (Travel and Tourism Competitiveness Report) is to evaluate each country progress, bring the development prediction, and compares them to each other within the group.

For the purpose of the research as well as for this study, several research methods were used:

- Scientific abstraction- oriented the abstraction of resources with a focus on tourism management in Visegrad four countries, TTDI index and TTCI index.

- Approximation method - was used to determine the index development forecast in the next evaluated year 2023 (the forecast for the following years is not suitable, as there is a relatively small amount of existing data). Among all five types of approximation a polynomial of the second degree was chosen.

- Regression model – was used to determine the coefficient of determination (R^2) for the development of the value of the TTDI index, processed in the MS Excel program.

H0: We assume that there will be different prediction results for the Visegrad Four countries for performance in 2023 and for tourism management in the future period of the stagnant pandemic.

Data: Research sample consisted of Visegrad four countries, namely: Czech Republic, Poland, Hungary and Slovak Republic. The analytical part of the study focuses on evaluating the position of V4 over the last decade based on the internationally recognized TTCI index and its revised version TTDI.

The analyzes are aimed at evaluating the position of the V4 countries precisely on the basis of the TTCI and TTDI index for the last decade (2013-2021). In this way, the intention was to gain an overview of the level of tourism in the given countries, their strengths, and weaknesses, and subsequently proceed to a more detailed analysis of the countries' statistical data, their national strategies, action plans, etc. in the context of the needs of tourism management and its quality.

In this way, the intention was to obtain an initial overview of the level and quality of tourism in the given countries, their strengths, and weaknesses, and could subsequently proceed to a more detailed analysis of the countries' statistical data, their national strategies, action plans, etc. In the following text, the structure of this index was briefly summarized and described the method of its calculation. All the data information is provided in the annual reports of the TTDI index, where the one from 2022 was the latest yet, describing the performance of the year 2021.

We consider the revised and globally recognized TTDI index, which is a modification of the originally used TTCI index, to be a suitable tool for comparing (not only) V4 countries. The structure of the index is based on generally comparable and unified indicators that are monitored on a regular basis in the V4 member countries. The index also serves as a platform for dialogue between interested parties and country representatives with the aim of understanding and anticipating emerging trends and risks in the field of tourism on a global level, modifying direct policies, procedures, investment decisions or accelerating new models ensuring the longevity of this important sector. It is important for countries to learn from recent and current crises, take steps to embed long-term inclusiveness, sustainability and resilience in the tourism sector and learn to face globally changing challenges and risks. The TTDI index consists of 5 sub-indices, 17 pillars and 112 individual indicators categorized into individual pillars. However, newly created sub-indexes (compared to TTCI) are not taken into account when calculating the index and are used only for presentation and categorization purposes:

• Subindex no. 1 (Enabling Environment)
• Subindex no. 2 (Travel and Tourism Policy and Enabling Conditions)
• Subindex no. 3 (Infrastructure)
• Subindex no. 4 (Travel and Tourism Demand Drivers)
• Subindex no. 5 (Travel and Tourism Sustainability).

As Gomez Pensado states in the TTDI Index Annual Report (2021), the tourism sector has changed permanently. Customers have become more demanding (especially in terms of health and hygiene conditions in potential destinations) and more cautious (impact of future variants of COVID-19, border closures, travel interruptions, etc.). However, the stagnation of international travel has largely given people the space to think about the impact of their decisions on the global climate and environment - this was the main reason for the revision of the original TTCI index to the TTDI, on which the World Economic Forum has based country rankings in the field of travel for the past 15 years traffic and travel. The creators of the index therefore decided to significantly expand and analyze the aspect of environmental, social and economic sustainability in the revised index due to the increase in demand volatility and the response to the changing expectations of customers (travelers, tourists). The TTDI index therefore serves as a strategic benchmarking tool for policy makers, companies, and complementary sectors to advance the future development of the travel and tourism sector by providing unique insights into the strengths and development areas of each country (economy).

The total score of the TTDI index is calculated as the average (arithmetic mean) of the averages of the 17 basic pillars (arithmetic mean). Each of the pillars is calculated as an unweighted average of individual component variables. Values for individual sub pillars are also reported in the annual reports, but they are used only for categorization and presentation purposes. Although the framework and methodology of the TTDI index has been updated and improved compared to the TTCI to reduce the deviation of the index and improve the flexibility of its use, the two indices remain very close (2019 results have been recalculated using the new framework, methodology and indicators).

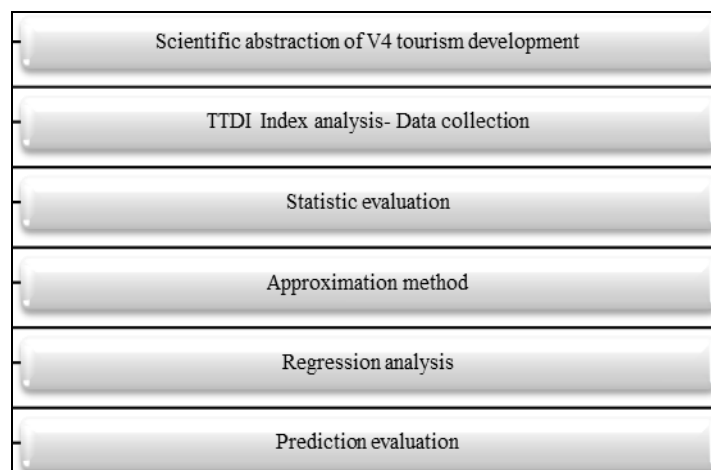Methodology steps of the paper are charted below (Figure 1):

Figure 1. Methodology step scheme

RESULTS AND DISCUSSION

The Visegrad Group (V4) reflects the efforts of the Central European region countries to work together in fields of common interest within pan-European integration. The Czech Republic, Hungary, Poland and Slovakia have always been part of a single civilization sharing cultural and intellectual values and common roots in diverse religious traditions, which they wish to preserve and further strengthen. V4 cooperation can currently be described as the most clearly profiled initiative in Central Europe. The backbone of this cooperation consists of contacts at all levels from political summits at the highest level to expert and diplomatic meetings, the work of non-governmental associations in the region, think-tanks and research bodies, cultural institutions, and numerous networks of individuals (Ministry of Regional Development CZ 2024). Tourism is no exception. For more than a decade, the V4 countries have been trying to address the international market together with integrated strategies at national levels. However, tourism performance varies over the long term. Table 1 bring the overview of the international arrivals of V4 countries in in the monitored period 2013-2021.

Table 1. Overview of International arrivals performance in V4 countries (in thousands) in 2013-2021
Source: own processing based on TTCI and TTDI annual reports from 2013 to 2021

Country	2013	2015	2017	2019	2021
Czech Republic	8 775.00	9 004.00	11 148.00	13 665.34	14 651.09
Poland	13 350.00	15 800.00	16 728.00	19 622.00	8 418.00
Hungary	10 250.00	10 675.00	14 316.00	17 152.00	7 418.00
Slovak Republic	1 460.40	6 235.00	6 816.00	5 734.11	5 453.29
Total	33 835.40	41 714.00	49 008.00	56 173.46	35 940.38

Table 2. Comparison of the latest status of V4 countries of the latest Travel & Tourism Development Index from 2022 report
Source: own processing based on Travel & Tourism Development Index 2022

			Change since 2019		Diff. from
Country	Rank	Score	Rank	Score	TTDI Avg. (%)
Czech Republic	26	4.5	1	0.3%	13.3%
Poland	30	4.4	3	0.8%	10.6%
Hungary	37	4.3	0	0.3%	8.7%
Slovak Republic	56	4.1	-3	0.2%	2.9%

According to the data of the latest Report of Travel & Tourism Development Index z from 2022 which measures the set of factors and policies that enable the sustainable and resilient development of the Travel and Tourism (T&T) sector, which in turn contributes to the development of a country, the position of V4 countries differs. Table 2 shows the position of individual countries as well as their index of change compared to the last observed period from the last available report from 2022. Newer data are not yet available yet. The results show that the Czech Republic has the strongest position among the V4 countries, which ranked 26th out of 117 monitored countries in the latest statistics. The Slovak Republic has the lowest performance among the monitored countries with 56th place.

Evaluation of the position of the V4 countries based on the TTCI and TTDI index

In the following preliminary analyses, there was a focus on evaluating position of V4 countries precisely on the basis of the TTCI and TTDI index for the last decade (2013-2021). In this way, it was aimed to gain an overview of the level of tourism in the given countries, their strengths and weaknesses, and could subsequently proceed to a more detailed analysis of the countries' statistical data, their national strategies, action plans, etc. Based on the *latest available data*, or score of the TTCI index (2013-2017) and TTDI (2019-2021), an approximation method was used in the MS Excel program, through which the intention was to determine the forecast of the development of the index in the next evaluated year 2023 (*the forecast for the following years is not suitable, as there is a relatively small amount of existing data*).
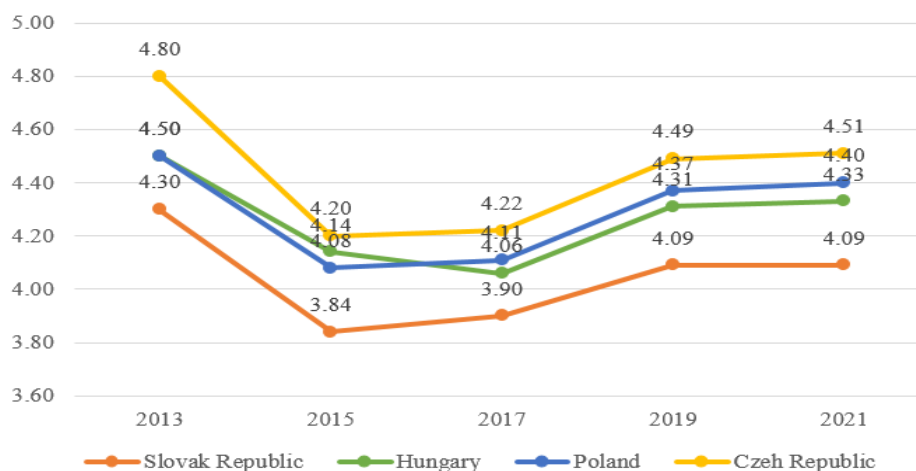

Figure 2. Development of TTCI (2013-2017) and TTDI (2019-2021) index scores of V4 countries
Source: own processing based on TTCI and TTDI annual reports from 2013 to 2021

Among all five types of approximation, a polynomial of the second degree was chosen. This type is best used in the case of variable data, which the authors consider to be the most appropriate choice given the current unstable geopolitical situation and the COVID-19 pandemic. Based on the values of the TTCI index (2013-2017) and TTDI (2019-2021) (Figure 2), the Czech Republic achieved the best results in each year (Figure 2).

Compared to 2013, however, the value of the index fell from 4.8 to 4.51, which represents the most significant drop over the last decade among the V4 countries. Nevertheless, the country has maintained a stable average index value of 4.50 in the last two evaluation periods and has improved by 5th places in the world rankings (from 31st place in 2013 to 26th place in 2021). The Czech Republic is the unequivocal leader among the V4 countries in the field of tourism and travel, so other countries should take it as an example when building national strategies, policies and plans, or inspiration. Figure 2 shows the average ratings of sets of factors and country policies that enable the sustainability and flexible development of the Travel and Tourism sector of the V4 countries, which was calculated through the rating of individual sub-indexes (described above) on a point scale from 1-7. The obtained scores in individual categories were subsequently averaged and the result is around the value of 4 for the V4 countries.

Evaluation of the total score of the TTCI index (2013-2017) and TTDI (2019-2021)

Based on the regression model processed in the MS Excel program (Figure 3), it can be seen that the coefficient of determination (R2) for the development of the TTDI index value is at the level of 0.6794 in the case of the Czech Republic. This value indicates that the created regression model explains 67.94% of the data, the remaining 32.06% is caused by deterministic factors and random influences not included in the model. The regression model (Maryati et al. 2021) in the form of $y = 0.1058x2 − 0.6637x + 5.272$ makes it possible to create a forecast of the value of the TTDI index in the next analyzed year of 2023, the expected level of which will be 5.10.

The value on the x-axis (Figure 3) shows the average ratings of the sets of factors and policies of the countries that enable the sustainability and flexible development of the Travel and Tourism sector of the V4 countries, which was calculated through the rating of a specific sub-index (described above) on a point scale from 1-7. The obtained score in the subindex category was subsequently averaged and the result is around the value of 4 for the V4 countries.

In order, the second best rated V4 country is Poland, which, although in 2015, saw a significant decrease in the index, in the last two evaluated years, it improved its position and maintained a stable index value at an average level of 4.39. During the analyzed decade, Poland recorded the most significant positive development in the global ranking, as it advanced from 42nd place in 2013 to 30th place in 2021. With more progressive growth in recent years, this country is becoming the biggest rival of the Czech Republic, and not only in the field of travel traffic and tourism.
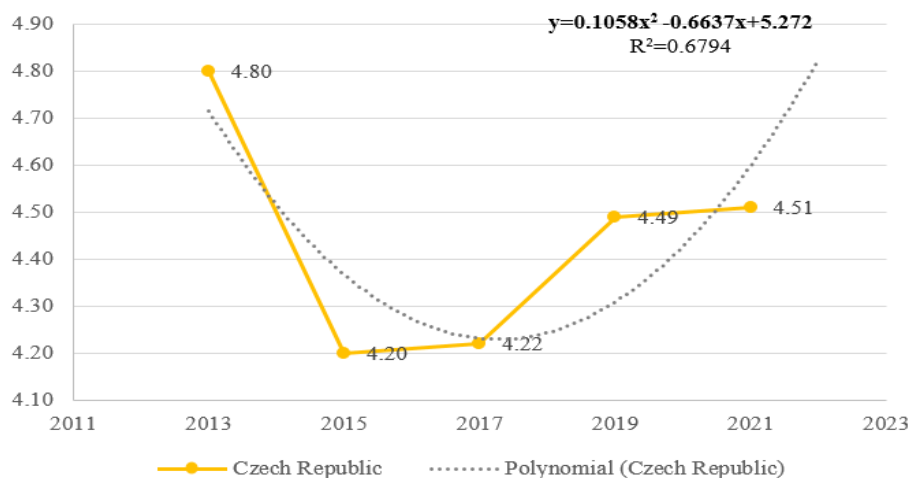

Figure 3. Prediction of the development of the TTDI index for Czech Republic
Source: own processing based on TTCI and TTDI annual reports from 2013 to 2021

The value on the x-axis (Figure 4) shows the average ratings of the sets of factors and policies of the countries that enable the sustainability and flexible development of the Travel and Tourism sector of the V4 countries, which was calculated through the rating of a specific sub-index (described above) on a point scale from 1-7. The obtained score in the subindex category was subsequently averaged and the result is around the value of 4 for the V4 countries.

Based on the regression model processed in the MS Excel program (Figure 4), it was found that the coefficient of determination (R2) for the development of the value of the TTDI index is at the level of 0.6668 in the case of Poland. This value indicates that the created regression model explains 66.68% of the data, the remaining 33.32% is caused by deterministic factors and random influences not included in the model. The regression model (Maryati et al., 2021) in the form of $y = 0.081x2 − 0.477x + 4.8318$ will allow to create a forecast of the value of the TTDI index in the next analysed year of 2023, the expected level of which will be 4.89. The third best rated V4 country is Hungary, with the least significant fall in the value of the index during the analysed decade. Its stable development is also visible in the global ranking, where the country improved by 2 places (from 39th place in 2013 to 37th place in 2021). Hungary is thus slightly behind Poland, which is also confirmed by the slight difference between the average score of the index (4.29 Poland and 4.27 Hungary).
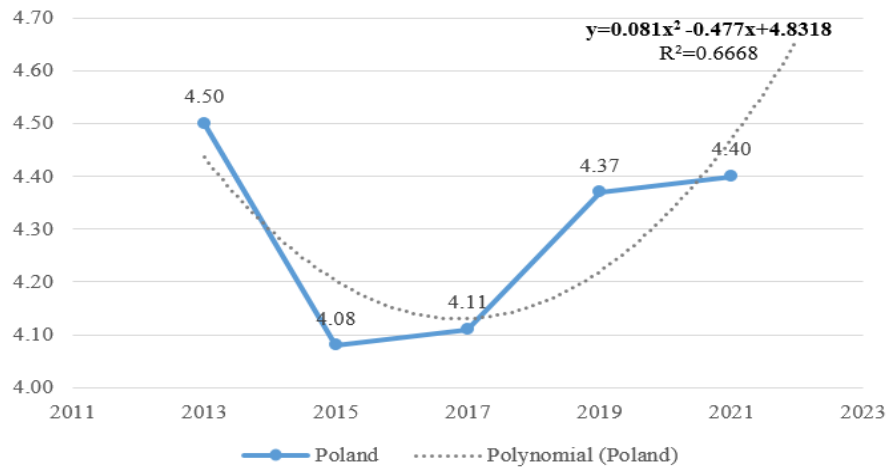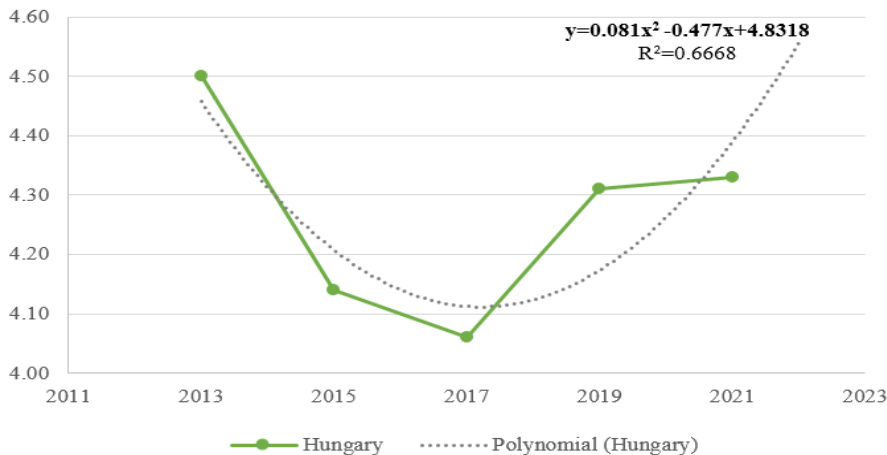
Figure 4. Prediction of the development of the TTDI index for Poland
Source: own processing based on TTCI and TTDI annual reports from 2013 to 2021

The value on the x-axis (Figure 5) shows the average ratings of the sets of factors and policies of the countries that enable the sustainability and flexible development of the Travel and Tourism sector of the V4 countries, which was calculated through the rating of a specific sub-index (described above) on a point scale from 1-7. The obtained score in the subindex category was subsequently averaged and the result is around the value of 4 for the V4 countries.

Figure 5. Prediction of the development of the TTDI index for Hungary
Source: own processing based on TTCI and TTDI annual reports from 2013 to 2021

Based on the regression model processed in the MS Excel program (Figure 5), it was found that the coefficient of determination (R^2) for the development of the value of the TTDI index is at the level of 0.7269 in the case of Hungary. This value indicates that the created regression model explains 72.69% of the data, the remaining 27.31% is caused by deterministic factors and random influences not included in the model. A regression model (Maryati et al., 2021) in the form of $y = 0.0772x^2 - 0.4805x + 4.8604$ will allow to create a forecast of the value of the TTDI index in the next analyzed year of 2023, the expected level of which will be 4.76. The Slovak Republic is the worst rated V4 country in terms of the value of the TTCI index (up to 2017) and TTDI (2019-2021). It was the only one to worsen its position in the global ranking during the analyzed decade, as it fell from 54th to 56th place. The most significant drop (as in the case of other countries) was recorded in 2015. The value of the index dropped from the original 4.30 in 2013 to 4.09 and remained identical for the last 2 evaluated years (other countries improved their scores at least slightly). Looking at the score of the TTDI index, the Slovak Republic lags most significantly behind the other V4 countries, so it should look for some inspiration in their tourism development strategies and plans and try to improve its position. The value on the x-axis (Figure 6) shows the average ratings of the sets of factors and policies of the countries that enable the sustainability and flexible development of the Travel and Tourism sector of the V4 countries, which was calculated through the rating of a specific sub-index (described above) on a point scale from 1-7. The obtained score in the subindex category was subsequently averaged and the result is around the value of 4 for the V4 countries.

Based on the regression model processed in the MS Excel program (Figure 6), it was found that the coefficient of determination (R^2) for the development of the value of the TTDI index is at the level of 0.6288 in the case of the Slovak Republic. This value indicates that the created regression model explains 62.88% of the data, the remaining 37.12% is caused by deterministic factors and random influences not included in the model. A regression model (Maryati et al., 2021) in the form of $y = 0.0759x^2 - 0.4715x + 4.6244$ will allow to create a prediction/prediction of the value of the TTDI index in the next analyzed year of 2023, the expected level of which will be 4.53.
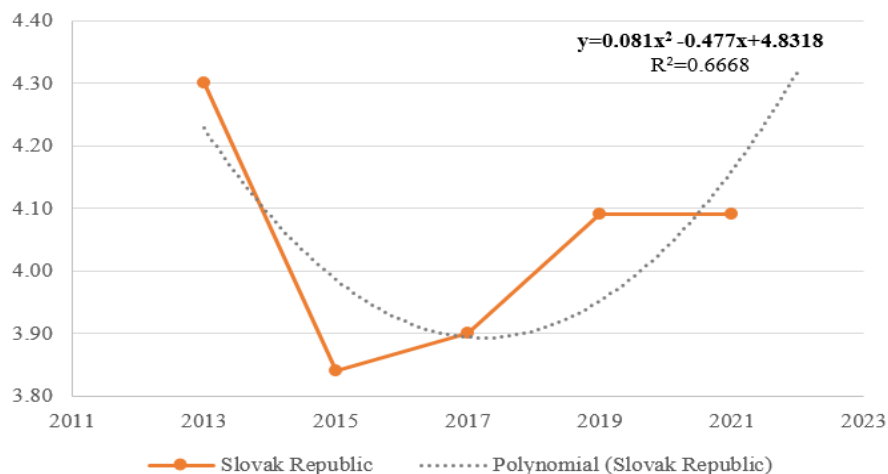
Figure 6. Prediction of the development of the TTDI index for the Slovak Republic
Source: own processing based on TTCI and TTDI annual reports from 2013 to 2021

Limitation of the study

The study is fully aware that at first glance the data may appear quite older but given the fact that the index updates are carried out on a two-year horizon, when they are published in 2024, it will be possible to compare how reliable the calculations of predictions in the industry can be tourism. In 2024, data from the following biennium for 2023 will be added. Based on them, it will be possible to verify whether the given prediction for development was conceived correctly, or whether consumer behaviour has changed so significantly that it does not correspond to the prediction model, and it will confirm that the tourism industry is so specific that it is difficult to rely on common calculation models. Among other things, the important fact is that the current period is already considered to be the period of the waning of the Covid-19 pandemic, and thus the market has also been significantly modified. From the point of view of service providers, there have been changes in the number of operating establishments, but also in the way services are provided. The focus on ensuring the maximum possible level of services in digital form is significant. In addition to these, touchless technologies have also become popular under the influence of the pandemic. On the part of the participants of the tourism industry, it was possible to continuously monitor the lengthening of the distance to the final destinations and the reduction of fears about travel and infection due to the mentioned pandemic disease. All the mentioned contributed to the gradual restart of the tourism industry.

CONCLUSIONS

Based on the information provided in this article, we can conclude that tourism in the Visegrad countries has undergone significant development and is facing new challenges and opportunities. The study covers various aspects such as tourism management strategies, economic impacts, and regional cooperation within the V4.

Differences in assessment and performance among individual V4 countries highlight the need for an individualized and tailored approach to tourism management and development. Despite the challenges posed by the COVID-19 pandemic and global economic changes, tourism maintains its important position as a key driver of economic and social development. The results from the TTDI and TTCI indices provide valuable insights and analyses that can assist policymakers and tourism industry professionals in formulating strategies and plans for achieving sustainable and inclusive growth. This article underscores the importance of continuous assessment and adaptation to the changing environment to effectively develop tourism in the V4 countries in the future.

REFERENCES

Alhazmi, N. (2018). Impact of Total Quality Management on Marketing of Tourism Services: An Applied Study on Hotels Located in Al-Kharj, Saudi Arabia. *International Journal of Management and Economics Invention*, 4(1), 1595-1605. https://doi.org/10.18535/ijmei/v4i1.06

Antošová, G., Vogl, M., & Schraud, M. (2020). Challenges for the Visegrad Group – the coronavirus crises and its impact on tourism. *Visegrad Journal on Bioeconomy and Sustainable Development*, 9(1), 28–32. https://doi.org/10.2478/vjbsd-2020-0006

Bazargani, R.H.Z., & Kiliç, H. (2021). Tourism competitiveness and tourism sector performance: Empirical insights from new data. *Journal of Hospitality and Tourism Management*, 46, 73-82. https://doi.org/10.1016/j.jhtm.2020.11.011

Beresecká, J., & Svetlíková, V. (2022). Performances, creativity and innovation of tourism in the post-pandemic period. *Aktuální problémy cestovního ruchu*. Jihlava: Vysoká škola polytechnická, 21-32. ISBN 978-80-88064-57-2.

Czuczor, K., Kozma, G., Dorogi, Z., Li, T., & Radics, Z. (2023). The Comprehensive Analysis of the Network of Superstructure Based on Territorial Characteristics of Accommodation and Food and Beverage Service Providers Considering the Financial Crisis and COVID-19: The Case of Bihor County, Romania. *Sustainability*, 15, 6759. https://doi.org/10.3390/su15086759

De Bernardi, C., & Arenas, D. (2022). How to avoid swinging: A social enterprise's quest for authenticity in tourism. *Tourism Management*, 89:104439. https://doi.org/10.1016/j.tourman.2021.104439

Deb, S.K., & Ahmed, S. (2022). Managing post Covid-19 crisis in the tourism and hospitality sector through sustainable recovery strategies. *GeoJournal of Tourism and Geosites*, 43(3), 993–1004. https://doi.org/10.30892/gtg.43319-913

Deb, S.K., Das, M.K., Voumik, L.C., Nafi, S.M., Rashid, M., & Esquivias, M.A. (2023). The environmental effects of tourism: analyzing the impact of tourism, global trade, consumption expenditure, electricity, and population on environment in leading global tourist destinations. *GeoJournal of Tourism and Geosites*, 51(4), 1703–1716. https://doi.org/10.30892/gtg.514spl11-1166

Gallo, P., Šenková, A., Mihalčová, B., Seifertová, V., Pružinský, M., & Nemec, J. (2019). relations of innovative management tool in Slovak hotel facilities. *GeoJournal of Tourism and Geosites*, 27(4), 1347–1356. https://doi.org/10.30892/gtg.27419-438

Gburová, J., & Lukáč, M. (2023). *Inovácie a udržateľná marketingová komunikácia múzeí* (Innovation and sustainable marketing communication of museums). Cestovný ruch: inovácie trendy a udržateľná budúcnosť. Scientific proceeding. 1st.ed. Prešov : Prešovská univerzita v Prešove, 2023. ISBN 978-80-555-3209-7, 34-4.1

Gössling, S., Scott, D., & Hall, C.M. (2021). Pandemics, tourism and global change: A rapid assessment of COVID-19. *Journal of Sustainable Tourism*, 29(1), 1–20. https://doi.org/10.1080/09669582.2020.1758708

Hakseung, S., Nicolau, J.L., Kang., J., Sharma, A., & Lee, H. (2022). Travel decision determinants during and after COVID-19: The role of tourist trust, travel constraints, and attitudinal factors. *Tourism Management*, 88, 104428. https://doi.org/10.1016/j.tourman.2021.104428

Hronec, M., Beresecká, J., & Hronec, Š. (2022). Social responsibility in local government. Praha: Wolters Kluwer ČR. ISBN 978-80-7676-579-5.

Kozmenko, O., Poluliakhova, O., & Iastremska, O. (2015). Analysis of countries' investment attractiveness in the field of tourism industry. *Investment Management and Financial*, 12(3), 56-63. https://doi.org/10.21511/imfi.12(3-1).2015.01

Kvitková, Z., & Petru, Z. (2021). *Domestic Tourism as a Factor of Survival and Recovery of Tourism in the V4 Countries (a comparative study)*. Conference: 21st International Joint Conference Central and Eastern Europe in the Changing Business Environment: Proceedings. https://doi.org/10.18267/pr.2021.krn.4816.13

Kyrylov, Y.Y., Hranovska, V.H., Krykunova, V.M., Svynous, I.V., & Nikitenko, K.S. (2023). Development of the sphere of hospitality in strategy recovery of the tourist industry of Ukraine. *GeoJournal of Tourism and Geosites*, 51(4), 1676–1691. https://doi.org/10.30892/gtg.514spl09-1164

Maryati, I., Sumartini, T.S., & Sofyan, D. (2021). Experiences of Pearson formula in analysis regression. *IOP Conference Series: Materials Science and Engineering*. IOP Publishing, 1098. https://doi:10.1088/1757-899X/1098/3/032088

Mátyás, Sz., Tokodi, P., Vince, V., & Tihanyi, M. (2021). Investigation of Certain Components of Tourism Safety in the Visegrád Countries. *Internal Security,* 13(1), 89-97. https://doi.org/10.5604/01.3001.0015.2902

Ministry of Regional Development CZ. (2024). Cooperation within the group of V4 countries. accessed 1th January of 2024. https://mmr.gov.cz/en/evropska-unie/spoluprace-v-ramci-eu-a-mezinarodni-spoluprace/spoluprace-v-ramci-skupiny-zemi-v4-(1),

Mura, L., & Stehlikova, B. (2023). Innovative Approaches: Using DEMATEL Method in the Research of SMEs Operating in Tourism Sector. In: Valeri, M. (eds) Family Businesses in Tourism and Hospitality. *Tourism, Hospitality & Event Management*. Springer, Cham. https://doi.org/10.1007/978-3-031-28053-5_10

Shen, Z., Fan D., & Buhalis, D. (2022). The Effect of Hotel Livestreaming on Viewers' Purchase Intention: Exploring the Role of Parasocial Interaction and Emotional Engagement. *International Journal of Hospitality Management*. 107. https://doi.org/10.1016/j.ijhm.2022.103348

Shin, H., Nicolau, J.L., Kang, J., Sharma, A., & Lee, H. (2022). Travel decision determinants during and after COVID-19: The role of tourist trust, travel constraints, and attitudinal factors. *Tourism Management*, 88:104428. https://doi.org/10.1016/J.TOURMAN.2021.104428

Stepchenkova, S., & Li, X.R. (2014). Destination image: Do top-of-mind associations say it all? *Annals of tourism research*, 45, 46-62. https://doi.org/10.1016/j.annals.2013.12.004.

Šambronská, K., & Matušíková, D. (2020). Analýza vybraných ukazovateľov stavu cestovného ruchu v krajinách vyšehradskej štvorky vo vybranom období. In Cestovný ruch v dvadsaťročnici od prelomu milénií –výkony, výzvy, trendy. Recenzovaný nekonferenčný zborník medzinárodných vedeckých štúdií. Prešovská univerzita v Prešove. 197-210. ISBN 978-80-555-2575-4.

Šenková, A., Vavrek, R., Molnárová, N., & Mitríková, J. (2020). Gender differences in perception on sustainable tourism – case study applied to the PU in Prešov. *GeoJournal of Tourism and Geosites*, 32(4),1216–1221. https://doi.org/10.30892/gtg.32404-560

Štrba, Ľ., Molokáč, M. (2022). Geotourism and geoparks - promoting geoheritage and geodiversity to people. *Landscapes and Landforms of Slovakia*, Springer Nature, World Geomorphological Landscapes, 437-449. https://link.springer.com/chapter/10.1007/978-3-030-89293-7_22

The World Bank. (2022). Tourism and Competitiveness. https://www.worldbank.org/en/topic/competitiveness/brief/tourism-and-competitiveness, accessed 31th of March, 2022.

UNWTO. (2020). International Tourism Highlights, 2020 Edition. https://www.e-unwto.org/doi/book/10.18111/9789284422456

Visegrad Cooperation (2023a). Visegrad Group. https://v4.mfa.gov.hu/page/visegrad-cooperation

Visegrad Cooperation (2023b). Public Events, Culture, Tourism. https://v4.mfa.gov.hu/page/public-events-culture-tourism

Volchek, K., Law, R., Buhalis, D., & Song, H. (2020). Exploring ways to improve personalisation: The influence of tourist context on service perception. *e-Review of Tourism Research*, 17(5), 737-752.

World travel & tourism council. (2022). Travel & Tourism Economic Impact 2022. Global Trends. https://wttc.org/Portals/0/Documents/Reports/2022/EIR2022-Global%20Trends.pdf

Zemanová, L. (2022). Comparison of state Policy of tourism in V4 countries. Studia turistica. 13(2), 39 – 51.