Article

Simulation of the Influence of External Factors on the Level of Use of the Regional Tourism Potential: A Practical Aspect

Nestor Shpak [1], Oksana Muzychenko-Kozlovska [2], Maryana Gvozd [3] and Włodzimierz Sroka [4,5,*]

1   Department of Management and International Business, Institute of Economics and Management,
    Lviv Polytechnic National University, Stepana Bandery St. 12, 79013 Lviv, Ukraine; dida_05@ukr.net
2   Department of Business Economics and Investment, Institute of Economics and Management,
    Lviv Polytechnic National University, Stepana Bandery St. 12, 79013 Lviv, Ukraine;
    v.muzychenko-kozlovska@lpnu.ua
3   Department of Management of Organizations, Institute of Economics and Management,
    Lviv Polytechnic National University, Stepana Bandery St. 12, 79013 Lviv, Ukraine;
    mariana.y.hvozd@lpnu.ua
4   Department of Management, Faculty of Applied Sciences, WSB University, 41-300 Dąbrowa Górnicza, Poland
5   College of Business and Economics, University of Johannesburg, Johannesburg 1809, South Africa
*   Correspondence: wsroka@wsb.edu.pl

Abstract: Today, the issue of development of the tourism industry is becoming increasingly relevant, as this industry is an important component of the economic system of each country. External factors have the most significant impact on the development of tourism: natural disasters, wars, economic crises, and pandemics have had a destabilizing effect on the development of the tourism industry around the world. To avoid or reduce the impact of negative phenomena on the tourism industry of a particular country or region, it is crucial to predict the impact of external factors, identify the most important of them, and develop strategic measures to turn threats into opportunities. In the context of solving the mentioned problem, this study aims to model the impact of external factors on the level of use of tourism potential of the region. After all, tourist services and products of each country and region are unique, as they are formed under the influence of existing special natural resources, cultural heritage, environmental, social and other factors inherent only in them; and if in one country/region the influence of a certain factor can weaken the development of tourism, in another one—it can stimulate it. A method of comparison with the reference value and a method of calculating the integral indicator were used in the study. Based on the analysis, an integral indicator of the level of use of the tourist potential of the region was calculated and the method of assessing the impact of external factors on the level of tourist potential on the example of the Carpathian region of Ukraine was tested.

1. Introduction

Today's challenges create unstable conditions for the development of the tourism industry at the global level. Tourism can be perceived as an important determinant of countries' economies (Stefko et al. 2020; García-Machado et al. 2020). It is especially evident in case of the Central European Countries (Grančay 2020). Given the fact that in modern conditions tourism is the driving force of economic development of many countries, the use of tourism potential is receiving more and more attention (Ranasinghe and Sugandhika 2018; Enger et al. 2015; Bowen and Whalen 2017; Lakner et al. 2018; Song et al. 2019). The tourism industry, like all other sectors of the world economy, is a complex system with complex inputs and outputs, the formation of which is significantly influenced by the external environment. Given the significant influence of external factors, in particular:

the COVID-19 pandemic (Kock et al. 2020), the accelerated development of information technologies (Kirtil and Aşkun 2021), changes in climatic conditions of each country, rapid changes in the tastes of tourists (Grilli et al. 2020), and expanding the range of tourist services (Chang 2020; Khan et al. 2020), it is increasingly difficult to maintain competitive advantages in both domestic and global markets of tourism services (Dogru et al. 2020) and to ensure the development of the tourism industry of the country (region).

A positive industry feature is that tourism has an amazing ability to quickly resume its activities, although in this way a large number of tourism enterprises go bankrupt. In order to avoid negative consequences of the impact of environmental factors on the industry in general and tourism enterprises in particular, it is necessary to turn crises into motivating factors for industry entities to use their competitive advantages and maximize the existing tourism potential of the region. It also includes cross-border cooperation between tourist regions (Batyk and Rzeczkowski 2020). The main criterion for determining the level of use of tourist potential of the region (territory) is the degree of satisfaction of tourists' needs, i.e., the number of offered and used opportunities in the consumption of tourism resources, i.e., natural and anthropogenic resources, cultural, historical, and social benefits, etc.

The intensification of Ukraine's participation in the world economic processes and the growing role of Ukrainian tourism in the world requires increased attention to the development of its tourism industry. One of the key aspects here is to take into account the factors that have the most significant impact on the industry, given the available tourism potential. In fact, it is possible to determine such influence of external factors on the level of use of tourism potential by means of the modeling offered in article. It is the results of modeling that can become key guidelines in creating a strategy for development of the tourism industry. Given these facts the purpose of the study is to develop a scientific and methodological approach to modeling the impact of external factors and assessing the level of the use of tourism potential of the region, as well as to provide recommendations for improving the management of tourism in the region. The article is structured as follows: first, the authors present the theoretical foundations of the study, focused on studying the impact of environmental factors on the level of use of tourism potential of the region. Next, the research methodology is presented. The next part of the article presents the results, followed by conclusions, recommendations and limitations of the study.

2. Literature Review

2.1. The Concept of "Tourism Potential" and Its Main Components

Today, the role of the tourism industry in the economy of each country is growing. This is confirmed by studies showing that problems of development of international and domestic tourism have been receiving increased attention from scientists and practitioners, as well as from various international organizations that are directly or indirectly involved in the formation and support of this industry. A key aspect of the formation and development of the tourism industry of each country is its tourism potential. The reason is that in the tourism industry that there is a close cooperation between different economic entities, regions, countries, which requires the study of new issues in the context of cooperation, taking into account the political, economic, cultural and social spheres (Androniceanu and Tvaronavičienė 2019). They are regarded as the elements of the tourism potential.

Examining the conceptual apparatus of the tourism potential, it can be noted that according to Shabardina (2011), it is a multifaceted concept that includes natural resources (climate, terrain, landscapes, unique ecosystems); cultural, historical and archeological monuments—tourism infrastructure; material and technical provision. In turn, the approaches of Herasymenko (2016) are the most comprehensive. According to them, the tourism potential of the territory is considered as a set of four main components, i.e., (i) natural resources; (ii) historical and cultural; (iii) economic; and (iv) social, which are interconnected and interact with each other. A similar opinion has been expressed by Terebukh and Moroz (2016), who consider the tourism potential as a set of five components: natural, natural–anthropogenic, historical–cultural, infrastructural, and investment.

According to them, the natural component includes: geological, orographic, climatic, hydrographic, plant and animal resources. In contrast, Herasymenko (2016) calls this component a natural-resource one. Furthermore, scientists revealing the concept of tourism potential, distinguish between the tourism potential of a region and the enterprise. According to their definitions, the potential of the enterprise includes its internal resources in the formation of a product and represents a set of its tangible and intangible resources. One can then state that the tourism potential of the territory is a capacious concept that covers a set of natural, ethnocultural and socio-historical resources, as well as the existing economic and communication infrastructure of the territory, which serve (or may serve) as prerequisites for the development of certain types of tourism.

2.2. Types of Tourism

Depending on the availability and development of these components of the tourism potential, different types of tourism arose, in particular: sports (Prokopenko et al. 2020; Hindle et al. 2021; Escamilla-Fajardo et al. 2021), green (Yeoman et al. 2015), rural (Ruiz-Rea et al. 2020; Shpak et al. 2021; Botlíková 2021; Mura and Ključnikov 2018; Pop and Georgescu 2018), wine (Sánchez et al. 2017), cultural (Santana-Santana et al. 2020), mystical (Kulinyak et al. 2020), medical (Dryglas and Lubowiecki-Vikuk 2019; Čabinová et al. 2021), etc. Chang (2020) describes the development of this industry from aviation tourism to suborbital space tourism, exploring passenger behavior and the range of business opportunities. Tomej and Zheng (2020) described the possibility of designing new tourist services. They confirm the effectiveness of the concept, which fixes the relationship between human abilities and environmental properties, which can help to reconcile the elements for the creation of a new tourist service. The study of Santana-Santana et al. (2020) assessed the possibilities of physical accessibility of tourist attractions for people with disabilities. They concluded that new measures are needed to improve accessibility, which can be used as a basis for the development of new tourist products to strengthen the competitiveness of tourism. Thus, researchers study development trends, identify main problems, analyze the sensitivity of the industry to environmental factors, develop measures to improve it and predict strategic directions for each specific type of tourism.

Exploring the theoretical and practical aspects of the use of tourism potential and modeling the impact of environmental factors on the level of its use, the diversity should be emphasized. In particular, in numerous scientific works, increased attention is paid to the development of the tourism industry, due to its important contribution to the economy of each country. This is confirmed by a number of studies on the problems of tourism in the circular economy (Shpak et al. 2020; Meijerink and Keegan 2019; Sutherland and Jarrahi 2018; Voltes-Dorta et al. 2014). It is analyzed how tourism can support the development of the circular economy, applying a theory that emphasizes changes in what tourists do, rather than in tourism products and services (Flemming and Bærenholdt 2020). The importance of using information technology in the growth of so-called "shared consumption" of tourist products through online services is emphasized (Hamari et al. 2016). It is described that tourism is the key tool in overcoming poverty, which stimulates the economic development of poor countries (Tolkach et al. 2015).

2.3. Instruments Supporting Tourism

Studies of theoretical and applied aspects allow us to state that the key factor directly affecting the level of use of tourism potential is the rapid development of information technologies. They provide an opportunity to view tourist places online, based on knowledge mapping (Qian et al. 2019). In this context, Ugolkov and Karyy (2019) describe the support of customer's travel through digital tools of marketing communications and evaluate the effectiveness of content in network and offline marketing communications of the enterprise. Bashynska et al. (2019), as well as Nadanyiova et al. (2020a), substantiated the sales tunnels in messengers as new technologies for effective Internet marketing in the field of tourism and hospitality. Furthermore, Nadanyiova et al. (2020b) extended it

though analyzing the role of influencer marketing to attract potential customers, including tourists. Prokopenko et al. (2019) analyzed a set of digital tools for the promotion of tourist destinations. Problems of evaluating the effectiveness of content in network and offline marketing communications of an enterprise are important for improving the efficiency of tourism enterprises (Ugolkov et al. 2020). It should also be emphasized that development of information technology increases requirements for tourist services, because tourists share their impressions, and describe the advantages and disadvantages of a particular tourist object, which, in turn, forms its rating (Chen and Law 2016; De Matos and Rossi 2008). The results of practical research show that online reviews of tourist places are often distorted in the direction of positive ratings, as they are presented by the tourist sites themselves (Meijerink and Schoenmakers 2021). This undermines the credibility and reduces the reputation of tourist facilities and enterprises that demonstrate their services in an improved perspective (Ert et al. 2016). The presented works demonstrate that in the context of digitalization, the active use of information technology is a major factor for the success of tourism. However, the authors did not pay due attention to determining the correlation between the cost of information technology for the development of tourism and increasing the efficiency of tourism business. The authors also ignore the problems of the impact and active use of modern information technologies by consumers of tourism products. It mostly relates to its benefits and risks (Androniceanu et al. 2020). The question of determining the share of the impact of information technology development among other environmental factors on tourism development also remains open.

2.4. Impact of External Factors on Tourism

An important factor that has influenced the tourism industry at the global level and the tourism potential of regions is the pandemic COVID-19. There is no doubt that one of the hardest-hit economic sectors was the tourism industry, which virtually came to a complete standstill. For example, research conducted by Grančay (2020) among licensed tourist guides in Slovakia in 2020 showed that the income of more than four-fifths of the respondents decreased by at least 80% between March and June 2020. Kock et al. (2020) argue that evolutionary psychology is perhaps one of the most useful approaches to understanding the effects of the coronavirus pandemic on the psyche of tourists. This study empirically demonstrates the huge prospects for the study of tourism after COVID-19. Karl et al. (2020) describe what travel risks are more noticeable for tourists. In the context of this issue, researchers have developed and tested an integrated typology of travel risks based on a survey of 835 potential tourists. In particular, they explored the importance of travel risks associated with nature, health, terrorism, crime, political instability, and how risk perceptions affect travelers at key stages of the decision-making process. The results show that natural hazards are not a key barrier at an early stage of decision-making in the destination selection process. The practical value of this work is that the authors predicted the consequences for the tourism sector and developed recommendations for managing the behavior of tourists during decision-making after the COVID-19 pandemic. After all, the pandemic has had a significant influence on the tourism industry (Wen et al. 2020; Zenker and Kock 2020), both due to declining welfare (Kozlovskyi et al. 2021; Reportlinker n.d.; United Nations World Tourism Organization 2020) and to a significant drop in tourist flows (United Nations World Tourism Organization 2020).

Analyzing the impact of environmental factors on the level of use of tourism potential, it was revealed that the available publications in most cases examine the impact of several factors (investment (public and private), economic circumstances, skills of employees and the number of travel agents (Ben and Goaied 2014); external factors, internal factors of higher order and internal factors of lower order (Tolkach et al. 2015; Chmyreva and Fedyai 2013). In most cases, the available research in the field of tourism is multifaceted, highly specialized, and contains recommendations for the development of certain areas of tourism of a particular state or group of states.

However, given the above current trends caused by external threats, there is a need to create conditions for tourism authorities of different continents/countries to develop a single international space based on the use of unified and harmonized principles and standards. Otherwise, the tourism industry of individual states may not be able to cope with the existing threats on their own.

Obviously, the application and implementation of basic recommendations for the development of tourism in different countries can be implemented only with such mechanisms and management tools that are consistent with differences in size and characteristics of regions, levels of their socio-economic development, tourism policy priorities, etc. Tourism potential of a particular country is a unique system, which is formed in accordance with the specificity of the country and is characterized by its own path of development. That is why today, levels of development of the tourism industry in different countries are so different.

Such trends, accordingly, necessitate the reorientation of the tourism industry of individual countries/regions to better apply domestic potential. Measures to restore tourism after the crisis can include: the introduction of enhanced safety and hygiene measures, as well as policies aimed at promoting domestic tourism (UNWTO 2020).

It should also be noted that most studies are aimed at qualitative analysis of factors, but in the works of many researchers, there is no detailed method of assessing the quantitative factors (resource potential of the region, investment provision, etc.). Such preconditions have created the need to develop tools for management decisions in the context of tourist potential development and use based on the results of statistical analysis and construction of an appropriate scientific and methodological model.

Summarizing, one has to state that this issue is relevant in the world. As a result, it is receiving more and more attention, and in addition to scientific studies, analytical reports are prepared by experts from a number of international organizations (e.g., United Nations World Tourism Organization 2020; UNWTO 2020; United Federation of Travel Agents' Associations (UFTAA), International Hotel and Restaurant Association, (IHRA)) and tourism organizations of the world's leading countries, which offer recommendations for reforming the country's tourism industry in order to establish successful integration into international communities and associations (UNWTO 2020). Analytical data from the World Tourism Organization (UNWTO 2020) indicate a 22% decline in revenues in the first three months of 2020, according to the latest UNWTO World Tourism Barometer. Arrivals in March 2020 fell sharply by 57% after the start of border closures in many countries around the world, as well as the widespread introduction of travel restrictions and airport closures. This resulted in the loss of 67 million international arrivals and about $80 billion export earnings from tourism. Given the gradual easing of travel restrictions, the decline in demand for international travel could cause the following losses: from 850 million to 1.1 billion international tourists; from $910 billion to $1.2 trillion revenue from tourism; from 100 to 120 million direct jobs in tourism. The consequences will be different in different regions of the world (UNWTO 2020). Such a thorough analysis provides grounds for identifying the main factors that have a stabilizing and destabilizing impact on the level of use of the tourism potential of a particular region.

It should be noted that international organizations analyze the development of tourism mainly at a country level (e.g., the World Economic Forum (WEF) assess countries' tourism competitiveness (World Economic Forum 2019). In contrast, in this article we use an integral indicator for assessing the level of use of tourist potential of a region. This makes it possible to take into account the level of resource provision of each region of the country, which may differ significantly, which will result in selection of not one common strategy for the whole country, but separate ones for each region (territory).

3. Methodology and Data Description

The development of tourism is regional in nature, as it is determined by the available in the region (tourist destination, i.e., the place that attracts tourists) tourist resources,

infrastructure, quality ecological conditions, developed economy, financial opportunities and overall image. The hypothesis of this study is as follows:

Hypothesis 1 (H1). *The change of the integral indicator, averaged from proposed indicators (both stimulating—to increase, and destimulating—to decrease), by which the impact of environmental factors is assessed, leads to a change in the level of use of the tourism potential of the components (regions) of the Carpathian region.*

Thus, our hypothesis actualizes the study of the influence of external factors on the formation of tourist potential of the region, establishes the algorithm for implementing the purpose of the study, and explains the aspect of decision-making to increase the level of tourist potential at the regional level.

To substantiate the proposed hypothesis and achieve the set goal, a research methodology used in this article includes the following steps:

Stage 1—determination of components and factors of the external environment of formation of regional tourist potential;

Stage 2—formation of the system of the direct external environment factors of the region's tourist potential;

Stage 3—determination of indicators for assessing the main direct external factors;

Stage 4—assessment of the impact of the main direct environmental factors on the level of use of the regional tourist potential;

Stage 5—development of appropriate methodology and its testing on the example of a specific region of Ukraine.

For effective regional tourism management, it is necessary to analyze the state of its market of tourist services. The task of such analysis is to determine the tourist potential and indicators that make it possible to assess its ability to meet the existing and projected demand for tourist services, as well as to create conditions for a stable increase in the level of tourist attractiveness of the region (territory).

After all, in order to make economically sound, effective decisions in the implementation of the regional tourism policy, it is necessary to analyze the data operated by local authorities and, based on them, to identify shortcomings in the regional tourism management and choose the best options for improvement. To determine the feasible ways of tourism development in the region, it is necessary to form a set of measures to achieve an economically optimal level of tourist attractiveness within it, i.e., the degree at which the maximum number of tourists within the destination may be served by making minimal efforts. The use of the region's tourism potential is a complex multifaceted process that is influenced by a large number of factors, both internal and external (Table 1), in relation to the region's tourism industry.

To achieve a higher level of tourism development in the region, it is necessary to analyze environmental factors and try to manage them. Thus, external factors, in turn, are divided into direct and indirect.

Direct external factors include labor resources, marketing policy, external infrastructure, management system of tourist activity, quality of environment, general image of the region, etc. Indirect external factors are the state of the country's economy, the political situation, international events, the development of information technology, socio-cultural circumstances, the state of legislation in the industry, etc.

Optimal consideration of the influence of internal and external factors on the tourist potential of the region may increase its attractiveness. However, since indirect external factors are much less controlled, only direct external factors were chosen for the further research and modeling. Thus, the purpose of our study is to assess the impact of the direct environmental factors on the level of use of the region's tourism potential.

Table 1. The system of components and factors affecting the level of use of the regional tourism potential.

Components		Factors
External	Direct	Labor resources: the number of able-bodied population of the region, the structure of the population of the region, etc.
		Marketing policy: the state of information support, brand of the territory, product brands, pricing policy, etc.
		Tourism management system: availability of travel agents and tour operators; local authorities; associations and unions of tourism enterprises (e.g., clusters), etc.
		External infrastructure: geographical location of the region; length and condition of roads; provision of airports, seaports, railway stations; cultural and entertainment establishments, mountain trails, communications, tourist information centers, etc.
		The quality of the region's environment: ecological condition, the presence of areas with anthropogenic pollution, dangerous areas (e.g., the Chornobyl zone), etc.
		General image of the region: political situation (e.g., wars); economic attractiveness, etc.
	Indirect	International events (political changes, sports competitions, cultural events), force majeure (natural disasters, financial crisis, pandemics), scientific and technological progress, development of information technology, socio-cultural circumstances, the state of the country's economy, the state of legislation in the industry, etc.

Source: own elaboration.

Formation of a set of indicators for assessing the level of use of tourism potential is carried out after analyzing the feasibility of including each component in the model. When choosing the factors affecting the level of use of the regional tourist potential, their functional purpose, the share of statistical indicators in the overall integrated assessment, etc., was taken into account.

As mentioned, the level of the regional tourist potential primarily depends on the internal factors that form the basis of tourism—the available natural or anthropogenic tourist resources within it, as well as the material and technical base. However, increasing a socio-economic effect from their use within the region is possible only after the implementation of measures to improve tourist infrastructure, provision of labor resources, effective marketing policy, etc. (see Table 1). Thereby, increasing the socio-economic effect of the use of the regional tourist potential can only be achieved through external factors, e.g., formation of an attractive brand of the territory, assistance in creating tourist information centers, nature protection and rational use of natural resources, etc.

Indirect impact on the value of natural resources is manifested through the formation of demand for the services of tourism enterprises, which thus form the value of natural conditions. Thus, increasing the demand for certain climatic conditions (for example, a warm climate, a cozy atmosphere of the city) requires a developed infrastructure, which can provide comfortable conditions for tourists (hotels, restaurants, leisure facilities, etc.).

High quality of the environment is also important, as it creates additional effects for a travel company through avoiding losses that occur in cases of deterioration of its employees' health or due to environmental pollution and reduction of the influx of tourists to contaminated areas.

Thus, the analysis of the direct external factors will allow us to create a list of key indicators of tourist potential evaluation, mostly statistical. At the same time, there are many such factors that, having a significant impact on the level of use of the region's tourist potential, are not quantified in statistical materials, and, accordingly, it would be necessary to look for other sources of such information (data from sites, agencies, exchanges, etc.). Thus, based on the data of the State Statistics Service of Ukraine and available public information, the list of key indicators for assessing the impact of direct environmental factors on the level of use of the regional tourist potential was created (Table 2).

Table 2. The main indicators for assessing the impact of external direct factors on the level of use of the region's tourism potential.

No.	Factors	Indicators, Units of Measurement
1	Labor resources	number of economically active population, thousand people; number of registered unemployed, thousand people
2	Marketing policy	number of tourist brands of cities/towns of the region, units; number of known artifacts, units; average prices for tourist services, USD
3	Tourism management system	number of tour operators, units; number of travel agents, units; number of tourist associations, units; number of associations of tourist enterprises, units
4	External infrastructure	length of paved roads, km/1000 km^2 of the territory; number of airports, units; number of seaports, units; number of railway stations, units; number of cultural and entertainment establishments per capita, units; number of tourist information centers, units; number of medical institutions, units; number of people who have access to the Internet, thousand people.
5	The quality of the region's environment	capital investments in environmental protection, thousand USD; current expenditures for protection and rational use of natural resources, thousand USD; emissions of pollutants, thousand tons; quantity of discharged normatively treated waters, thousand tons; density of emissions of harmful substances into the atmosphere, thousand tons/km2
6	General image of the region	number of SMEs, units; average per capita income, thousand USD; average number of infectious diseases, thousand people; number of detected crimes, units; number of victims of hostilities, thousand people.

Formed by the authors.

In particular, the indicator "number of economically active population" directly reflects the labor potential of the region, and therefore also affects the formation of its tourism potential, as the hospitality industry requires a huge number of labor resources. The "number of registered unemployed" indicator is a limiting and mainly destimulating factor for regional tourism.

The indicators "number of tourist brands in the region", "number of known artifacts", and "average prices for tourist services" can help to assess the effectiveness of a marketing policy for tourism in the region, and, if necessary, improve it to attract more tourists.

The indicators "number of tour operators", "number of travel agents", "number of travel associations", and "number of associations of tourist enterprises" reflect entrepreneurial activity in the tourism sector of the region, which can be improved under favorable conditions.

Indicators "length of paved roads", "number of airports", "number of railway stations", "number of cultural and entertainment facilities per capita" directly reflect the state of tourism infrastructure in the region; indicators "number of tourist information centers" and "number of population with access to the Internet" allow us to assess the level of awareness of the population of the region, as well as the opportunity to take advantage of the achievements of information technology for tourists. The "number of medical facilities" indicator reflects the state of the medical care infrastructure, which is relevant in the context of the pandemic caused by COVID-19.

The indicators "capital investments in environmental protection" and "current expenditures for protection and rational use of natural resources" directly reflect the investment of funds to improve the state of the environment. The indicators "quantity of discharged normatively treated water" and "density of emissions of harmful substances into the atmosphere" reflect the state of water resources and atmospheric air. However, these indicators can only be used in combination with others, i.e., to calculate the integral indicator. Only in combination with the indicator of water quality or air quality can it be determined whether capital investments in environmental protection indicate its high quality. Thus, if a region has low environmental costs and low air emissions, this may indicate a high quality environment.

According to the indicators "number of SMEs" it is possible to estimate entrepreneurial activity in the region; "average per capita income" reflects the purchasing power of the region's population, which indirectly affects the number of domestic tourists. The indicators "average number of infectious diseases, including COVID-19", "number of detected crimes" and "number of victims of hostilities" allow assessing the negative trends in the region that hinder the development of tourism within it.

All these indicators are independent, and only analysis of their combined impact will allow to assess the feasibility of development or level of use of the tourist potential of the region, thus it is advisable to use an integral indicator. The choice of a method for assessing the level of use of the region's tourist potential by the integral indicator is due to the fact that its tourist attractiveness is influenced by various factors, including the external ones, reflecting the diversity of tourism as a complex socio-economic phenomenon.

The expediency of applying an integral approach to modeling the impact of external factors on the level of use of the regional tourist potential is that it allows us to systematically identify the elements (components) of this complex phenomenon. Based on an integral approach, it is possible to assess the region with available tourist resources and infrastructure for the feasibility of tourism activities, development and improvement of material and technical base of tourism, taking into account the recreational and psychological capacity of tourist facilities, justify tourism development programs within it, etc. The advantage of an integral approach in the study is the ability to provide authorities (first of all local) and management bodies with information to coordinate their decisions in different areas (operational, financial or marketing) and levels—strategic, tactical or operational, as well as providing continuity of management process.

The relevance of the application of the integral approach to assess the level of use of the regional tourist potential is evidenced by the works of scientists who have used a comprehensive approach in their research (Stylidis et al. 2017; Olokesusi et al. 2019; Kristjánsdóttir et al. 2018) and data from international organizations (World Economic Forum 2019). However, the integral indicator has limitations, because low values of indicators that reflect destimulatings cannot be compensated by high values of indicators that characterize incentives. In such a situation, it is necessary to take measures (or take into account this aspect of the assessment) to improve the values of destimulatings.

The objectives of the study are: to quantify the level of development of the tourism industry in the region; to find out the causal links in the process of determining the level of use of the region's tourist potential; to identify factors that affect the formation of the tourist potential of the region, including those that have a stimulating and destimulating effect. This will make it possible to predict changes in tourist flows due to the influence of destimulatings and the adoption of optimal management decisions based on them, which will strengthen the effect of incentives and level the destimulatings. The choice of the most important environmental factors and relevant indicators will allow us to assess the level of use of the region's tourist potential and strengthen the development of tourism within it.

Selection of some of the above indicators (see Table 2) to develop a model for estimating the level of use of the tourist potential of the region is due to the availability of data of the State Statistics Service of Ukraine.

In general, the methodology for assessing the impact of external factors on the level of use of the region's tourism potential involves the implementation of such stages of research.

Stage I—Determining the actual indicators for assessing the level of use of the tourist potential of the region (all administrative-territorial units of a particular region is assessed).

Stage II—Determining the most attractive part of the region by a degree of influence of the direct external factors on the level of use of its tourism potential by calculating normalized indicators for each of the selected actual indicators. To assess the level of use of the tourist potential of the region, it is necessary to determine the most attractive component of the region from the set of analyzed ones (all administrative-territorial units of a particular region (area)), which will be taken as a reference. The most attractive administrative-territorial unit will be considered the one where there is the largest number of maximum (or minimum for destabilizing factors) values of each individual indicator. The tourism potential of these units of the Carpathian region is presented in Table 3.

Table 3. Tourism potential of the administrative-territorial units of the Carpathian region.

	Area of Tourist Resources, km^2	Amount of Anthropogenic Tourist Resources, 100 Units	Amount of Tourist Accommodation, Units
1. Trans-carpathian	20.85	8.87	686
2. Ivano-Frankivsk	15.25	37.42	842
3. Lviv	17.7	14.04	820
4. Chernivtsi	6.32	22.86	445

Source: own elaboration based on State Statistics Service of State Statistics Service of Ukraine (2020).

Other parts of the region will be evaluated in comparison with the reference component of the region. As a reference indicator, the one is chosen that has the highest value for stimulating factors, and the lowest value—for destimulating factors.

Thus, the normalized indicator of each component of the studied region is determined, taking into account the influence of each chosen factor.

For factors whose quantitative growth has a positive effect on the level of use of the tourist potential of the region (stimulating ones), the normalized (relative) indicator of the factor, is calculated by the formula:

$$k_{ij}^N = \frac{p_{ij}}{p_{i\max}}, \tag{1}$$

where

k_{ij}^N—*i*-th normalized indicator of the *j*-th component of the region;

p_{ij}—*i*-th indicator (actual) of *j*-th component of the region;

$p_{i\max}$—maximum (reference) *i*-th indicator.

To calculate the normalized indicators, we set the variables (for the indicator "number of economically active population" of the Transcarpathian region, the variable will be p1.1., and the maximum value of this stimulating indicator will be $p_{1\max}$). The minimum value of the destimulating indicator "number of registered unemployed" will be $p_{1\min}$.

For factors whose quantitative growth negatively affects the level of use of the tourist potential of the region (destimulating ones), the normalized (relative) indicator of the factor is calculated by the formula:

$$k_{ij}^N = \frac{p_{i\min}}{p_{ij}}, \tag{2}$$

where $p_{i\min}$—minimum (reference) *i*-th indicator.

In particular, $k_{11}^1 = p_{11}/p_{1\max} = 560.5/1154.6 = 0.49$, where p_{11}—the number of economically active population of the Transcarpathian region, thousand people.

$p_{1\max}$—the maximum value of the indicator "the number of economically active population of the Carpathian region, thousand people".

Stage III. Calculating the integral indicator of the level of use of the region's tourism potential.

According to the data set, the integral indicator will be calculated as the arithmetic mean of the normalized indicators for each component of the region by the formula:

$$I_{E\ cm\ j} = \frac{\sum\limits_{1}^{n} k_{ij}^{N}}{n},$$ (3)

where:

$I_{E\ cm\ j}$—integral indicator of the level of use of the tourist potential of the *j*-th region;
n—the number of analyzed indicators of the level of use of the tourist potential of the region, units.

According to the results of calculations of integral indicators, the most attractive part of the region by the level of use of tourist potential is determined—the one with the maximum value of the integral indicator.

4. Results

The methodology for assessing the impact of environmental factors on the level of use of the region's tourism potential will be tested on the example of the Carpathian region of Ukraine.

Stage I—Determining the actual values of indicators to assess the level of use of tourist potential of the Carpathian region of Ukraine (the list includes all its administrative-territorial units, namely: Trans-carpathian, Ivano-Frankivsk, Lviv and Chernivtsi regions) (Table 4).

Stage II—Determining the most attractive part of the Carpathian region by the level of development of tourist potential by calculating the normalized indicators for each of the selected indicators. The results of calculations of normalized indicators and integral indicators according to the level of development of the tourist potential of the Carpathian region are given in Table 5.

Table 4. The value of indicators for assessing the level of use of the tourist potential of the Carpathian region of Ukraine.

Region, Its Components (Units)	The Value of Indicators							
	Number of Economically Active Population, Thousand People * p_1	Number of Registered Unemployed, Thousand People * p_2	Number of Travel Agents and Tour Operators, Units * p_3	Length of Public Roads with Hard Surface, Thousand km * p_4	Capital Investments in Environmental Protection, Thousand USD * p_5	Emissions of Pollutants, Thousand Tons * p_6	The Average Number of Infectious Diseases (Including Those Caused by COVID-19), Thousand People ** p_7	Number of Detected Crimes, Units * p_8
Total for the Carpathian region of Ukraine, including its components (units):	2777.3	199.9	573	18.6	22,808.17	183.81	4610.0 (5222.0)	51,881.0
1. Tran-scarpathian	560.5	50.9	89	3.4	1621.38	38.91	1275 (764)	11,006
2. Ivano-Frankivsk	626.2	44.6	118	4.1	**10,376.48 *****	38.43	1084 (1144)	**7386 *****
3. Lviv	**1154.6 *****	75.1	**291 *****	**8.2 *****	10,053.74	83.94	1806 (870)	25,764
4. Chernivtsi	436.0	**29.3 *****	75	2.9	756.57	**22.53 *****	**445 ***** (2444)	7725

* Calculated according to statistics. The value of the US dollar at the NBU exchange rate as of 30 September 2020. ** Calculated according to the data of the Center for Medical Statistics of the Ministry of Health of Ukraine (n.d.). *** The comparative, best value of each indicator is highlighted in bold.

Table 5. Normalized indicators and the integral indicator for assessing the level of use of tourist potential of the Carpathian region of Ukraine.

| Region, Its Components (Units) | Normalized Indicators | | | | | | | | Integral Indicator |
| | Stimulating Factors | | | | Destimulating Factors | | | | |
	Number of Economically Active Population People *	Number of Registered Unemployed *	Number of Travel Agents and Tour Operators *	Length of Public Roads with Hard Surface *	Capital Investments in Environmental Protection *	Emissions of Pollutants, Thousand Tons *	The Average Number of Infectious Diseases (Including Those Caused by COVID-19) **	Number of Detected Crimes *	
Total for the Carpathian region of Ukraine, including its components (units):	0.60	0.50	0.57	0.55	0.66	0.61	0.50	0.73	0.59
1. Transcarpathian	0.49	0.31	0.41	0.16	0.58	0.58	0.35	0.67	0.44
2. Ivano-Frankivsk	0.54	0.41	0.50	1.0	0.66	0.59	0.41	1.0	0.64
3. Lviv	1.0	1.0	1.0	0.97	0.39	0.27	0.25	0.29	**0.65 ***
4. Chernivtsi	0.38	0.26	0.35	0.07	1.0	1.0	1.0	0.96	0.63

* Calculated according to statistics. The value of the US dollar at the NBU exchange rate as of 30 September 2020. ** Calculated according to the data of the Center for Medical Statistics of the Ministry of Health of Ukraine (n.d.). *** The comparative, best value of each indicator is highlighted in bold.

The most attractive part of the Carpathian region in terms of the level of tourist potential use and the largest number of maximum (or minimum for destimulating factors) values of each individual indicator is the Lviv region of Ukraine.

Stage III—Calculation of an integral indicator of the level of use of the regional tourist potential. The values of integral indicators of the impact of direct external factors on the level of use of tourist potential of the Carpathian region (see Table 5) reflect that the most attractive for tourism development and the level of use of tourist potential is Lviv region, whose integral indicator (0.65) is higher than average in the Carpathian region (0.59).

In the Lviv region, there are the best indicators that reflect the impact of the stimulating factors (labor resources, tourism management, external infrastructure, etc.), and the lowest values of indicators reflecting the impact of the destimulating factors (environmental quality, overall image of the region, etc.)

The results of calculations of the integrated normalized (relative) indicator (see Table 4) showed that its greatest value is in the Lviv region in comparison with other components of the Carpathian region (0.65); therefore, this component of the Carpathian region has the highest level of tourism potential. In particular, in this area, there are the highest values of stimulating indicators, namely: p_{11}, p_{12}, p_{13} (1 each); a high value of p_{14} (0.97) and the smallest values of destimulating factors, in particular, p_{15}, p_{16}, p_{17} and p_{18} (0.39; 0.27; 0.25 and 0.29).

5. Discussion and Conclusions

The development of tourism is crucial for the economic growth of each country and its regions, especially for developing countries. Effective tourism management involves identifying favorable (stimulating) and unfavorable (destimulating) external factors to develop measures to enhance their positive and reduce negative impacts, and thus—formation of tourism development programs in the region. Summarizing the results of the above study, it is worth emphasizing that changes in indicators of the direct external environment of tourism, such as labor, marketing policy, tourism management facilities, external infrastructure, environmental quality, market infrastructure, and overall image of the region are evaluated and compared with the most attractive locality as part of the region.

The obtained results indicate that Lviv region is the most attractive among the components of the Carpathian region of Ukraine. In general, the results of the study confirm that tourist attractiveness of a region or a country varies depending on the overall (integral) indicator of the level of tourism potential, which suggests that tourism management should be focused on demand growth mechanisms and optimal use of the tourist potential.

The recent globalization processes in the world, in contrast to regionalization, have led to irreversible consequences, namely: caused a crisis in the social, economic, medical, political, and cultural spheres. However, any crisis situation encourages a change in the actions of the affected parties, which with the right strategy provides new opportunities for revival, renewal and strengthening of positions. This study reveals the problem of the influence of external factors on the level of use of the tourist potential of the region. The object of the study is a region of a country, because it is within its borders that there are unique tourist natural and anthropogenic resources.

Based on the study, the following components were identified:

- The main factors of the formation of the regional tourist potential—internal and external (direct and indirect);
- The main direct external factors—labor resources; marketing policy; tourist activity management system; external infrastructure; environmental quality; general image of the region;
- The main indicators for assessing direct external factors of the regional tourist potential: the number of economically active population; number of travel agents and tour operators; the length and condition of public roads; capital investments in environmental protection; number of registered unemployed; emissions of pollutants; average number of infectious diseases (including those caused by COVID-19); and the number of detected crimes.

The practical application of the proposed method showed that the most attractive component of the Carpathian region in terms of the largest number of maximum (or minimum for destabilizing factors) values of each individual indicator, is the Lviv region, which confirmed the hypothesis of the study.

As a result of the study, it was determined that:

- According to the integral indicator of the influence of the direct external factors on the level of use of the tourist potential of the Carpathian region, the most attractive region is Lviv, whose integrated indicator (0.65) is higher than the average for the Carpathian region (0.59).
- The Lviv region has the best indicators that reflect the impact of stimulating factors (labor resources, tourism management, external infrastructure, etc.), and the lowest values of destimulatings (poor environmental quality, negative overall image of the region, etc.).

The methodology proposed in the article and tested on the example of the Carpathian region of Ukraine can be used to form programs for tourism development of regions of different countries, planning investment measures to improve the use of tourism potential of the region (territory).

The results of the study allowed us to develop recommendations for increasing the use of tourist potential of the region, which directly shapes its attractiveness, taking into account the influence of external factors and their stabilizing and destabilizing nature.

In order to strengthen the stimulating factors of the region's tourism potential (number of economically active population; number of travel agents and tour operators; length of paved public roads; capital investment in environmental protection) it is necessary to support the development of the tourism industry at the state level and enact legislation to improve the country's demographic situation (and thus stimulate an increase in labor resources); pass laws to support the tourism industry, especially in conditions of the COVID-19 pandemic; to plan expenditures from the state budget for the development of tourism, to support entrepreneurs in the tourism sector, to develop public infrastructure,

which is also used in the tourism sector, and to improve the quality of the environment in the region.

To offset the destimulating factors to the region's tourism potential (number of registered unemployed; pollutant emissions; average number of infectious diseases (including those caused by COVID-19); number of detected crimes), it is advisable to increase budget expenditures to create new jobs in tourism to reduce unemployment; to protect the natural environment and to preserve biodiversity and habitats in order to improve the quality of the environment within it; as well as to develop the medical infrastructure and improve the quality of medical care by improving the skills of doctors to reduce the number of infectious diseases; to reduce the level of crime, it is advisable for government officials in the region to take preventive measures (informational, educational, etc.).

The novelty of this study is that the article uses an integral approach to modeling the impact of external factors on the level of tourism potential of the region, taking into account stimulating and destimulating factors. The research of other researchers do not take into account the influence of stimulating and destimulating indicators. For example, an integral approach is used, but integral assessment does not sufficiently reflect the impact of destimulating indicators, because their negative impact cannot be offset by improving stimulating ones.

Of course, this study has some limitations. In particular, although Ukraine is actively developing the tourism industry, it lags behind the leading tourism-oriented countries, so the set of environmental factors may differ slightly and have a different impact on the development of tourism potential of regions of other countries. Another limitation of the study is that the analysis is mainly based on the data of the State Statistics Service of Ukraine, and in other countries where data can be collected by other methods and from other sources, the proposed methodology may require adaptation. It was already emphasized that an integral indicator has limitations in use, because low values of indicators that reflect destimulating factors cannot be compensated by high values of indicators that characterize the stimulating ones. Nevertheless, despite these limitations, the study presents a specific approach to modeling the impact of stabilizing and destabilizing direct external factors on the development of tourist potential of the region.

References

Androniceanu, Armenia, and Manuela Tvaronavičienė. 2019. Developing a holistic system for social assistance services based on effective and sustainable partnerships. *Administratie si Management Public* 33: 103–18. [CrossRef]

Androniceanu, Armenia, Jany Kinnunen, and Iryna Georgescu. 2020. E-Government clusters in the EU based on the Gaussian Mixture Models. *Administratie si Management Public* 35: 6–20. [CrossRef]

Bashynska, Iryna, Iryna Lytovchenko, and Dmytro Kharenko. 2019. Sales tunnels in messengers as new technologies for effective. Internet-marketing in tourism and hospitality. *International Journal of Innovative Technology and Exploring Engineering* 8: 594–98. [CrossRef]

Batyk, Iwona, and Daniel Rzeczkowski. 2020. Cross-border cooperation at the external border of the European Union in the context of political, economic and social conditions: The case of the Polish-Russian neighbourhood. *Equilibrium. Quarterly Journal of Economics and Economic Policy* 15: 833–71. [CrossRef]

Ben, Aissa, and Mohamed Goaied. 2014. Performance of tourism destinations: Evidence from Tunisia. *Journal of Hospitality & Tourism Research* 41: 797–822. [CrossRef]

Botlíková, Milena. 2021. Potential Pond Farming in the Context of Tourism. *Journal of Tourism and Services* 20: 42–65. [CrossRef]

Bowen, John, and Elizabeth Whalen. 2017. Trends that are changing travel and tourism. *Worldwide Hospitality and Tourism Themes* 9: 592–602. [CrossRef]

Čabinová, Veronika, Peter Gallo, B. Petra Pártlová, Jan Dobrovič, and Milan Stoch. 2021. Evaluating Business Performance and Efficiency in the Medical Tourism: A Multi-criteria Approach. *Journal of Tourism and Services* 22: 198–221. [CrossRef]

Center for Medical Statistics of the Ministry of Health of Ukraine. n.d. Available online: http://medstat.gov.ua/ukr/main.html (accessed on 13 May 2020).

Chang, Eva Yi-Wei. 2020. From aviation tourism to suborbital space tourism: A study on passenger screening and business opportunities. *Acta Astronautica* 177: 410–20. [CrossRef]

Chen, Yi-Fan, and Rob Law. 2016. A review of research on electronic word-of-mouth in hospitality and tourism management. *International Journal of Hospitality & Tourism Administration* 17: 347–72.

Chmyreva, Larisa, and Nataliia Fedyai. 2013. Zoning of the Territory of Ukraine as One of the Factors of Spatial Socio-Economic Development of Regions. Effective Economy No. 3. Available online: http://www.economy.nayka.com.ua/?op=1&z=1878 (accessed on 12 May 2020).

De Matos, Celso Augusto, and Carlos Alberto Vargas Rossi. 2008. Word-of-mouth communications in marketing: A meta-analytic review of the antecedents and moderators. *Journal of the Academy of Marketing Science* 36: 578–96. [CrossRef]

Dogru, Tarik, Courtney Suess, and Ercan Sirakaya-Turk. 2020. Why Do Some Countries Prosper More in Tourism than Others? Global Competitiveness of Tourism Development. *Journal of Hospitality & Tourism Research* 45: 215–56. [CrossRef]

Dryglas, Diana, and Adrian Lubowiecki-Vikuk. 2019. The Attractiveness of Poland as a Medical Tourism Destination from the Perspective of German and British Consumers. *Entrepreneurial Business and Economics Review* 7: 45–62. [CrossRef]

Enger, Anniken, Kåre Sandvik, and Endre Kildal Iversen. 2015. Developing scenarios for the Norwegian travel industry 2025. *Journal of Tourism Futures* 1: 6–18. [CrossRef]

Ert, Eyal, Aliza Fleischer, and Nathan Magen. 2016. Trust and reputation in the sharing economy: The role of personal photos in Airbnb. *Tourism Management* 55: 62–73. [CrossRef]

Escamilla-Fajardo, Paloma, Juan Núñez-Pomar, Ferran Prado-Gascó, and Ana Gómez-Tafalla. 2021. Economic performance in Spanish sports clubs: Entrepreneurial orientation of professional and non-professional teams analysed through fsQCA. *European Journal of International Management* 15: 214–30. [CrossRef]

Flemming, Sørensen, and Jørgen Ole Bærenholdt. 2020. Tourist practices in the circular Economy. *Annals of Tourism Research* 85: 103027. [CrossRef]

García-Machado, J. J., E. Barbadilla Martín, and C. Gutiérrez Rengel. 2020. A PLS multigroup analysis of the role of businesswomen in the tourism sector in Andalusia. *Forum Scientiae Oeconomia* 8: 37–57. [CrossRef]

Grančay, Martin. 2020. COVID-19 and Central European Tourism: The Competitiveness of Slovak Tourist Guides. *Central European Business Review* 9: 81–98. [CrossRef]

Grilli, Gaetano, Emmanouil Tyllianakis, Tiziana Luisetti, Silvia Ferrini, and Kerry Turner. 2020. Prospective tourist preferences for sustainable tourism development in Small Island Developing States. *Tourism Management* 82: 104178. [CrossRef]

Hamari, Juho, Mimm Sjöklint, and Antti Ukkonen. 2016. The sharing economy: Why people participate in collaborative consumption. *Journal of the Association for Information Science and Technology* 67: 2047–59. [CrossRef]

Herasymenko, Viktor. 2016. *Estimation of Tourist and Recreational Potential of the Region*. Odesa: ONEU.

Hindle, Kevin, Jonas Hammerschmidt, Céline Viala, Sascha Kraus, Paul Jones, and Calabuig-Moreno Ferran. 2021. Converting sporting capacity to entrepreneurial capacity: A process perspective. *European Journal of International Management* 15: 197–213. [CrossRef]

Karl, Marion, Birgit Muskat, and Brent Ritchie. 2020. Which travel risks are more salient for destination choice? An examination of the tourist's decision-making process. *Journal of Destination Marketing & Management* 18: 100487. [CrossRef]

Khan, Muhammad Asif, József Popp, Mirza Nouman Ali Talib, Zoltán Lakner, Muhammad Atif Khan, and Judit Oláh. 2020. Asymmetric impact of institutional quality on tourism inflows among selected Asian Pacific countries. *Sustainability* 12: 1223. [CrossRef]

Kirtil, İsmail Gökay, and Volkan Aşkun. 2021. Artificial intelligence in tourism: A review and bibliometrics research. *Advances in Hospitality and Tourism Research* 9: 205–33. [CrossRef]

Kock, Florian, Astrid Nørfelt, Alexander Josiassen, George Assaf, and Mike Tsionas. 2020. Understanding the COVID-19 tourist psyche: The Evolutionary Tourism Paradigm. *Annals of Tourism Research* 85: 13. [CrossRef] [PubMed]

Kozlovskyi, Serhii, Iaroslav Petrunenko, Viktoriia Baidala, Viktoriia Myronchuk, and Tetiana Kulinich. 2021. Assessment of public welfare in Ukraine in the context of the COVID-19 pandemic and economy digitalization. *Problems and Perspectives in Management* 19: 416–31. [CrossRef]

Kristjánsdóttir, Kristín Rut, Ólafsdóttir Rannveig, and Kristín Vala Ragnarsdóttir. 2018. Reviewing integrated sustainability indicators for tourism. *Journal of Sustainable Tourism* 26: 583–99. [CrossRef]

Kulinyak, Ihor, Yuliya Bondarenko, and Maryana Gvozd. 2020. Statistical and sociological analysis of the attitude of tourists to the development of mystical tourism in the Lviv region. *Bulletin of the Lviv Polytechnic National University* 4: 22–33. [CrossRef]

Lakner, Zoltán, Kiss Anna, Ivan Merlet, Judit Oláh, Domicián Máté, Janusz Grabara, and József Popp. 2018. Building coalitions for a diversified and sustainable tourism: Two case studies from Hungary. *Sustainability* 10: 1090. [CrossRef]

Meijerink, Jeroen, and Anne Keegan. 2019. Conceptualizing human resource management in the gig economy: Toward a platform ecosystem perspective. *Journal of Managerial Psychology* 34: 214–32. [CrossRef]

Meijerink, Jeroen, and Emma Schoenmakers. 2021. Why are online reviews in the sharing economy skewed toward positive ratings? Linking customer perceptions of service quality to leaving a review of an Airbnb stay. *Journal of Tourism Futures* 7: 5–19. [CrossRef]

Mura, Ladislav, and Aleksandr Ključnikov. 2018. Small Businesses in Rural Tourism and Agrotourism: Study from Slovakia. *Economics and Sociology* 11: 286–300. [CrossRef] [PubMed]

Nadanyiova, Margareta, Jana Majerova, and Lubica Gajanova. 2020a. Online Marketing Communication Trends in Slovak Hotel Industry. *Economics and Culture* 17: 13–21. [CrossRef]

Nadanyiova, Margareta, Lubica Gajanova, Jana Majerova, and Lenka Lizbetinova. 2020b. Influencer marketing and its impact on consumer lifestyles. *Forum Scientiae Oeconomia* 8: 109–20. [CrossRef]

Olokesusi, Femi, Afolabi Babatunde, and O. Awoyemi. 2019. Determinants of Sub-Saharan African Countries' Travel and Tourism Competitiveness. *International Journal of Hospitality Leisure and Tourism* 3: 66–80.

Pop, Cornelia, and Maria-Andrada Georgescu. 2018. Romanian Rural World Heritage Sites and Tourism Development. *Entrepreneurial Business and Economics Review* 7: 135–58. [CrossRef]

Prokopenko, Olha, Valentyna Rusavska, Nelia Maliar, Alisa Tvelina, Nataliia Opanasiuk, and Halyna Aldankova. 2020. Digital-Toolkit for Sports Tourism Promoting. *International Journal of Advanced Research in Engineering and Technology* 11: 84–96. [CrossRef]

Prokopenko, Olha, Yaroslava Larina, Olena Chetveryk, Sergiy Kravtsov, Nataliya Rozhko, and Iryna Lorvi. 2019. Digital-toolkit for promoting tourist destinations. *International Journal of Innovative Technology and Exploring Engineering* 8: 4982–87. [CrossRef]

Qian, Jianwei, Rob Law, and Jiewen Wei. 2019. Knowledge mapping in travel website studies: A scientometric review. *Scandinavian Journal of Hospitality and Tourism* 19: 192–209. [CrossRef]

Ranasinghe, Ruwan, and M. G. P. Sugandhika. 2018. The contribution of tourism income for the economic growth of Sri Lanka. *Journal of Management and Tourism Research* 1: 67–84.

Reportlinker. n.d. Impact of COVID-19 on the Global Lodging Industry: Hot Topic Brief-Issue 1. Available online: https://www.reportlinker.com/report/search?keywords=external%20factors%20of%20tourism&mode=public&typologies=I (accessed on 10 May 2021).

Ruiz-Rea, José Luisl, Juan Uribe-Toril, Valenciano de Pablo, and Juan Carlos Gázquez-Abad. 2020. Rural tourism and development: Evolution in scientific literature and trends. *Journal of Hospitality and Tourism Research*, 1–25. [CrossRef]

Sánchez, Amador Durán; Rama Del Río, María de la Cruz, and Álvarez García José. 2017. Bibliometric analysis of publications on wine tourism in the databases Scopus and WoS. *European Research on Management and Business Economics* 2: 8–15. [CrossRef]

Santana-Santana, Sara Beatriz, Peña-Alonso Carolina, and Pérez-Chacón Espino Emma. 2020. Assessing physical accessibility conditions to tourist attractions. The case of Maspalomas Costa Canaria urban area (Gran Canaria, Spain). *Applied Geography* 125: 102327. [CrossRef]

Shabardina, Yuliia. 2011. Recreational Potential as a Component of Productive Forces of Regional Economic Space. Ph.D. thesis, Chernihiv State Technological University, Chernihiv, Ukraine.

Shpak, Nestor, Ihor Kulyniak, Maryana Gvozd, Jolita Vveinhardt, and Natalia Horbal. 2021. Formulation of Development Strategies for Regional Agricultural Resource Potential: The Ukrainian Case. *Resources* 10: 57. [CrossRef]

Shpak, Nestor, Oleh Kuzmin, Olga Melnyk, Mariana Ruda, and Włodzimierz Sroka. 2020. Implementation of a Circular Economy in Ukraine: The Context of European Integration. *Resources* 9: 96. [CrossRef]

Song, Haiyan, Richard T. R. Qiu, and Jinah Park. 2019. A review of research on tourism demand forecasting. *Annals of Tourism Research* 75: 338–62. [CrossRef]

State Statistics Service of Ukraine. 2020. Available online: http://www.ukrstat.gov.ua (accessed on 14 May 2020).

Stefko, Robert, Richard Fedorko, Radovan Bacik, Martin Rigelsky, and Maria Olearova. 2020. Effect of service quality assessment on perception of TOP hotels in terms of sentiment polarity in the Visegrad group countries. *Oeconomia Copernicana* 11: 721–42. [CrossRef]

Stylidis, Dimitrios, Amir Shani, and Yaniv Belhassen. 2017. Testing an integrated destination image model across residents and tourists. *Tourism Management* 58: 184–95. [CrossRef]

Sutherland, Will, and Mohammad Hossein Jarrahi. 2018. The sharing economy and digital platforms: A review and research agenda. *International Journal of Information Management* 43: 328–41. [CrossRef]

Terebukh, Andrii, and Oleksandr Moroz. 2016. Assessment of tourism potential. *Actual Problems of Economy* 7: 335–43.

Tolkach, Denis, Michael Pearlman, and Brian King. 2015. Key Implementation Factors in Pro-poor Tourism. *Journal Tourism Recreation Research* 37: 3–13. [CrossRef]

Tomej, Kristof, and Xiang Zheng. 2020. Affordances for tourism service design. *Annals of Tourism Research* 85: 103029. [CrossRef]

Ugolkov, Ievgenii, and Oleh Karyy. 2019. Supporting the customer journey with digital instruments of marketing communications. *Annales Universitatis Mariae Curie-Skłodowska, Section H—Oeconomia* 53: 109–19. [CrossRef]

Ugolkov, Ievgenii, Oleh Karyy, Oleksandr Skybinskyi, Olena Ugolkova, and Volodymyr Zhezhukha. 2020. The evaluation of content effectiveness within online and offline marketing communications of an enterprise. *Innovative Marketing* 16: 26–36. [CrossRef]

United Nations World Tourism Organization. 2020. Impact Assessment of the Covid-19 Outbreak on International Tourism Online. Available online: https://www.unwto.org/impact-assessment-of-the-covid-19-outbreak-on-international-tourism (accessed on 15 April 2020).

UNWTO. 2020. UNWTO Reports. Available online: https://www.unwto.org/news/new-data-shows-impact-of-covid-19-on-tourism (accessed on 10 May 2020).

Voltes-Dorta, Augusto, Juan Luis Jiménez, and Ancor Suárez-Alemán. 2014. An initial investigation into the impact of tourism on local budgets: A comparative analysis of Spanish municipalities. *Tourism Management* 45: 124–33. [CrossRef]

Wen, Jun, Joshua Aston, Xinyi Liu, and Tianyu Ying. 2020. Effects of misleading media coverage on public health crisis: A case of the 2019 novel coronavirus outbreak in China. *Anatolia* 31: 331–36. [CrossRef]

World Economic Forum. 2019. Available online: https://reports.weforum.org/travel-and-tourism-competitiveness-report-2019/rankings (accessed on 10 May 2020).

Yeoman, Ian, Marcela Palomino-Schalscha, and Una McMahon-Beattie. 2015. Keeping it pure: Could New Zealand be an eco paradise? *Journal of Tourism Futures* 1: 19–35. [CrossRef]

Zenker, Sebastian, and Florian Kock. 2020. The coronavirus pandemic-A critical discussion of a tourism research agenda. *Tourism Management* 81: 104164. [CrossRef]