Cross-country Comparison of Statistical Indicators

Olga Kaurova, Alexander Maloletko, Olga Yumanova

Russian State University of Tourism and Service, Pushkin Area, Moscow Region, Glavnaya Street, 99, 141221, Russia

Abstract: The purpose of this study was to explore the multilateral on a comparable basis, which creates the initial basis for expansion and improvement of economic analysis, which is important for resolving many existing problems of the market economy and entering the global economic relationships. The most important in these relationships are the problem of data comparability, completeness and detail of statistical information and timeliness of its submitting. For this cross-country comparisons indicators were considered, which are learned and described in the works of some Russian scientists and economists.
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1. Introduction

With the development of the global economy, tourism is constantly growing and demonstrates its effect on a global economy, as well as on a national economy.

Tourism is being transformed into a major independent industry of the national economy. It is frequently viewed as an important engine for the economic growth and development of countries, helping to increase the economic welfare of local populations [1-3]. According to the WTO forecasts, tourism industry growth rates will remain for the next few decades. Research of tourism requires quantitative data (based on statistical figures), their calculation.

Important in this respect are the problems of data comparability, completeness and detailing of statistical data and the timelines of its delivery. Several of Russian economists study and describe cross-country comparisons in their research papers [4]. In their view, cross-country comparisons of indicators are classified to territorial comparisons. Such comparisons are most common in connection with the variety of development requirements of foreign trade and other economical and cultural connection of Russia, cross-country agreements and etc.

The Act of the Russian Federation dated October 2, 2006, № 595, "On the Federal Target Program Development of Russian State Statistics for the Period of 2007-2011", that one of the purposes for creating the modern, highly efficient and competitive tourist complex in the Russian Federation is the formation of tourism statistic that would meet the international requirements in line with the decisions of the UN WTO Statistics Commission, which take into account the indicators of the allied industries and identify the cumulative contribution of tourism into the national economy. The ultimate goal is a generation of tourism satellite accounts on a regular basis, which serves its purpose of valuating its economic multiplicative effects [5].

To execute earlier mentioned Act of Russia Federation, a system of statistics indicators is being designed to provide a comprehensive description of tourism development and implementation recommendations into the existing statistics practice, as well as methodological approaches of the statistical monitoring of tourism in accordance with WTO.

In order to improve Russian statistics in general and tourism statistics in particular, it is essential to improve the transparency and openness of the methodology of calculation of statistical indicators and identify form and methods that would provide a wider access to official statistics for the prospective users.

BILATERAL CROSS-COUNTRY COMPARISONS OF STATISTICAL INDICATORS

Almost in all cases of comparison of published data from different countries and analysis of methodological explanations, we can see similarities and differences in the concept of statistical observations, methods of collection and processing of initial information, a territorial or population size changes, during statistical observation as well as in units of measurement, price-levels, purchasing power of currencies and in other factors affecting the natural and cost related comparison indicators [6].

In order to resolve these emerging problems and to achieve comparability of compared indicators "transitive key" system is used. When comparing parameters of production volumes in physical units for Russia and foreign countries, the parameters of other countries are converted into metric units of measurement and made subject to some corrections

in case there are differences in quality of compared goods and services. Besides, not only general values are compared, but values per capita, which better achieve the comparability of social and economical phenomena.

Analyze from a statistical point of view the tourism activity using both simple methods (interdependent series method, graphic method) and analytical evaluation method of the links between variables (correlation and regression). They are presented and quantified such as, the existent links between GDP index and the civil population weight occupied in tourism, from the sum of occupied civil population also from the tourist number, real income gaining index and the number of cars [7].

Special coefficients of real purchasing power of currencies are applied to other economic indicators for their comparisons in the recent 30-40 years, considering the price ratios of the domestic markets in each country. In this case, the researchers proceed from the assumption that all cost parameters consist of the following key elements: price *(P)* and quantity of goods or service *(Q)*. Owing to such factors the elementary comparison requires to obtain the following ratios:

$$\frac{P_1 \times Q_1}{P_2 \times Q_2}, \text{when } \frac{P_1 \times Q_2}{P_2 \times Q_1} \text{ and } \frac{P_2 \times Q_2}{P_1 \times Q_2}. \quad (1)$$

Thus, the obtained correlation of the coefficients determines the purchasing power of the currency of one country in relation to the purchasing power of currency of another country. Value estimates of these coefficients are determined using set of products based on the structure of the elements in the compared indicators.

Bilateral cross-country comparisons are performed most frequantly to identify the scale ratio of social and economical development of Russia in comparison with its existing partners or for entering into cross-country agreements that became considerably important in the recent decades.

To resolve the appearing problems in connection with achieving comparability of the required parameters, the special techniques are developed: the identification of similarities and differences , "transitive keys", conversion of the values of the indicators into monetary units of the compared countries under "purchasing power parity" (PPP) and a number of other techniques applicable alongside with the traditional methods of statistic.

MULTILATERAL COMPARISONS

Multilateral comparisons of indicators, both natural and cost, are often used by statistical agencies of countries to identify the levels and patterns of development of certain trends in Russia with appropriate level in other groups of countries, for example CIS or EU states. In such instances, the composition of indicators of those countries should be brought to comparability with the indicators in Russia or on the contrary, with the composition of EU states. After achieving comparability of value compared indicators of a group of countries, the methods of correlation analysis become particularly important, especially for the analysis of aggregated economic indicators.

As for the natural indicators, no special complexities arise in comparisons, except for conversion of data of foreign countries into metrical units of measurement or into other standard international measurement units. The following comparisons of indicators became highly relevant: standards of living, food and non-food consumption, housing and etc.

2. Results and discussion

Since 1968, under the aegis of the United Nations Organization, the Program of International Comparisons (PIC) was established for calculation of the values of "purchasing power parities currencies" (PPP) for various countries. At the first stage of the PIC, according to 1967 data - 10 countries participated, while at the sixth stage, according to 1993 data - 86 countries, including Russia.

The main objective of PIC is to obtain PPP values for GDP, both total amount and its components, and also other parameters, so that indicators of large group of emerging/developing countries could be recalculated into a common currency - USD [8], and to achieve the direct comparability of such indicators for direct mutual measurements.

The theory of purchasing power parity (PPP) is the simple proposition that national price levels should tend to be equal when expressed in a common currency [9,10].

The methodology of PPP calculations as follows:

• first, the values of purchasing power the parity of currencies is to be calculated for homogeneous "primary groups" (PG) according to their representative goods;

• then PPP values are calculated to obtain the aggregated parameters of GDP indicators as average weight values obtainable from PPP primary groups, which are included into a specific aggregated value.

The representative goods are selected in each particular instance in such a way that they meet specified requirements:

• comparability, i.e., they should be identical in all countries;

• representation, i.e., they should be specific for each PG in each country and should have a significant proportion in this index.

When aggregated, the results of calculated PPP and comparisons should meet the following requirements:

• invariance, i.e., results of PPP calculations should not depend on the selected base of comparison (the base country, specific weights of components of its GDP, etc.);

• transitivity, i.e., when direct pair comparisons of PPP should produce the same results as the indirect comparisons made through the third countries;

• additive, i.e., addition of the results of pair comparisons should yield the same results as the indirect comparisons made through the third countries;

• all results should acquire characteristics of the weights system for structures of GDP values and structures of all participating countries.

Conclusion

Multilateral comparisons of statistical indicators significantly enhance analytical capabilities to identify common trends in social and economical development of both groups of countries and global community. The results of such comparisons help to identify the levels and patterns of development of various countries through comparisons of the systems of comparable parameters.

Corresponding Author:
Dr. Kaurova,
Russian State University of Tourism and Service,
Pushkin Area, Moscow Region, Glavnaya Street, 99,
141221, Russia

References

1. Karmanova, T.E., O.V. Kaurova , A.N. Maloletko. 2012. Tourism statistics, Moscow.
2. Webster, C., S. Ivanov. 2014.Transforming competitiveness into economic benefits: Does tourism stimulate economic growth in more competitive destinations? Tourism Management, Volume 40: 137-140.
3. Brida, J.G., W.A. Risso. 2009. Tourism as a factor of long-run economic growth: an empirical analysis for Chile. European Journal of Tourism Research, 2(2): 178–185.
4. Kulagina, G.D., B.I. Bashkatov, D.V. Dianov. 1997. Methodology of cross-country comparisons of indicators in the system of national accounts, Moscow.
5. Maloletko, A.N., A.A. Fedulin, O.V. Kaurova, T.E. Karmanova, G.V. Chonaeva, Yu.G. Krukova, O.S. Yumanova. 2009. Processing of statistical indicators, providing comprehensive description of the development of the tourism market of Russian Federation (within the framework of the federal program “Development of State Statistics of Russia in 2007-2011”).
6. He, H., O. Ranjbar, T. Chang. 2013. Purchasing power parity in transition countries: Old wine with new bottle. Japan and the World Economy, Volume 28: 24-32.
7. Lilea, F.P.C. 2013. Statistics analysis model used in tourism activity, Metalurgia International, Volume 18, Issue 2: 223-225.
8. Salehizadeh, M., R. Taylor, 1999. A test of purchasing power parity for emerging economies. Journal of International Financial Markets, Institutions and Money, Volume 9, Issue 2, 183-193.
9. He, H., T. Chang. 2013. Purchasing power parity in transition countries: Sequential panel selection method. Economic Modelling, Volume 35: 604–609.
10. Paul G.J. O'Connell. 1998. The overvaluation of purchasing power parity. Journal of International Economics, Volume 44, Issue 1: 1–19.

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