

Article

The Contribution of Tourism to the Development of Central and Eastern European Countries in the New Post-Endemic and Geostrategic Context

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Abstract: This study explores an important issue in tourism, namely, the competitiveness of tourism. In the present paper, we aim at analyzing the relationship between tourism and national prosperity. The term competitiveness is a research topic intensively addressed in various fields, and it can answer current research questions related to a constantly changing tourism industry. Thus, the possibility of knowing how competitive this particularly important sector is for the five emerging countries considered in the study, namely, the Czech Republic, Hungary, Poland, Romania, and Slovakia, allows public authorities and entrepreneurs to estimate the revenues that can generate the field of hospitality. Also, based on these results, a series of national strategies specific to the tourism industry can be founded to lead to the increase of its competitiveness. We used cross-country multiple regression analysis to determine variables that are particularly important for the competitiveness of the hospitality industry, a fact for which the study has a theoretical and practical applicability. The study offers the possibility to anticipate the values of this index (TTCI), thus enabling government and industry bodies to take the necessary steps to increase specific competitiveness in the international market.

Keywords: competitiveness; development; Travel & Tourism Competitiveness Index; cross-country multiple regression analysis



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1. Introduction

Tourism is one of the fastest growing sectors of the 21st century (OECD 2020b). Tourism is changing. Tourism has changed the world. Today we all accept that any person represents a potential tourist, and any place on Earth can become a tourist destination. Not long ago, few people traveled abroad, and if they did, they usually went to familiar and easily accessible places or as part of groups for distant destinations. Today, tourists have become more demanding and plan their own trips and bookings: they are what industry experts call “free and independent travelers” (Walton 2021). Increasing tourism is a topic that is always present, especially in Europe. Tourism is one of the key sectors of the European economy, confirmed by the fact that the EU is the number one tourist destination in the world.

The development and contributions of professions related to the world of information technology have allowed companies not only to revitalize their internal management systems (Piszczek et al. 2016), but also to open up to the world and create a global approach of the multi-channel offer, in an ever-expanding market, reaching a larger number of different subjects with diversified needs.

The times of COVID-19 have generated social isolation of people and minimized travel during lockdown periods. Mobility today refers not only to physical movement, but also to the mobility of ideas and images, which have undergone major changes with new technologies that broaden and accelerate both physical and imaginary and virtual interconnections.

The humanitarian crisis caused by the COVID-19 pandemic has also triggered a global economic and social crisis. Attempts to predict the likely impact of the pandemic on the tourism economy have been quickly overtaken by the speed with which the situation has evolved with the spread of the pandemic. The total impacts will depend not only on the duration of the pandemic, but also on the speed of the response and the measures taken. However, the serious situation is also a major challenge, always evolving.

The pandemic has triggered an unprecedented crisis (UNCTAD 2020), with major blockade measures, very strict travel restrictions, and bans still affecting many people in developed and rich countries (Gwee et al. 2021, p. 799). Emerging economies are also experiencing a crisis. The pace of their economic growth is reflected in the evolution of GDP (World Bank 2020). Governments have made efforts to limit the spread of new, increasingly contagious strains of the COVID-19 virus, prompting the tourism industry to hope for an economic recovery (OECD 2020a, pp. 16–18). But the COVID-19 challenge may also present some opportunities, especially for HoReCa if it manages to adapt to the new conditions.

There have also been situations of global or regional crisis, such as the collapse of the Twin Towers (11 September 2001) in the United States (International Air Transport Association 2012), the financial crisis (launched in December 2007), international terrorist acts, certain bankruptcies in tourism (the British operator Thomas Cook 2019), or the eruption of a volcano that turned all European flights upside down, but they were all different, did not have such a devastating impact on travel, and did not cover the entire globe. The 2003 SARS epidemic saw a 0.4% decrease in international tourist arrivals, and in the case of the financial crisis, the decrease was 4.0%. After the last crises (the 2003 SARS epidemic and the global financial crisis in 2009 (Chen and Chiou-Wei 2009, pp. 812–18), travel expenses (tourism and business) returned to pre-crisis levels, two or even three years after the start of the crisis.

UNWTO claims that tourism suffered the biggest crisis in 2020. International tourist arrivals (overnight visitors) plunged by 74% in 2020 (UNWTO 2022). By 2021, global tourism had seen a slight increase of 4%, with 15 million arrivals of international tourists (overnight visitors), more than in 2020, but it remained 72% below pre-pandemic 2019 levels. The UNWTO World Tourism Barometer, which regularly monitors short-term tourism trends, provides updated analysis of international tourism; the economic contribution of tourism (gross domestic product of tourism) is estimated at 1.9 trillion USD in 2021, over 1.6 trillion USD in 2020, but still well below the pre-pandemic value of 3.5 trillion USD.

Fear will be the biggest threat to the tourism industry in the near future, especially as a long-term armed conflict is looming in Eastern Europe, with major repercussions for economies in general, but also for emerging economies in particular in this area (Şorcaru et al. 2020, pp. 143–44).

For the tourism industry, competitiveness will be the watchword for the coming years, just as for emerging economies, competitiveness is the engine. Below, we will analyze some aspects of competitiveness in the field of tourism for several emerging economies in Eastern Central Europe: the Czech Republic, Hungary, Poland, Romania, and Slovakia.

The tourism industry plays a crucial role in the economic development of many countries, and the emerging economies of Central and Eastern Europe are no exception. This paper aims at addressing the importance of the tourism industry and its competitiveness in the Czech Republic, Hungary, Poland, Romania, and Slovakia, while also examining the impact of the COVID-19 pandemic on this vital sector. The Importance of Tourism in Central and Eastern European Countries: The tourism industry in these five mentioned countries has significantly contributed to their economic growth. Tourism brings in foreign currency revenues; creates job opportunities; and encourages the growth of related sectors,

such as hospitality, transportation, and retail. These countries boast a rich cultural heritage, historical landmarks, picturesque landscapes, and vibrant cities, making them attractive destinations for both domestic and international tourists.

Before the pandemic, the tourism sector in Central and Eastern Europe was experiencing steady growth. In 2019, these countries had the following Total contribution of Travel & Tourism to GDP/% of Total Economy: the Czech Republic 6.20%, Hungary 7.80%, Poland 4.70%, Romania 6.10%, Slovakia 6.40%.

However, the year 2020, marked by significant travel restrictions, saw a massive decline in the Total contribution of Travel & Tourism to GDP/% of Total Economy as follows: the Czech Republic 3.90% (−40.00%), Hungary 3.80% (−54.40%), Poland 2.20% (−54.10%), Romania 2.90% (−55.50%), Slovakia 3.20% (−53.00%).

In 2021, a slow recovery began for the hospitality sector, and there were changes in the Total contribution of Travel & Tourism to GDP/% of Total Economy for some of the analyzed emerging countries, as follows: the Czech Republic 3.6% (−3.8%), Poland 2.8% (+10.4%), Romania 3.8% (+14.9%), Slovakia 3.8% (+17.7%).

In this study, we analyze whether there is a connection in the case of the group of five emerging countries, namely, the Czech Republic, Hungary, Poland, Romania, and Slovakia, between the competitiveness of tourism and their economic development. The degree of economic development of a country is also defined and quantified by Real GDP per capita, which reflects the standard of living in the respective country, and which also influences the preference of its citizens towards tourism.

2. Theoretical Background and Literature Review

2.1. The Concept of Competitiveness

Competitiveness is one of the main features and driving forces of today's global economy, including for the emerging economies of the countries in Central and Eastern Europe (Aiginger et al. 2013). National competitiveness is the ability of a state and its institutions to influence the steady growth of the economy (Androniceanu et al. 2020, pp. 5–21).

The International Institute for Management Development (IMD) proposes the following factors (see Figure 1) for the elaboration of the World Competitiveness Yearbook (WCY) (IMD World Competitiveness Ranking 2021), which it has been compiling since 1989: Economic Performance, Government Efficiency, Business Efficiency, and Infrastructure. This global competitiveness ranking is based on 334 competitiveness criteria.

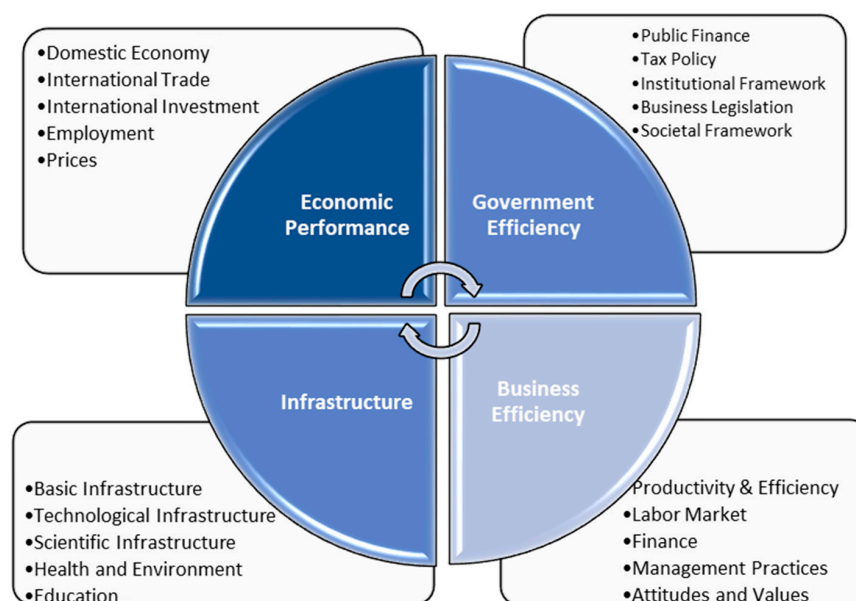


Figure 1. World Competitiveness Yearbook (WCY) Analysis Factors. Source: Processing by authors after IMD World Competitiveness Ranking 2021 competitiveness.

2.2. Competitiveness in Tourism

At the heart of tourism competitiveness (Dogru et al. 2021, pp. 215–56) is the tourism product, and it is distinguished by a special complexity (Crouch and Ritchie 1999, pp. 137–52). The characteristics of tourism production are atypical compared to other types of industry due to a number of factors, such as the fact that the object of tourism production (Altinay and Kozak 2021, pp. 331–40) is everything that serves to meet the needs of travelers, i.e., a whole that cannot be defined a priori and once and for all, but only by virtue of the consumption made or the fact that this set is variable and includes both exclusive services and goods for tourists, but also services and goods for the local (Sequeira and Nunes 2008, pp. 2431–41) or non-tourist population (public transport; food establishments, entertainment activities, such as theatre, museums, cinemas, discos, sports facilities, health facilities, etc.).

The World Economic Forum (GEF) conducts biennial reports comparing 140 economies and measures the set of factors and policies that enable the sustainable development of the Travel sector and Tourism (T&T) (Calderwood and Soshkin 2019), which in turn contributes to a country's development and competitiveness (World Economic Forum 2017). The general index is calculated from several component indices (see Figure 2).

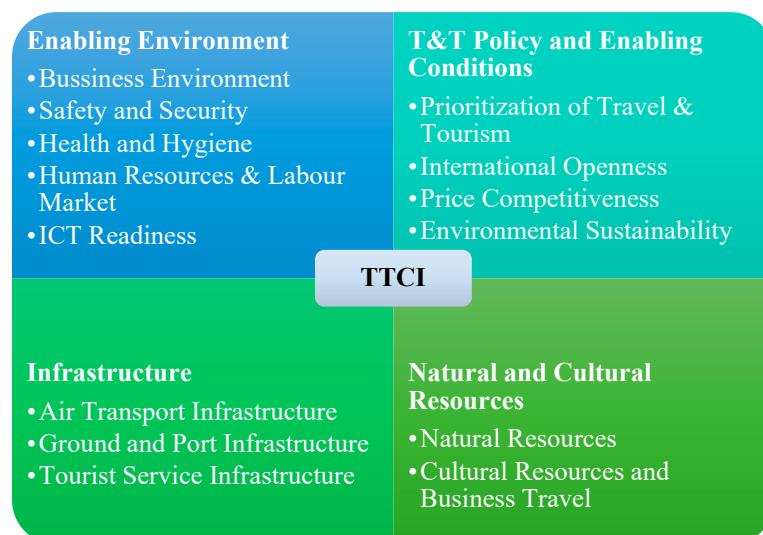


Figure 2. Pillars of TPCI. Source: Authors' processing.

The competitiveness in tourism (Luštický and Štumpf 2021, p. 100792) of each country is measured by the Competitiveness in Travel & Tourism Index, which analyzes four macro-categories of variables for each country: the set of enabling environments that captures the conditions necessary to operate in a country; the set of laws and policies governing the sector, business context, infrastructure, and ITC Readiness; and, finally, human, cultural, and natural resources, which are further detailed in 14 competitiveness factors, including environmental sustainability, safety, the priority given to tourism in national policies, air transport infrastructure, and so on (Rodríguez-Díaz and Pulido-Fernández 2019, p. 51). Tourism competitiveness is measured by the four areas of the environment that surround business and markets, tourism policy, hospitality infrastructure, and natural and cultural resources and 14 elements and 90 indicators that subdivide them. The World Economic Forum (GEF) shall develop an appropriate composite indicator as an unweighted average of the indicators, pillars, or sub-indices included in the immediately preceding level (Rodríguez-Díaz and Pulido-Fernández 2019, p. 51).

The theme of tourism competitiveness (d'Hautesserre 2000, pp. 23–32) has taken on a major role in international literature in the recent decades (Crouch 2011, pp. 27–45) and is closely linked to the concept of territorial competitiveness (Buhalis 2000, pp. 97–116). The competitiveness of the tourist destination (TDC) is very relevant in the academic field and

has been studied for more than 30 years (Vasanicova et al. 2021; Knežević Cvelbar et al. 2016). From this point of view, tourism is proposed as a privileged tool of analysis and as an essential element for value creation (Enright and Newton 2004, pp. 777–88).

To analyze and understand the complex category mentioned above and its specific representations, the emerging economies of Central and Eastern Europe were chosen, which are in a similar position in terms of their competitiveness. The Czech Republic, Hungary, Poland, Romania, and Slovakia are all emerging market economies in full progress.

Some of the limitations that researchers may face when analyzing competitiveness in the tourism industry are related to the rapid changes in the constantly evolving tourism industry. Technological and social developments can quickly influence the competitiveness of a tourist destination. Additionally, political and economic instability can have a negative impact on the tourism industry and the competitiveness of a place, even in the short term. Hidden competition is another challenge, as competitiveness can sometimes be influenced by subtle or unobservable factors, such as marketing strategies or secret trade agreements. Cultural and social aspects related to understanding the needs and preferences of different tourist groups can be difficult to assess and may vary depending on cultural and social factors. Moreover, environmental impact plays a significant role. The pressure on natural resources and the environmental consequences can influence both the competitiveness and the image of a tourist.

2.3. The ICT Readiness Component

In the last thirty years, the World Wide Web (WWW) and related applications developed through the Information Technology (IT) system (Nyagadza et al. 2022) have accelerated the change in the optics of the individual's participation in the community and in society, and the administration of many businesses has acquired a completely different perspective (Rondović et al. 2019, pp. 30–50), helping to increase the competitiveness of different economic sectors on a global level (Poulopoulos and Wallace 2022, p. 73).

Nyagadza and colleagues conducted a systematic review of the literature, employing a structural analysis methodology, with the aim of identifying the interest in technological innovation in various industries of emerging economies. The authors have underscored the limitations of their study, but have also highlighted that digital technologies will play a crucial role in unlocking the potential for sustainable industrial innovation in emerging economies. These digital technologies facilitate the improvement of production processes and stimulate progress in innovation, scientific discovery, and the pace of technology implementation, adaptation, and scaling, all of which contribute to the overall advancement of technological innovation.

Tourism has profoundly changed its operating system by virtue of the introduction of digital information (Yetimoğlu 2022) transmission channels (Iranmanesh et al. 2022; Polat 2022); the entire system related to the sector was structured by capitalizing on this ability to interact at all levels (Dimova and Velikova 2022, pp. 513–24): socially, individually, commercially, productively (Moral-Cuadra et al. 2021, pp. 1120–35).

ICTs have induced efficiency and increased the productivity, but also the complexity and competitiveness, of the entire system. Policy planning then becomes increasingly important to guarantee the sustainable development of the sector, knowing very well that its growth is necessary for the economic and social stability of the entire contemporary society (Garcia-Haro et al. 2021, pp. 2051–72).

The national capacity to generate competitive potential must be correlated with regional and local specifics to obtain an increased level of competitiveness (CNUCED 2007), but at the same time, the possibilities of Information and Communication Technologies (ICT) must be correlated, as well.

Part of the Travel & Tourism Competitiveness Index (TTCI) is also based on ITC Readiness. Information and Communication Technologies (ITC) Readiness is the pillar that measures how developed the ICT infrastructure is in a country, as well as how widely it is used by individuals and businesses in the country.

ITC Readiness is calculated based on eight criteria ([The Travel and Tourism Competitiveness Report 2019](#)): “ICT use for biz-to-biz transactions”, “Internet use for biz-to-consumer transactions”, “Internet users”, “Fixed-broadband Internet subscriptions”, “Mobile-cellular telephone subscriptions”, “Mobile-broadband subscriptions”, “Mobile network coverage”, “Quality of electricity supply”. They relate to the extent to which businesses use ICT for transactions with other businesses; the extent to which organizations use the Internet to sell their goods and services to consumers; the percentage of people who use the Internet for any purpose, from anywhere, regardless of device and network; the number of fixed broadband internet subscriptions; the number of mobile phone subscriptions, but also the percentage of a country’s population covered by a mobile network signal; or how reliable the electricity supply is. (see the Table 1).

Table 1. Travel & Tourism Competitiveness Index and ICT readiness with the eight components for countries with emerging economies in Central and Eastern Europe.

		Czech Republic	Hungary	Poland	Romania	Slovak Republic
Travel & Tourism Competitiveness Index	Value	4.3 ↑	4.2 ↑	4.2 ↑	4.0 ↑	4.0 ↑
	Rank/140	38	48	42	56	60
ICT readiness 1–7 (best)	Value	5.7 ↑	4.7 ↓	5.5 ↑	5.2 ↑	5.7 ↑
	Rank/140	32	66	40	55	33
ICT use for biz-to-biz transactions 1–7 (best)	Value	5.2 ↓	4.9 ↑	4.7 =	4.6 =	5.5 ↑
	Rank/140	35	54	70	78	19
Internet use for biz-to-consumer transactions 1–7 (best)	Value	5.8 =	4.9 ↑	5.3↑	5.1 ↑	5.6 =
	Rank/140	12	54	33	43	20
Internet users % pop.	Value	78.7 ↓	76.8 ↑	76	63.7 ↑	81.6 ↑
	Rank/140	41	45	50	69	31
Fixed-broadband Internet subscriptions/100 pop.	Value	29.6 ↓	30.5 ↑	20 ↑	24.3 ↑	25.8 ↑
	Rank/140	27	26	49	42	40
Mobile-cellular telephone subscriptions/100 pop.	Value	119 ↓	113.5 ↓	132.2 ↓	113.8↑	130.7 ↑
	Rank/140	70	78	38	77	42
Mobile-broadband subscriptions/100 pop.	Value	82 ↑	63.2 ↑	154.1 ↑	82.9↑	82.6 ↑
	Rank/140	49	80	3	46	48
Mobile network coverage % pop	Value	99.8 =	99.0 =	100.0 =	99.9 =	100.0 =
	Rank/140	47	70	1	37	1
Quality of electricity supply 1–7 (best)	Value	6.4 =	5.7 ↑	5.4 ↓	5.4↑	6.2 ↑
	Rank/140	18	44	54	53	25

Source: Authors’ processing Economic Forum: *The Travel & Tourism Competitiveness Report, 2019* ([The Travel and Tourism Competitiveness Report 2019](#)).

The ICT readiness sub-pillar with its eight components are expanding; most of their values were increasing compared to the previous period. The component “Mobile-broadband subscriptions/100 pop” increased for all analyzed countries, and “Mobile network coverage % pop” was constant for the five countries with emerging economies.

It can be observed in Table 2 that the strongest correlations with a Pearson’s coefficient greater than +0.5 are achieved in most situations. “Internet use for biz-to-consumer transactions” are very strongly correlated with “ICT readiness” (0.9228954) and with “ICT use for biz-to-biz transactions” (0.6926686); “Mobile-broadband subscriptions” with “Mobile-cellular telephone subscriptions” (0.7074854); and “Quality of electricity supply” with the following “ICT readiness” (0.5327977), “ICT use for biz-to-biz transactions” (0.8977661), “Internet use for biz-to-consumer transactions” (0.7980149), “Internet users” (0.6931255), and “Fixed-broadband Internet subscriptions” (0.6017138).

Table 2. Pearson’s correlation coefficient between Travel & Tourism Competitiveness Index and ICT readiness with the eight components for countries with emerging economies in Central and Eastern Europe.

Travel & Tourism Competitiveness Index	1.00									
ICT readiness	−0.01	1.00								
ICT use for biz-to-biz transactions	−0.03	0.52	1.00							
Internet use for biz-to-consumer transactions	0.21	0.92	0.69	1.00						
Internet users	0.38	0.37	0.80	0.53	1.00					
Fixed-broadband Internet subscriptions	0.33	−0.33	0.42	0.04	0.29	1.00				
Mobile-cellular telephone subscriptions	−0.09	0.67	0.36	0.47	0.54	−0.64	1.00			
Mobile-broadband subscriptions	0.16	0.38	−0.36	0.10	0.01	−0.87	0.71	1.00		
Mobile network coverage	−0.34	0.85	0.12	0.60	−0.08	−0.70	0.64	0.56	1.00	
Quality of electricity supply	0.27	0.53	0.90	0.80	0.69	0.60	0.10	−0.43	0.06	1.00

Source: Own processing based on data obtained from data centralization.

3. Materials and Methods

3.1. Study Description and Data Set

This study considers annual data of Real GDP per capita, the image abroad of the country, and the evolution of the Travel & Tourism Competitiveness Index for the 5 emerging countries in Central and Eastern Europe, namely, the Czech Republic, Hungary, Poland, Romania, and Slovakia, in the period 2007–2021. Real GDP per capita statistics were extracted from the Eurostat database <https://ec.europa.eu/eurostat/web/main/data/database> accessed on 15 March 2022 (Eurostat 2021); those related to the image abroad of a country on <https://worldcompetitiveness.imd.org> accessed on 15 March 2022 (Image Abroad of Country 2007–2021) and statistical data for TTCI were extracted from the Annual Tourism-Competitiveness-Report accessed on 15 March 2022 <https://www.weforum.org/> (Annual Tourism-Competitiveness-Report 2007, 2009, 2011, 2013, 2015, 2017, 2019).

The study period is between the years 2007 and 2021. Based on these statistics, we have studied the evolution of the Travel & Tourism Competitiveness Index and some components considered essential within its pillars for the 5 emerging countries in Central and Eastern Europe in the period 2007–2021; subsequently, we have calculated, with help from IBM SPSS Statistics, the Pearson’s correlation coefficients between TTCI and the components studied to determine the meaning and intensity of the connection between them, and we have performed a comparative analysis on the correlation coefficients obtained for the selected components and TTCI for the 5 emerging countries in 2007–2021. We have also studied the relationships between TTCI as a dependent variable, and Real GDP per capita and image abroad or branding as independent variables, to see if TTCI is concretely influenced by these indicators, with linear regression backward.

On the other hand, we have studied with the help of cross-country multiple regression analysis for TTCI and independent variables (Total contribution of Travel & Tourism to GDP, Total contribution of Travel & Tourism to Employment, Visitor Impact/International—Visitor spend USD, Visitor Impact/Domestic—Visitor spend USD, and Image abroad or branding and Travel) for 2019 because these are the latest values published by the World Travel & Tourism Council <https://wtcc.org/>.

With the help of SPSS, we have calculated the statistical data for each country from the five emergencies analyzed in the period 2007–2021, as the evolution for Real GDP per capita, the evolution of disparities between Real GDP per capita in the period 2007–2020, and the linear regression method and ANOVA for the dependent variable TTCI and the independent variables Real GDP per capita and Image abroad or branding of country.

3.2. Algorithm of the System for Analyzing and Forecasting the Competitiveness of Tourism and Hospitality Services for Emerging Countries in Central and Eastern Europe Considered in the Analysis

To perform the statistical analysis on Real GDP per capita, Image Abroad of Country, and Travel & Tourism Competitiveness Index, we performed the following algorithm for this study based on the methodology mentioned in Figure 3.

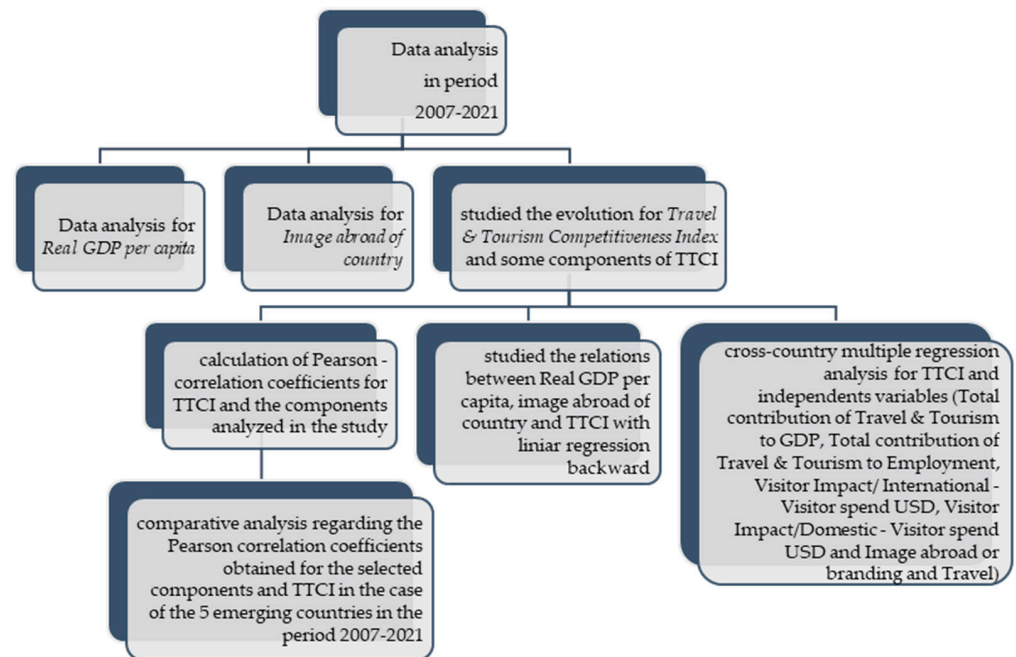


Figure 3. Algorithm of the system for analyzing and forecasting the competitiveness of tourism and hospitality services for emerging countries in Central and Eastern Europe considered in the analysis.

3.3. Methodology

Starting from the idea that at the level of a country, “national competitiveness is the ability of a state and its institutions to influence the stable growth of the economy” and that there is “a link between the level of competitiveness and the welfare of citizens” and “the higher the first indicator, the second is more positive (World Economic Forum 2020)”, we set out to study the relationship between Real GDP per capita as an indicator that reflects the standard of living and the well-being of the citizens of a country and the competitiveness of a country in the field of tourism and the hospitality industry.

The Global Competitiveness Index or GCI was created by Xavier Sala-i-Martin with Elsa V. Artadi (then a graduate student at Harvard University) and members of the WEF (mainly Jennifer Blanke).

Up to that point, the WEF had two complementary approaches to analyzing competitiveness. The first, called the Growth Competitiveness Index, had been developed by Jeffrey D. Sachs of Columbia University and John W. McArthur of The Earth Institute. The Sachs–McArthur index measured the aggregate or macroeconomic determinants of competitiveness. The second index, labeled the Business Competitiveness Index (BCI), was developed by Michael Porter of Harvard University and was first introduced in 2000. In contrast to the Sachs–McArthur index, Porter’s index focused more on the microeconomics or business aspects of competitiveness (The Global Comp 2004).

The Global Competitiveness Index (GCI) is combined with the Business Competitiveness Index and is determined on the basis of 113 variables, divided into 12 categories.

Given that the OECD considers that the measure of competitiveness is the ability of a country to produce goods and services that can withstand the test of the international market, under the conditions of maintaining and even increasing the real revenues of the OECD population in the long run (Organization for Economic Co-operation and Development 1992).

We aim at studying how the tourism competitiveness index reflects the way in which the tourism services and hospitality industry activities in one country compete on the international market with those in other countries or face external competition on the domestic market.

To this end, we studied the tourism competitiveness reports that are prepared biannually by the WEF, and we extracted from them for the countries we studied a series of statistical data on the Travel & Tourism Competitiveness Index (TTCI), but and to a series of indicators that we considered more important from our point of view within the 5 pillars within the TTCI, namely, like in Figure 4:

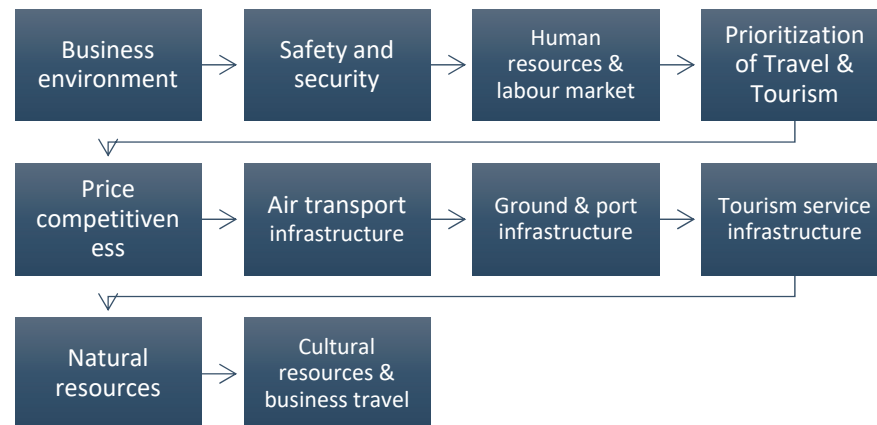


Figure 4. TTCI indicators considered in our study. *Source: Drafted by the authors.*

Given the latest report published by WEF <https://www.weforum.org/> on TTCI, we have proceeded to estimate the values for TTCI, as well as for all other indicators considered in our study, by the method of simple linear regression with SPSS and Eviews, obtaining a series of values that are found in the tables as estimated values for 2021.

4. Results

As a preliminary analysis, we first studied the evolution of the Real GDP per capita indicator, which reflects the standard of living and well-being of the population, in the period 2007–2021, based on statistical data (Statistical data). The evolution of this indicator can be represented with the help of the statistical data presented in Table 3, but also graphically with the help of Figure 5.

Table 3. Evolution for Real GDP per capita in period 2007–2020.

TIME	Czechia	Hungary	Poland	Romania	Slovakia
2007	15,250	10,410	8550	6050	11,960
2008	15,500	10,530	8910	6730	12,610
2009	14,690	9850	9070	6410	11,890
2010	15,020	9980	9400	6200	12,610
2011	15,310	10,200	9850	6350	13,020
2012	15,170	10,120	9980	6500	13,180
2013	15,160	10,330	10,100	6770	13,250
2014	15,480	10,800	10,440	7040	13,600
2015	16,290	11,220	10,890	7290	14,300
2016	16,670	11,500	11,240	7670	14,550
2017	17,490	12,030	11,790	8280	14,960
2018	17,990	12,690	12,420	8700	15,510
2019	18,460	13,270	13,020	9120	15,890
2020	17,340	12,680	12,700	8830	15,180

Source: Authors processing with SPSS based on statistical data from Eurostat.

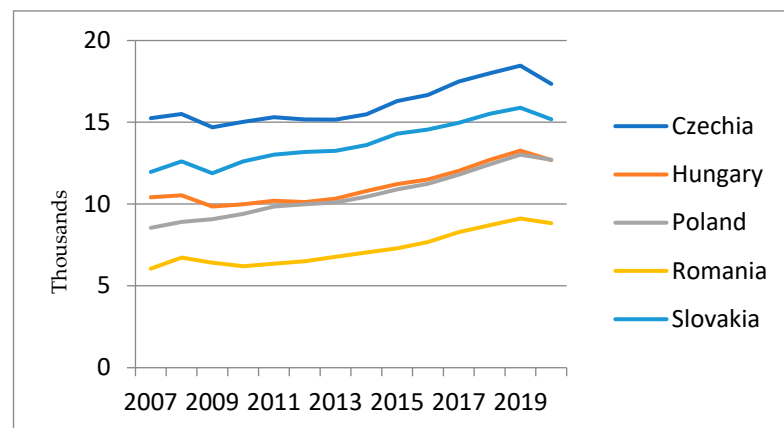


Figure 5. The evolution of GDP per capita in the period 2007–2020 with SPSS.

Thus, Figure 5 shows that the Czech Republic records the highest standard of living during the entire period considered in the study, followed by Slovakia, Hungary, and Poland. Also, we can remark in a negative sense that during the entire analyzed period, namely, 2007–2020, the lowest standard of living was registered in Romania.

Also, the evolution of disparities for the Real GDP per capita indicator in the five emerging countries studied can be highlighted as in Figure 6, so it is found that the discrepancies between Real GDP per capita in Hungary and Poland since 2010 have been practically eliminated, while the gap between the level of Real GDP per capita for all the emerging countries analyzed remained relatively constant.

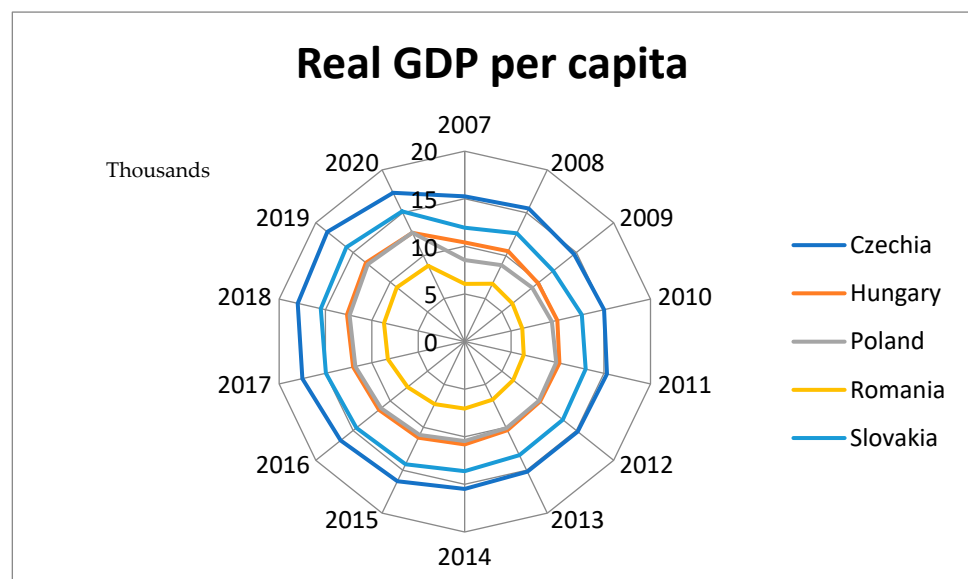


Figure 6. The evolution of disparities between Real GDP per capita in the period 2007–2020 with SPSS.

Also, the standard of living reflected by Real GDP per capita for 2020 for the emerging countries studied in Central and Eastern Europe can be highlighted with the help of Figure 7, which shows that the highest standard of living is still recorded in the year 2020 in the Czech Republic and the lowest in Romania.

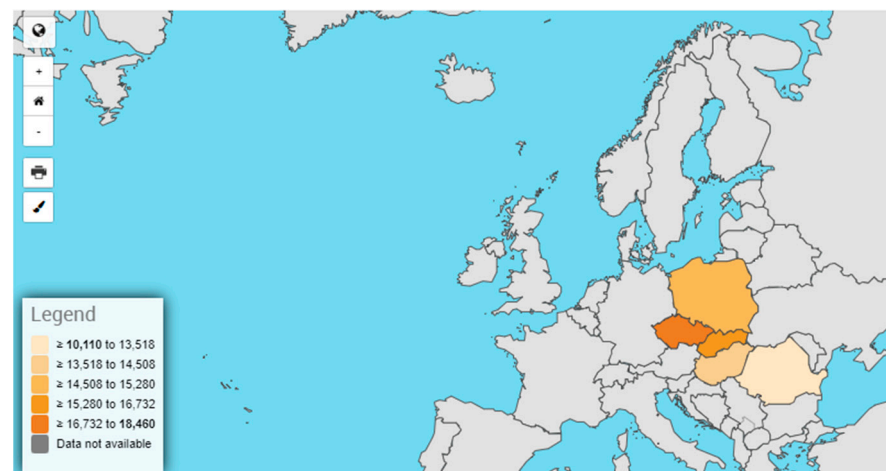


Figure 7. The evolution of disparities between Real GDP per capita in year 2022. Source: Eurostat (https://ec.europa.eu/eurostat/databrowser/view/sdg_08_10/default/map?lang=en, accessed on 25 March 2023) (Eurostat 2007–2021).

Just as foreign direct investment in a country is influenced by a number of factors that quantify the risks associated with the investment, as well as the potential of that investment, and in tourism and hospitality, business development is influenced by a number of elements, including that an important role for the image abroad of country indicator, calculated by the IMD World Competitiveness Executive Opinion Survey based on an index from 0 to 10, is also important.

We will study the evolution of this indicator Image abroad or branding of country in the period 2007–2021 based on the statistical data obtained ([World Competitiveness 2007–2021](#)), as well as the influence that this indicator exerts on the competitiveness of tourism in the analyzed emerging countries.

The evolution of the Image abroad or branding of country indicator can be presented with the help of the statistical data presented in Table 4, but also graphically with the help of Figure 8.

Table 4. Evolution for Image abroad or branding of country in period 2007–2021.

	Czech Republic	Hungary	Poland	Romania	Slovak Republic
2007	6.93	5.65	3.78	3.74	6.90
2008	7.03	4.48	3.91	4.21	6.75
2009	6.05	3.13	3.80	3.08	6.38
2010	5.45	4.32	4.46	2.88	5.28
2011	6.16	3.28	4.40	4.55	5.39
2012	5.87	2.10	4.46	2.78	5.52
2013	5.70	2.23	3.56	3.54	5.52
2014	6.18	3.51	3.04	2.83	5.69
2015	6.65	3.19	4.74	5.32	5.42
2016	6.75	3.95	3.94	4.03	5.47
2017	6.64	4.28	4.67	4.22	5.51
2018	6.31	4.71	4.41	3.93	4.85
2019	6.32	4.56	5.19	4.38	4.90
2020	6.23	4.58	5.45	4.34	4.79
2021	5.86	4.10	3.49	4.73	4.40

Source: Authors' processing with SPSS based on statistical data from World Competitiveness available at: <https://worldcompetitiveness.imd.org>, accessed on 29 August 2022.

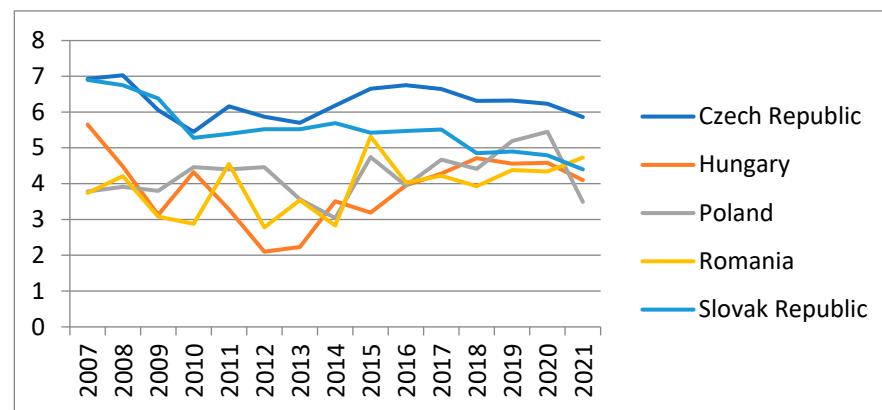


Figure 8. The evolution of Image abroad or branding of country in period 2017–2021.

Thus, Figure 8 shows that the Czech Republic has the highest value for the Image abroad or branding of country indicator throughout the study period, except for the period 2008–2010, in which Slovakia recorded a slightly higher value. The other countries taken in the analysis registered a very fluctuating evolution for this indicator, and in 2021, it is found that Romania is in second place, and in last place is Poland.

We have conducted an analysis of the evolution of Real GDP per capita and the indicator the image abroad of country within the five emerging countries in Central and Eastern Europe in the period 2007–2021. We also conducted a statistical analysis of the dynamics of the Travel & Tourism Competitiveness Index and of the indicators established to be analyzed within its pillars for the five emerging countries in Central and Eastern Europe in the period 2007–2021.

Subsequently, we proceeded to the correlation analysis, calculating the Pearson's correlation coefficients between TTCI and the components studied to determine the meaning and intensity of the connection between them for each country analyzed in 2007–2021, but also to perform a comparative analysis on correlation coefficients obtained for the selected components and TTCI in the case of the five emerging countries.

Thus, for the Czech Republic, the statistical data extracted and processed from the Tourism Competitiveness Report 2007, 2008, 2009, 2011, 2013, 2015, 2017, and 2019 and based on the estimation of 2021 values using the simple linear regression method can be centralized in Table 5 and graphs as in Figure 9.

Table 5. Statistical data for TTCI and other indicators for the Czech Republic.

Czech Republic	2007	2008	2009	2011	2013	2015	2017	2019	2021 *
Travel & Tourism Competitiveness Index	4.75	4.75	4.86	4.77	4.78	4.22	4.22	4.30	4.12
Business environment	4.13	4.37	4.41	4.56	4.49	4.35	4.50	4.50	4.57
Safety and security	4.74	5.45	5.63	5.36	5.30	5.71	5.90	6.10	6.19
Human resources & labor market	5.50	5.35	5.51	5.20	5.04	4.75	5.00	4.90	4.67
Prioritization of Travel & Tourism	3.97	4.79	5.10	4.47	4.44	4.61	4.20	4.30	4.30
Price competitiveness	4.03	4.12	4.18	4.48	4.23	4.47	4.90	5.40	5.30
Air transport infrastructure	3.39	3.39	3.51	3.59	3.70	3.13	3.10	3.40	3.24
Ground & port infrastructure	4.27	5.09	4.88	5.15	5.16	5.15	4.90	4.90	5.14
Tourist service infrastructure	4.49	5.04	5.11	5.30	5.15	5.44	5.10	5.20	5.41
Natural resources	5.80	2.87	2.89	2.84	3.40	2.59	2.50	2.50	1.86
Cultural resources & business travel	5.80	4.97	5.41	5.56	5.39	2.30	2.40	2.40	1.55

* values estimated using the simple linear regression method with SPSS.

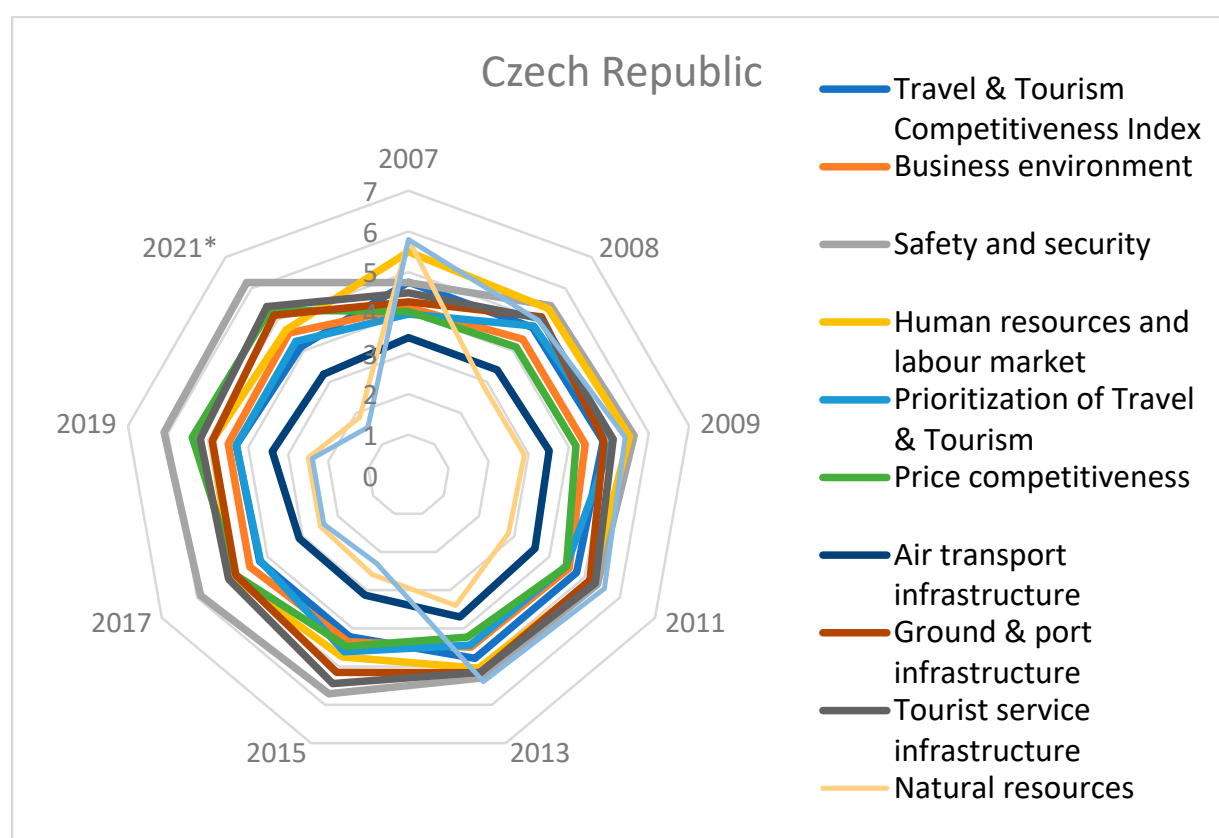


Figure 9. Evolution of TTCI indicators considered in our study for the Czech Republic. *Source: Drafted by the authors. * values estimated using the simple linear regression method with SPSS.*

For Hungary, the statistical data extracted and processed from the Tourism Competitiveness Report 2007, 2008, 2009, 2011, 2013, 2015, 2017, and 2019 and based on the estimation of 2021 values using the simple linear regression method can be centralized in Table 6 and Figure 10.

Table 6. Statistical data for TTCI and other related indicators for Hungary.

Hungary	2007	2008	2009	2011	2013	2015	2017	2019	2021 *
Travel & Tourism Competitiveness Index	4.61	4.6	4.45	4.54	4.51	4.14	4.06	4.20	4.01
Business environment	3.71	4.18	4.06	4.28	4.16	4.28	4.20	4.30	4.40
Safety and security	5.32	5.73	5.75	5.32	5.30	5.79	5.70	5.80	5.78
Human resources & labor market	5.34	5.03	4.99	5.13	5.11	4.79	4.70	4.60	4.53
Prioritization of Travel & Tourism	4.22	4.80	4.30	4.71	4.71	5.13	4.90	5.10	5.26
Price competitiveness	4.07	4.43	3.94	4.40	4.29	4.60	4.70	5.30	5.18
Air transport infrastructure	2.98	2.98	3.00	2.86	2.91	2.71	3.00	3.40	3.12
Ground & port infrastructure	3.74	4.81	4.41	4.63	4.51	4.45	4.40	4.20	4.41
Tourist service infrastructure	4.15	4.89	4.88	5.15	5.20	5.02	4.40	4.80	4.90
Natural resources	5.20	2.74	2.60	2.60	2.81	2.72	2.60	2.70	2.13
Cultural resources & business travel	5.20	4.75	3.92	4.17	4.09	2.22	2.30	2.30	1.46

* values estimated using the simple linear regression method with SPSS.

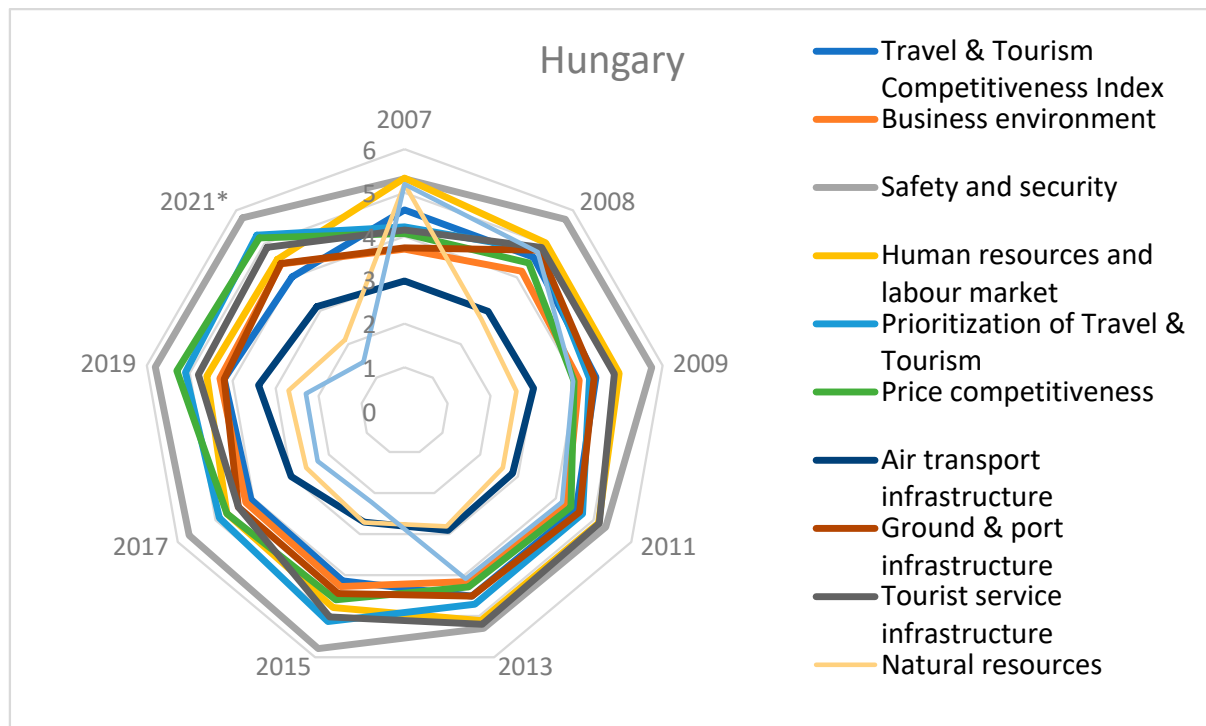


Figure 10. Evolution of TTCI indicators considered in our study for Hungary. *Source: Drafted by the authors. * values estimated using the simple linear regression method with SPSS.*

For Poland, the statistical data extracted and processed from the Tourism Competitiveness Report 2007, 2008, 2009, 2011, 2013, 2015, 2017, and 2019 and based on the estimation of 2021 values using the simple linear regression method can be centralized in Table 7 and represented graphically as in Figure 11.

The statistical data extracted and processed from the Tourism Competitiveness Report <https://www.weforum.org/> (accessed on 9 August 2023) 2007, 2008, 2009, 2011, 2013, 2015, 2017, and 2019 and based on the estimation of 2021 values using the simple linear regression method for Romania can be centralized in Table 8 and represented as a graph as in Figure 12.

Table 7. Statistical data for TTCI and other indicators within it for Poland.

Poland	2007	2008	2009	2011	2013	2015	2017	2019	2021 *
Travel & Tourism Competitiveness Index	4.18	4.18	4.18	4.38	4.47	4.08	4.11	4.20	4.19
Business environment	3.50	3.62	3.53	3.81	3.94	4.35	4.50	4.30	4.68
Safety and security	4.26	4.58	4.65	5.21	5.23	5.86	5.70	5.60	6.19
Human resources & labor market	5.31	5.18	5.16	5.14	5.09	4.80	4.90	4.80	4.70
Prioritization of Travel & Tourism	4.15	4.18	4.13	4.09	4.04	4.10	4.10	4.20	4.12
Price competitiveness	4.24	4.36	4.12	4.54	4.61	4.94	5.50	5.70	5.85
Air transport infrastructure	2.60	2.57	2.75	2.67	2.69	2.57	2.60	3.20	2.93
Ground & port infrastructure	3.60	3.95	3.47	3.30	3.69	4.08	4.30	4.30	4.38
Tourist service infrastructure	3.61	3.60	3.51	4.47	4.71	4.44	4.20	4.50	4.82
Natural resources	5.52	3.72	3.53	3.49	3.70	3.14	3.00	3.20	2.57
Cultural resources & business travel	5.52	4.72	5.08	5.41	5.35	2.77	2.80	3.00	2.30

* values estimated using the simple linear regression method with SPSS.

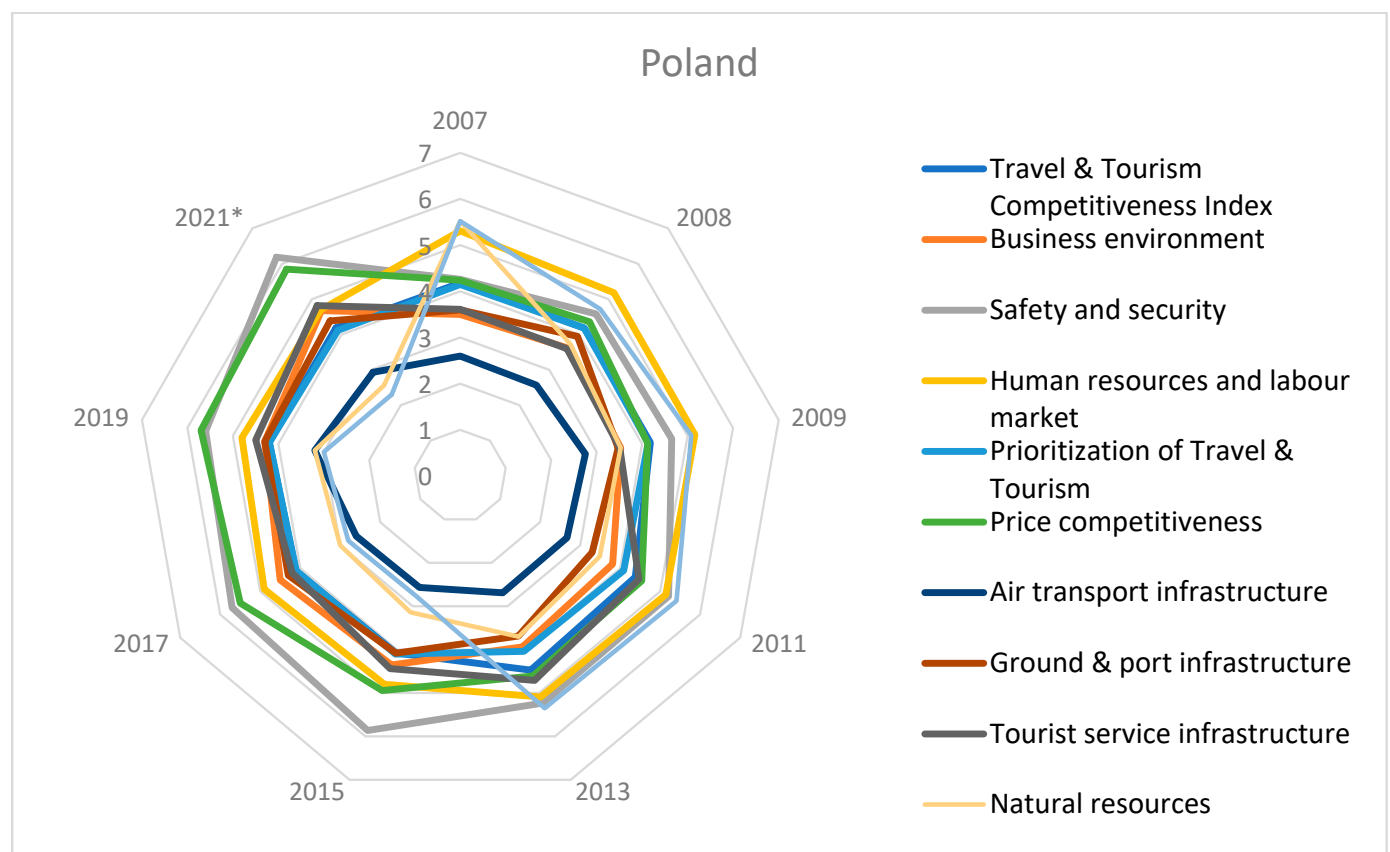


Figure 11. Evolution of TTCI indicators considered in our study for Poland. *Source: Written by the authors. * values estimated using the simple linear regression method with SPSS.*

Table 8. Statistical data for TTCI and other indicators within it for Romania.

Romania	2007	2008	2009	2011	2013	2015	2017	2019	2021 *
Travel & Tourism Competitiveness Index	3.91	3.88	4.04	4.17	4.04	3.78	3.78	4.00	3.89
Business environment	3.20	3.55	3.61	3.80	3.67	4.11	4.40	4.40	4.64
Safety and security	4.26	4.87	5.26	5.45	4.89	5.42	5.80	6.00	6.17
Human resources & labor market	4.96	4.96	5.15	4.93	4.73	4.56	4.40	4.50	4.29
Prioritization of Travel & Tourism	3.45	3.58	3.72	4.43	3.77	4.34	3.80	4.10	4.26
Price competitiveness	4.19	4.10	3.98	4.46	4.41	4.89	4.70	5.60	5.47
Air transport infrastructure	2.38	2.57	2.74	2.76	2.59	2.34	2.40	2.70	2.54
Ground & port infrastructure	3.01	3.44	3.11	3.06	2.87	3.10	2.80	3.10	2.90
Tourism service infrastructure	3.55	4.42	4.46	4.99	5.07	5.01	4.40	4.60	5.00
Natural resources	4.64	2.67	2.87	2.69	3.25	2.70	3.00	3.20	2.75
Cultural resources & business travel	4.64	3.12	2.85	3.33	3.31	2.07	2.30	2.30	1.74

* values estimated using the simple linear regression method with SPSS.

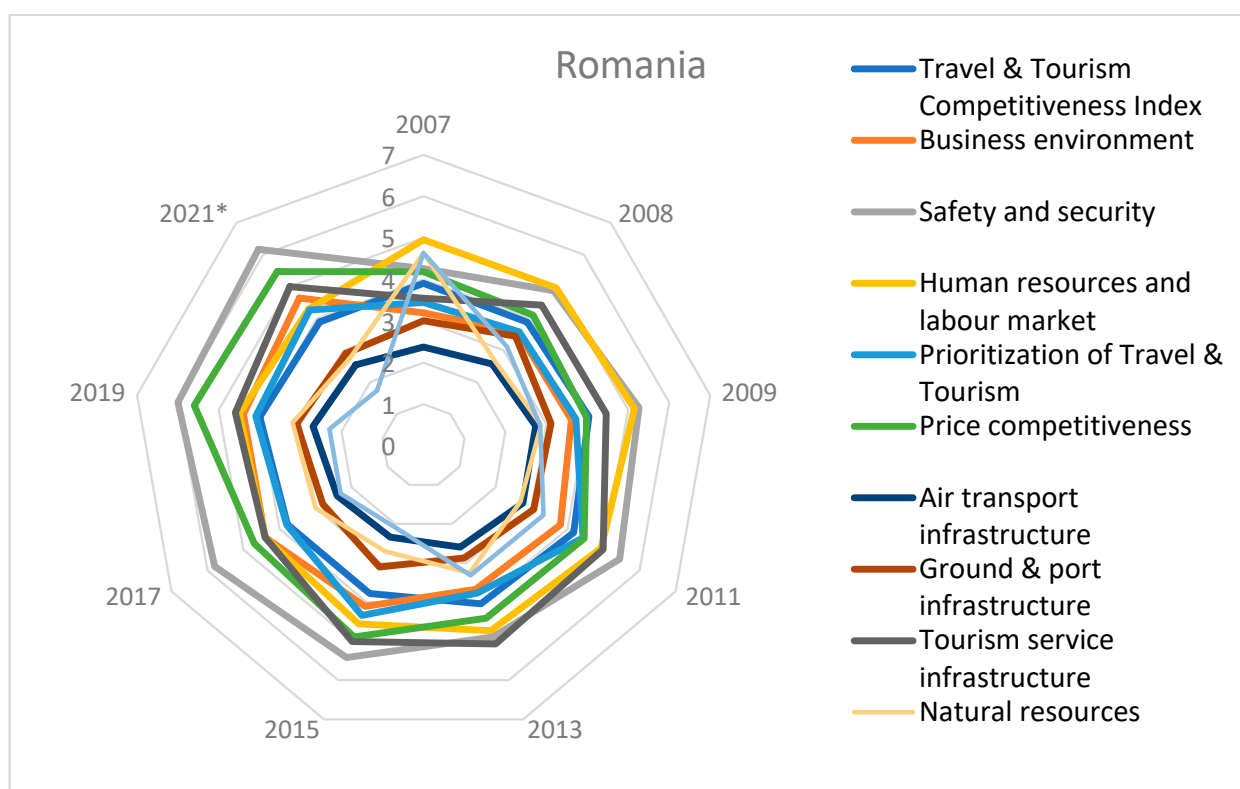


Figure 12. The evolution of the indicators within TTCI considered in our study for Romania. *Source: Drafted by the authors.* * values estimated using the simple linear regression method with SPSS.

In the Slovak Republic, the statistical data extracted and processed from the Tourism Competitiveness Report 2007, 2008, 2009, 2011, 2013, 2015, 2017, and 2019 and based on the estimation of 2021 values using the simple linear regression method can be centralized as in Table 9 and is represented graphically as in Figure 13.

Table 9. Statistical data for TTCI and other indicators within it for the Slovak Republic.

Slovak Republic	2007	2008	2009	2011	2013	2015	2017	2019	2021 *
Travel & Tourism Competitiveness Index	4.68	4.42	4.34	4.35	4.32	3.94	3.91	4.00	3.76
Business environment	3.81	3.94	3.78	3.96	3.92	3.92	4.00	4.10	4.09
Safety and security	5.37	5.70	5.59	5.23	5.00	5.55	5.60	5.60	5.51
Human resources & labor market	5.78	5.39	5.22	5.04	5.01	4.75	4.70	4.70	4.38
Prioritization of Travel & Tourism	3.05	3.29	3.70	3.64	3.67	4.04	4.10	4.30	4.50
Price competitiveness	4.66	4.38	4.27	4.23	4.43	4.51	4.95	5.40	5.17
Air transport infrastructure	2.30	2.35	2.34	2.17	2.18	1.78	1.75	2.00	1.71
Ground & port infrastructure	4.01	4.61	4.02	4.27	4.20	4.22	4.19	4.20	4.20
Tourist service infrastructure	4.29	4.87	4.59	4.89	4.94	4.94	4.34	4.40	4.57
Natural resources	5.62	4.01	3.73	3.93	3.98	3.31	3.43	3.40	2.88
Cultural resources & business travel	5.62	2.69	2.69	2.92	2.90	1.42	1.53	1.60	0.62

* values estimated using the simple linear regression method with SPSS.

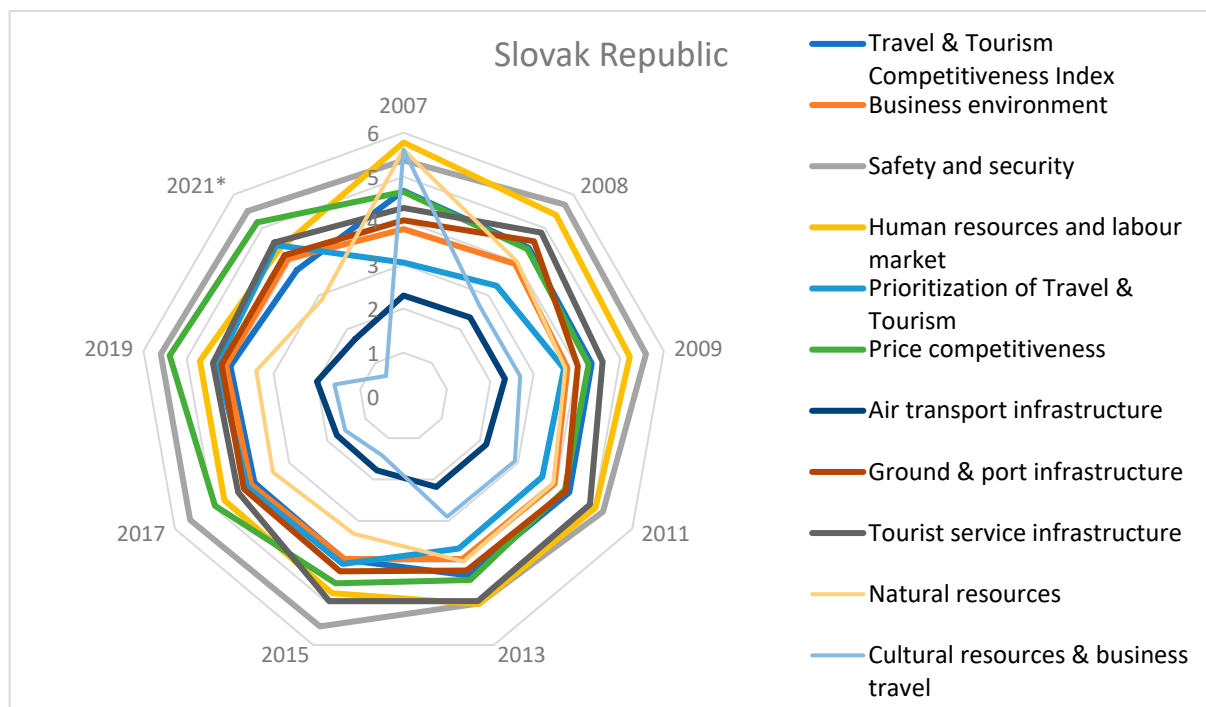


Figure 13. Evolution of TTCI indicators considered in our study for the Slovak Republic. *Source: Drafted by the authors. * values estimated using the simple linear regression method with SPSS.*

Applying the correlation method, we determined the Pearson's correlation coefficients between TTCI and the components studied to determine the meaning and intensity of the connection between them, and we performed a comparative analysis on the correlation coefficients obtained for selected components and TTCI for the five emerging countries in the period 2007–2021.

For a start, we performed an analysis on the descriptive statistics for TTCI and the analyzed components, which is presented in Table 10.

With the help of SPSS, we determined the Pearson's correlation coefficients by correlated bivariate between TTCI and the components considered essential within the TTCI pillars, and we obtained the values from Table 11. The positive values reflect the fact that there is a direct link between TTCI and the respective factor. The closer the value is, the stronger the connection intensity is, as can be seen for the following elements: Air Transport Infrastructure (0.875614), Cultural Resources (0.356635), Human Resources & Labor Market (0.562775), Prioritization of Travel Tourism (0.227424), and Tourist Service Infrastructure (0.281744). Thus, the factors that influence the TTCI the most are Air Transport Infrastructure and Human Resources & Labor Market, and to an average extent, those related to Cultural Resources and Tourist Service Infrastructure.

Table 10. Descriptive Statistics.

	TTCI	Air Transport Infrastructure	Business Environment	Cultural Resources	Ground Port Infrastructure	Natural Resources	Human Resources	Price Competitiveness	Prioritization Travel	Safety Security	Tourist Service Infrastructure
Mean	3.94	2.55	3.80	3.03	3.05	3.12	4.79	4.47	3.88	5.19	4.56
Median	3.91	2.57	3.67	3.12	3.06	2.87	4.93	4.41	3.77	5.26	4.46
Maximum	4.17	2.76	4.40	4.64	3.44	4.64	5.15	5.60	4.43	6.00	5.07
Minimum	3.78	2.34	3.20	2.07	2.80	2.67	4.40	3.98	3.45	4.26	3.55
Std. Dev.	0.13	0.16	0.39	0.80	0.19	0.65	0.25	0.43	0.34	0.51	0.49
Skewness	0.18	−0.001	0.22	0.75	0.66	1.72	−0.24	1.10	0.49	−0.38	−0.88
Kurtosis	1.86	1.42	2.04	2.91	3.09	4.59	1.73	3.96	1.81	2.39	2.99
Jarque–Bera	0.89	1.54	0.69	1.44	1.12	9.05	1.14	3.61	1.49	0.59	1.97
Probability	0.63	0.46	0.70	0.48	0.56	0.01	0.56	0.16	0.47	0.74	0.37
Sum	59.20	38.26	57.08	45.54	45.88	46.84	71.88	67.06	58.28	77.90	68.40
Sum Sq. Dev.	0.26	0.37	2.22	9.04	0.51	5.94	0.91	2.65	1.71	3.76	3.44

Source: SPSS processing.

Table 11. Pearson—Correlation coefficients.

	TTCI	Air Transport Infrastructure	Business Environment	Cultural Resources	Ground Port Infrastructure	Natural Resources	Human Resources & Labor Market	Price Competitiveness	Prioritization of Travel Tourism	Safety & Security	Tourist Service Infrastructure
TTCI	1.000000										
Air Transport Infrastructure	0.875614	1.000000									
Business Environment	−0.333681	−0.118771	1.000000								
Cultural Resources	0.356635	0.026420	−0.867876	1.000000							
Ground Port Infrastructure	0.006400	0.234883	−0.340324	0.026386	1.000000						
Natural Resources	−0.065686	−0.384131	−0.521255	0.769532	−0.307801	1.000000					
Human Resources & Labor Market	0.562775	0.526916	−0.837796	0.598314	0.502794	0.133494	1.000000				
Price Competitiveness	−0.233094	−0.190439	0.797608	−0.571274	−0.274966	−0.150547	−0.814733	1.000000			
Prioritization of Travel Tourism	0.227424	0.197984	0.551324	−0.518149	−0.076818	−0.566684	−0.326821	0.571990	1.000000		
Safety & Security	−0.053281	0.215500	0.929021	−0.859086	−0.213056	−0.666072	−0.583052	0.667130	0.635014	1.000000	
Tourist Service Infrastructure	0.281744	0.338372	0.469059	−0.601319	−0.066607	−0.766247	−0.280143	0.346169	0.737927	0.531801	1.000000

Source: SPSS processing.

Thus, considering those factors that exert a positive influence on the TTCI, regardless of their intensity, i.e., those for which the Pearson's correlation coefficients have positive values, can be represented with the help of EViews, as in Figure 14.

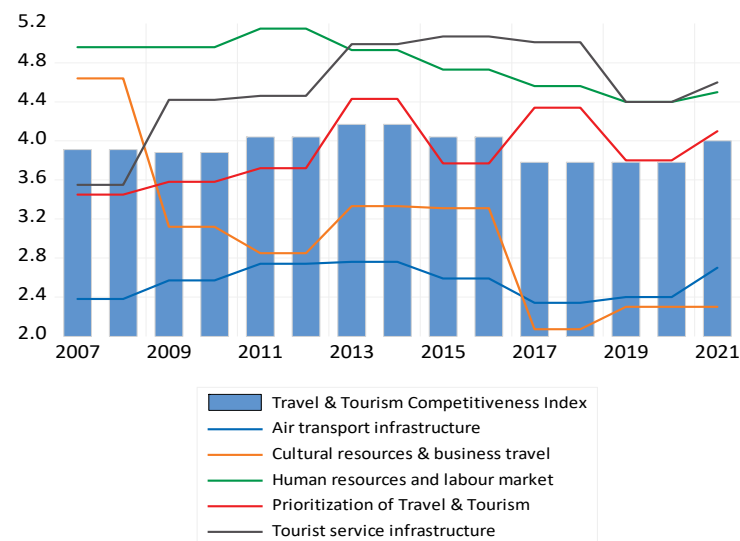


Figure 14. Factors that determine a positive influence on TTCI. Source: Processing with EViews.

The comparative analysis of the Pearson's correlation coefficients obtained for each of the five emerging countries analyzed were centralized and colored separately according to the intensity of the link, from shades of red, meaning a reverse and very strong link, to shades of dark green, for a direct link very strong, as in Table 12.

Table 12. Comparative analysis of Pearson's correlation coefficients.

Travel & Tourism Competitiveness Index	Pearson's Correlation Coefficient				
	Czech Republic	Hungary	Poland	Romania	Slovak Republic
Business environment	−0.33	−0.62	−0.28	−0.31	−0.74
Safety and security	0.81	0.41	0.91	−0.09	0.11
Human resources & labor market	0.87	0.92	0.34	0.51	0.97
Prioritization of Travel & Tourism	0.38	−0.77	−0.52	0.17	−0.96
Price competitiveness	−0.81	−0.75	−0.26	−0.20	−0.63
Air transport infrastructure	0.80	−0.25	0.06	0.87	0.92
Ground & port infrastructure	−0.22	0.01	−0.54	0.06	−0.04
Tourism service infrastructure	−0.50	0.04	0.37	0.22	0.06
Natural resources	0.54	0.51	0.12	−0.03	0.90
Cultural resources & business travel	0.98	0.98	0.60	0.35	0.94

Source: Drafted by the Authors.

Applying linear regression, the backward method for the dependent variable TTCI and the independent variables Real GDP per capita and Image abroad or branding of country studied, we determined whether these independent variables can be considered as determinants for TTCI.

The statistical data for each country from the five emergencies analyzed in the period 2007–2021 were processed with the help of SPSS, and we obtained a series of results, such as:

- (1) The linear regression method—backward for Czechia, Hungary, and Slovakia—the variable Image abroad or branding is not statistically significant (see Table 13).

Table 13. Variables Entered/Removed for Dependent Variable: TTCL.

Model	Variables Entered	Variables Removed	Method
1	Image Czechia, Real GDP per capita Czechia		Enter
2		Image Czechia	Backward (criterion: Probability of F-to-remove ≥ 0.100).
1	Image Hungary, Real GDP per capita Hungary		Enter
2		Image Hungary	Backward (criterion: Probability of F-to-remove ≥ 0.100).
1	Image Slovakia, Real GDP per capita Slovakia		Enter
2		Image Slovakia	Backward (criterion: Probability of F-to-remove ≥ 0.100).

Source: SPSS processing.

Analyzing only Model 2 for the Czech Republic, Hungary, and Slovakia because only these remained in the analysis, and because Sig. from the ANOVA table is 0.002, 0.009, and 0.002 (see Table 14 and the last column in Table 15), respectively, and is less than 0.05, shows that Model 2 for each of the three countries is statistically relevant, and the parameters in the respective regression equation differ significantly from 0. These results are centralized in Tables 14 and 15.

Table 14. Model Summary for dependent variable TTCL.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
2 Czechia	0.867	0.751	0.715	0.16238	−0.003	0.074	1	6	0.795	2.274
2 Hungary	0.807	0.651	0.601	0.15275	−0.071	1.535	1	6	0.262	2.074
2 Slovakia	0.883	0.780	0.749	0.15012	−0.020	0.589	1	6	0.472	2.256

Table 15. ANOVA for dependent variable TTCL.

Model	Sum of Squares	df	Mean Square	F	Sig.
2 Czechia	Regression	0.557	1	0.557	21.115
	Residual	0.185	7	0.026	0.002
	Total	0.741	8		
2 Hungary	Regression	0.305	1	0.305	13.052
	Residual	0.163	7	0.023	0.009
	Total	0.468	8		
2 Slovakia	Regression	0.560	1	0.560	24.861
	Residual	0.158	7	0.023	0.002
	Total	0.718	8		

As can be seen in Table 16 for each Model 2 analyzed in these three emerging countries, Sig. afferent for the constant and the independent variable Real GDP per capita are <0.05 (see column Sig. in Table 16), so the corresponding coefficients are statistically relevant.

- (2) Linear regression method—backward for Poland—both independent variables are statistically significant and can be included in the model (see b. Table 17);

Table 16. Coefficients for dependent variable TTCI.

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B Lower Bound Upper Bound	
2 Czechia	(Constant)	7.799	0.713		10.931	0.000	6.112	9.486
	Real GDP per capita Czechia	0.000	0.000	−0.867	−4.595	0.002	0.000	0.000
2 Hungary	(Constant)	6.140	0.499		12.303	0.000	4.960	7.321
	Real GDP per capita Hungary	0.000	0.000	−0.807	−3.613	0.009	0.000	0.000
2 Slovakia	(Constant)	6.668	0.499		13.358	0.000	5.487	7.848
	Real GDP per capita Slovakia	0.000	0.000	−0.883	−4.986	0.002	0.000	0.000

Table 17. Variables Entered/Removed for dependent variable TTCI Poland.

Model	Variables Entered	Variables Removed	Method
1	Image Poland, Real GDP per capita Poland		Enter

Source: SPSS processing.

Analyzing Model 1 for Poland, because, in this case, no independent variable was excluded from the initial model (see Table 18), and because Sig. from the ANOVA table is 0.351 (see column Sig. in Table 19) and is higher than 0.05, shows that this model is not statistically relevant, and the parameters in the respective regression equation do not differ significantly from 0 (see column Sig. in Table 20). These results are centralized in Tables 19 and 20.

- (3) Linear regression method—backward in the case of Romania—it seems that neither Real GDP per capita nor the variable Image abroad or branding are statistically significant (see Table 21).

Table 18. Model Summary for dependent variable TTCI.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change	Durbin–Watson
						F Change	df1	df2		
1 Poland	0.543	0.295	0.060	0.12173	0.295	1.253	2	6	0.351	1.645

Source: SPSS processing.

Table 19. ANOVA for dependent variable TTCI Poland.

Model		Sum of Squares	df	Mean Square	F	Sig.
1 Poland	Regression	0.037	2	0.019	1.253	0.351
	Residual	0.089	6	0.015		
	Total	0.126	8			

Source: SPSS processing.

Table 20. Coefficients for dependent variable TTCI Poland.

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B Lower Bound Upper Bound	
1 Poland	(Constant)	4.494	0.289		15.574	0.000	3.788	5.200
	Real GDP per capita Poland	6.269×10^{-5}	0.000	0.827	1.072	0.325	0.000	0.000
	Image Poland	−0.213	0.144	−1.141	−1.478	0.190	−0.566	0.140

Source: SPSS processing.

Table 21. Variables Entered/Removed for dependent variable TTCI Romania.

Model	Variables Entered	Variables Removed	Method
1	Image Romania, Real GDP per capita Romania		Enter
2		Real GDP per capita Romania	Backward (criterion: Probability of F-to-remove ≥ 0.100).
3		Image Romania	Backward (criterion: Probability of F-to-remove ≥ 0.100).

Source: SPSS processing.

Thus, for the case of Romania, it is no longer necessary to continue the analysis because both independent variables studied were eliminated from the model (see column Variables Removed in Tables 21 and 22).

Table 22. Model Summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics F Change	df1	df2	Sig. F Change
1	0.449	0.202	−0.065	0.13383	0.202	0.757	2	6	0.509
2	0.392	0.153	0.032	0.12758	−0.048	0.362	1	6	0.570
3	0.000	0.000	0.000	0.12971	−0.153	1.268	1	7	0.297

Source: SPSS processing.

The results on the linear backward regression for the dependent variable TTCI and the independent variables Real GDP per capita and Image abroad or branding of country for the five emerging countries considered in the study show that TTCI depends in most cases on the other specific indicators considered in the calculation within the pillars by which it is determined, and the standard of living in the respective countries, reflected through the Real GDP per capita indicator.

5. Discussions

The year 2019 showed that Travel & Tourism was one of the most important sectors in the world, contributing 10.4% of global GDP (USD 9.2 trillion) and 10.6% of all jobs (334 million), and created 1 in 4 of the total jobs globally. Expenditures of international visitors in 2019 amounted to USD 1.7 trillion in 2019 (6.8% of total exports, 27.4% of global exports of services) (WTTC 2021).

The health crisis triggered by COVID-19 has led to losses of almost USD 4.5 trillion, the contribution of the Travel & Tourism sector worldwide to GDP decreasing by 49.1% compared to 2019, to reach only USD 4.7 trillion in 2020, compared to a 3.7% decrease in global GDP. Domestic visitor spending fell by 45%, while international visitor spending fell by 69.4%. In 2020, 62 million jobs were lost, leaving only 272 million employees in this sector worldwide (WTTC 2021).

Other authors have also studied the relationship between TTCI and GDP, but some of them, such as Dempere, J. and Modugu, K. (Dempere and Modugu 2023), researched the connection between TTCI and the GDP growth rate in European countries. Also, Terzić (Terzić 2018) studied the contribution of tourism destination competitiveness to the GDP in case of certain European economies. Several authors, such as Selim Ach and Brian Pearce (Ach and Pearce 2009), studied the connection between TTCI and travel intensity.

Compared to the previous studies, in our study, we analyze the relationship between TTCI and GDP per capita, starting from the definition of this indicator, which “is a measure of economic activity and is also used as a proxy for the development in a country’s material living standards”, according to Eurostat (Available online: [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Gross_domestic_product_\(GDP\)](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Gross_domestic_product_(GDP)) accessed on 11 July 2023).

Applying the cross-country multiple regression analysis method, the backward method for the database for 2019 and 2020, because 2020 is the last year for which the values regarding the variables are published—Total contribution of Travel & Tourism to GDP, Total contribution of Travel & Tourism to Employment, Visitor Impact/International—Visitor spend USD, Visitor Impact/Domestic—Visitor spend USD and Image abroad or branding and Travel & Tourism Competitiveness Index—leads to a statistically relevant model.

The correct statistical model is chosen by the backward multiple regression method because all the independent variables are checked in turn, and those that are not statistically relevant are excluded, i.e., those that present multicollinearity.

Column Variables Removed from Table 23 shows that Model 1 results, from which none of the independent variables for both 2019 and 2020 are eliminated.

Table 23. Variables Entered/Removed for dependent variable TTCL.

Model	Variables Entered	Variables Removed	Method
1/2019	Total contribution of Travel & Tourism to GDP, Total contribution of Travel & Tourism to Employment, Visitor Impact/International—Visitor spend USD, Visitor Impact/Domestic—Visitor spend USD and Image abroad or branding and Travel		Enter
1/2020	Total contribution of Travel & Tourism to GDP, Total contribution of Travel & Tourism to Employment, Visitor Impact/International—Visitor spend USD, Visitor Impact/Domestic—Visitor spend USD and Image abroad or branding and Travel		Enter

Source: SPSS processing.

Based on Table 24 for Model 1 remaining in the analysis, it is found that the R Square is 1.000, i.e., the TTCL variable for the years 2019 and 2020 is explained in a proportion of 100% by the variables within the model. The model could have been validated, even if R Square was not equal to 1, as long as its value would have been greater than 0.5. If so, we should have identified other variables that could have influenced the TTCL. Cases as such can be analyzed in the following years through other studies, if need be so.

Table 24. Model Summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics F Change	df1	df2	Sig. F Change	Durbin-Watson
1/2019	1.000	1.000			1.000		4	0		-
1/2020	1.000	1.000			1.000		4	0		1.5

Source: SPSS processing.

We analyze Model 1 within the analysis, and because Sig. from Table 25 is less than 0.05, it shows that Model 1, both for 2019 and for 2020, is statistically relevant, and the parameters in the respective regression equation differ significantly from 0.

Table 25. ANOVA for dependent variable TTCL.

Model		Sum of Squares	df	Mean Square	F	Sig.
1/2019	Regression	0.072	4	0.018		
	Residual	0.000	0			
	Total	0.072	4			
1/2020	Regression	0.120	4	0.030		
	Residual	0.000	0			
	Total	0.120	4			

Source: SPSS processing.

Table 26 shows that for Model 1 in 2019, but also for Model 1 in 2020, which met the previous conditions, they are statistically significant, as evidenced by the fact that the confidence interval does not contain the value 0. Thus, the corresponding coefficients the independent variables introduced in those models are statistically relevant, and none of the independent variables should be excluded (see Table 27).

Table 26. Coefficients.

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B	
							Lower Bound	Upper Bound
1/2019	(Constant)	2.951	0.000				2.951	2.951
	Total contribution of Travel & Tourism to GDP	−0.019	0.000	−0.236			−0.019	−0.019
	Total contribution of Travel & Tourism to Employment	0.098	0.000	0.891			0.098	0.098
	Visitor Impact/International—Visitor spend USD	3.992×10^{-6}	0.000	0.049			0.000	0.000
	Visitor Impact/Domestic—Visitor spend USD	0.171	0.000	0.976			0.171	0.171
1/2020	(Constant)	4.773	0.000				4.773	4.773
	Total contribution of Travel & Tourism to GDP	−0.107	0.000	−0.917			−0.107	−0.107
	Total contribution of Travel & Tourism to Employment	0.464	0.000	1.614			0.464	0.464
	Visitor Impact/International—Visitor spend USD	0.000	0.000	1.523			0.000	0.000
	Visitor Impact/Domestic—Visitor spend USD	−0.279	0.000	−1.233			−0.279	−0.279

Source: SPSS processing.

Table 27. Excluded Variables for dependent variable TTCL.

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1/2019	Total contribution of Travel & Tourism to GDP/%of Total Economy					0.000		0.000
1/2020	Total contribution of Travel & Tourism to GDP/%of Total Economy					0.000		0.000

Source: SPSS processing.

In other words, the TTCL for any of the emerging countries analyzed can be very well estimated based on the independent variables monitored, namely, Total contribution of Travel & Tourism to GDP, Total contribution of Travel & Tourism to Employment, Visitor Impact/International—Visitor spend USD, Visitor Impact/Domestic—Visitor spend USD, and Image abroad or branding and Travel.

We will analyze in future studies if it is necessary to take into account in the model other variables that could influence TTCL.

6. Conclusions

The COVID-19 pandemic also triggered a global economic and social crisis and particularly affected the tourism industry in many countries, but also highlighted the positive contribution of Travel & Tourism.

Considering that the tourism industry has a continuous growth, apart from the pandemic period, this industry is particularly important at the global and national level, becoming one of the economic sectors with the highest growth rate. Thus, tourism exerts a direct influence on the socio-economic development of a country, considering its potential to create new jobs, especially for young people. Thus, state governments are interested in the development of public policies in the field of tourism, in an adequate segmentation of the market and in increasing the international visibility of national touristic objectives (Image abroad of country).

To be able to take coherent measures, sectoral development strategies must be elaborated, which constitute the basis for an action plan, through which sectoral problems are addressed and solved in a timely manner. At the same time, a national strategy for the tourism industry can be a useful tool for the Governments of the respective states for economic development and recovery after the COVID-19 pandemic, by increasing competitiveness in the tourism industry. In this context, Romania has already adopted this year the National Strategy of Romania for the Development of Tourism 2023–2035. In any state, the central authorities in the field of tourism and hospitality are interested in knowing a possible trend of tourism that can be anticipated depending on the competitiveness of this sector, quantified through Travel & Tourism Competitiveness Index determined globally by World Economic Forum. Also, the possibility to know how competitive this particularly important sector is for the five emerging countries considered in the study, allows the public authorities, but also the entrepreneurs in the hospitality industry and related services, to estimate the possible revenues that this field may generate, but also for the anticipation of the necessary labor force, as well as for the creation of specific national strategies that will lead to the increase of the tourist competitiveness.

Compared to the previous studies, in our work, we analyze the relationship between TTCI and GDP per capita and the image abroad of country for the five emerging countries in Central and Eastern Europe in the period 2007–2021. Based on these statistics, we studied the evolution of the Travel & Tourism Competitiveness Index and some components considered essential in its pillars for the five emerging countries in Central and Eastern Europe and the Pearson's correlation coefficients between TTCI and the components studied.

We have also studied with linear regression backward the relationships between TTCI as a dependent variable and Real GDP per capita and image abroad or branding as independent variables to see if TTCI is concretely influenced by these indicators. Our study highlights that TTCI depends in most cases on the other specific indicators taken into account in the pillars that determine it; also, the standard of living in those countries reflect the Czech Republic has the highest value for the Image abroad or branding of country indicator throughout the study period, with the exception of the period 2008–2010, when Slovakia recorded a slightly higher value. The other countries taken in the analysis registered a very fluctuating evolution for this indicator, and in 2021, it is found that Romania is in second place, and in last place is Poland.

In our study, with method of cross-country multiple regression analysis for TTCI and independents variables allows us to observe whether the respective model is statistically relevant and whether the tourism competitiveness index reflects the way in which the tourism services and hospitality industry activities in one country compete on the international market with those in other countries. In other words, TTCI for any of the emerging countries analyzed can be very well estimated based on the independent variables monitored, namely: Total contribution of Travel & Tourism to GDP, Total contribution of Travel & Tourism to Employment, Visitor Impact/International—Visitor spend USD, Visitor Impact/Domestic—Visitor spend USD and Image abroad or branding and Travel.

This study has certain limitations because the empirical study may be affected by the anomalies recorded by the tourism activity since the pandemic period. Moreover, this study focuses mainly on the series of TPCI, Image abroad of country and Real GDP per capita among the five countries chosen for the analysis, so it will be considered for future research, also we will take into account a number of other factors that may influence TPCI, not only the influence exerted by the pandemic context or take into account a larger number of European countries and not only, grouped into categories of countries where a certain type of tourism predominates. In addition, future research should be conducted, which could analyze other models for TPCI series, maybe as ARMA or ARIMA.

The research has both a theoretical applicability, by determining those variables that are particularly important for competitiveness in the field of tourism services and hospitality and implicitly for Travel & Tourism Competitiveness, but also a practical applicability, offering the possibility to anticipate the values of this TPCI and thus offering the possibility government, as well as entrepreneurs in the hospitality industry and related services to take the necessary measures to counteract the negative effects of the pandemic and to increase the competitiveness of tourism and hospitality services in the international market.

Considering the importance of increasing competitiveness in the tourism industry for economic development and recovery after the COVID-19 pandemic, the European states that have been seriously affected in the tourism field must take coherent measures and develop national strategies for the tourism industry.

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