










“The rating of Ukraine’s regional tourist systems according to their investment potential”

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THE RATING OF UKRAINE'S REGIONAL TOURIST SYSTEMS ACCORDING TO THEIR INVESTMENT POTENTIAL¹

Abstract

The development and implementation of regional tourism development programs in Ukraine require the formation of the information environment for ranking the tourist systems of Ukraine's regions according to the attractiveness of their investment potential, which determines the purpose of this study. The methods of economic analysis and rating modeling were used to rank regional tourism systems according to their investment potential by determining the integral indicator of the economic and tourist resources of each region. Accordingly, economic indicators are chosen to provide the regions with financial, labor, and production resources; tourism indicators include supply and demand for tourism services, availability of tourism resources, tourism efficiency, as well as tourism accommodation. According to the results of rating and grouping, three groups of regions were formed: the first (the priority in terms of investment potential of the tourist system has the value of the integrated indicator from 72.0 to 94.8); the second (values from 40.2 to 71.0, reflecting the average level of investment potential); and the third (values from 25.0 to 40.1 for regions with low investment potential). The rating of regional tourist systems reflects the development level of their potential; it is an indicator of the effectiveness of its management and information base necessary for management decisions of potential investors. The asymmetry of investment potential of regional tourism systems causes an imbalance in their competitiveness, so implementing regional and national programs will help intensifying their use and equalizing regions' development.

Keywords tourism, region, investment, rating, Ukraine

JEL Classification L83, O18

INTRODUCTION

The tourist system is a dynamic area that creates added value through multiplicity and synergy of interrelated and related economic activities. Therefore, investments in the development of this area make it possible to achieve high results of economic growth. Moreover, more significant investment into the tourist sector will stimulate long-term tourism returns, innovation, and sustainable growth (Jackson et al., 2009).

The World Travel and Tourism Council (WTTC) predicts that tourism-related investments will grow by 4.3% annually by 2050 and amount to 1254 billion US dollars by 2026, which will be 4.7% of the total volume of investments (WTTC, 2017). In addition, the importance of investing in the development of the tourist system is because its revenues are equal to or even exceed the volume of business sales of cars, food, and oil exports. In the pre-pandemic period, revenues from tourism accounted for 9% of the global GDP, 1 of 11 direct, indirect,

¹ The study was conducted before Russia's war against Ukraine, and its results need to be rethought considering the consequences of this aggression.

and induced employment positions; 6% of world exports, i.e., 1.4 trillion US dollars in exports; 30% of exports of services (Robaina-Alves et al., 2016). Accordingly, tourism is an area of economic activity with significant potential for profit and employment, and public and private sector investment is needed to boost and develop the sector (Nawaz & Hassan, 2016).

A regional tourist system is a spatially localized set of socio-economic, functional-sectoral, institutional, and information subsystems of the region's economic system. It provides production, sale, distribution, and consumption of tourist products based on purposeful interaction. For Ukraine, developing tourist systems at different levels is important given the available resource potential, domestic demand, and potential demand of domestic and foreign tourists. These form the inbound tourist flow and ensure the export potential of regional tourism systems and development of information, communication, and digital technologies. Furthermore, after the war in Ukraine, experts predict significant interest to the country and, accordingly, the growth of tourist flows and investor interest in investing in the reconstruction of Ukraine (State Tourism Development Agency of Ukraine, 2022; Madzhumdar & Honcharova, 2022). Accordingly, the need to assess individual regions regarding investment opportunities and priorities is intensifying. Moreover, the rating of regional tourist systems of Ukraine by investment potential will provide an understanding of the need, areas, and scope of investment.

1. LITERATURE REVIEW

In their analysis on tourism development trends, WTTC experts show that a 1% increase in tourism development indicators improves capital investment by 2.64%, and a 1% increase in infrastructure investment contributes to tourism development by 0.25%. In the short term, 1% of tourism development and capital investment offset each other by 1.48% and 0.15%, respectively (WTTC, 2019). Such data indicate the relevance of investing in this area. Boiko et al. (2018), Okhrimenko et al. (2019), and Khan et al. (2020) consider tourism as a complex system that provides an extensive value chain and requires a variety of investment support. Therefore, when investing in the tourism system, attention should be paid to a number of factors of investment attractiveness, such as urban planning, tourism education, personnel strategy, transport policy, tourism resources, communications, and financing.

Methods for assessing the investment potential of regions based on the rating approach make it possible to analyze different areas of the region's development. In addition, it is possible to form specific indicators for their further grouping and characteristics, based on which an integrated indicator is formed (Gaidutski, 2005; Umanets, 2006). Thus, the following consolidated groups of indicators are important in making investment decisions: economic development of the region; mar-

ket infrastructure; financial sector; and human resources. This system of indicators is not clearly fixed, as different industries in the region may be studied, requiring the analysis of additional indicators with certain specific features. For example, the tourist system may be such an area.

An essential aspect of ranking Ukraine's regional tourism systems by investment potential is the study of factors influencing the investment in the tourism system. In particular, Cro and Martinsc (2020) consider cultural and historical ties that stimulate economic exchanges; labor costs and taxes, which are important determinants of investment in tourism; infrastructure that is important for attracting foreign capital and promoting economic growth. Furthermore, Larionova et al. (2018) consider the degree of the region's attractiveness in the tourism market as an indicator that determines the pace of tourism development in its territory, as well as the role and place in the state of the economy, analyzing the positions of the North Caucasus.

Khopchan (2014) considers the problems and trends in effectively assessing Ukraine's investment potential, which determines the direction and dynamics of investments. The study examined the main factors influencing the process of rating investment attractiveness and developing criteria for the investment potential of regions. Determining factors influencing tourism invest-

ment makes it possible to divide all factors into two groups. For example, there are economic indicators (financial, labor, and production resources) and indicators of development of the regions' tourism industry (tourist flows in the region, demand and supply of tourism services, availability of tourist resources, and efficiency of tourist activity). Therefore, the study has a theoretical character, based on which the regions' investment potential analysis is carried out to provide investment support for the tourism industry.

Kulyk and Koretska (2018) determine the investment potential of economic, financial, production, and organizational aspects of company valuation, which must meet the requirements of potential investors and ensure a positive effect of investment, which is set at the appropriate time and space. Duma (2019) holds the same position.

The choice of characteristics that affect the investment potential, their measurement, and analysis make it possible to assess companies' level of investment attractiveness. However, these approaches apply to specific companies, neutralizing the investment attractiveness of an industry, region, or country. For example, Kramarenko (2016) considers the integrated indicator of investment potential and characterizes the objects of investment but does not consider the peculiarities of the tourism industry as a service sector.

Bogdan and Krasnokutska (2021) noted that the most important and mandatory condition of investment activity at the regional level is the scientific and rational determination of the need for investment resources. It is necessary to realize tourism potential, taking into account its specific circumstances, relevant conditions that stimulate investment activities, and infrastructure of the tourism industry. This approach does not allow ranking regions by investment attractiveness but requires specific actions from the region itself. Matsuka (2014) considers investment potential from several positions: assessment of investment security by investment sources; assessment of investment support by industry principle, assessment of investment support by investment objects; evaluation of investment support by innovation aspect. However, this assessment is carried out at the international and sectoral levels.

Krupitsa and Zagreba (2017) identify soft and hard factors influencing the investment attractiveness of tourism in the region but do not rank and group them.

Given the dynamic development of the economic environment and the impact of transformational factors, and following Boiko et al. (2018), this study sets the following objectives. First, it is vital to form an integrated indicator of the investment potential of tourism systems in Ukraine; second, to visualize investment maps of attractive areas and proposals to improve investment attractiveness. The indicator of investment potential of tourist systems is an integrated indicator, as it takes into account not only economic indicators of regional development but also indicators of tourism development.

Thus, the aim of this study is to rank regional tourist systems of Ukraine by their investment potential.

2. METHODOLOGY

This study uses rating and grouping methods to assess Ukraine's regional tourism systems by investment potential. Based on Sushchenko and Trunina (2016) and Davydova (2015), the study generalized approaches to the analysis of regions' investment potential (Appendix A), highlighting a set of methods, processes, results, and possible relationships between them. Emphasis is placed on rating and estimating the tourist potential of territories on the basis of multifactor analysis, which makes it possible to form a single integrated indicator and determine the place of a particular region in the general ranking of regions.

To rank the regions, groups of indicators for the level of investment potential of tourist systems are defined: economic and sectoral (tourism). The economic indicators of investment potential of tourist systems include the provision of each region with 1) financial; 2) labor; and 3) production resources. Industry (tourism) indicators include 1) indicators of demand and supply of tourism services; 2) availability of tourist resources and efficiency of tourist activity; and 3) accommodation of tourists (Appendix B).

2.1. Determining the rating positions of Ukraine's regions according to their economic resources

On the basis of statistical data, the regions (oblasts) are ranked according to the highest and lowest indicators, using the system of 22 points: the region that ranks first in a certain positive indicator receives 22 points (because of 22 oblasts), and the one which ranks last – 1 point. Luhansk and Donetsk regions, as well as the Autonomous Republic of Crimea, have not been studied (due to the military conflict and threats to human life and health), which automatically excludes them. Moreover, in further research of the tourism industry development, tourist safety is a top priority, making it impossible to analyze these regions. The place in the ranking is an index for each indicator of financial, labor, and production resources. The index of investment potential by economic indicators is determined by:

$$I_{ipei} = \sum \frac{I_f + I_l + I_p}{n}, \quad (1)$$

where I_{ipei} – index of investment potential by economic indicators; $\sum I_f$ – index of the region's provision with financial resources; $\sum I_l$ – index of the region's provision with labor resources; $\sum I_p$ – index of the region's provision with production resources; n – the number of analyzed indicators.

According to these indices, the rating of regions by economic indicators of investment potential of tourist systems is formed.

2.2. Determining the rating positions of Ukraine's regions according to their tourist resources

It was carried out according to the above algorithm (the system of 22 points). The position of regions in the rating of investment potential by indicators of tourism resources is determined by:

$$I_{ii} = \frac{\sum ITds + \sum ITre + \sum ITa}{n}, \quad (2)$$

where I_{ii} – index of investment potential by tourism indicators; $\sum ITds$ – region's rating according to the indicators of demand and supply of tourist services; $\sum ITre$ – rating of the region according to the availability of tourist resources and the

efficiency of tourist activities; $\sum ITa$ – rating of the region according to the indicators of tourist accommodation; n – the number of rating indicators.

By characterizing the regions and defining their groups by economic and tourism indicators, the regions with the most attractive investment opportunities in terms of investments in the tourism system are identified. For this purpose, the following calculations were used:

$$I_{ip} = \frac{I_{ipei} + I_{ii}}{n}, \quad (3)$$

where I_{ip} – integrated index of investment potential of the region's tourist systems; I_{ipei} – index of the region's investment potential by economic indicators; I_{ii} – index of investment potential of the region according to tourism indicators; n – the number of analyzed indices.

This indicator is integrated because it combines different components: economic (financial, labor, production) and tourism (indicators of supply and demand, resources, indicators of tourism efficiency, indicators of tourist accommodation):

$$I_{ip} = \sum \frac{I_f + I_l + I_p + ITds + ITre + ITa}{n}. \quad (4)$$

This portfolio of indicators for analyzing tourist systems' investment attractiveness made it possible to form a single integrated indicator of the investment potential of the tourist system in a particular region. The proposed approach made it possible to monitor the indicators of investment potential, determine the level of investment potential of each region, which will help to predict the volume and structure of investment potential of regions, develop strategies and development programs, select and implement scenarios of regional development.

3. RESULTS

Under the proposed procedure for studying the investment potential of regional tourist systems, the components of economic resources (financial, labor, and production) (Appendix C) are gradually considered. Thus, rating positions of Ukraine's regions in terms of their provision with these resources are developed (Appendix D).

Regarding the provision of the regions of Ukraine with financial resources, Dnipropetrovsk, Kyiv, Odesa, and Kharkiv regions have the highest number of points in terms of financial resources in 2020. Ternopil and Zakarpattia regions have the lowest number of points, with Chernivtsi region being the lowest. Regarding the provision of labor resources, the following regions have the highest indicators of labor supply in 2020: Kharkiv, Dnipropetrovsk, and Odesa regions. Kirovohrad region has the lowest position, which characterizes it as an area with high unemployment, low employment of the registered unemployed, and low economic activity.

Regarding the provision of the regions with production resources, the following oblasts have the highest indicator: Dnipropetrovsk, Odesa, Mykolaiv, and Kharkiv. On the other hand, Chernivtsi region has the lowest rate due to the low concentration of industrial, agricultural, and small enterprises. In general, the first positions in ranking economic indicators in determining the investment potential of regions are taken by Dnipropetrovsk, Odesa, and Kyiv regions, with Chernivtsi region having the lowest position.

Accordingly, the ranking positions of the regions of Ukraine in terms of their provision with tourist resources (supply and demand, availability of tourist resources and efficiency of tourist activities, accommodation of tourists) were determined (Appendix E, Appendix F, Appendix G in accordance). This dependence takes into account all previous ratings of the studied tourist resources and makes it possible to form an integrated indicator (Appendix H).

Regarding supply and demand indicators, the leading positions are taken by regions with high indicators of supply and demand of tourist services, namely Dnipropetrovsk, Kyiv, Lviv, and Kharkiv regions. On the contrary, the lowest rates are in the regions characterized by a low number of tourists, a small number of tourist enterprises, and a low number of tourist hotels, namely Volyn, Zhytomyr, Ternopil, Kherson, Khmelnytskyi, and Chernivtsi regions with the lowest position of Kirovograd region.

Regarding the indicators of tourist resources and efficiency of tourist activity, Lviv, Kharkiv, Ivano-Frankivsk, Vinnytsia, Dnipropetrovsk, Kyiv, and

Odesa regions have the highest rating. This is because they are characterized by significant numbers of nature reserves, museums, cultural heritage sites, as well as large volumes of tourist services provided by tour operators, and, accordingly, the high costs associated with the provision of tourist services.

These regions also have significant income from the provision of tourist services, especially Dnipropetrovsk, Ivano-Frankivsk, Kyiv, Lviv, Odesa, and Kharkiv regions. Zhytomyr, Kirovohrad, Mykolaiv, and Sumy regions have the lowest rates, with low volumes of tourist services and low income from these services. However, Zhytomyr, Mykolaiv, and Sumy regions have a significant number of nature reserves, museums, theaters, and cultural heritage sites. This difference is due to the low level of tourist resource use, improper maintenance, poor representation of tourist routes, and lack of promotion of tourist attractions.

Regarding the indicators of tourist accommodation, the leaders are Odesa, Zaporizhzhia, Dnipropetrovsk, Lviv, and Kherson regions. However, Kherson region has low ratings on the number of tourists served by tour operators, a small number of tour operators and travel agents, as well as a small number of nature reserves and museums, although the income from tourism services is moderate. Zhytomyr, Rivne, Sumy, Ternopil, Chernivtsi, Chernihiv, and Vinnytsia regions have the lowest score in the ranking. However, these regions have a good rating of nature reserves and museums, as well as income from tourist services. This difference indicates the attendance of museums, the predominance of one-day sightseeing, business tourism, and the problem of “one-day city,” i.e., the lack of “long-term tourism” in such cities.

Table 1 shows the calculation of the integrated index of investment potential of tourist systems in the regions.

Integrated indices for tourist systems' investment potential in the regions of Ukraine are visualized and grouped according to the closest links between the data of the regions (Figure 1):

- values from 72.0 to 94.8;
- values from 40.2 to 71.0;
- values from 25.0 to 40.1.

Table 1. Integrated index of investment potential of tourist systems in the regions of Ukraine

No.	Regions	I_{ipei}	I_{ti}	General integral index I_{ip}
1	Crimea	-	-	-
2	Vinnitsia	64.3	57.0	60.6
3	Volyn	26.4	42.0	34.2
4	Dnipropetrovsk	99.0	78.0	94.8
5	Donetsk	-	-	-
6	Zhytomyr	40.3	32.3	36.3
7	Zakarpattia	28.3	52.0	40.2
8	Zaporizhzhia	77.0	67.0	72.0
9	Ivano-Frankivsk	45.7	69.0	57.4
10	Kyiv	89.0	72.0	80.5
11	Kirovohrad	33.0	25.0	29.0
12	Luhansk	-	-	-
13	Lviv	78.0	85.0	81.5
14	Mykolayiv	59.0	47.0	53.2
15	Odesa	91.0	72.0	81.5
16	Poltava	69.3	54.7	62.0
17	Rivne	32.0	51.7	41.8
18	Sumy	43.7	35.7	39.7
19	Ternopil	23.0	35.3	29.2
20	Kharkiv	87.3	77.0	82.2
21	Kherson	38.0	44.3	41.2
22	Khmelnytskyi	48.0	39.7	43.2
23	Cherkasy	59.0	53.3	56.2
24	Chernivtsi	14.7	35.3	25.0
25	Chernihiv	34.7	47.3	41.0

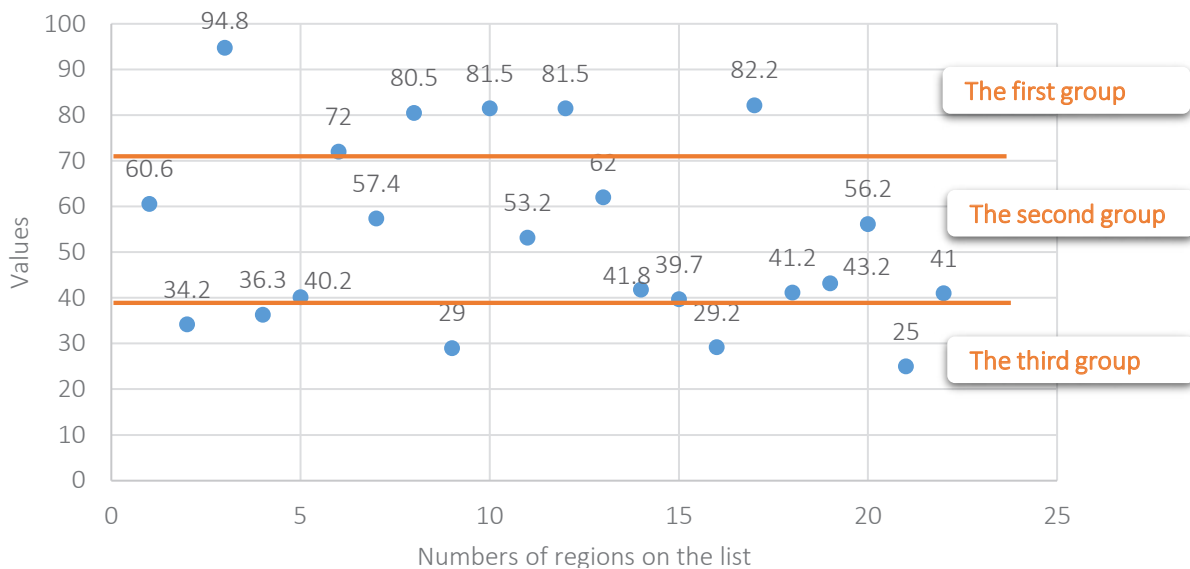


Figure 1. Grouping of Ukraine's regions according to the integrated index of tourist systems' investment potential

Table 2. Characteristics of groups of Ukraine's regions according to the integrated index of tourist systems' investment potential

Group	Regions that are part of the group	Group characteristics
The first group (high integrated index of investment potential, high level of investment attractiveness)	Dnipropetrovsk, Kharkiv, Odesa, Lviv, Kyiv, Zaporizhzhia	Regions included in this group have high economic indicators. They are characterized by a large number of companies, significant investments in the economy of regions, high financial results, high economic activity, and high employment of the unemployed. Moreover, they show high numbers of tourists served by tourism entities, overnight stays of tourists included in tourist packages, a large number of tourism entities (tour operators and travel agents), and high rates of tourism resources. These regions have high efficiency of tourist activities, large volumes of tourist services, high revenues from this industry, and a large number of collective accommodation facilities.
The second group (average integrated index of investment potential, moderate level of investment attractiveness)	Poltava, Vinnytsia, Cherkasy, Ivano-Frankivsk, Mykolaiv, Khmelnytskyi, Kherson, Chernihiv, Rivne, Zakarpattia	They are characterized by fluctuations between high and low rates, and average pre-tax financial results. Some regions show a small amount of direct investments, as well as a sufficient number of companies and economic activity of residents of the regions. The regions have significant fluctuations between high and low indicators, the average number of tourists served by tourism entities, and a significant number of tour operators and travel agents. However, analyzing the level of provision with nature reserves, one can say about the average level. For example, some areas have a low number of museums and cultural heritage sites, low volumes of tourism services provided by tour operators, as well as income from tourism services. The number of collective accommodation facilities is also characterized by an average level.
The third group (low integrated index of investment potential, low level of investment attractiveness)	Sumy, Zhytomyr, Volyn, Kirovohrad, Ternopil, Chernivtsi	These regions show low investment, a small number of enterprises, low loans to the economy of the regions, low per capita income, low share of GDP, and low number of employees, which may indicate an outflow of personnel from the region. They are characterized by high unemployment rate (the lowest is in Chernivtsi region, which is characterized by the lowest investment, financial performance of enterprises, loans to the region's economy, the lowest wages, low number of workers, low economic activity, low incomes, combined with high costs of living). There are also low indicators of the number of tourists served by tourism entities, a small number of tour operators and travel agents, analyzing the provision with nature reserves. It should be noted that there are large fluctuations between medium and low indicators: the lowest level of provision is in Kirovohrad region. These regions also show a low level of provision with museums and cultural heritage sites, as well as low revenues from the provision of tourist services.

According to the integrated index of tourist systems' investment potential, characteristics of groups of regions are given in Table 2 and visualized in Appendix I.

4. DISCUSSION

The study shows that the ranking and grouping of investment potential of regions is caused by differences due to regional characteristics of economic development, labor, infrastructure resources, and their use. However, suppose one considers the specific areas of a particular group. In that case, there is an imbalance between the economic and tourism resources of the regions, which creates particular challenges. Accordingly, there is a need to enrich and strengthen the provision with components of available resources.

A set of separate characteristics (both economic and tourist) for rating the regions of Ukraine is also debatable. For example, Khlopiak et al. (2021) propose a set of indicators for assessing the tourism potential

of the regions. The results of the study are somewhat different. This means that different results will be obtained depending on the chosen evaluation methodology and the set of specific indicators for the analysis of the regions, even if one goal is pursued.

Fedulova and Savchenko (2020) argue that the same regions may be attractive from the point of view of tourism and unattractive from others, for example, from agriculture or construction. This finding contradicts this study, as it combines the use of promising and underdeveloped areas. All these necessitate further systematic (annual) assessments of investment potential and investment attractiveness of regions, their grouping, and ranking. In addition, it is vital to introduce regional tourism systems, taking into account the position of each region in the group, to strengthen weaknesses and public-private partnerships in tourism to form the investment image of the regions. This paper can be used both at the regional level to further strengthen weaknesses and by potential investors who want to invest in reliable, resource-rich, and economically secure regions.

CONCLUSION

The rating of regional tourist systems in Ukraine by investment potential is based on the definition of integrated indicators of data sets on the state of economic and sectoral (tourist) resources of the regions. On the one hand, this rating reflects the state of development of regional tourist systems. On the other hand, it is an indicator of the effectiveness of managing this potential. The study identified three groups of regions by investment potential of tourist systems: high, average, and low. These groups differ in the asymmetry of investment attractiveness and differences in economic development indicators. This corresponds to the nature of the current organizational and economic changes in the field of tourism and the state of development of regional tourist systems.

The dynamics of rating the values of heterogeneity investment potential determines the phenomenon of entropy (unstructured) development of national tourism in general. Therefore, the formed information environment will serve to determine the state of regional tourist systems in Ukraine by investment potential, understanding their asymmetry, phenomena, and processes that activate or, conversely, discourage the development of regional tourist systems.

Further research should focus on developing methods for assessing the configuration of economic, social, resource, infrastructure, natural-geographical, and cultural-historical indicators. These methods can reflect the possibilities of strengthening regional tourism systems and the formation of an information-analytical metasystem to ensure spatial and chronological compatibility of indicators for the development of Ukraine's regional tourist systems.

AUTHOR CONTRIBUTIONS

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APPENDIX A

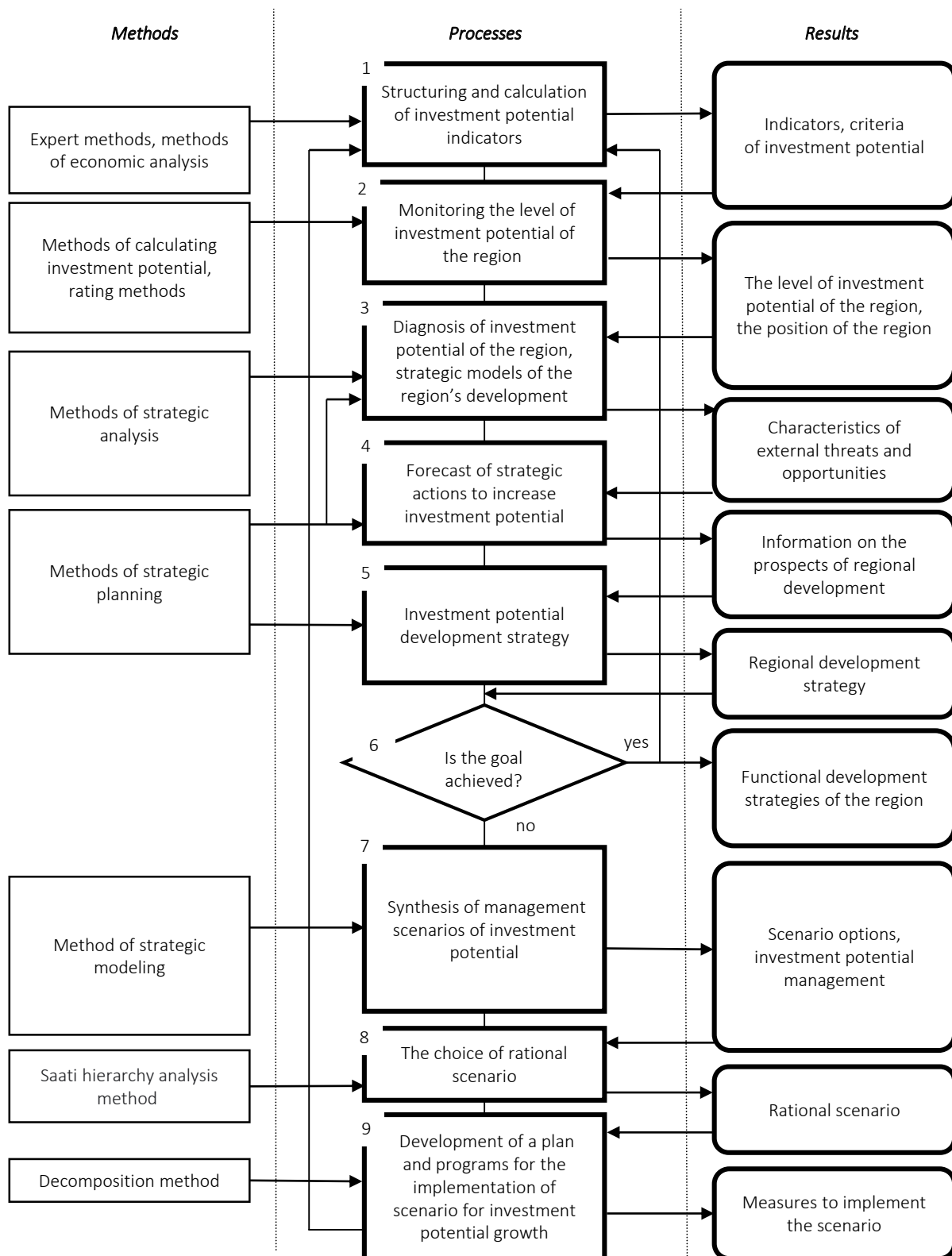


Figure A1. Methods and results of research on the region's investment potential

APPENDIX B

Table B1. Indicators for the analysis of investment potential for regional tourist systems

Source: Oleksandrenko (2009), Skliar et al. (2017).

Economic indicators of investment potential for regional tourist systems			
Indicators of the region's provision with financial resources (F)	Indicators of the region's labor supply (L)		Indicators of the region's provision with production resources (P)
Volume of direct investments, million dollars	Average number of full-time employees, thousand people		Number of industrial enterprises, units
Financial results before taxation of companies, million UAH	Economic activity, thousand people		Number of operating agricultural societies, units
Volumes of loans granted to the region's economy, million UAH	Registered unemployment rate, %		Number of small industrial enterprises, units
Disposable income per capita, UAH	Employment rate of registered unemployed, %		
Expenses per person, UAH			
The share of GRP (Gross regional product) in total, %			
Average monthly nominal salary of employees, UAH			
Tourist (sectoral) investment potential of regional tourist systems			
Demand and supply of tourist services in the region (DS)	Indicators of availability of tourist resources and efficiency of tourist activity (RE)		Tourist accommodation indicators (A)
Number of tourists served by tourism entities (legal entities and individuals);	Nature reserve funds, units;	The volume of tourist services provided by tour operators;	Number of collective accommodation facilities;
Number of tourist overnight stays included in tourist packages	Total number of museums, units;	Costs associated with the provision of travel services;	Number of places (beds) in collective accommodation
Number of tourism entities	Number of cultural heritage sites;	Income from the provision of tourist services (excluding VAT, excise duties and similar mandatory payments)	
	Number of theaters		

APPENDIX C

Table C1. Indicators of the provision of Ukraine's regions with financial resources in 2020

Source: State Statistics Service of Ukraine (2021), NBU (n.d.), Main Departments of Statistics in the regions (2021).

No.	Regions	Volume of direct investments, million US dollars F_1	Financial results before taxation of enterprises by regions, million UAH F_2	Volumes of loans granted to the region's economy, million UAH F_3	Disposable income per capita. UAH F_4	Expenses per person, UAH F_5	The share of GRP in total, % F_6	Average monthly salary of employees, UAH F_7
1	Crimea	–	–	–	–	–	–	–
2	Vinnitsia	305.6	11613.8	4373	70691	81 557	3.3	10297
3	Volyn	259.7	2589.9	3559	56603	71 651	1.9	9256
4	Dnipropetrovsk	4 745.9	68233.5	210345	92083	104 333	9.8	11681
5	Donetsk	–	–	–	–	–	–	–
6	Zhytomyr	394.4	4869.8	3086	67187	80 236	2.1	9571
7	Zakarpattia	290.5	1861.2	2478	51073	68 466	1.5	10193
8	Zaporizhzhia	1 632.8	6317.6	15909	81949	96 006	3.9	11556
9	Ivano-Frankivsk	737.6	2121.2	3327	60276	71 584	2.2	9980
10	Kyiv	1 480.9	40416.7	394361	79263	129 478	5.5	11887
11	Kirovohrad	143.7	6057.2	3402	63472	78 445	1.8	9603
12	Luhansk	–	–	–	–	–	–	–
13	Lviv	1 401.5	10871.8	18108	71150	90 406	5.4	10299
14	Mykolayiv	284.5	10471.0	12202	68289	80 485	2.3	11414
15	Odesa	1 767.9	25502.3	22549	80164	102 923	5.0	10336
16	Poltava	797.9	22064.6	5466	77547	91 751	4.7	10819
17	Rivne	237.3	7288.7	2205	58814	69 213	1.7	10254
18	Sumy	323.5	7539.7	4920	71117	78 765	1.9	9785
19	Ternopil	121.3	41851.2	3533	55570	66 015	1.4	9384
20	Kharkiv	908.8	13108.1	27708	73218	107 693	6.2	9968
21	Kherson	268.3	6099.4	3470	63073	80 235	1.6	9354
22	Khmelnitskyi	181.2	9717.0	4536	64824	81 865	2.1	9872
23	Cherkasy	227.5	12123.3	6662	64254	85 695	2.6	9797
24	Chernivtsi	49.1	287.6	955	53875	74 058	1.0	9166
25	Chernihiv	373.9	8386.1	2540	64933	79 518	2.0	9328

Table C2. Indicators of the provision of Ukraine's regions with labor resources in 2020

Source: State Statistics Service of Ukraine (2021), NBU (n.d.), Main Departments of Statistics in the regions (2021).

No	Regions	Average number of full-time employees, thousand people L_1	Economic activity, thousand people L_2	Registered unemployment rate, % L_3	Employment rate of the registered unemployed, % L_4
1	Crimea	–	–	–	–
2	Vinnitsia	242.8	730.8	11.0	35.9
3	Volyn	157.6	426.2	12.8	40.5
4	Dnipropetrovsk	720.8	1 538.3	8.8	49.3
5	Donetsk	–	–	–	–
6	Zhytomyr	204.8	579.7	11.3	31.7
7	Zakarpattia	151.2	560.5	11.0	34.3
8	Zaporizhzhia	331.6	822.7	11.1	37.9
9	Ivano-Frankivsk	183.8	626.2	9.0	41.6
10	Kyiv	341.8	820.9	7.0	38.1
11	Kirovohrad	160.0	432.2	13.2	32.7
12	Luhansk	–	–	–	–

Table C2 (cont.). Indicators of the provision of Ukraine's regions with labor resources in 2020

No	Regions	Average number of full-time employees, thousand people L_1	Economic activity, thousand people L_2	Registered unemployment rate, % L_3	Employment rate of the registered unemployed, % L_4
13	Lviv	464.1	1 154.6	7.7	35.1
14	Mykolayiv	176.8	551.3	11.0	31.7
15	Odesa	395.9	1 088.5	7.3	38.2
16	Poltava	281.0	663.0	12.3	35.8
17	Rivne	167.0	534.3	10.1	36.5
18	Sumy	187.3	533.0	9.9	32.7
19	Ternopil	142.3	465.1	11.9	33.4
20	Kharkiv	534.9	1 333.2	6.4	43.8
21	Kherson	144.3	504.6	11.5	36.3
22	Khmelnyskyi	191.7	582.9	10.4	34.0
23	Cherkasy	201.2	580.6	9.8	36.1
24	Chernivtsi	108.0	436.0	10.1	33.7
25	Chernihiv	168.4	487.0	12.3	33.4

Table C3. Indicators of provision of Ukraine's regions with production resources in 2020

Source: State Statistics Service of Ukraine (2021), NBU (n.d.), Main Departments of Statistics in the regions (2021).

No.	Regions	Number of industrial enterprises, units P_1	Number of operating agricultural societies, units P_2	Number of small industrial enterprises, units P_3
1	Crimea	–	–	–
2	Vynnytsia	9862	2593	9272
3	Volyn	6047	848	5673
4	Dnipropetrovsk	30827	3949	29329
5	Donetsk	–	–	–
6	Zhytomyr	7060	1084	6604
7	Zakarpattia	6655	1029	6360
8	Zaporizhzhia	15368	2700	14692
9	Ivano-Frankivsk	8124	714	7754
10	Kyiv	20320	1966	19250
11	Kirovohrad	8553	3200	8146
12	Luhansk	–	–	–
13	Lviv	20909	1186	19819
14	Mykolayiv	11482	3970	11078
15	Odesa	25465	4813	24519
16	Poltava	11103	2453	10445
17	Rivne	6021	554	5652
18	Sumy	6096	1061	5676
19	Ternopil	5135	1016	4822
20	Kharkiv	25144	1928	23868
21	Kherson	8116	2560	7807
22	Khmelnyskyi	7654	1570	7212
23	Cherkasy	9286	1904	8763
24	Chernivtsi	4205	777	3984
25	Chernihiv	6254	1101	5812

APPENDIX D

Table D1. Rating positions of Ukraine's regions according to their provision with economic (financial, labor, and production) resources in 2020

№	Regions	Financial resources								Labor resources					Production resources				Total lipei
		F ₁	F ₂	F ₃	F ₄	F ₅	F ₆	F ₇	ΣIf	L ₁	L ₂	L ₃	L ₄	ΣIl	P ₁	P ₂	P ₃	ΣIp	
1	Crimea	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2	Vinnitsia	11	15	11	14	13	15	15	94	15	16	12	12	55	14	16	14	44	64.3
3	Volyn	7	4	10	4	5	8	2	40	5	1	2	19	27	4	4	4	12	26.4
4	Dnipropetrovsk	22	22	21	22	20	22	21	150	22	22	17	22	83	22	20	22	64	99.0
5	Donetsk	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
6	Zhytomyr	14	5	5	12	11	11	6	64	14	11	7	1	33	8	8	8	24	40.3
7	Zakarpattia	10	2	3	1	2	3	13	31	4	10	11	9	34	7	6	7	20	28.3
8	Zaporizhzhia	20	8	17	21	18	16	20	120	17	18	8	16	59	17	18	17	52	77.0
9	Ivano-Frankivsk	15	5	6	6	4	12	12	60	10	14	10	20	54	11	2	10	23	45.7
10	Kyiv	19	20	22	19	22	20	22	144	18	17	21	17	73	18	14	18	50	89.0
11	Kirovohrad	3	6	7	8	7	6	7	44	6	2	1	3	12	12	19	12	43	33.0
12	Luhansk	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
13	Lviv	18	14	18	16	16	19	16	117	20	20	19	10	69	19	10	19	48	78.0
14	Mykolayiv	9	13	16	13	12	13	19	95	9	9	9	2	29	16	21	16	53	59.0
15	Odesa	21	19	19	20	19	18	17	133	19	19	20	18	76	21	22	21	64	91.0
16	Poltava	16	18	14	18	17	17	18	118	16	15	3	11	45	15	15	15	45	69.3
17	Rivne	6	9	2	5	3	5	14	44	7	8	15	15	45	3	1	3	7	32.0
18	Sumy	12	10	13	15	8	7	8	73	11	7	19	4	41	5	7	5	17	43.7
19	Ternopil	2	21	9	2	1	2	5	42	2	4	5	7	18	2	5	2	9	23.0
20	Kharkiv	17	17	20	17	21	21	11	124	21	21	22	21	85	20	13	20	53	87.3
21	Kherson	8	7	8	7	10	4	3	47	3	6	6	14	29	10	17	11	38	38.0
22	Khmelnyskyi	4	12	12	10	14	10	10	72	12	13	13	5	43	9	11	9	29	48.0
23	Cherkasy	5	16	15	9	15	14	9	83	13	12	18	13	56	13	12	13	38	59.0
24	Chernivtsi	1	1	1	2	6	1	1	13	1	3	14	8	26	1	3	1	5	14.7
25	Chernihiv	13	11	3	11	9	9	4	60	8	5	4	6	23	6	9	6	21	34.7

APPENDIX E

Table E1. Indicators of demand and supply of tourist services in Ukraine's regions in 2020

Source: State Statistics Service of Ukraine (2021), NBU (n.d.), Main Departments of Statistics in the regions (2021).

No.	Regions	Number of tourists served by tourism entities (legal entities and individuals)	Number of tourist overnight stays included in travel packages	Number of tourism entities	
				Number of tour operators and travel agents – legal entities	Number of travel agents – individual entrepreneurs
1	Crimea				
2	Vinnitsia	26470	185496	19	60
3	Volyn	10047	73030	13	57
4	Dnipropetrovsk	78100	607251	109	322
5	Donetsk	18672	92451	26	56
6	Zhytomyr	11203	72436	16	43
7	Zakarpattia	14669	102470	22	50
8	Zaporizhzhia	33169	232812	57	90
9	Ivano-Frankivsk	62479	176867	25	79
10	Kyiv	47950	343755	47	173
11	Kirovohrad	7774	37825	13	44
12	Luhansk	3411	25905	6	31
13	Lviv	100824	751073	97	168
14	Mykolayiv	11103	79807	20	69
15	Odesa	28182	197485	92	102

Table E1 (cont.). Indicators of demand and supply of tourist services in Ukraine's regions in 2020

No.	Regions	Number of tourists served by tourism entities (legal entities and individuals)	Number of tourist overnight stays included in travel packages	Number of tourism entities	
				Number of tour operators and travel agents – legal entities	Number of travel agents – individual entrepreneurs
16	Poltava	18993	145635	14	110
17	Rivne	19269	290082	28	74
18	Sumy	12004	74253	17	68
19	Ternopil	8199	57698	14	51
20	Kharkiv	43989	331087	84	150
21	Kherson	13767	51488	8	46
22	Khmelnyskyi	11073	57606	18	45
23	Cherkasy	15761	93906	20	79
24	Chernivtsi	7825	51333	28	27
25	Chernihiv	15849	113356	18	39
26	the city of Kyiv	1739496	10710152	750	273

APPENDIX F

Table F1. Indicators of the availability of tourist resources and the efficiency of tourist activities in Ukraine's regions in 2020

Source: State Statistics Service of Ukraine (2021), Main Departments of Statistics in the regions (2021), National Tourism Organization of Ukraine (2021).

No.	Regions	Indicators of availability of tourist resources				Indicators of tourist activity efficiency		
		Number of natural protected reserves, units	The total number of museums, units	Number of cultural heritage sites	Number of theaters	Volume of services provided by tour operators, thousand UAH	Expenses related to the provision of tourist services, thousand UAH	Income from the provision of tourist services (excluding VAT), thousand UAH
1	Crimea							
2	Vinnitsia	424	30	28	2	325206	3928,6	54610
3	Volyn	371	16	23	2	124925	2309,9	33201
4	Dnipropetrovsk	172	26	24	15	1128965	5519,0	119901
5	Donetsk	112	15	13	7	218919	1482,8	23007
6	Zhytomyr	211	23	16	4	137235	234,0	15282
7	Zakarpattia	450	14	15	3	160271	5763,1	34890
8	Zaporizhzhia	311	23	12	5	421984	426,2	53490
9	Ivano-Frankivsk	456	26	5	3	362022	235824,7	344953
10	Kyiv	193	24	29	1	671051	39514,9	126004
11	Kirovohrad	51	29	3	2	108228	-	16643
12	Luhansk	138	13	10	5	47416	-	11973
13	Lviv	347	27	29	14	960213	149464,5	655639
14	Mykolayiv	140	12	30	3	154469	128,9	19041
15	Odesa	125	14	24	6	394952	13624,9	220538
16	Poltava	384	37	31	2	253364	-	28808
17	Rivne	310	14	17	2	228278	6993,4	34237
18	Sumy	208	17	29	2	146452	-	18018
19	Ternopil	607	30	5	11	101270	83,9	21756
20	Kharkiv	242	33	29	21	654928	14966,0	106260
21	Kherson	79	9	34	2	111326	4630,6	58203
22	Khmelnyskyi	472	28	19	3	123373	362,4	16520
23	Cherkasy	50	29	38	2	187813	803,7	47410
24	Chernivtsi	331	10	18	2	82374	10863,3	28893
25	Chernihiv	656	35	44	4	194176	-	13540
26	the city of Kyiv	72	40	48	30	25457680	17842013,6	30597362

APPENDIX G

Table G1. Indicators of tourism accommodation in the regions of Ukraine in 2020

Source: National Tourism Organization of Ukraine (2021).

No.	Regions	Number of collective accommodation facilities	Number of places (beds) in collective accommodation facilities
1	Crimea	–	–
2	Vinnitsia	21	1 869
3	Volyn	61	3 309
4	Dnipropetrovsk	106	13 070
5	Donetsk	–	–
6	Zhytomyr	19	1 615
7	Zakarpattia	59	4 672
8	Zaporizhzhia	133	17 938
9	Ivano-Frankivsk	64	5 912
10	Kyiv	96	10 184
11	Kirovohrad	37	2 377
12	Luhansk	–	–
13	Lviv	130	13 188
14	Mykolayiv	103	12 081
15	Odesa	187	26 151
16	Poltava	44	3 453
17	Rivne	18	1 588
18	Sumy	21	1 424
19	Ternopil	15	1 392
20	Kharkiv	73	7 824
21	Kherson	88	16 594
22	Khmelnitskyi	31	2 606
23	Cherkasy	55	4 308
24	Chernivtsi	13	2 108
25	Chernihiv	24	1 722
26	the city of Kyiv	129	19 619

APPENDIX H

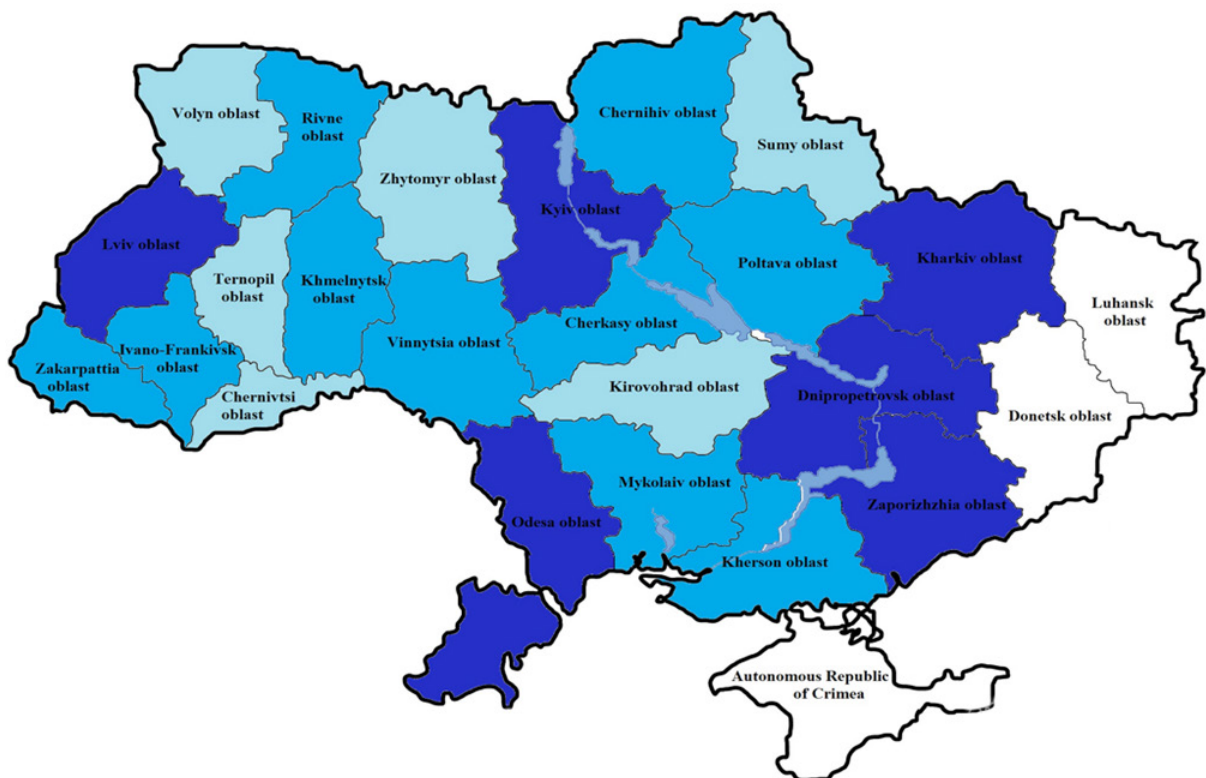
Table H1. Ranking positions of Ukraine's regions according to their provision with tourist resources (supply and demand, availability of tourist resources, efficiency of tourist activities, tourism accommodation) in 2020

No.	Regions	Indicators of supply and demand					Indicators of the availability of tourist resources and the efficiency of tourist activities							Indicators of tourism accommodation			Total Iti	
		IT ₁	IT ₂	IT ₃	IT ₄	ΣITds	IT ₁	IT ₂	IT ₃	IT ₄	IT ₅	IT ₆	IT ₇	ΣITre	IT ₁	IT ₂		ΣITa
1	Crimea																	
2	Vinnitsia	15	15	10	10	50	17	19	16	14	15	12	15	108	7	6	13	57.0
3	Volyn	3	7	2	9	21	15	11	14	14	6	11	10	81	14	10	24	42.0
4	Dnipropetrovsk	21	21	22	22	86	6	15	15	21	22	14	18	111	19	18	37	78.0
5	Donetsk																	
6	Zhytomyr	7	6	6	3	22	9	14	10	16	7	7	2	65	6	4	10	32.3
7	Zakarpattia	10	11	13	7	41	18	10	9	15	10	15	12	89	13	13	26	52.0
8	Zaporizhzhia	17	17	18	16	68	11	14	8	17	18	9	14	91	21	21	42	67.0
9	Ivano-Frankivsk	20	14	14	15	63	19	15	7	15	16	22	21	115	15	14	29	69.0
10	Kyiv	19	20	17	21	77	7	13	17	13	20	17	19	106	17	16	33	72.0
11	Kirovohrad	1	1	3	4	9	2	18	6	14	3	–	4	47	10	9	19	25.0
12	Luhansk																	
13	Lviv	22	22	21	20	85	14	16	17	20	21	21	22	131	20	19	39	85.0
14	Mykolayiv	6	9	11	12	38	5	9	18	15	9	6	6	68	18	17	35	47.0

Table H1 (cont.). Ranking positions of Ukraine’s regions according to their provision with tourist resources (supply and demand, availability of tourist resources, efficiency of tourist activities, tourism accommodation) in 2020

No.	Regions	Indicators of supply and demand					Indicators of the availability of tourist resources and the efficiency of tourist activities							Indicators of tourism accommodation			Total Iti	
		IT_1	IT_2	IT_3	IT_4	$\Sigma ITds$	IT_1	IT_2	IT_3	IT_4	IT_5	IT_6	IT_7	$\Sigma ITre$	IT_1	IT_2		ΣITa
15	Odesa	16	16	20	17	69	4	10	15	18	17	19	20	103	22	22	44	72.0
16	Poltava	13	13	5	18	49	16	22	19	14	14	-	8	93	11	11	22	54.7
17	Rivne	14	18	15	13	60	12	10	11	14	13	16	11	87	5	3	8	51.7
18	Sumy	8	8	7	11	34	8	12	17	14	8	-	5	64	7	2	9	35.7
19	Ternopil	4	5	4	8	21	21	19	7	19	2	5	7	80	4	1	5	35.3
20	Kharkiv	18	19	19	19	75	10	20	17	22	19	20	17	125	16	15	31	77.0
21	Kherson	9	3	1	6	19	3	7	20	14	4	13	16	77	17	20	37	44.3
22	Khmelnyskyi	5	4	8	5	22	20	17	13	15	5	8	3	81	9	7	16	39.7
23	Cherkasy	11	10	12	14	47	1	18	21	14	11	10	13	88	13	12	25	53.3
24	Chernivtsi	2	2	16	1	21	13	8	12	14	1	18	9	75	3	7	10	35.3
25	Chernihiv	12	12	9	2	35	22	21	22	16	12	-	1	94	8	5	13	47.3

APPENDIX I



Note: * not taking into account temporarily occupied territories and the Autonomous Republic of Crimea, which are shown in white on the map.

Figure I1. Grouping of regions* according to the integrated index of investment potential of tourist systems