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THE ATTRACTIVENESS OF TOURISM IN THE CONDITIONS OF MODERN CHALLENGES: METHODOLOGY, ASSESSMENT, PROSPECTS

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Abstract

Purpose. *The purpose of this study is to develop a methodological tool for assessing the level of tourism attractiveness in the country and to analyse the socio-economic consequences of the war for Ukrainian and international tourism on this basis.*

Design/methodology/approach. *A method of integral assessment of the attractiveness*

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of tourism at the macro level has been developed. The integral index includes 30 partial indicators describing the economic, political and legal, social, cultural and health, infrastructure and environmental pillars of the attractiveness of the country for tourists. The integral assessment of tourism attractiveness is conducted using the case of Ukraine and Poland in 2017–2022.

Findings. *According to the comparative analysis performed based on the integral index, the level of tourism development in Poland was significantly higher compared with Ukraine. The most obvious lag was evident in the political and legal, cultural and recreational, environmental and infrastructural components. The gaps in tourism development are increased by the influence of the war, where an especially harmful impact was felt in the social, economic and environmental spheres.*

Originality. *The originality and advantages of our approach are in using the official statistical data available for the objective estimation of the holistic attractiveness of tourism in a country, as well as the possibility of comparing a certain country in terms of touristic attractiveness with any other country considering differences in the values of partial indicators. The gaps obtained in the values of partial indicators can be used by policymakers in strategies for tourism development.*

Keywords: *war, tourism attractiveness, tourism competitiveness, integral index of touristic attractiveness.*

JEL index: *L83, Z31.*

1. Introduction

The tourism attractiveness of each country is influenced by many factors of the internal and external environment, and largely depends on the efficiency of the national tourism market. In these conditions, taking into account the specific indicators of the degree of influence of various factors which are both incentives and barriers to the growth of the touristic attractiveness of the country is a necessary step in the construction of an effective strategy for the development of tourism and its adaptation to global trends.

In the scientific literature there are several groups of factors that affect the formation of the touristic competitiveness of a country, in particular: natural and environmental, social, economic, political, legal, demographic and cultural factors. Under the influence of these factors, the competitiveness of the tourism sector is reduced to that which best meets the needs of tourists. This is possible only under the conditions of constant monitoring of market changes, the creation of new tourism products that are interesting to consumers, timely responses to changes in various fields of activity related to tourism, actively informing tourists about the presence and benefits of tourism in the country, and creating a system of service that is the most comfortable for tourists.

Another less intensively studied group of factors that influence the formation of the country's tourism potential and stimulate the development of the market of tourist ser-

vices is personal behavioural factors. They are formed by motives that provide the desire to travel according to the requirements of the tourist. Analysis of the role of psychological factors in the formation of the market of tourist services shows that only a small proportion of tourists return to places where they have previously been. This, however, does not apply to cases in the presence of economic, therapeutic or sensory impulses. With the growth of income, tourists are beginning to give more preference to psychological reasons when choosing a new trip. This is why the concept of attractiveness as a socio-psychological category begins to come to the fore in the development of modern approaches to assessing the development of tourism in the country, replacing such purely economic categories as the competitiveness of tourism, tourism potential and the like.

In this regard, ensuring a high level of tourism attractiveness in the country is increasingly attracting the attention of researchers working in various subject areas – in particular, in the economy of sustainable development, tourism, and socio-cultural research. Despite differences in the methodology and methodological principles of research, the definition and development of an optimal set of social and economic indicators suitable for assessing the tourism attractiveness of the country is common. In this context, the possibility of combining existing practical techniques with new techniques focused on the socio-psychological component of the concept of attractiveness is of particular importance. However, this issue has not yet been adequately covered in the works of scientists, which confirms the relevance and prospects of research in this direction.

However, although most modern research shows the existence of a link between the development of tourism and the presence of socio-cultural and historical potential in the country, methodological tools for assessing and measuring these elements of attractiveness require clarification and further development. This is particularly the case in terms of the standardization of indicators and the possibility of measuring them at the level of national economies, since most scientists use fairly abstract concepts to measure tourism attractiveness in the country, which are either very difficult to calculate or can be assessed only if the expert methodology of the study is applied. These approaches are dominant now, and some successful tools are outlined in works of Al Mamun and Mitra (2012), Havryliuk et al. (2021), Kim et al. (2020), Shpak et al. (2022), Vasanicova et al. (2021), and Reményik et al. (2020). However, the majority of works are focused on partial features of the touristic attractiveness of territories, and are particularly aimed at touristic brand development with an emphasis on the development of the most obvious competitive advantages (Castillo-Manzano et al., 2021; Tóth et al., 2013; Zaman & Aktan, 2021). Alternatively, many works in the field are devoted to investigating the links between tourism development and the consequences for communities, or prerequisites for tourism and hospitality industry support via taxation and support for other tools of doing business (Ajide, 2022). No doubt, challenges to tourism development caused by the COVID-19 pandemic have led to increased research into tourism threats and prospects (Kostynets et al., 2021; Tóth et al., 2015; Woosnam et al., 2022), including attempts to find solutions regarding opportunities for augmented reality and other advanced technologies in order to maintain links with potential customers (Florek & Lewicki, 2022).

The slow recovery of the tourism industry in light of the mitigation of pandemic risks

was destroyed again by the war in Ukraine, influencing not only neighbouring countries. Specifically, experts predict that a prolonged war between russia and Ukraine could translate into a loss of $14 billion in tourism receipts globally in 2022 (UNWTO, n.d.). European tourism is the zone at greatest risk. Moreover, these assumptions apply not only to Eastern Europe, where the war is directly ongoing, but also to the entire continent as a whole. The main reason for this is security. Russian armed aggression forces tourists, particularly those from other continents, to think about the feasibility of traveling to Europe. That is why they increasingly choose safer alternatives. As a result, tourism attractiveness decreases not only for Ukraine, but also for all European countries.

Taking into account all of the abovementioned, the aim of this study is to develop a methodological tool for assessing the level of tourism attractiveness in the country and to analyse the socio-economic consequences of the war for Ukrainian and international tourism on this basis. In light of this aim, the objectives of the study cover the development of a complex system of partial indicators of tourism attractiveness in the country as well as the calculation of the integrated index of tourism attractiveness using the cases of Poland and Ukraine. This makes it possible to undertake cross-country comparisons, to test the authors' methodological approach and to evaluate the consequences of the war in Ukraine for tourism development.

To the best of our knowledge, there is a lack of research dealing with country-level data based on the objective indicators describing the holistic system of factors influencing tourism attractiveness. Therefore, a comprehensive approach to assessing tourism attractiveness in the country based on publicly available data and covering the core constituents of the tourism environment is important for comprehensive management in this area. The authors' method is novel in this regard, and is important for diminishing the research gap in current investigations into tourism attractiveness at the country level.

The paper is organised as follows. The subsequent section provides a literature review considering tourism attractiveness and approaches to its assessment. Section 3 describes the methodological basis of the authors' research. The data, empirical approach, and results of the empirical study conducted using the cases of Ukraine and Poland are elaborated in Section 4. Lastly, concluding remarks as well as policy implications can be found in Section 5.

2. Literature review

The concept of attractiveness can be defined as the property of causing admiration and attracting special qualities and characteristics. The question of tourism attractiveness as a separate area of research has not yet been subject to comprehensive analysis, and has instead been considered through the prism of the attractiveness of tourist regions, territories or specific places. Thus, the scientific literature on tourism often uses the concept of "attractiveness" (from Lat. *attrahere* – attractiveness), which defines such important properties of tourist resources as their recreational value. In the context of this concept, the touristic attractiveness of the territory is formed by a combination of natural, historical and cultural tourist resources, and is determined by the presence of attractions (historical and cultural

monuments, natural heritage, etc.), developed tourist infrastructure (enterprises in the hotel industry, restaurants, transport, sightseeing services, information services, etc.), the level of security and law and order, trends in society (fashion for a particular type of recreation) and the like (Havryliuk et al., 2021). At the same time, scientists widely consider concepts such as "the attractiveness of the destination": since tourist destinations consist of specific physical, natural and cultural resources that are unique, exclusive and irreplaceable (for example, physiography, social and cultural resources of the country), these same factors are the basis of their attractiveness (Bernd & Brunner-Sperdin, 2015). In this sense, the attractiveness of the destination is considered in terms of the feelings and opinions of tourists about the ability of the destination to meet their needs (Vengesayi, 2003). From the demand side of particularly attractive tourist places or services, this perspective allows suppliers to effectively manage the level of their attractiveness in order to achieve the maximum sense of well-being for tourists (Cracolici & Nijkamp, 2008). At the same time, it should be noted that these resources do not establish the level of attractiveness of a territory. Tourism attractiveness is a variable phenomenon, which may change depending on the actions of various economic, social, natural and other types of factors.

Scientific interest in further research in this direction was fostered by: the growing importance of the tourism sector in the regional, national and global economy; increased competition in the tourism business, although over the years this has not changed a great deal; and the obvious advantages of tourism for the economy. Based on current trends in the development of tourism, solely from an economic point of view, tourism attractiveness as an industry that provides services is a faster return on investment and income. The development of tourism as an industry has led to the use of such concepts as "investment tourism attractiveness", "competitiveness of tourism", and "tourism potential". "Competitiveness" in tourism, along with other definitions mentioned, is a complex concept, so it is firmly entrenched in the scientific literature. The competitiveness of tourism lies in the ability of the industry to optimize its attractiveness for residents and non-residents by providing quality, innovative and attractive tourism services to consumers in order to gain a share in the domestic and global market, while ensuring the effective and sustainable use of available resources to support tourism (Gooroochurn & Sugiyarto, 2005). Thus, the conceptual framework for tourism competitiveness is based on innovative research that began to be published in the economic literature in the late twentieth and early twenty-first centuries, along with other methods of research on tourism attractiveness.

The competitiveness assessment methodology developed by Ritchie and Crouch (2003) was the first of the modern models presented in this paper to assess the competitiveness of tourism. Scientists consider it the main reference model of tourism competitiveness that has been created to date. This statement is based on the fact that this technique includes all of the important factors that can determine the competitiveness of a tourist destination. The authors of this model believe that the competitiveness of tourism is primarily caused by both the competitive environment at the level of microeconomics and the global environment at the macro level. The competitiveness of tourism is determined according to five levels: direct external and internal environment; global forces that change the composition and nature of tourism attractiveness; the main resources

and monuments of the local geographical enclave; additional factors and resources of the tourism industry; and activities that increase interest in the main resources (promotions or development of a tourism package) (Ritchie and Crouch, 2003).

Another well-known approach to assessing the competitiveness of tourism is the methodology developed by Dwayer and Kim (2003), who considered four sources of tourism competitiveness: economic agents involved in the development process; tourism policy (planning, management, investment in the tourism sector, taxes levied on tourism activities); tourism infrastructure; and the demand for tourism services and the employment generated by the sector.

These conceptual approaches to the methodology for assessing the competitiveness of tourism have contributed to significant empirical progress. The existing concepts highlight the need to define tourism competitiveness through a set of interrelated variables that must be measurable in order to assess and compare competitiveness. This led to the further development of a wide variety of indicators that are offered in the economic literature, the main drawback of which is that it is very difficult to find the values of indicators in all proposed areas of assessment.

Thus, since the appearance of the first theoretical foundations of the competitiveness of tourism, this area of economic research has received international recognition. In this context, in modern conditions, the most famous method is that of assessing tourism attractiveness using the competitiveness index in the field of tourism and travel (Travel and Tourism Competitiveness Index – TTCI), which was developed by experts of the World Economic Forum in conjunction with the International Air Transport Association (IATA), the UN World Tourism Organization (UNWTO) and the World Travel and Tourism Council (WTTC). The competitiveness index in tourism and travel has been calculated since 2012 and covers 140 countries, assessing their competitiveness using open-source data, information from institutions and experts in the field of tourism and travel, as well as the results of a survey of company managers. This index is measured in three sub-indices: legislative regulation; business climate and infrastructure; and human, cultural and natural resources (World Economic Forum, 2019). Each of the above sub-indicators consists of 14 core pillars, which in turn form the 90 indicators characterising differently oriented aspects of the development of tourism. Despite the worldwide popularity of this technique, which is characterised by the significant breadth of the scope of the subject area of the study, the simplicity of comparing estimates for different elements and the clarity of the presentation of the results, this tool for assessing tourism attractiveness has significant disadvantages, in particular the need to accumulate large amounts of information and to exert additional control over its reliability "at the exit". In addition, this technique is not devoid of subjectivity, since some of its indicators are calculated based on the opinions of experts and surveys of enterprises.

Today, competitiveness factors are of significant importance in explaining and assessing the level of tourism development at both the macro and micro levels, and are used as tools to assess tourism attractiveness. However, based on the etymology of the concept of tourism attractiveness, it is not correct to consider that the use of factors and comparative methods of assessing the competitiveness of tourism in the country is suffi-

cient for an exhaustive assessment and disclosure of the essence of the concept of tourism attractiveness. This leads to the emergence of a significant number of modern techniques that focus not on "dry" economic calculations, but instead vary the components and characteristics that can determine tourism attractiveness in the economic literature. One of such modern concepts of touristic attractiveness assessment is the weighted sum of attractiveness (WSM) method, which includes several successive stages: 1. The attributes of attractiveness and their weight are determined. The physical attributes of this method include geographical location, regional communication and vehicle availability, local souvenirs, and the availability of quality and special food. Social attributes include the existing influx of tourists, the intensity of fairs and festivals, safety for tourists, the likelihood of social crimes and the like. Environmental attributes include the probability of natural disasters within a specified time period, natural and anthropogenic threats and the like. 2. Evaluation of each attribute by respondents (Al Mamun & Mitra, 2012). Since the conceptual basis of the methodology is a fairly broad economic concept (tourism attractiveness), in addition to three components (physical, social and environmental), other groups of indicators should be included in the overall assessment, which traditionally assesses attractiveness in the social and economic sense (economic, political, cultural, etc.). Another controversial point of such methods is that this approach to evaluation is based solely on expert research, which gives grounds for doubt as to the reliability of the results obtained on the basis of this method.

Another group of modern techniques that determine the level of tourism attractiveness are techniques that are based on the determination of the level of attractiveness of the destination by measuring the attractiveness to each individual person (individual opinion) and combining these values into a single indicator. As a result, according to foreign scientists, the opinion of each person contributes to the overall touristic attractiveness of the destination or region, and therefore the competitiveness of the destination depends largely on the degree of production of individual levels of attractiveness. In other words, the characteristics of tourism which are perceived by tourists as the most important (or the most interesting) and which cause the strongest and most positive feelings among tourists, can be defined as the most important components of the formation of tourism attractiveness, and they are characterised by the highest values of the indices. In our opinion, this approach is very useful in determining the attractiveness of individual groups of historical and cultural sites or a particular area in order to determine the main factors that cause the desire of tourists to travel in a particular direction. Thus, it is possible to analyse the structure of attractiveness and determine the relative importance of the various elements of the destination for overall attractiveness. However, these studies do not require an assessment of the formation of attractiveness, but rather an analysis of the level of attractiveness of the tourism sector (Krešić & Prebežac, 2011).

The continuation of the mentioned approach can be found in the modern research of Kim et al. (2020), Shpak et al. (2022), Vasanicova et al. (2021), and Zaman and Aktan (2021). These authors include a variety of factors of the touristic attractiveness of a destination. However, there is a lack of complexity and unification in these approaches. They are mostly devoted to measuring the attractiveness of a certain territory consider-

ing its specific identity or the system of competitive advantages typical for the territory. Therefore, these methods are difficult to implement for comparative studies, where some typical and universal measurements are required.

The same limitations are distinctive of other studies with an emphasis on certain features of the attractiveness of the territory for some kinds of tourists. For instance, some important approaches have been developed to investigate: heritage attractiveness (Castillo-Manzano et al., 2021); natural resources, landscape and overall environmental attractiveness (Vukoičić et al., 2023; Ziernicka-Wojtaszek & Malec, 2022); cultural features (Devkota et al., 2020), including food attractiveness (Savelli et al., 2022); and other peculiarities of territories. Some useful approaches to the estimation of the attractiveness of certain territories can be found in related studies. In particular, not only touristic but also migration studies have developed a theoretical background to measure a country's attractiveness in terms of plentiful surroundings for the satisfaction of professional needs (Oliinyk et al., 2022) and other factors of ensuring well-being (Mishchuk & Grishnova, 2015; Papadopoulos & Fratsea, 2022). In all cases, the attractiveness of territories is linked with expectations of migrants or visitors and is described by a set of pull-factors. Their choice depends on the aims of the researchers; however, the majority of studies justify the most crucial factors due to their impact on subjective decisions, but do not use a complex approach.

The challenges for the development of tourism and hospitality under pandemic conditions caused new interest in the prospects of the industry. In this regard, the threats and measures for tourism industry support were studied by Florek and Lewicki (2022), Kostynets et al. (2021), Woosnam et al. (2022), and many others. The common feature of all similar studies is the emphasis on the positive economic impact of tourism, and therefore the necessity of supporting its steep recovery in different ways. Typical conclusions in this sphere are connected with the evidence of the economic growth influenced by tourism development, particularly due to visitors' expenses, remittances, investment growth (Akbulaev & Salihova, 2020; Virak & Bilan, 2022), and real estate market development (Nikšić Radić, 2022). Therefore, there is a need for the development of positive relations between local communities and visitors (Kim et al., 2020) and support for legal businesses with the restriction of latent entrepreneurship (Ajide, 2022).

Despite the developed background for the assessment of the most essential factors of evaluating touristic attractiveness, there is still a lack of comprehensive studies suitable for measuring the attractiveness of a territory considering the holistic complex of factors. Consequently, this slows down the development of appropriate strategic tools for territorial development based on the objective evaluation of weaknesses and possibilities for tourism development according to the gaps identified in ensuring the impact of certain factors.

Among the methods of assessing touristic attractiveness at the macro level developed by Ukrainian scientists, the most complex is the technique proposed by the Institute for Strategic Studies of the NAS of Ukraine. Economists propose determining the index of touristic competitiveness in Ukraine for two groups of indicators that assess the competitive advantages and disadvantages of the country (National Institute for Stra-

tegic Studies, n.d.). Behind the approaches to the content and the list of indicators, the methodology has many features and differences in comparison with the methodology for calculating the competitiveness index in the field of travel and tourism. As a result, it is very specific, since it is aimed at testing in countries that are developing and is not suitable for assessing countries with market economies, nor for comparing Ukraine with economically developed countries.

As we can see from the results of the literature analysis, there is no method for determining a complex indicator for the social and economic evaluation of the touristic attractiveness of a country. Therefore, there is a need to develop a methodology for assessing the tourism attractiveness in a country which would take into account the main set of factors affecting the touristic attractiveness of the country for tourists and be subject to formalization and the calculation of comparative and composite indicators.

Taking into account the negative trends in Ukraine and the existing methodological framework for assessing tourism attractiveness – involving single studies that relate to fragmented aspects, mainly the analysis of financial and economic indicators of the tourism industry – we find it important to develop a methodology for the integrated assessment of touristic attractiveness at the macro level.

The existing approaches to assessing the level of tourism attractiveness in the country highlighted above cannot be identified with the methods of assessing the competitiveness of tourism, as they are different in the essential characteristics of the concepts of attractiveness and competitiveness and have different specifics of the set of indicators and the method of their calculation, as confirmed and proved in the literature review. At the research stage, the following main differences in the use of these techniques were identified:

1. methods of assessing competitiveness are mainly large-scale and comprehensive, aimed at assessing attractiveness at the state and international level, while the methods that determine attractiveness are more localised, aimed at the study of certain territories, regions or individual objects;
2. methods of assessing competitiveness are based mainly on the integral values of indicators that can be quantified, while the methods of attractiveness are more abstract and practically impossible to calculate without the use of expert methods;
3. methods of competitiveness are often limited to the analysis of economic components, while methods of attractiveness, on the contrary, often gravitate to the analysis and accounting of such components as sociocultural, legal, environmental and the like, although often the indicators of these methods in the studies of domestic authors are intertwined and complementary.

Thus, there is a need to combine the useful peculiarities of tourism competitiveness and attractiveness assessment methods in order to develop a specific integrated method of assessing tourism attractiveness in the country. It should cover the complex of features, particularly, socio-cultural, political and other important components of tourism attractiveness. Today, the most widely used methodological tool for the estimation of tourism attractiveness is the Tourism Travel and Competitiveness Index. However, it has a different purpose and does not disclose the tourism potential of the country.

An effective comprehensive method of assessing tourism attractiveness in the coun-

try, on the one hand, should be built on a methodological basis appropriate to, on the basis of world rankings, provide a unified methodology for the comparability of the results of calculations. On the other hand, it should be detailed enough and provide possibilities for the managerial decisions of both business entities and the authorities of the country. In this aspect, assessing the level of tourism attractiveness only based on international indicators of competitiveness is not enough, because, in addition to the possibility of comparing the country and its specific indicators with other countries, it is necessary to develop indicators covering specific features of tourism attractiveness, as well as identifying the most problematic of them, in order to improve policy and strategies regarding tourism development.

3. Material and methods

Considering the described differences in assessing tourism attractiveness and tourism industry competitiveness, we find it important to develop the methodological basis for assessing tourism attractiveness in the country. This is based on the calculation of an integrated index of tourism attractiveness covering some partial quantitative indicators available in official databases. It is important to note that partial indicators are calculated exclusively on the basis of public, standardized, quantifiable values, without distorting the results of research by expert assessments and abstract descriptions of social and economic phenomena.

The integrated indicator includes six groups of partial indicators – economic, political and legal, social, cultural and health, infrastructure, and environmental. The detailed meaning and approach to the calculation of each group of indicators are presented in Table 1.

Table 1. *A complex system of indicators for the integrated assessment of tourism attractiveness in a country*

No.	The name of the indicator	Calculation formula	The symbols in the formula to calculate
I. Economic indicators of tourism attractiveness			
1	Index of consumption of tourist services	Icts = Vts/GDP	Vts – volume of tourist services sold in value terms, billion USD; GDP – gross domestic product, billion USD.
2	Index of excess expenses of tourists	Ieet = (Cod – DA)/ Cod	Cod – average cost of a 1-day stay for foreign tourists in the country, USD; DA – amount of daily allowance according to the legislation of the country, USD.
3	Index of profitability of food in the country	Ipf = 1 – Ibmc/Ibmh	Ibmc – international Big Mac index of the country, USD; Ibmh – highest international Big Mac index, USD.

No.	The name of the indicator	Calculation formula	The symbols in the formula to calculate
4	Index of health, recreation and culture expenditure in consumer spending	Ihrc = Vhrc/Vcs	Vhrc – volume of expenses on health, rest and culture, UAH; Vcs – volume of consumer spending, UAH.
5	Tourism employment index	Ite = Net/Nec	Net – number of people employed in the tourism industry, thousand people; Nec – total number of employed population of the country, thousand people.
II. Political and legal indicators of tourism attractiveness			
6	Peace index of the country	Ip = 1 – Pc/Nc	Pc – country's place in the international ranking of peaceful countries in the world; Nc – number of analysed countries in the international ranking of peace in the world.
7	Index of law enforcement by foreign citizens in the country (per 1,000 foreigners who enter the country)	Ile= 1 – Nfcc/Nfe	Nfcc – number of foreign citizens and persons who are prisoners or convicts; Nfe – number of foreigners who enter the country, million people.
8	Index of duration of stay of foreigners in the country	Idsf = Pms/Pcy	Pms – maximum period of stay of foreigners in the country, days; CYD – calendar year, days.
9	Index of openness of the tourist area of the country	Iota = 1 – Nvi/Nfei	Nvi – number of visas to enter the country issued; Nfe – number of foreigners who entered the country, thousand people.
10	Index of rates of airport tax	Irat = 1 – RAFmin/RATmax	RAFmin – minimum rate of airport fees in the country for passengers of economy class aircraft in international traffic, USD; RATmax – maximum rate of airport tax for passengers of economy class aircraft of international traffic, USD.
III. Social indicators of tourism attractiveness			
11	Index of activity of foreigners visiting the country for the purpose of tourism	Iavt = Nft/Nfe	Nft – number of foreigners who visited the country for tourism, million people; Nfe – number of foreigners who entered the country, million people.
12	Hotel room occupancy index	Ihro = Nhro/Nhrt	Nhro– number of occupied hotel rooms; Nhrt– total number of hotel rooms.
13	Index of perception of representatives of other nationalities	Ipon = Npon/Ntp	Npon – population of other nationalities legally living in the country, million people; Ntp – total population, million people.
14	Human development index of the country	Ihd = HDI	HDI – international human development index of the country.

No.	The name of the indicator	Calculation formula	The symbols in the formula to calculate
15	Index of duration of tourist trips to the country	Idtt = ALst/ADcm	ALst – average length of stay in the country, days; ADcm – average duration of a calendar month, days.
IV. Cultural and health indicators of tourism attractiveness			
16	Index of availability of health resorts (per 1,000 km^2 of the territory of the country)	Ihr = Nhr/Ac	Nhr – number of health resorts; Ac – area of the whole country, thousand km^2.
17	Index of the availability of UNESCO world heritage sites	Ihs = Nhsc/Nhsw	Nhsc – number of UNESCO world heritage sites in the country; Nhsw – largest number of UNESCO world heritage sites concentrated within one country.
18	Index of concentration of historical and cultural monuments (in 1 km^2 of the territory of the country)	Ihcm = Nrhcm/Ac	Nrhcm – number of registered cultural and historical monuments; Ac – area of the whole country, km^2.
19	Index of the prevalence of the network of restaurant businesses	Inrb = Nicr/Nce	Nicr – number of institutions such as cafes and restaurants; Nce – total number of catering establishments.
20	Index of the capacity of stadiums for large-scale events	Ics = CSt/Ntp	CSt – total capacity of stadiums with a size of more than 10,000 seats, million seats; Ntp – total population, million people..
V. Infrastructure indicators of tourism attractiveness			
21	Access to the Internet index	Iai = Nsci/Nscp	Nsci – number of subscribers connected to the Internet, million people; Nscp – number of subscribers connected to power supply networks, million people.
22	Index of security of tourism enterprises	Iste = Nte/Nre	Nte – number of tourist enterprises; Nre – total number of registered enterprises.
23	Solid road surface index	Isrs = Lhsr/Ltr	Lhsr – length of class A, B, C roads (with hard surface), thousand km; Ltr– total length of roads, thousand km.
24	Index of the level of hotel service	Ilhs = Nh/Ncaf	Nh – number of hotels; Ncaf – number of collective accommodation facilities.
25	The service index of passenger traffic via air transport	Ispt = Npt/ (Ntp + Nfe)	Npt – volume of passenger traffic in all airports of the country, million people; Ntp – number oftotal population, millions of people; Nfe – the number of foreigners who entered the country, million people.

No.	The name of the indicator	Calculation formula	The symbols in the formula to calculate
VI. Environmental indicators of tourism attractiveness			
26	Landscaping index of the territory	Ilt = Af/Ac	Af – forest area, thousand km^2; Ac – area of the whole country, km^2.
27	Air pollution index	Iap = 1 – Nco_2 /Ac	Nco_2 – CO_2 emissions, million tons; Ac – area of the whole country, km^2.
28	Urbanization index	Iu = 1 – Nup/Ntp	Nup – urban population, million people; Ntp –- number of total population, millions of people.
29	Surface water pollution index	Iswp = 1 – Vswp/ Vswt	Vswp – volume of surface water that does not meet environmental standards, million cubic meters; Vswt – total surface water volume, million cubic meters
30	Index of efficiency of environmental measures in the country	Ieem = 1 – Pepi/Nepi	Pepi – place of the country in the international rating of the ecological efficiency of the countries of the world (EPI); Nepi – number of analysed countries in the international ranking of environmental efficiency in the world.

Source: *compiled by the authors*

The procedure for calculating the integrated index of tourism attractiveness in the country consists of three stages:

1. Calculation of indices for each individual group based on available statistics. Since the absolute indicators that form the base of the study are, as a rule, different, combining them into an integral assessment initially involves bringing the original data into one type. Therefore, all the absolute values in the proposed method are presented in relative terms, expressed as a coefficient or percentage. Indices that suggest a destructive impact on tourism attractiveness in the country are converted to compare with other indicators using the formulas given in Table 1, resulting in the growth of the modified indicator being regarded as a positive impact on the development of tourism. The maximum value of each index for all groups of indicators does not exceed 1.
2. Calculation of the tourism attractiveness index for each group of indicators. At this stage, the total level of indicators is calculated for each group to obtain an overall integrated assessment. Indicators are normalised for each group of indices using the expert methodology.

This is only one subjective feature of our approach which, in turn, can be modified later using other approaches to define the weights of certain indicators (like a statistical method of factor loadings, or others). We justify the use of expert evaluations in this stage of the development of the methodology in order to demonstrate the importance of differences in the consideration of factor weights. Further, based on scientific discussion in this field, this stage of factor value normalization can be changed or developed.

In our pilot calculations, the priority of groups of indicators of tourism attractiveness is determined by the method of direct evaluation, where each expert gives a numerical value according to a given scale. The beginning of this scale, 0 points, corresponds to the absence of a value, and the upper gradation of the scale, 10 points, is an indicator of the maximum significance of the group. After the normalization of the scores, the weight coefficients k_{ij} for all experts (m) for each group and the value k_i for each group are determined by finding the arithmetic mean of the obtained values – k_{ij}. The formula for the normalization of the score values is as follows:

$$k_{ij} = \frac{p_{ij}}{\sum_{i=1}^{n} p_{ij}} \quad (1)$$

kij – the weight of the i-th group (I = 1,..., (n) provided by the j-th expert;

p_{ij} – the score of the j-th expert (j = 1,..., m) for the i-th group (I = 1,..., n);

$\sum_{i=1}^{n} p_{ij}$ – the sum of points given by the j-th expert to all groups.

The expert evaluation was conducted on 9–22 January 2023. The 12 experts involved were representatives of the tourism industry. They represented all levels of stakeholders linked to the development of the tourism industry: authorities (Ministry of Culture and Information Policy, State Agency for Tourism Development of Ukraine); business entities and NGOs in the field (National Tourism Organization of Ukraine, owners and managers of tourism establishments and organizations); and practitioners, analysts and researchers (professionals listed in the unified register of environmental impact assessment, scientists of Taras Shevchenko Kyiv National University involved in tourism research).

3. The calculation of the integrated index of tourism attractiveness in the country is defined as the total value of the normalised integrated indices of tourism attractiveness in the country by the economic, political, legal, social, cultural, health, infrastructure and environmental groups of indicators.

$$I = \sum_{i=1}^{n} k_i \times x_i \quad (2)$$

I – integrated index of tourism attractiveness in the country;

k_i – weighted coefficient of tourism attractiveness for the i-th group of indicators;

x_i – integral index of tourism attractiveness for the i-th group of indicators, calculated as the total value of the sub-indexes of the group;

n – number of index groups (economic, political, legal, social, cultural, health, infrastructure, environmental).

Our approach, on the one hand, reflects the complexity of the structure of the tourism attractiveness index and the frequent inability to identify one priority or key factor. On the other hand, it determines the relevance of a wide range of indicators for the compact presentation, clarity and ease of perception of an integrated assessment.

4. Results

Russia's full-scale invasion of Ukraine on 24 February 2022 resulted in large-scale human casualties, massive population displacement, and significant infrastructure damage. The impact on Ukraine's economic activity was also enormous: real GDP fell extensively, inflation rose drastically, trade was severely disrupted, and the budget deficit rose to unprecedented levels. In addition, Ukraine suffered significant destruction. The cost of the recovery and reconstruction of Ukraine, including its economy, has already reached around $349 billion. More than 7 million Ukrainians (around one fifth of the total population) left the country or became internally displaced, which puts pressure on the social security system (Wilkie, 2022).

As a result of the russian invasion and damage to the country's infrastructure, there is a whole list of current environmental threats and challenges, including the following:

- damage to the water supply, sewerage systems and communications, which is a direct threat to the emergency pollution of rivers, which are water sources for industrial and municipal enterprises and the population;
- the repair of water pipes and power lines in war zones is often delayed, and the quality of drinking water deteriorates severely during such periods;
- there is local (yet significant in terms of its consequences) pollution of underground and surface waters as a result of large-scale oil spills from exploded tanks, from destroyed equipment and other military actions;
- the probability of the destruction of sludge storage facilities and landfills is growing catastrophically, which carries the threat of water pollution and emergency situations in the regions;
- the ecosystems of all territories affected by the war have been comprehensively disrupted.

In general, the russian invasion of Ukraine led to serious environmental consequences for the Donetsk, Luhansk, Zaporizhzhia, Kherson, Kyiv, Chernihiv and Sumy Oblasts (regions). In particular, they include air, soil and water pollution, the flooding of territories, the decommissioning of large tracts of arable land, the destruction and damage of nature reserve fund objects, and the occurrence of forest fires, including those in the exclusion zone of the Chernobyl Nuclear Power Plant, etc. (Ministry of Environmental Protection and Natural Resources of Ukraine, 2022b).

In particular, as a result of the hostilities, in March 2022 the entire network of large metallurgical and chemical industry facilities which were concentrated in the east of Ukraine was completely destroyed. Azovstal, the Avdiivka Coke Chemical Plant, the Lysychansk Oil Refinery, Sumykhimprom and others appear to be the most ecologically dangerous manufacturers among a great number of industrial enterprises damaged as a result of hostilities. These enterprises traditionally posed the greatest danger to the environment in Ukraine and formed some of the most polluted environments in the country around their locations (Ministry of Environmental Protection and Natural Resources of Ukraine, 2022a).

Ammunition explosions and the destruction and burning of military equipment together with fuel and ammunition are a source of significant air and soil pollution. Several aircrafts and helicopters which were shot down fell into water reservoirs and even into the sea. Furthermore, several warships were also destroyed, including the *Moskva* missile cruiser, which suffered an ammunition detonation, and the *Saratov* troop ship, which had up to 1,000 tons of fuel and ammunition on board. According to rough estimates, 10%–25% of all russian equipment was slowed down or blocked by water reservoirs (Ministry of Environmental Protection and Natural Resources of Ukraine, 2022b).

Since 24 February 2022, the data from the Chernobyl Exclusion Zone has shown increased levels of gamma radiation as heavily armoured vehicles and other transport have moved over the contaminated soil and emitted radioactive dust into the air.

According to preliminary calculations, a total of 900 objects of the nature reserve fund with an area of 12,406.6 km^2 (1.24 million hectares) fell into the zone of military occupation and hostilities, which is around a third of the total area of the nature reserve fund of Ukraine (Ministry of Environmental Protection and Natural Resources of Ukraine, 2022a).

The russian-Ukrainian war is recognized as the worst conflict in Europe since World War II. Its consequences will be felt for several generations – and not only for Ukrainians, as the development of human potential has been disrupted, cultural heritage has been destroyed, an ecological disaster is brewing, and the positive trajectory of economic development and the level of poverty has changed into a negative one. The World Bank predicts that due to russia's unprovoked invasion of Ukraine, global economic growth is forecast to slow from 4.1% to 3.2% in 2022, and countries will face stagflation (stagnation in manufacturing occurs simultaneously with inflation), rising energy prices, and the disruption of supply chains. The population will be forced to live in a turbulent environment, experiencing a constant shortage of food and a limited number of jobs (Wilkie, 2022).

In order to interpret the results of using the suggested methodology and assess the effects of the war in Ukraine on social, economic and ecological spheres, we will compare touristic attractiveness in Ukraine and Poland. The initial conditions for the construction of the model are the calculation of partial indices for groups of economic, political, legal, social, cultural, health, infrastructure and environmental tourism attractiveness indicators and the reduction of relative indicators to standard values for comparison. At the same time, the expert commission, consisting of 8 specialists in the field of economy and tourism, established a priority for each of the six groups of indicators. The results of the usage of the proposed method based on the case of Ukraine and Poland are presented in Table 2.

Table 2. *The results of the analysis of integrated tourism attractiveness in Ukraine and Poland in 2017–2022*[1]

No.	The name of the indicator	2017		2018		2022[2]	
		Ukraine	Poland	Ukraine	Poland	Ukraine	Poland
I. Economic indicators of tourism attractiveness							
1	Index of consumption of tourist services	0.015	0.060	0.006	0.045	0.001	0.059
2	Index of excess expenses of tourists	0.150	0.212	0.115	0.090	0.198	0.121
3	Index of profitability of food in the country	0.760	0.620	0.757	0.573	n/d[3]	0.588
4	Index of health, recreation and culture expenditure in consumer spending	0.100	0.130	0.062	0.090	0.026	0.097
5	Tourism employment index	0.056	0.045	0.001	0.043	0.021	0.052
Integral index of economic tourism attractiveness		1.081	1.067	0.941	0.841	0.246	0.917
Weighted coefficient of economic tourism attractiveness according to the results of expert evaluation		0.187	0.187	0.187	0.187	0.187	0.187
Normalised integral index of economic tourism attractiveness		0.202	0.199	0.176	0.157	0.046	0.187
II. Political and legal indicators of tourism attractiveness							
6	Peace index of the country	0.055	0.804	0.080	0.804	0.061	0.847
7	Index of law enforcement by foreign citizens in the country (per 1,000 foreigners who enter the country)	0.914	0.989	0.998	0.990	1.498	1.098
8	Index of duration of stay of foreigners in the country	0.493	0.493	0.493	0.493	0.493	0.493
9	Index of openness of the tourist area of the country	0.994	0.980	0.990	0.985	0.494	1.226
10	Index of rates of airport tax	0.365	0.504	0.345	0.504	n/d[4]	0.523
Integral index of political and legal tourism attractiveness		2.821	3.770	2.906	3.776	2.546	4.187
Weighted coefficient of political and legal tourism attractiveness according to the results of expert evaluation		0.145	0.145	0.145	0.145	0.145	0.145
Normalised integral index of political and legal tourism attractiveness		0.409	0.547	0.421	0.548	0.369	0.607
III. Social indicators of tourism attractiveness							
11	Index of activity of foreigners visiting the country for the purpose of tourism	0.003	0.218	0.005	0.228	0	0.238
12	Hotel room occupancy index	0.510	0.489	0.310	0.498	0.102	0.695

No.	The name of the indicator	2017		2018		2022 [2]	
		Ukraine	Poland	Ukraine	Poland	Ukraine	Poland
13	Index of perception of representatives of other nationalities	0.222	0.029	0.222	0.030	0.201	0.097
14	Human development index of the country	0.751	0.865	0.751	0.872	n/d[5]	n/d[5]
15	Index of duration of tourist trips to the country	0.234	0.210	0.445	0.234	0.037	0.343
Integral index of social tourism attractiveness		1.720	1.811	1.733	1.862	0.340	1.373
Weighted coefficient of social tourism attractiveness according to the results of expert evaluation		0.159	0.159	0.159	0.159	0.159	0.159
Normalised integral index of social tourism attractiveness		0.273	0.288	0.276	0.296	0.054	0.218
IV. Cultural and health indicators of tourism attractiveness							
16	Index of availability of health resorts (per 1,000 km^2 of the territory of the country)	0.089	0.140	0.096	0.144	0.087	0.149
17	Index of the availability of UNESCO world heritage sites	0.132	0.302	0.132	0.302	0.132	0.302
18	Index of concentration of historical and cultural monuments (in 1 km^2 of the territory of the country)	0.209	0.247	0.209	0.246	0.225	0.263
19	The index of the prevalence of the network of restaurant business	0.460	0.590	0.522	0.558	0.318	0.549
20	Index of the capacity of stadiums for large-scale events	0.024	0.022	0.024	0.022	0.024	0.022
Integral index of cultural and health tourism attractiveness		0.914	1.301	0.983	1.272	0.786	1.285
Weighted coefficient of cultural and health tourism attractiveness according to the results of expert evaluation		0.214	0.214	0.214	0.214	0.214	0.214
Normalised integral index of cultural and recreational tourism attractiveness		0.196	0.278	0.210	0.272	0.168	0.275
V. Infrastructure indicators of tourism attractiveness							
21	Access to the Internet index	0.520	0.730	0.626	0.929	0.793	0.932
22	Index of security of tourism enterprises	0.010	0.004	0.002	0.001	0.001	0.005
23	Solid road surface index	0.978	0.971	0.978	0.972	n/d[6]	0.980
24	Index of the level of hotel service	0.589	0.364	0.588	0.234	0.421	0.483
25	The service index of passenger traffic via air transport	0.235	1.041	0.485	1.093	n/d[4]	1.231

No.	The name of the indicator	2017		2018		2022 [2]	
		Ukraine	Poland	Ukraine	Poland	Ukraine	Poland
Integral index of infrastructure tourism attractiveness		2.332	3.110	2.679	3.229	1.215	3.631
Weighted coefficient of infrastructure tourism attractiveness based on the results of expert evaluation		0.184	0.184	0.184	0.184	0.184	0.184
Normalised integral index of infrastructure tourism attractiveness		0.429	0.572	0.493	0.594	0.224	0.668
VI. Environmental indicators of tourism attractiveness							
26	Landscaping index of the territory	0.208	0.267	0.155	0.296	n/d[7]	0.308
27	Air pollution index	0.786	0.612	0.791	0.999	n/d[8]	1.098
28	Urbanization index	0.311	0.391	0.307	0.399	0.287	0.395
29	Surface water pollution index	0.250	0.400	0.250	0.500	n/d[9]	0.549
30	Index of efficiency of environmental measures in the country	0.394	0.722	0.394	0.722	n/d[10]	n/d[10]
Integral index of ecological tourism attractiveness		1.949	2.492	1.897	2.916	0.278	2.350
Weighted coefficient of ecological tourism attractiveness according to the results of expert evaluation		0.111	0.111	0.111	0.111	0.111	0.111
Normalised integral index of ecological tourism attractiveness		0.216	0.277	0.211	0.324	0.032	0.261
The integrated index of tourism attractiveness in the country		1.725	2.161	1.787	2.191	0.893	2.216

[1] We do not include 2019–2021 in comparative calculations, aiming to prevent data distortion and the impossibility of their calculation. During this period, the COVID-19 pandemic covered the whole world and had devastating consequences for the tourism industry due to the unprecedented closure of borders between countries, the reduction of transport connections both at the international and national levels, social distancing limiting gatherings in public places, etc. Experts testify that such a crisis in tourism has not been observed since World War II.

[2] During this period, the Integral Index of Tourism Attractiveness in the country was calculated fragmentarily (that is, only for those indices that could be determined as of October 2022), particularly aiming to reflect the impact of the war in Ukraine on tourism attractiveness, as well as the social, economic and environmental situation.

[3] In 2022, Ukraine was not included in the Big Mac index of The Economist magazine. McDonald's restaurants shut down after the full-scale russian invasion began.

[4] Ukraine closed all of its airspace to civilian traffic on 24 February 2022 due to the full-scale russian military invasion. Along with this, all air transportation to, from and within Ukraine completely stopped, and the activities of dozens of airports, airlines and other enterprises of the aviation market have stopped as well.

[5] The country's Human Development Index is calculated in the next period (in 2023). Currently, the United Nations believes that in the nearest future there will be a global decline in the Human Development Index due to COVID-19 and russia's military invasion of Ukraine.

[6] As of October 2022, more than 25,000 kilometres of highways have been damaged as a result of the war in Ukraine, of which 8,800 kilometres are state highways; 326 bridges and overpasses were destroyed, 140 of which were on state highways; and the current damages to the state road network are equal to 973 billion hryvnias (Levchuk, 2022).

[7] As of September 2022, as a result of hostilities in Ukraine, around a third of the country's forests have been destroyed or significantly damaged, and 450,000 hectares of forests at this moment are under russian occupation. Moreover, 2.45 million hectares of forests have been taken back, but they are "burnt and trenched" and it will take decades to restore them.

[8] As of September 2022, as a result of forest fires, bombings of oil refineries and manufacturing facilities, the volume of carbon emissions into the atmosphere is at least 31 million tons. At the same time, potentially 79 million tons of greenhouse gases will be produced during the post-war reconstruction of Ukraine, in particular for the rebuilding of infrastructure.

[9] The bombing of cities, towns and villages led to dozens of broken pipelines and non-working pumping stations. The sewage treatment facilities of the Severodonetskvodokanal Municipal Enterprise, Lysychanskvodokanal Municipal Enterprise, Rubizhanske VUVKH Municipal Enterprise, Popasniansky Vodokanal Municipal Enterprise, and Oblvodokanal Municipal Enterprise were damaged. Because of this, untreated wastewater from Severodonetsk, Lysychansk, Rubizhne, Popasna and part of Zaporizhzhia pollutes surface water. Two commercial ships carrying fuel and chemicals (the Moldova-flagged chemical tanker Millennial Spirit and the Panama-flagged bulk carrier Namura Queen) were hit by russian missiles to the east of Odesa, causing a local fuel spill and a fire at sea.

[10] The Environmental Performance Index, which is the basis for the calculation of this index, is a method of quantitative assessment and comparative analysis of environmental policy indicators around the world. Using 40 performance indicators across 11 issue categories, the EPI ranks 180 countries on climate change performance, environmental health, and ecosystem vitality. The index is published every 2 years. Therefore, for 2017–2018, we took a common value based on the indicators of 2018, and the data for 2022 is not available yet, hence this indicator cannot be calculated.

Source: *compiled by the authors according to the data of: the State Statistics Service of Ukraine (n.d.), Statistics Poland (2019a, 2019b), the migration profile of Ukraine and Poland, the Human Development Indices and Indicators, the statistics in the sector of air transport, European statistics, the Global Peace Index (Institute for Economics and Peace, 2022) and others.*

In order to facilitate perception, we will compare the tourism attractiveness in Ukraine and Poland according to the Integral Index of Tourism attractiveness in the country with the use of a graph (see Fig. 1).

As we can see from Figure 1, tourism attractiveness in Poland is significantly higher than tourism attractiveness in Ukraine. Based on the results of the calculation of a number of integral indices, it was found that the integral coefficient of Ukraine in 2017 and 2018 was lower than the integral coefficient of Poland (1.725 and 2.161 in 2017, 1.787 and 2.191 in 2018; therefore, the difference was 0.436 in 2017 and 0.404 in 2018 respectively). This trend indicates that Poland is ahead of Ukraine in its level of tourism attractiveness. As a result of the analysis of the structure of tourism attractiveness, the authors determined that according to 5 out of 6 indicators, there is a significant gap between the level of tourism development in Poland and its level in Ukraine, especially in the groups of indicators for political and legal, cultural and recreational, and environmental and infrastructural components. Nevertheless, in terms of the economic attractiveness, there is not a big difference between the countries. In 2017–2018, the countries were almost equal in terms of social tourism attractiveness (the difference in 2017 was only 0.015, and in 2018 was equal to 0.02). Thus, as a result of the comparison of the tourism attractiveness of Ukraine and Poland according to the suggested methodology, it is obvious that the majority of tourists would give preference to Poland.

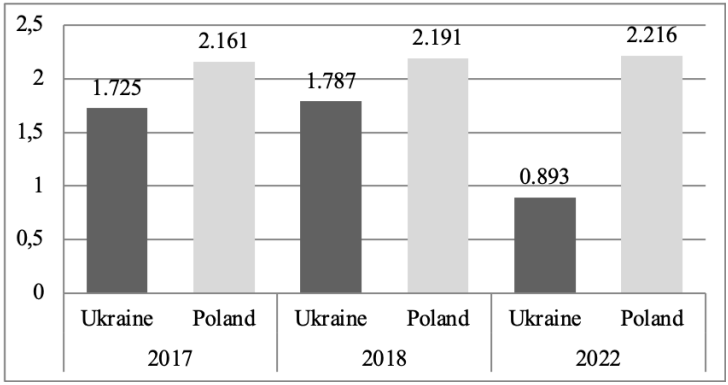

Figure 1. *Comparative assessment of tourism attractiveness in Ukraine and Poland according to the developed methodology*

Source: *authors' own research*

The use of the suggested methodology for comparing the tourism attractiveness in Ukraine and Poland in 2022, as well as the analysis of the indicators' dynamics, clearly demonstrates the harmful impact of the war on the social, economic and environmental spheres in Ukraine. Consequently, in 2022, compared to the relatively peaceful period of 2018, all partial indicators for Ukraine decreased with dramatic dynamics: the normalised integral index of economic tourism attractiveness by 73.9%; the normalised integral index of political and legal tourism attractiveness by 12.4%; the normalised integral index of social tourism attractiveness by 80.4%; the normalised integral index of cultural and health tourism attractiveness by 20.0%; and the normalised integral index of infrastructural tourism attractiveness by 54.6%. The normalised integral index of ecological tourism attractiveness decreased most drastically, i.e., by 84.8%.

The analysis suggests that the proposed method provides a holistic view of tourism attractiveness due to the usage of a complex system of indicators. It has a high theoretical consistency and is suitable for practical use as the results obtained reflect the existing trends in tourism development and are important for understanding the gaps in specific dimensions of ensuring tourism attractiveness.

5. Conclusion

According to the research results, it was found that it is difficult to objectively assess the tourism attractiveness of the country since there are differences between countries and their regions in tourist infrastructure, geographical location, economic and sociocultural development, resource potential, and the like. At the same time, in the economic literature to there is no comprehensive methodology assessing tourism attractiveness that would cover the diversity of tourism activities.

Theoretical implications

Our research was conducted with an emphasis on the use of objective values of partial indicators. This makes our method more convincing in terms of the reliability of results and easier to use compared with methods based on expert evaluations of tourism attractiveness – for example, those developed by Al Mamun & Mitra (2012), Kim et al. (2020), Shpak et al. (2022), and Vasanicova et al. (2021). Simultaneously, our approach enables policymakers and other stakeholders of the tourist market to assess partial indicators and thus find relative advantages and gaps compared with other countries. These advantages are not currently accessible, as the more precise attention of researchers is focused on the overall attractiveness of the tourism industry, which is particularly reflected in country brand attractiveness estimates (Castillo-Manzano et al., 2021; Zaman & Aktan, 2021) and the ubiquitous challenges caused by pandemic restrictions and possible similar large-scale threats in the future (Kostynets et al., 2021; Woosnam et al., 2022).

In light of these comparisons, we can conclude that our approach has some obvious advantages:

1. it is based on the available statistical indicators, so stakeholders of touristic market development can relatively easily assess the current situation and perspectives if trends are considered. These estimates are not time-consuming to a great extent and can be fulfilled using the most commonly used software;
2. it makes it possible to compare countries with different sizes and levels of economic development as it is developed with the use of relative indicators;
3. it takes into account all constituents of tourism attractiveness, particularly indicators relating to economic, political, legal, social, cultural, infrastructure and environmental development areas. It also creates the possibility to produce a holistic understanding of the overall lag behind the leaders, as well as partial gaps in certain constituents of the integral index. These estimates, using the experience of countries with similar geographical positions (which cannot be changed despite the majority of other attributes of touristic attractiveness), are useful to develop strategic decisions regarding the development of tourism in the country.

Of course, this methodology can be developed – for example, by considering the most important constituents of determinants of the tourist environment in the country. Particularly for those countries with higher risks in certain spheres, such as the personal security of tourists, the Global Terrorism Index can be included in the list of political and legal indicators. Similar methodological changes can be undertaken by researchers based on discussions and the consideration of peculiarities typical for some groups of countries. In our study, we tried to ensure the most ubiquitous approach to assessing tourism attractiveness with an emphasis on publicly available values for calculations, which, in their turn, provide a reliable basis to understand the differences as well as the strengths and weaknesses of tourism attractiveness.

Practical implications

Using the cases of Ukraine and Poland to demonstrate the advantages of our approach, we found that the level of tourism development in Poland was significantly different from its level in Ukraine. The most obvious lag was typical of the political and legal, cultural and recreational, and environmental and infrastructural components. Even before the war and pandemic, some obvious crisis tendencies were typical for the development of Ukrainian tourism. However, the war significantly enlarged this gap. A comparison of indicators of the tourism attractiveness in Ukraine in 2022 clearly demonstrates the harmful impact of the war on the social, economic and environmental spheres.

In light of post-war political, economic and environmental issues, the primary influence and support for the industry from the authorities should be focused on innovative changes to increase tourism attractiveness and strengthen the competitive positions of tourism enterprises. In this regard, the most obvious competitive advantages can be achieved based on unique product offers, which are possible considering the growing attention of the global community towards Ukrainian identity. These efforts should be considered for the development of the strategy of the recovery of Ukrainian tourism.

A second important direction of policymaking is the implementation of the concept of sustainable tourism, which will contribute to the balanced development of territories. This issue becomes especially important considering the increasing disparities in regional development caused by war destruction. The development of post-war tourism in Ukraine could be supported, for example, by using the best practices of other post-war territories (Dissanayake & Samarathunga, 2021) as well as the existing experience of multilateral political influence (Zhou et al., 2021).

Limitations and future research

The significant limitations in the development of our methodology were linked to the prioritization of the indicators used. We involved experts for this aim; however, there is a significant obstacle to involving a larger number of experts in the field due to the war in Ukraine and appropriate difficulties for the activities of tourism representatives. As a result, some of them stopped their activities and lost motivation to cooperate in this study. However, we believe that our future research in the field will allow us to fill this gap. In this research, we propose the principal proposition of a research methodology which can be improved, including via improvements at the stage of the weighting of the factors.

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