Use Of Cluster Analysis In Determining The Market Competitiveness Of Tourism Services

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**Annotation:** In this article the market competitiveness of countries providing tourism services was defined on the basis of a comparative analysis of different cluster models according to their characteristics of the formation of a visitor cluster and competitiveness factors.

**Keywords:** competitiveness, tourism cluster, pilgrimage cluster, organization of clusters, tourism direction, management of goals, pilgrimage tourism.

In today’s world, the integrated indicator, that is, the competitiveness index of tourism clusters is the most universal tool for assessing the ability of various tourist resources to meet the needs of tourists in accordance with international standards. The index presents extensive coverage of statistics and expert data from countries around the world, which allows consider various and many factors that assess the competitiveness of the tourism industry. However, the World Economic Forum does not take into account the types of tourism in a particular region. It focuses on the availability of a certain set of tourist resources in the proposed countries. In order to accurately assess competitiveness and develop tourism, we need to analyze available clusters, identify most developed types of tourism in the country and conduct comparative assessment of intensity of domestic competition. This expands the range of factors and indicators for a reliable assessment of the international competitiveness of countries in the global market of tourism services.

There are competitive factors that influence the development of a particular (each) type of tourism. We put together and correlate the types of competitiveness and types of tourism according to the above classification. With this in mind, allow us to assume that “educational tourism” and “travel for other educational purposes” may form one category due to the existence of a common goal (education) and the existence of similar methods (training, counseling) to achieve the goal. From this we combine “recreational tourism” and “other healthcare regulations” according to the general purpose (rehabilitation and prevention) and directions of its achievement (rest and recreation). Consider that “other types of tourism” and “other purposes” (other than transit) are not capable of delivering significant tourism and cash flows. Let us connect 18 types of tourism with the following 83 factors of competitiveness. Evaluate each factor on a certain type of tourism on three levels: 0 - factor that does not affect the development of tourism; 1 - factor...
that has a small effect: 2 - absence or presence of this factor is necessary for the development of tourism. Based on the following criteria, we collect points by the method of expert evaluation:

- The importance of the presence or absence of this factor in deciding that foreign tourists go somewhere (the data obtained from tourist flows can be compared to the leading tourist destinations);

- the presence or absence of this factor for the organization or development of recreational tourism infrastructure in the country.

We can draw the following conclusions, as a result of the analysis and evaluation of competitive factors that are important for the development of different types of tourism.

There are factors that directly affect the development of tourism types, and this allows us to assess the general state of socio-economic situation in the country.

2.07 Ratification of environmental agreements;
4.04. Availability of hospital beds (dormitories);
5.04 Completeness of statistical data for the year by sector;
5.05 Timely submission of monthly, quarterly statistical reports on the sector;
6.04 Enough for one thousand people, number of population.

There are a number of factors that can have significant impact on the development of many types of tourism in the country:

1.04 Visa regime;
6.01 Quality of air transport infrastructure;
8.01 Number of rooms;
10.01 Ticket price and airport expenses;
12.02 Attitude of the population towards foreign visitors.

The factors mentioned above affect the development of different types of tourism, depending on the purpose of the foreign tourists (Appendix B). For countries in the top ten in the WEF rankings, a score of 1 to 10 is a competitive advantage (“1” is an advantage and the rest is equal to “0’). If the country ranks among the countries from 11 to 50, it means positive regarding the competitiveness of tourism services in the world market and the type of tourism (“1”); if the country has a negative impact on the competitiveness of the tourism industry (marked “0”) on any indicator (since the 1950s and later). For countries with positions 51 and below, a score above 51 is a competitive advantage (marked “1”),
a score below 51 indicates a negative impact on the competitiveness of the indicator (marked “0”).

For the calculations, we used factor and cluster analysis methods using the SPSS (Statistical Package for the Social Sciences) software package, developed by University of Chicago experts to conduct applied research in the social sciences. The task of cluster analysis is to stay permanent within clusters to identify global market sectors. The proposed method consists of the following steps.

1. **Formation of a system of international competitiveness indicators of countries in the global market of tourist services.** We used the followings to select the indicators: the level of representation of the samples (global market), taking into account the characteristics of the global market of tourist services, as well as the conversion of data for use in the program. In accordance with these criteria, M. Porter’s classification of international competitiveness factors was applied in the methodology, which allowed provide a system of indicators that takes into account the competitiveness of the tourism industry and the relationship between related and supporting industries.

### Indicators for Assessing the Countries’ International Competitiveness in the Global Tourism Services Market

<table>
<thead>
<tr>
<th>Factors</th>
<th>Indicators</th>
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<tbody>
<tr>
<td>1 Factor Conditions</td>
<td>Residential buildings; presence of leading car rental companies; availability of professional training; availability of specialized educational services; World Natural Heritage Sites; environmental quality; wildlife diversity; World cultural heritage sites; sports stadiums; interval frequency; folk exhibitions and fairs</td>
</tr>
<tr>
<td>2 Requirements</td>
<td>Individual use of the Internet; use of landline telephone lines; use of mobile communication; life expectancy; availability of drinking water sources; purchasing capability; taxation rate; fuel price level; access to medical services; quality of education system; public attitude to foreign visitors; to continue the recommended tourism works</td>
</tr>
<tr>
<td>3 Relevant and supportive sectors</td>
<td>Health development; quality of air transport infrastructure; development of domestic and international air travel; condition of road constructions; quality of railway infrastructure; ATMs that accept VISA cards; Use of ICT infrastructure for B2B operations; Using the Internet for B2C operations.</td>
</tr>
<tr>
<td>4 Company strategy</td>
<td>Ticket prices and airport costs; number of airlines; price index for hotel accommodation; personnel policy;</td>
</tr>
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</table>
2. **Identifying and studying the clusters of countries by approaching international competitiveness levels.** By analyzing the clusters, we divide the countries into groups, based on the similarity of competitive indicators. We group them (1) in terms of competitiveness in the global market of tourist services, and (2) group of countries far from each other.

3. **Identifying types of tourism for development, studying the most competitive privileges in the country.** In order to more accurately assess competitiveness of cluster analysis, we identify the types of tourism peculiar to that country. The choice of indicators represents the presence of factors (preference, business tourism, exhibition, position, privileged study, trade and advertising, cultural mission, education, beach, shopping, sports, education, event, relatives and friends, place of rest, transit) for the development of tourism in the country.

4. **Assessing the competitiveness of the country’s tourism industry.**

In order to clearly identify shortcomings in competitiveness in the tourism industry of our country and compare it with the closest competitors in the cluster by type of tourism, we create a competitive corridor in accordance with M. Porter’s theory of five competitive forces, in line with the global market of tourism services.

The proposed tools allow us to conduct a dynamic and systematic analysis of competing countries, to clearly identify the disadvantages and advantages of disasters in relation to competitiveness. This approach is a clear tool in determining the country’s position among the close competitors in terms of tourism.
development, which helps to set goals for the transition to the next (more developed) group.

In conclusion, the proposed methodological approach is (can be) applied to identify the indicators of success in tourism development, identify key segments of the global tourism market in accordance with the most optimal types of tourism, as well as to further develop the national tourism industry.

References