

The Feasibility of Assessing the Country's Tourism Development Based on the Use of International Indices

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Abstract *Assessing tourism development using international indices can provide governments and industry experts with information to develop strategies and policies aimed at improving tourism and attracting more tourists. The purpose of the study is to identify the peculiarities of the assessment of tourism development based on international ratings and to identify the correlation between the indicators of world tourist flows and the ranks of the indices on the example of 59 countries. The grouping of a sample of 59 countries of the world was carried out based on information according to the selected international ratings of WDCR, NRI, TTDI, GII during 2008-2019, the level of tourism's contribution to GDP was estimated with the appropriate grouping of the sample, and the level of dependence between tourist flows and ranks was determined using correlation analysis in international rankings, where the highest level is characteristic of the "tourist flows-TTDI" pair. Based on the comparison of the results of TTDI and TTDI in 2019, the statistical relationship of indicators of world inbound tourist flows with index ratings was modelled. It has been established that bringing tourism data of 2019 in international ratings from TTDI to TTDI demonstrates that when the approaches to evaluation are changed, almost the same results are obtained. It was determined that 13 of the 59 countries of the sample have the highest positions in all the considered international ratings.*

Keywords: *Tourism, Development of Tourism, Global Index, Competitiveness, Economic Growth, Digitalization*

INTRODUCTION

The assessment of a country's tourism development based on international indices is an important tool for determining the competitiveness and efficiency of its tourism sector. In the world, there are a significant number of ratings and indicators that aim to determine the state of a specific phenomenon or object and find a position that was as close to ideal as possible. International indices are often based on objective and independent feedback and statistical data provided by authoritative international organizations and this allows obtaining reliable and comparative data for different countries. Tourism is no exception, so indices in this area provide an opportunity to compare the level of tourism development between different countries (Croes & Kubickova, 2013), which helps to determine the country's

strengths and weaknesses compared to other participants in the global tourism market (Torres-Delgado & Saarinen, 2017), to make decisions about visiting a tourist destination (Celotto et al., 2015). Rating at the international level can stimulate countries and relevant institutions involved in their development to improve the quality of tourism services and infrastructure (Fernández et al., 2020), as they face competition for tourist visitors (Barbosa et al., 2010), and high scores in relevant international indices can become attractive for investors looking for opportunities to develop tourism business in a specific country (Dwyer & Kim, 2003). The results of international indices can serve as a basis for the development and implementation of tourism development policies and strategies by national governments.

In this context the purpose of the article is to justify the feasibility of tourism development assessment, based on

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the research of international ratings. The task was also set to investigate the relationship between the leading world indices and incoming tourist flows, since the development of the economy, the increase in the level of competitiveness, infrastructure, etc. are favorable factors that, in combination with effective promotion, stimulate tourists to visit the respective destination.

THEORETICAL BACKGROUND

However, it is important to consider the limitations of using international indices, such as possible differences in methodologies, insufficient attention to specific country contexts, or the possibility of data manipulation (Pidgirna & Filipchuk, 2020). Also, indices may not take into account all aspects of tourism development, and therefore their use should be complemented by internal research and evaluations (Mitrović & Beloglavec, 2021). Torres-Delgado and Saarinen (2014) point out the fact that indices are better used to compare different tourism destinations, while indicators are better used to assess the sustainability of tourism destinations. The change in methodologies is also relevant, where in the study, special attention is paid to the Tourism and Travel Competitiveness Index (TTCI) and the Tourism and Travel Development Index (TTDI), which replaced the first and is based on an updated methodology, which led to the assessment of both of them and the comparison of the obtained results on the example of a defined sample.

The level of development of the relevant branch of the economy depends on many factors, but the state of the economy of the selected country plays a significant role. For many countries of the world, the industries in which they specialize become an important source of filling the budget, the development of related industries or spheres of activity. Tourism, as a sphere of the economy for a significant number of countries served as a significant source of filling the budget (Kyrylov et al., 2020) and a driver of economic growth (Mazaraki et al., 2019). In addition, tourism contributes to the development of the economy of a country (Gandilova, 2018) and a region (Gong, 2023). Researchers have also found a relationship between tourism and financial development (Shahbaz et al., 2019). At the same time, some countries such as Ethiopia, Kenya, Uganda and Tanzania, despite having rich wildlife resources and cultural heritage, do not generate high revenues from tourism (Elsawahli et al., 2014). In 2019, which was chosen as the period for analysis in this study, the contribution of tourism to the world GDP was 10.3% (or \$9.2 trillion) (World Travel & Tourism Council, 2019).

It should be noted that digitalization increasingly covers all spheres of the economy and society, including tourism. The spread of digital technologies to the tourism industry is changing the features of its functioning and development,

which attracts the attention of researchers. The results of studies by Boiko et al. (2022) show that tourists are increasingly using digital tools for information search, orientation, travel planning and organisation. Therefore, analysing the relationship between the level of digitalization and tourism development is also relevant.

MATERIALS AND METHODS

Within the scope of the study, the period up to 2019, i.e. before the start of the COVID-19 pandemic, was chosen for relevant analysis in order to obtain reliable data and investigate existing dependencies and future trends. Also, the study was based on a sample of 60 countries of the world, which were selected on the basis of published official data on various indicators. The data selection of 60 countries is due to the openness of the data for the selected indicators in the specified period, namely 2008-2019, as well as the different level of development of the countries to form relevant conclusions depending on the development of the economy. The data and materials of the World Bank, the World Economic Forum (WEF), the World Tourism Organization (UNWTO), the World Travel and Tourism Council (WTTC), statistical reports and notes of other leading organizations and research by leading scientists in this field served as the information base of the research.

The basis of the work was the following data:

- The country's level of development according to the methodology and data of the World Bank (The World Bank 2024).
- Direct contribution of tourism to GDP according to the methodology of the World Travel and Tourism Council (WTTC) (Oxford Economics 2021).
- Travel and Tourism Competitiveness Index (TTCI) based on World Economic Forum methodology (2019).
- Travel and Tourism Development Index (TTDI) based on World Economic Forum (2022 b).
- Global Innovation Index (GII) (INSTEAD, 2019).
- World Digital Competitiveness Ranking (WDCR) (IMD, 2019).
- Networked Readiness Index (NRI) (Portulance Institute, 2019).

In order to obtain relevant results, the work used such methods as systematization - to form a general understanding of the state and factors of tourism development, analysis - to evaluate key indices and the positions of countries in them, as well as to highlight the most significant components that reflect the real state of the situation, grouping - to find common features in the development of the economies of countries and the tourism sector, comparison - to reflect the differences in approaches that are the basis of the

international indices, according to which the research was carried out, and to choose the best indicator that provides an objective assessment of the state and potential development of tourism in the country, correlation analysis - to reflect the presence of a link and the degree of dependence between the selected objects.

RESULTS

Since tourism, before the COVID-19 pandemic, was a rapidly developing field, and together with it, there was an increase in the number of people employed in this and related fields, a synergistic effect of various market participants was created, respectively.

To achieve the purpose of the article, two working hypotheses are put forward in the work:

H.1. - The existence of a strong relationship between the country's economic development and its place in international rankings;

H.2. - The change of TTCI approaches to TTDI significantly reflected the country's position in the international ranking

and its relationship with tourist flows.

The first step of the research is to group the selected 60 countries according to the level of income, development of travel and tourism and readiness for information and communication technologies and the contribution of tourism to GDP. Next, with the help of correlation analysis, determining the existence of a relationship between the selected indicators and tourism.

According to the classification of the World Bank (The World Bank, 2024) of countries by income level, the study sample was grouped depending on the level of economic development, and the countries were divided into 4 groups:

- with a high level of income (81 countries);
- with an income above the average (54 countries);
- with income below average (54 countries);
- low-income (28 countries) (World Bank Blogs, 2019).

The results are presented in Table 1. Countries in the low-income group are not represented among the selected sample.

Table 1: Grouping of Sample Countries by Income Level According to the World Bank Methodology

High Level of Income	Income is Above Average	Income is Below Average
Australia, Austria, Bahrain, Belgium, Canada, Chile, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, Ireland, Israel, Italy, Japan, Republic of Korea, Latvia, Lithuania, Luxembourg, Netherlands, New Zealand, Poland, Portugal, Qatar, Romania, Saudi Arabia, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, United Arab Emirates, United Kingdom, United States of America	Argentina, Brazil, Bulgaria, China, Colombia, Jordan, Kazakhstan, Malaysia, Mexico, Peru, South Africa, Thailand, Turkey	India, Indonesia, Mongolia, Philippines, Ukraine

Source: Compiled by the authors based on World Bank data (2024).

Among the representatives of the first group, Chile - in 2008-2012 belonged to countries with an income above the average, Croatia in 2016, Hungary in 2012-2013, Latvia - in 2008, 2010-2011, Lithuania - in 2008-2011. Poland since 2009 belongs to countries with a high level of economy, Romania in 2019 and 2021 became a country with a high level of income, which for a significant period of time belonged to the group with an income above the average.

It is worth noting that the state of economic development is closely related to the development of innovations and information and communication technologies in the country, as well as their level of competitiveness. To confirm this hypothesis, we will group the selected sample according to the following indices: The GII, the WDCR, the NRI, the TTDI and its separate component - the level of ICT readiness in 2019. We will divide the countries based on the division countries according to different indices also

into 4 blocks: high level, above average, below average and low.

Since one of the tasks of the work is to study the relationship between the level of development of the country according to various indicators and the level of tourism development, we will also group countries according to the TTDI, which is an indicator of the development of tourism in each country, which is conducted once at two years old. At the same time, it is worth noting that until 2019, this indicator was the TTCI, which was conducted for 15 years with results displayed every two years.

The main difference between TTDI and TTCI was to take into account more advanced concepts of travel and tourism (T&T) development, including tourism sustainability, economic and social development, stakeholder engagement, integration of different levels of tourism and travel management, and to take into account the impact of the

pandemic and possible risks in the future (World Economic Forum 2022b).

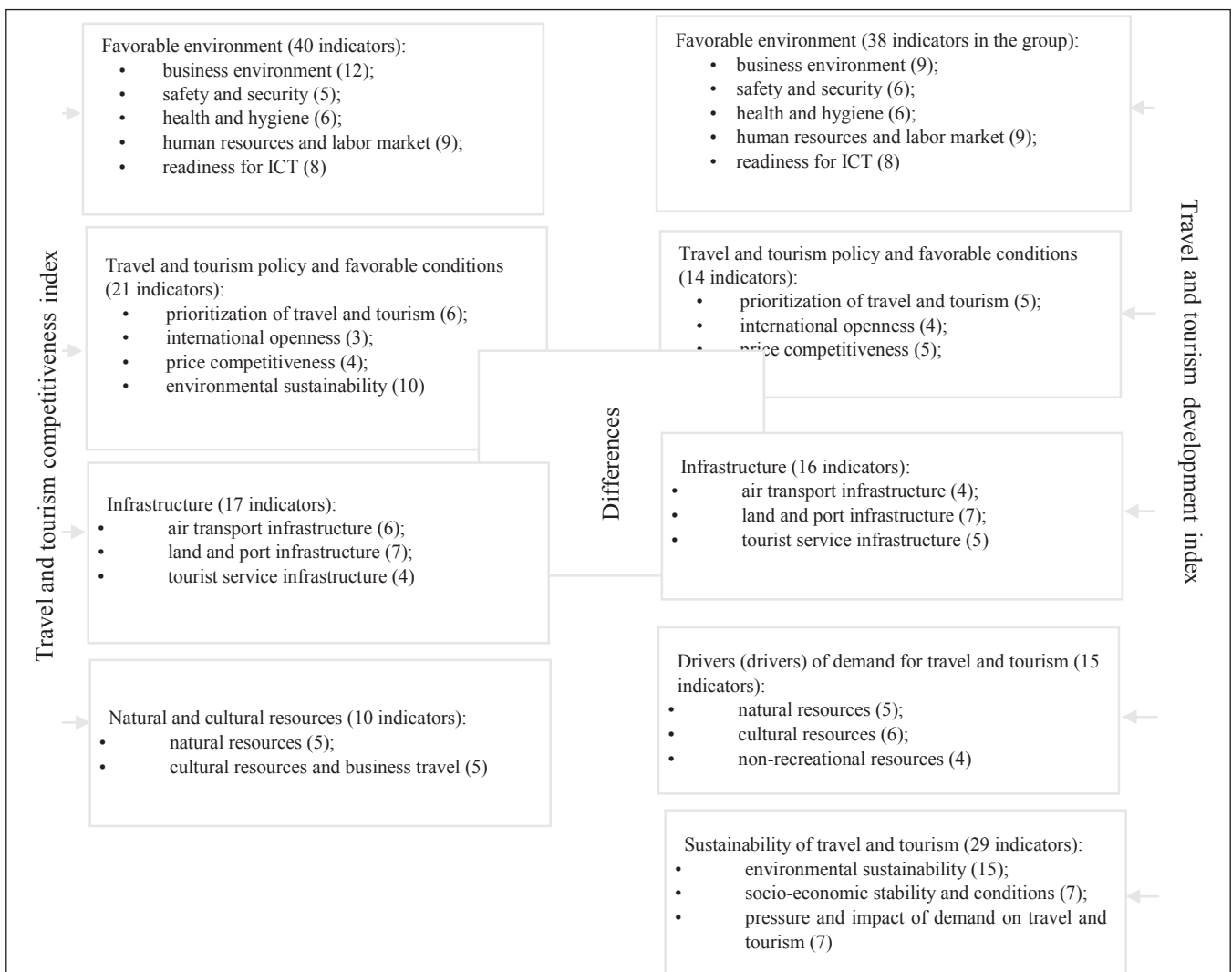
TTDI is considered an update of TTCI, therefore, in order to avoid unreliable data in 2019, the data of the Travel and Tourism Competitiveness Index were adjusted to the calculation methodology of 2021 and, thus, became officially published in 2019 as well. It is understood that even in 2019 was originally calculated by TTCI, but with the update of TTDI, a recalculation was made for 2019 based on already new methodology, data and indicators.

Measuring the competitiveness of travel and tourism through the relevant TTCI allowed it to become a strategic tool in the development of the tourism industry, identifying the weaknesses and strengths of each country in the field of tourism.

The TTCI was aimed at determining the level of competitiveness by measuring the following components:

- *Enabling Environment, including the Following Sub-Indices:* Business environment, safety and security, health and hygiene, human resources and labor market, readiness for ICT;
- *Travel and tourism Policy and Favorable Conditions with:* Prioritization of travel and tourism, international openness, price competitiveness, environmental sustainability;
- *Infrastructure:* Air transport infrastructure, land and port infrastructure, tourist service infrastructure;
- *Natural and Cultural Resources, Taking into Account:* natural resources, cultural resources and business travel (World Economic Forum, 2019).

In general, this index takes into account 90 indicators, each of which is aimed at determining the country's competitiveness in the field of tourism. At the same time, the TTDI contains 5 blocks, where enabling environment and infrastructure



Source: Compiled by the authors based on World Economic Forum (2019, 2022 b).

Fig. 1: Main Differences between TTCI and TTDI

with all sub-indices remained unchanged, and other blocks and sub-indices were moved and expanded. Particular attention is focused on taking into account sustainability, which contains almost 30 indicators. The transition from assessing the level of competitiveness was due to changes in the external environment, and therefore, it became necessary to take into account these transformations, where TTDI is aimed at measuring not so much the level of tourism and travel development as taking into account the driving forces of such development.

At the same time, the TTDI contains 5 blocks that already include 112 indicators, with 52 indicators remaining from the TTCI. It is worth noting that, despite the fact that certain indicators have changed from the previous index, either the methodology or the source has been changed. The main differences between TTCI and TTDI are presented in Fig. 1.

So, as can be seen from Fig. 1, while preserving certain blocks and sub-indices, the number of indicators used to measure them has changed in the updated version to 22. Particular

attention is focused on taking into account sustainability, which contains almost 30 indicators. The transition from assessing the level of competitiveness was due to changes in the external environment, and therefore, it became necessary to take into account these transformations. TTDI is aimed at measuring not so much the level of tourism and travel development as taking into account the driving forces of such development. The key difference between these indices lies in the approach to evaluation. As with TTCI, the results were calculated as the arithmetic average of 4 sub-indices, which, in turn, were also calculated as the average of the sub-indices. Accordingly, when calculating the TTDI, the previous approach was changed, where the updated index is calculated as the arithmetic average of 17 components, that is, it allows showing the significance of each of the 17 sub-indices (World Economic Forum, 2022 b).

Accordingly, groupings were performed by both TTCI (Table 2) and TTDI (Table 3) in order to reflect whether drastic changes occurred when the index was updated.

Table 2: Grouping of Countries According to the TTCI According to the Methodology of the World Economic Forum

High Level of Development	The Level of Development is Above Average	The Level of Development is Below Average
Spain (1), France (2), Germany (3), Japan (4), USA (5), United Kingdom, Australia, Latvia, Canada, Switzerland, Austria, Portugal, China, Hong Kong, Netherlands, Republic of Korea, Singapore, New Zealand, Mexico, Denmark, Sweden, Luxembourg, Belgium, Poland, Ireland, Slovak Republic, Finland, Malaysia, Iceland, Thailand, Brazil, United Arab Emirates, India	Slovenia, Czech Republic, Indonesia, Greece, Turkey, Cyprus, Bulgaria, Estonia, Hungary, Peru, Lithuania, Croatia, Italy, Bahrain, Colombia, Romania, Israel, Chile, Argentina, South Africa, Qatar, Saudi Arabia	Philippines, Ukraine, Kazakhstan, Jordan, Mongolia

Source: Compiled by the authors based on World Economic Forum (2019).

Thus, 33 countries out of 60 according to the TTCI were included in the group of countries with a high level of tourism development, 22 - above average, and 5 countries

have a level of travel and tourism development below average according to the TTCI in 2019.

Table 3: Grouping of Countries According to the TTDI According to the Methodology of the World Economic Forum

High Level of Development	The Level of Development is Above Average	The Level of Development is Below Average
USA (1), Japan (2), United Kingdom (3), Germany (4), Spain (5), France, Switzerland, Australia, Singapore, Canada, Austria, Italy, Portugal, Netherlands, China, Denmark, Finland, Hong Kong, Republic of Korea, Ireland, Sweden, Iceland, Luxembourg, New Zealand, Belgium, United Arab Emirates, Czech Republic, Greece, Malaysia, Cyprus, Estonia, Poland, Mexico	Thailand, Slovenia, Hungary, Chile, Bulgaria, Israel, Qatar, Croatia, Saudi Arabia, Indonesia, Lithuania, India, Latvia, Turkey, Romania, Brazil, Slovak Republic, Argentina, Bahrain, Colombia, Jordan, Kazakhstan, South Africa, Peru	Philippines, Mongolia

Source: Compiled by the authors based on World Economic Forum (2022 a).

According to the calculation of the TTDI, 33 countries were also included in the group with a high level of tourism development. Comparing countries on both indices, namely TTCI and TTDI in 2019, it should be noted that most

countries have hardly changed positions, although some differences are still observed. In particular, the Czech Republic (38), Greece (42), Cyprus (44), Estonia (46) and Italy (52) were classified according to the Development

Index to the group with a level above the average, but when calculating the updated Development Index, they fell into the group with a high level of travel and tourism development. At the same time, a mirror situation is observed with the other five, which according to the TTCI were at a high level, but when recalculating the TTDI are classified as a group with an above average level - Thailand, India, Latvia, Brazil, the Slovak Republic.

The main changes are also observed in the quantitative shift in the group above the average, where, unlike the TTCI, the number of countries has increased to 24, and in the group with a level below the average there are 2. These

transformations can be explained by the fact that Ukraine was not taken into account in the updated TTDI, but Jordan and Kazakhstan changed positions, entering the group with an above-average level.

If we estimate the direct contribution of tourism to GDP for each country, then, taking into account that this level was 10.3% in the world in 2019, we will get the following grouping of the sample (Table 4). The direct contribution of tourism reflects the monetary measurement of the volumes of tourism provided by outbound and domestic tourists, i.e. spending on tourism by both non-residents and residents.

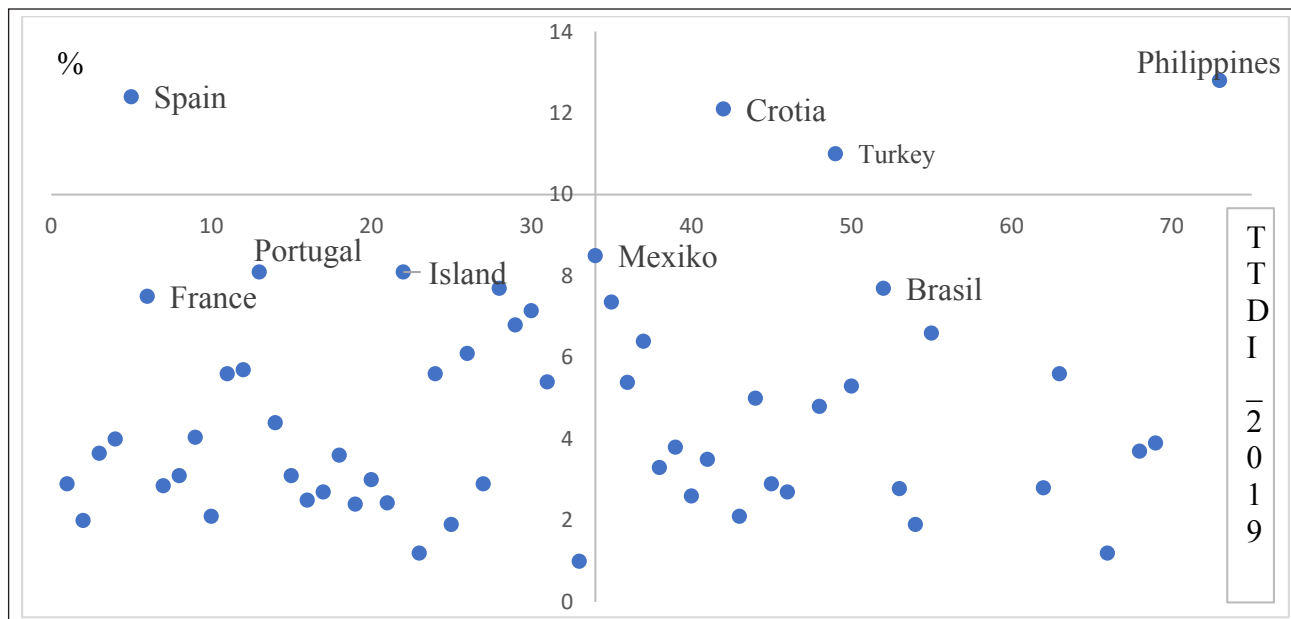
Table 4: Grouping of Countries According to the Direct Contribution of Tourism to GDP According to the Methodology of the WTTC

High Level	The Level is Above Average
Croatia, Philippines, Spain, Turkey	Bahrain, Brazil, Cyprus, France, Greece, Hungary, Iceland, Malaysia, Mexico, Portugal, Thailand, United Arab Emirates
The level is below average	The level is low
Australia, Austria, Bulgaria, Chile, China, Estonia, Germany, Hong Kong, Indonesia, Ireland, Italy, Jordan, Latvia, Netherlands, New Zealand, Peru, Qatar, Romania, Singapore, Slovenia, South Africa, United Kingdom, USA	Argentina, Belgium, Canada, Colombia, Czech Republic, Denmark, Finland, India, Israel, Japan, Kazakhstan, Republic of Korea, Lithuania, Luxembourg, Mongolia, Poland, Saudi Arabia, Slovak Republic, Sweden, Switzerland, Ukraine

Source: Compiled by the authors based on Statista (2023), World Tourism & Travel Council (2019).

As can be seen from this Table 4, only 4 countries from the sample had a high level of tourism contribution, that is, their level was above the world average.

In order to trace the density of the 2019 TTDI among a sample of 59 countries, we will build a corresponding matrix that will also reflect the contribution of tourism to the country's GDP (Fig. 2).



Source: Compiled by the authors.

Fig. 2: Position of the Country by TTDI and Direct Contribution of Tourism to GDP, 2019

As can be seen from the data in Fig. 2, the highest density (33 countries) is characteristic of the quadrant where the rank in the TTDI is high, and with regard to the contribution of tourism, this group combines countries with a level above and below the average. The leaders in terms of tourism contribution are located in the upper quadrants, where only Spain has a high ranking in both TTDI and tourism contribution.

If evaluate the dependence of TTDI with the contribution of tourism to GDP, then the analysis of the level of inbound tourist flows, which affects the contribution of the industry to the country's economy, should also be important here. It is worth noting that the volumes of tourist flow for each country are quite different, especially if you take into account the area of the country and the presence of various attractions and the corresponding promotion. In 2019, the leaders in terms of the number of inbound tourist flows were: France, the USA, China, Spain, Mexico, Latvia, Greece, Hungary, and the Slovak Republic.

Almost half of the countries selected for analysis belong to those that have high volumes of inbound tourist flows, as well as high ratings by other indicators (Annex A), such as Tourism direct GDP Rank, TTCL, TTDI, GII, WDCR, NRI and ITA (Inbound tourism, arrivals).

Analyzing the level of development of economies takes into account the development of innovations, in 2019 130 countries of the world were evaluated according to the GII, which represents the level of economic development of the country and competitiveness, which are based on innovations. For many countries of the world, innovation forms the basis of their strategic development, therefore it is extremely important to measure the level of innovation at the international level. By focusing on the standard of development and innovation use, this index encourages the introduction of latest technologies in various fields and sectors of the economy.

Innovation is considered a driving force, a tool that allows to improve the level of the object and is aimed at

strengthening its competitive position. Accordingly, WDCR was also chosen for analysis, which examines the country's potential and its readiness to accept and implement digital technologies, which in modern conditions are the driver of economic transformations. The uniqueness of this rating is its dynamism, manifested in the use of new criteria for maximum coverage of various aspects of competitiveness, rather than focusing exclusively on economic achievements. This rating includes 3 blocks: knowledge, technologies, readiness for the future (IMD, 2019).

No less important is the NRI, which is a comprehensive indicator of the level of development of information and communication technologies (ICT) and the country's network economy. Since 2019, the Portulance Institute and the World Information Technology and Services Alliance began to assess the level of information. This index is a reflection of the country's innovative and technological development, taking into account the possibilities of information technology development and the level of the country's digital economy. The peculiarity of this index is the existence of a link between the economic well-being of the country and the level of ICT development, since the latter contribute to innovative development, increase competitiveness and labor productivity, and are also activators of strategic development of various spheres of the economy.

The methodology for calculating the NRI involves assessing the country based on 62 indicators, which are grouped into 4 blocks: technologies as the core of the network economy; people without whom the availability and level of technology loses relevance; governance, which consists of regulating and safely engaging in the digital economy; impact through improved growth and well-being (Portulance Institute, 2019).

The next stage of the study is to calculate the correlation between the analysed indicators. To obtain objective results, the study uses Pearson, Spearman and Kendall's tau correlation coefficients (Table 5).

Table 5: Correlation Dependence between the WDCR, NRI, TTDI, GII and ITA, 2019

	WDCR	NRI	TTDI	GI
Pearson's Correlations				
NRI	0,814552			
TTDI	0,699607	0,865585		
GI	0,707172	0,871582	0,778113	
ITA	0,088297	0,270882	0,359924	0,206233
Spearman's Correlations				
NRI	0,820631			
TTDI	0,698890	0,847341		
GI	0,772297	0,924430	0,820105	
ITA	0,088428	0,228521	0,337756	0,200701

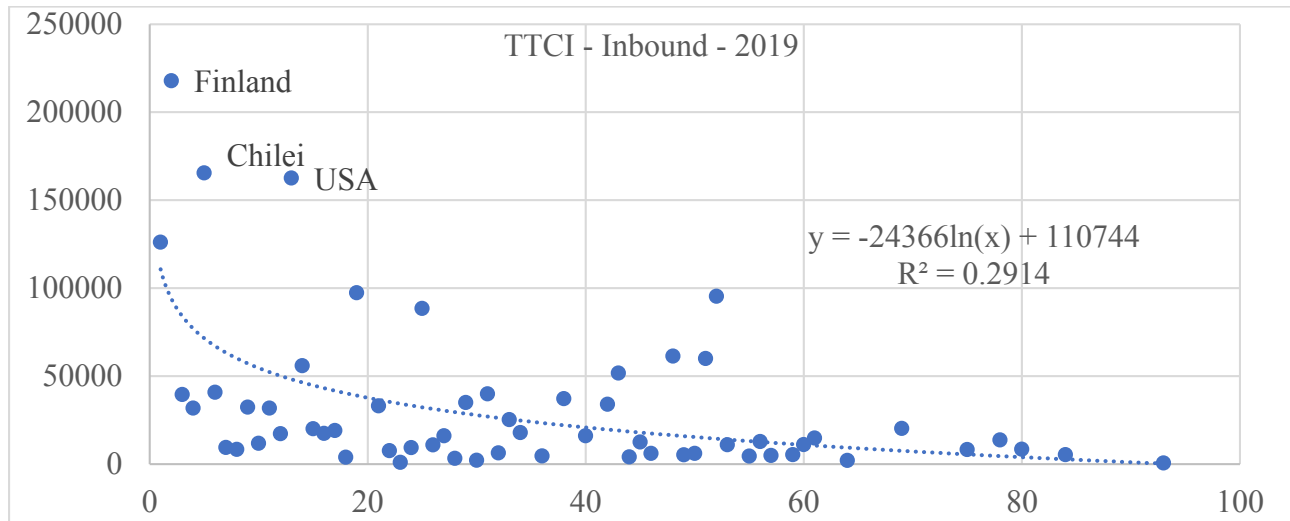
	WDCR	NRI	TTDI	GII
Kendall's Tau Correlations				
NRI	0,669199			
TTDI	0,510228	0,656341		
GII	0,624781	0,754530	0,616598	
ITA	0,059030	0,160725	0,237873	0,127995

Source: Calculated by the authors using Statistica.

Table 5 shows that there is a significant correlation between all indices except ITA. ITA has a statistically insignificant relationship with the analysed indices. The results are similar for Pearson's, Spearman's and Kendall's tau correlation coefficients.

In accordance with the indicators of the correlation matrix, we will try to build a mathematical relationship between the

volumes of tourist flows and the TTDI indicators for the data of 2019. Since the data on the TTDI and TTDI of 2019 are available, it seems appropriate to compare the relationship between the world tourist flows and the values of these indices. Fig. 3 represents the mathematical modelling of the dependence between indicators of tourist flows and the corresponding values of the TTDI index using a logarithmic trend.



Source: Compiled by the authors

Fig. 3: The Relationship of World Tourist Flows with Indicators of the TTDI

The values of the coefficient of determination ($R^2 = 0,2914$) and, accordingly, the correlation coefficient ($R = -0.53$) allow us to assume a sufficient level of adequacy of the model. More accurate assessments using statistical criteria were not carried out. Fig. 4 represents a similar modelling of the dependence between the number of tourists and the TTDI index, also based on 2019 data.

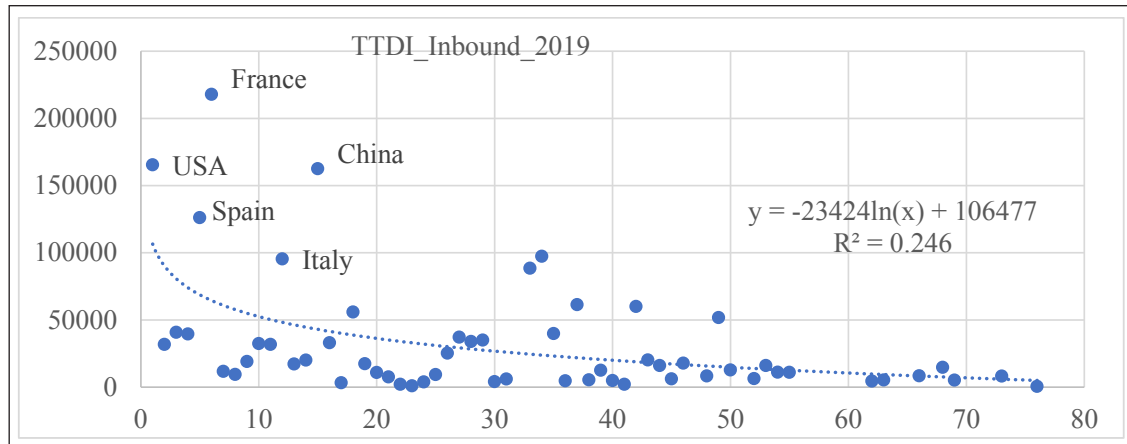
As can be seen from Fig. 3 and 4, the distribution of the volumes of tourist flows depending on the indices TTDI and TTDI are quite close. The main countries that have large volumes of incoming flows and at the same time occupy the first places in the rating of the TTDI and TTDI are: France, USA, China, Spain, Italy. In accordance with the logarithmic trend used for modelling, a significant reduction in the volume of tourist flows when the TTDI and TTDI increase occurs for the first 10 positions in the rating, for

positions 10-30 the reduction is not so noticeable, and after the 30th position, the sensitivity of flows to increase indices is practically imperceptible.

According to the proposed hypotheses at the beginning of the study, it was established:

H.1. The existence of a significant relationship between the economic development of the country and the place in the international rankings: the study showed that there is a dependence between the level of development of the country and its positions in the selected international rankings. 13 highly developed countries occupied leading positions in international rankings.

H.2. The replacement of the international tourism assessment rating did not significantly affect the country's position: the transition from TTDI and TTDI based on approaches



Source: Compiled by the authors.

Fig. 4: Modelling the Statistical Relationship of Indicators of World Tourist Flows with the Rating of the TTDI in 2019

to tourism assessment did not lead to drastic changes, the correlation between tourist flows and TTSI, as tourist flows and TTDI varies within the same limits.

DISCUSSION

Among the conducted groupings of countries according to various indices and the relationship with tourism, the distribution of the selected sample of countries based on the repeatability of the country's position according to them will also be generalizing. That is, highlighting the main feature of the TTDI, the study carried out conduct an appropriate grouping to distinguish the leaders according to GII, WDCI, NRI, TTDI. Accordingly, in 2019, 13 countries from our sample are in high-level positions according to the indicated indices. In particular, Australia, Canada, Denmark, Finland, Hong Kong, the Republic of Korea, the Netherlands, Singapore, Sweden, Switzerland, the United Arab Emirates, the United Kingdom and the United States of America.

The issue of the time period for the assessment of tourism development, namely 2008-2019, is due to obtaining objective assessments before the start of the COVID-19 pandemic. And the determination of countries' positions in international rankings is also due to the fact that after the start of the pandemic, drastic changes took place in all areas of the economy, and determining the level of correlation, as well as modelling the statistical relationship at the beginning and after negative events is not always an adequate reflection of the processes taking place.

The change of the TTCI to the TTDI led to certain points of discussion. First, there have been changes in the methodology and sources, and therefore, this requires

changes in the initial objective data as well. Secondly, the key approach to the assessment of tourism development has changed, where according to the TTCI - measuring the competitiveness of tourism, TTDI - taking into account the driving forces of tourism development and assessing its sustainability. Thirdly, the number of countries evaluated by international tourism indices has changed. Bringing the 2019 data to the TTDI caused a decrease in the number of countries whose tourism development was evaluated in the TTCI, which affected the position of the countries as a whole in 2019. Despite certain differences in the approaches to both tourism evaluation indices, the research found that the level of correlation between incoming tourist flows and indices is not statistically significant.

A study of the relationship between the TTDI and tourist flows showed that the leadership of the leading tourist countries, which also have high positions in other ratings, reflecting either stability in positions or their development, is maintained. Such growth is often based on modern innovations, so it is important to develop this direction both at the level of the state and relevant bodies, as well as of the tourism enterprises.

Tourism is developing in the digital space, where social media and travel websites contribute to increasing tourist flows (Ivchenko et al., 2023). However, with Ukraine lagging far behind developed countries in terms of digitalization (Ponomarenko et al., 2021), it will be difficult for the country to realise the potential of tourism development in the coming years.

At the same time, tourism development also has negative environmental impacts such as increased carbon footprint (Mehmood Kaewsang-on et al., 2024), so tourism development should be balanced.

CONCLUSION

In the process of research, the idea that the level of economic development of the country is related to the country's position in international rankings was confirmed. The country's specialization in a certain industry or several is also reflected in the place in the corresponding index, where tourism, as one of the priority areas of the economy, has not become an exception. On the example of a sample of 60 countries of the world, they were grouped according to key international ratings correlated with tourism. The basis of the division of countries according to each rating was the approach of considering the country by high level, above average, medium and low level within the respective ratings, which made it possible to see that almost a quarter of the countries in the sample are among the leaders in the selected world ratings. Research also shows (e.g. Stryzhak et al., 2021) that countries at the top of international rankings demonstrate a relationship between tourism development and nation brand.

The replacement of the key indicator of tourism development assessment - TTCI with TTDI, where, in addition to the methodology, the number of countries was also changed, which in turn, when bringing the TTDI to the data of 2019, caused a certain discussion, was also identified as a topical issue of the study. In addition, in the course of the research, an assessment of the degree of dependence between selected global indicators and tourist flows was carried out. A study by Uyar et al. (2023) showed similar results, finding that there is a positive relationship between TTCI and tourist arrivals.

The highest level was characteristic between TTDI and tourist flows. Despite the study of countries according to the relevant world ratings in 2019 and their relationship with tourism, the issue of the influence of international ratings on the assessment of tourism development remains relevant and requires in-depth research on the example of a larger sample of countries, comparing the results obtained before the start of the pandemic with those, which will characterize the development of tourism after its completion.

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ANNEX A: POSITIONS OF COUNTRIES ACCORDING TO WORLD RANKINGS

Country	Tourism Direct GDP_Rank	WDGR_Rank	NRI_Rank	TTDI_Rank	TTCI_Rank	Rank country by income group	GII_Rank	Inbound tourism: arrivals_Rank
Argentina	Low	Low	Upper Middle	Upper Middle	Upper Middle	Upper middle	High	Upper Middle
Australia	Middle	High	High	High	High	High	High	Upper Middle
Austria	Middle	Upper Middle	High	High	High	High	High	High
Bahrain	Upper Middle	-	Upper Middle	Upper Middle	Upper Middle	High	High	Upper Middle
Belgium	Low	Upper Middle	High	High	High	High	High	Upper Middle
Brazil	Upper Middle	Low	Upper Middle	Upper Middle	High	Upper middle	Upper Middle	Middle
Bulgaria	Middle	Middle	Upper Middle	Upper Middle	Upper Middle	Upper middle	Upper Middle	Upper Middle
Canada	Low	High	High	High	High	High	High	High
Chile	Middle	Middle	Upper Middle	Upper Middle	Upper Middle	High	High	Middle
China	Middle	Upper Middle	Upper Middle	High	High	Upper middle	Upper Middle	High
Colombia	Low	Low	Middle	Upper Middle	Upper Middle	Upper middle	Upper Middle	Middle
Croatia	High	Low	Upper Middle	Upper Middle	Upper Middle	High i	High	Middle
Cyprus	Upper Middle	Low	Upper Middle	High	Upper Middle	High	High	Middle
Czech Republic	Low	Middle	High	High	Upper Middle	High	High	High
Denmark	Low	High	High	High	High	High	High	High
Estonia	Middle	Upper Middle	High	High	Upper Middle	High	High	Middle
Finland	Low	High	High	High	High	High	High	Middle
France	Upper Middle	Upper Middle	High	High	High	High	High	High
Germany	Middle	Upper Middle	High	High	High	High	High	High
Greece	Upper Middle	Low	Upper Middle	High	Upper Middle	High	High	High
Hong Kong	Middle	High	High	High	High	High	High	High
Hungary	Upper Middle	Middle	Upper Middle	Upper Middle	Upper Middle	High	High	High
Iceland	Upper Middle	Upper Middle	High	High	High	High	High	Middle
India	Low	Middle	Middle	Upper Middle	High	Lower middle	Middle	High

Country	Tourism Direct GDP_Rank	WDCR_Rank	NRI_Rank	TTDI_Rank	TTCI_Rank	Rank country by income group	GII_Rank	Inbound tour- ism: arrivals_ Rank
Indonesia	Middle	Low	Middle	Upper Middle	Upper Middle	Lower middle	Middle	Upper Middle
Ireland	Middle	Upper Middle	High	High	High	High	High	Upper Middle
Israel	Low	Upper Middle	High	Upper Middle	Upper Middle	High	High	Middle
Italy	Middle	Middle	Upper Middle	High	Upper Middle	High	High	Middle
Japan	Low	Upper Middle	High	High	High	High	High	High
Jordan	Middle	Low	Middle	Upper Middle	Middle	Upper middle	Upper Middle	Middle
Kazakhstan	Low	Middle	Upper Middle	Upper Middle	Middle	Upper middle	Upper Middle	Upper Middle
Korea Rep.	Low	High	High	High	High	High	High	High
Latvia	Middle	Middle	Upper Middle	Upper Middle	High	High	High	High
Lithuania	Low	Upper Middle	Upper Middle	Upper Middle	Middle	High	High	Middle
Luxembourg	Low	Upper Middle	High	High	High	High	High	Low
Malaysia	Upper Middle	Upper Middle	Upper Middle	High	High	Upper middle	Middle	High
Mexico	Upper Middle	Low	Upper Middle	High	High	Upper middle	Middle	High
Mongolia	Low	Low	Middle	Middle	Middle	Lower middle	Middle	Low
Netherlands	Middle	High	High	High	High	High	High	High
New Zealand	Middle	Upper Middle	High	High	High	High	High	Middle
Peru	Middle	Low	Middle	Upper Middle	Middle	Upper middle	Middle	Middle
Philippines	High	Low	Middle	Middle	Middle	Lower middle	Middle	Middle
Poland	Low	Middle	Upper Middle	High	High	High	High	High
Portugal	Middle	Middle	High	High	High	High	High	High
Qatar	Middle	Middle	Upper Middle	Middle	Upper Middle	High	High	Middle
Romania	Middle	Low	Upper Middle	Middle	Upper Middle	High	Upper Middle	Middle
Saudi Arabia	Low	Middle	Upper Middle	Middle	Upper Middle	High	High	High
Singapore	Middle	High	High	High	High	High	High	High
Slovak Republic	Low	Low	Upper Middle	Middle	High	High	High	High
Slovenia	Middle	Middle	High	Middle	Upper Middle	High	High	Middle

Country	Tourism Direct GDP_Rank	WDOR_Rank	NRI_Rank	TTDI_Rank	TTCI_Rank	Rank country by Income group	GII_Rank	Inbound tourism: arrivals_Rank
South Africa	Middle	Low	Middle	Middle	Upper Middle	Upper middle	Upper Middle	Middle
Spain	High	Upper Middle	High	High	High	High	High	High
Sweden	Low	High	High	High	High	High	High	Middle
Switzerland	Low	High	High	High	High	High	High	Middle
Thailand	Upper Middle	Middle	Upper Middle	Upper Middle	High	Upper middle	Upper Middle	High
Turkey	High	Low	Upper Middle	Upper Middle	Upper Middle	Upper middle	Upper Middle	High
Ukraine	Low	Low	Middle	-	Middle	Lower middle	Middle	Upper Middle
UAE	Upper Middle	High	High	High	High	High	High	High
United Kingdom	Middle	High	High	High	High	High	High	High
USA	Low	High	High	High	High	High	High	High

Source: Compiled by the authors based on World Economic Forum (2019, 2022a, 2022b), World Bank (2024), World Tourism & Travel Council (2019); - - no data available.