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METHODOLOGICAL PROBLEMS OF STATISTICAL STUDY OF REGIONAL TOURISM AND TOURIST EXPENDITURE[1]

The aim of the work is the analysis of the problems of regional tourism statistics. The subject of the research is the tourism expenditure, the specificity of their recording and modeling. The methods of statistical observation and factor analysis are used. The article shows the features and directions of statistical methodology of tourism. A brief review of international publications on statistical studies of tourist expenditure is made. It summarizes the data from different statistical forms and shows the positive and negative trends in the development of tourism in Russia. It is concluded that the tourist industry in Russia is focused on outbound tourism rather than on inbound or internal. The features of statistical accounting and statistical analysis of tourism expenditure in Russian and international statistics are described. To assess the level of development of regional tourism the necessity of use the coefficient of efficiency of tourism. The reasons of the prevalence of imports over exports of tourism services are revealed using the data of the balance of payments. This is due to the raw material orientation of Russian exports and low specific weight of the account "Services" in the structure of the balance of payments. The additive model is also proposed in the paper. It describes the influence of three factors on the changes in tourist expenditure. These factors are the number of trips, the cost of a trip and structural changes in destinations and travel purposes. On the basis of the data from 2012–2013 we estimate the force and the direction of the influence of each factor. Testing of the model showed that the increase in tourism exports caused by the combined positive impact of all three factors, chief of which is the growing number of foreigners who visited Russia during the concerned period.

Keywords: statistics, tourism industry, tourist expenditure, regional tourism, the balance of payments, factor analysis

Introduction

One of the features of statistical methodology of tourism is that its content covers different concepts, definitions, classifications and indicators necessary to assess the socio-economic development of tourism on the regional or international levels. Tourism statistics also develops various models and methods of calculating tourism indicators.

The international guidelines [20] provide statistical definition of the concept "tourism" and

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related categories, analyze various aspects of regional demand: the content and classification of visitors and tourist traveling, as well as the scope, time and place of tourism expenditure. In addition, tourism statistics pays great attention to the standard classifications of products and activities, forming tourist supply, as well as to the elements of Tourism Satellite Account [9].

There is a large number of research using statistical and econometric models to study tourism expenditure. A number of models analyse the impact of various factors on individual spending [4, 17]. These models allow us to assess the significance of some demand variables in total tourism expenditure. As a rule, all models use classical regression analysis to quantify the impact of each parameter.

Most individual consumption models consider the level of expenditure as a function of economic, socio-demographic, psychological and other variables associated with the trip [6, 10, 15]. For example, Zhang, Zhang, Kuwano present an integrated behavioral model of tourism expenditure taking into account the data on the purpose of travel and the time of tourism expenditure [19]. In addition, there are random utility models, estimating the probability of tourism expenditure in the situation of choice between consumption of tourist services and the purchase of other goods [1, 7, 13]. Finally, there are various models of tourism expenditure multiplier based on the Keynesian approach. According to the Keynesian multiplier, the change in the initial expenditure generates a chain reaction that dies away with each subsequent cycle but at the same time brings about multiple changes in income. Tourism multiplier and tourism super-multiplier models describe the reaction of an economic factor (e.g. employment) to the changes of tourism expenditure [5, pp. 428-440]. If such a reaction is forceful, it means that tourist spending greatly affects this factor, and consequently, the economic development of the region. The higher the multiplier is the greater is the contribution of tourism to the regional economy.

The results of statistical and econometric modeling of tourism expenditure are used to assess and predict the development of tourism in different countries or regions [3, 8, 11]. In this paper, we are going to show the features of statistical analysis of tourism and tourism expenditure in Russia.

Tourism in Russia: a brief statistical analysis

The main difficulty of statistical observation in tourism and of the whole tourism statistics as well is the impossibility of referring tourism to any particular industry in economic and statistical sense of this word. According to the definition given in 2008 by the System of National Accounts, "an industry consists of a group of establishments engaged in the same or similar kinds of activity" [21, p. 92]. This definition is not suitable for tourism because a set of specific activities in tourism includes a number of industries in the traditional sense of the word. The tourist industry has interconnections with a variety of industries and economic activities. The interlocking economic relations are quite clear in tourism, so observation of them requires various statistical forms.

In Russia over fifty statistical forms represent the main tourism indicators. Using these forms and the data of the World Travel & Tourism Council [18] we show the dynamics of the main indicators of tourism in Russia in 2007–2013 in Table 1.

Analyzing these statistics, we can characterize modern Russian tourism as having various and often contradictory trends. On the one hand, there are positive changes in the tourism sector of Russian economy. For example, the number of independent hotels and international hotel chains is growing (such brands as the Hilton, the Kempinski, the Radisson SAS, the Novotel, the Park Inn etc. are actively coming to the Russian market), their number of rooms and room occupancy rate are increasing. International tourism receipts and tourist arrivals, employment in the tourism sector have reached the pre-crisis level. Today many tourism indicators show positive dynamics. According to the World Tourism Organization (UNWTO) in 2012, Russia was one of the top ten world leaders in international tourist arrivals (the 9th place) and in international tourism expenditure (the 5th place) [16]. The government actively supports national tourism industry. The federal target program "Development of domestic and inbound tourism in the Russian Federation (2011–2018 years)" with the total funding of about $10 billion works in the country. Many Russian regions have adopted their own programs to support tourism sector based on this program. In addition, in tourism and recreation special economic zones public-private partnerships are building tourist facilities in different regions of the country. For example, only one special zone in the Altai region is going to get the public investment of more than $200 million. The residents of those special zones have tax benefits, lease facilities, backing of interest rates on bank loans and free customs zone regulations act on those territories.

At the same time, positive trends in the development of the tourism industry in Russia are subject to risks associated with undeveloped re-

Table 1

Dynamics of tourism indicators in Russia

Indicators	2007	2008	2009	2010	2011	2012	2013
Travel & Tourism contribution to GDP, %:							
direct	1,4	1,4	1,5	1,4	1,3	1,3	1,4
total	5,8	5,7	6,3	5,8	5,6	5,6	5,8
Travel & Tourism contribution to employment, thou. jobs:							
direct	949,7	945,2	1009,3	955,8	921,2	920,6	966,8
total	3847,8	3829,3	4103,6	3875,2	3781,3	3790,4	3934,9
Number of travels of foreign citizens into Russia (far abroad countries; thou. visits)	8347	8551	8361	8266	9194	10175	10869
of which by purpose of travel:							
business	2293	2945	2755	3035	3753	4058	3516
tourism	2123	2168	2000	2025	2228	2430	2506
private	2853	2389	2663	2174	2121	2483	3582
Number of travels of Russian citizens from Russia to abroad (far abroad countries; thou. visits)	18692	20464	21638	25487	29271	33142	38521
of which by purpose of travel:							
business	1712	1614	1043	1133	1203	975	801
tourism	9041	10822	9192	12231	14052	14816	17682
private	6071	6072	9879	10188	11962	15141	17746
Market services rendered to population — total, %	100	100	100	100	100	100	100
of which:							
tourist services	1,6	1,8	1,7	2,0	2,0	2,0	2,1
spa and resort treatment services	1,4	1,4	1,4	1,2	1,2	1,3	1,0
hotels and similar establishments services	2,7	2,6	2,4	2,3	2,3	2,3	2,3
Consumer prices indices for tourism services rendered population (at the end of period; percentage as compared to December of the previous year):							
international tourism services	106,2	122,9	107,8	100,2	105,4	103,4	109,1
spa and resort treatment services	115,6	121,2	109,5	105,4	109,0	105,9	105,7
excursion services	115,6	122,3	110,1	104,8	106,5	108,8	115,0
Main indicators of collective accommodation establishments:							
number of hotels and similar facilities for accommodation	5917	6774	7410	7866	8406	9316	9855
accommodated person, thou.	22125	24742	21175	24026	27112	30235	31661
number of sanatoria and recreation organizations	2118	2147	1997	1945	1959	1905	1841
accommodated person, thou.	6071	6356	5774	5674	5733	5751	5675
number of children sanitation camps, thou	51,7	52,2	51,0	50,2	49,2	47,9	46,7

gional tourism infrastructure and terrorism threats, which are especially acute for the North Caucasus. The World Economic Forum 2013 confirms this because in 2013 in the Travel & Tourism Competitiveness Index Russia ranked the 63rd position out of 140 countries. Its total index was 4,16 [14]. This is 4 positions lower than in the previous year. Russia's natural, cultural and historical potential rating was rather high, while the level of security (the 113th rank) causes serious anxiety among international experts and foreign tourists as well. Thus, according to official Russian statistics in 2012 no foreigners stayed at collective accommodation establishments of two Caucasian republics (Chechnya and Ingushetia); while more than 2 million foreign tourists visited Moscow and St. Petersburg.

In general, we can conclude that there are serious problems in Russian tourism. Russian tourist industry focuses on outbound tourism rather

than on inbound or internal tourism. And it is not yet possible to change this situation significantly. The main competitive advantage of Russia is its natural and socio-cultural contrasts, which allow developing all kinds of tourism in all seasons. But there is little use of it in Russia.

Methods of collecting and analyzing the data on tourist expenditure in regional statistics

According to methodological regulations of tourism statistics tourism expenditures include all funds spent on the purchase of consumer goods and services during the preparation for a tour and while travelling [20, p. 31]. Tourist expenditure can be paid either by the visitor or by other people. One should distinguish between the spending related to internal (regional) and international tourism. Nonrecurring or periodic household surveys on issues related to the provision of tourism services help to keep a record of internal tourism expenditure. The subject of the survey should be a resident of a country who consumes tourist services within the national borders. International tourism expenditures are recorded in the balance of payment on the account "Travel". The credit of this account reflects the cost of goods and services that non-residents bought in the country during their visit both for personal use and/or for donation. Obviously, these expenditures are connected with inbound tourism. The debit of the account reflects the cost of goods and services that residents of the country purchased while visiting other countries [2, p. 166]. These expenditures are connected with outbound tourism.

In the terminology of foreign trade, the turnover of the credit account "Travel" corresponds to the export of tourism services (*E*) and the turnover of the debit account corresponds to the import of tourism services (*I*). The sum of exports and imports reflects foreign trade turnover of tourist services, the difference between exports and imports shows foreign trade amount of balance. Statistical digests of UNWTO devoted to the analysis of trends in international tourism use the term "international tourist receipts" instead of the term "export of tourist services", and the term "international tourist expenditure" instead of the term "imports of tourist services".

From the perspective of macroeconomic analysis, tourism efficiency is higher in those countries where the exports of tourist services exceed their imports, i.e. where inbound tourism dominates outbound tourism. If you take the simplest index for the assessment of any country's activity in the international tourist market of the following form:

$$K_{effect} = \frac{E}{I},$$

then the performance criteria of the tourist industry will be $K_{effect} > 1$. Our calculations based on the UNWTO data of 2013 [16] show that $K_{effect}^{Italy} = 1,63$, $K_{effect}^{US} = 1,62$, $K_{effect}^{France} = 1,32$, $K_{effect}^{China} = 0,40$, $K_{effect}^{Russia} = 0,22$.

This means that such countries as China and Russia focus on outbound tourism rather than on inbound. I should note that there is not always a correlation between travelling and the economy which it affects [20, p. 33]. For example, tourists from China who travel abroad can use Chinese airlines thereby investing personal funds into the economy of their country. In addition, while preparing for the trip these tourists can buy Chinese goods and services for the needs of the future trip without leaving their usual environment. Therefore, China gets the economic benefits of such purchases, despite the fact that the tourists travel abroad.

Table 2 shows the dynamics of exports and imports of tourism services in Russia, which allows you to distinguish a steady growth trend in foreign trade turnover. However, the share of tourism expenditure in the total bulk of foreign trade of goods and services is extremely low. This is due to the raw material orientation of Russian exports and low specific weight of the account "Services" in the structure of the balance of payments. High oil prices in the world determine the maladjustment between the accounts of the balance of payments. Thus, in 2012 the current account of the export of goods exceeded the exports of services by more than 8 times (the export of goods made up $529,1 billion and the export of services was $62,7 billion) [12].

The global economic crisis brought about sharp reduction of tourism expenditure in Russia in 2009. However, their share in the total turnover of goods and services has increased as compared to previous years. This is because the rate of decline of exports and imports of goods exceeded the rate of decline of exports and imports of services. Thus, in 2009 Russian exports of services decreased by 19,8 % as compared to 2008, while exports of goods decreased by 36,3 %. Besides exports of mineral products, which are the main item of exports commodity composition, fell by almost 40 %. Later the situation stabilized, and today some indicators (international tourist arrivals, number of hotels and similar facilities for accommodation, etc.) of Russian tourism show positive dynamics. However, the adverse foreign trade balance of tourist services is increasing year af-

Table 2

Exports and imports of tourist services in Russia

Indicators	2007	2008	2009	2010	2011	2012	2013
Foreign trade balance of tourist services, million US$	–10799	–11066	–11480	–17595	–20967	–31323	–40785
exports	9447	11842	9366	8830	11328	10759	11988
imports	20246	22908	20846	26425	32295	42082	52773
External trade turnover of tourist services, million US$	29693	34750	30212	35255	43623	52841	64761
The share of turnover of tourist services in the total volume of foreign trade of goods and services, %	4,5	3,9	5,1	4,4	4,5	5,1	6,1

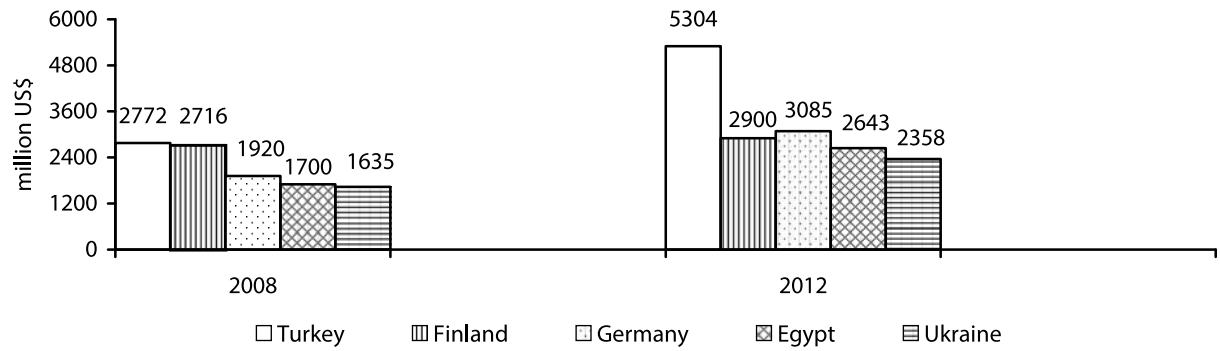

Fig. *International tourist expenditure of Russian citizens for the item "Travel" in 2008 and 2012*

ter year. In other words, the gap between international tourist expenditure and international tourism receipts increases every year. This indicates an extremely unfavorable tendency, which means that national tourism industry in Russia is inefficient.

According to the Balance of payments manual [2, p. 167] we should account tourism expenditures dividing these costs into two groups of trips: business and personal. Business trips have professional or business purposes, while personal trips have other purposes not related to professional activities of a visitor (vacation, education, health, etc.). As for the structure of Russian exports of services, business trips traditionally prevail in the "Travel" item. In 2013 they accounted for 57.6 % of total exports, while the share of personal trips was 42.4 %. The situation is different for the import of services in the "Travel" item. Personal travel expenditure constantly dominates in the ratio of business trips to personal travel. In 2013, their share was 96,5 %, respectively, the proportion of business expenditure in the total imports accounted for 4.5 %. Thus, the maximum sum of $6947 million Russian citizens spent in Turkey, which is the most popular destination among Russian tourists.

In this regard it should be noted that in the international tourism market Russian citizens have an image of wasteful tourists spending their money on a variety of items (clothes, jewelry, car rental, extreme entertainment, etc.). Indirectly, the data of the Central Bank of Russia on the largest spending of Russian citizens on the territory of different countries supports this image (Fig.). The volume of such expenditure increases every year. At this background, spending of foreigners arriving in Russia is much more modest. The total spending of the citizens of the top five countries amounted to $4220 million in the largest expenses ranking in 2013. And the total largest expenditure of Russian citizens in abroad tours was $20216 million.

Three-factor model of the dynamics of tourism expenditures

Economic studies use statistical factor analysis to assess the impact of separate factors on the dynamics of a complex phenomenon. For example, such factors as a net cost, goods prices, and the sales structure affect the sales profit. The labour outcome depends on a labour productivity and on labour costs and in particular on the amount of workforce. Crop page depends on crop yield and crop area. Thus, one can always present the total result as a set of different factors. Therefore, factor analysis uses additive models when the result is obtained by summing up the factors while multiplicative models are used when you multiply factors.

The three-factor additive statistical model gives the measure of the dynamics of tourism expenditure:

Table 3

Factor analysis of exports and imports of services in the item "Travel" (million US$)

Indicators	2012	2013	ΔQ	including		
				$\Delta Q(s)$	$\Delta Q(z)$	$\Delta Q(f)$
International tourism receipts	10759	11988	1230	498	155	57
International tourist expenditure	42082	52773	10691	5942	1594	3155
External trade turnover of tourist services	52841	64761	11921	6441	1750	3731
External trade balance of tourist services	–31323	–40785	–9462	–5444	–1439	–2578

$$\Delta Q = \Delta Q(s) + \Delta Q(z) + \Delta Q(f),$$

where ΔQ the total increase in tourism expenditure over a certain period of time, $\Delta Q(s)$ the increase in tourism expenditure due to the change in the number of trips (factor *s*), $\Delta Q(z)$ the increase in tourism expenditure due to the change of the cost of a trip (factor *z*), $\Delta Q(f)$ the increase in tourism expenditure due to the structural changes (factor *f*).

Table 3 shows the results of calculations made in respect of Russian tourism according to this model. Four indicators of tourism expenditure here are international tourist expenditure and receipts, foreign trade turnover and balance of tourist services. Factor analysis was carried out on the data of the balance of payments for 2012–2013.

The maximum increase ($5942 million) was due to high rates of outbound tourism (factor *s*). In 2013, the number of Russian residents going abroad (including people in search of temporary employment) increased by 14 % as compared to 2012 and ran up to 50.9 million people. Such destinations as Poland, Greece, Tunisia, Italy, Thailand and Spain enjoyed the fastest growing number of departures of Russian citizens. Changes in the cost of a trip (factor *z*) produced the much less impact on international tourist expenditure growth. Going abroad in 2013, a Russian citizen spent the average of $1033 while a year earlier the sum had been $941. This brought about the increase of international tourist expenditure by $1594 million. Structural changes in the purposes and destinations of trips (factor *f*) led to the significant increase of imports by $3155 million and to the slight increase of exports by $57 million. The general trend of both inbound and outbound tours was the reduction of the number of the most expensive one-day trips.

The major factor influencing the dynamics of international tourism receipts is the growing number of foreigners who visited Russia during the concerned period (factor *s*). Due to the fact that in 2012 international tourist arrivals increased by 7 % as compared to 2011 and made up 33.2 million people there was an increase of exports of services under the item "Travel" by $823 million. Despite this positive trend, the average spending of a non-resident entering Russia decreased from $366 to $337. In other words, the decrease in expenditures of foreigners traveling in Russia counterbalanced the growth in international arrivals. This, together with the already mentioned structural changes led to the decrease in international tourism receipts by $141 million.

The major factor influencing the dynamics of international tourism receipts is the growing number of foreigners who visited Russia during the concerned period (factor *s*). Due to the fact that in 2013 international tourist arrivals increased by 5 % as compared to 2012 and made up 34 million people there was an increase of exports of services under the item "Travel" by $498 million. In addition, the average spending of a non-resident entering Russia increased from $331 to $352. This, together with the already mentioned structural changes led to the increase in international tourism receipts by $1230 million.

Conclusions

This article shows that a lot of modern tourism research is devoted to building and testing complex econometric models, which examine the impact of various factors on regional tourist expenditure. However, the abstract nature of various models does not allow a quality analysis of tourism expenditure. Therefore, basing on the methodological principles of tourism statistics we clarify the content of tourism expenditure and the details of their statistical measurement in the balance of payments. We propose an index for measuring the effectiveness of international tourism, which is calculated as the ratio of international tourism receipts and international tourist expenditure.

On real statistical data, we show the positive and negative trends in the development of tourism in Russia. The conclusion is that Russian tourist industry focuses on outbound tourism rather than on inbound or internal (regional) tourism. The gap between international tourist expenditure and international tourism receipts increases each year, and it results in a significant adverse trade balance of tourist services.

The article proposes to use multivariate statistical analysis techniques in the study of the dynamics of regional tourism expenditure. The additive model is also presented in the paper. It describes the influence of three factors on the changes in tourist expenditure. These factors are the number of trips, the cost of a trip, and structural changes in destinations and travel purposes. We tested the model on the data of Russian balance of payments taking four tourism expenditure indicators: international tourism expenditure and receipts, foreign trade turnover and the balance of tourist services. We made the conclusion that the increase in tourism exports caused by the combined positive impact of all three factors, chief of which is the growing number of foreigners who visited Russia during the concerned period. In past years, the situation was different. The reduction in international tourism receipts was due to the decrease in expenditures of foreigners traveling in Russia. We attribute this reduction to the fact that private visits to Russia made by the citizens of the Commonwealth of Independent States have a large share in the structure of personal travel. The purpose of such trips, unlike that of business and leisure travel, is mostly visiting friends and relatives. Therefore, they presuppose significant saving of board and lodging expenditures.

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