

Ways to increase tourist flows in the Siberian Federal District

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Abstract — The article analyzes the dynamics of tourist flows in the Siberian Federal District of the Russian Federation based on the methods of horizontal and trend analysis. The authors constructed a correlation-regression model of the relationship between the number of tourists in the region and the volume of paid services provided by collective accommodation facilities. Based on the obtained model, a conclusion is drawn about the positive impact of increased tourist flows on the social and economic status of the Siberian Federal District, which justifies the need to increase tourist flows. The development of cruise tourism is recommended as one of the directions for attracting tourists to the Siberian Federal District. The main problems and prospects of river cruise routes in the region are analyzed. The recommendations made will help to increase the tourist attractiveness of the region, improve its social and economic situation, and increase the welfare of its population.

Keywords - tourism, correlation-regression analysis, Siberian Federal District, cruise tourism, region.

I. INTRODUCTION

Currently, tourism in the Russian Federation is regulated in accordance with the "Strategy for the development of tourism in the Russian Federation until 2020", which is aimed at the development of inbound and domestic tourism [1]. The Siberian Federal District (SFD), as stated in the regional document "Strategy for the Social and Economic Development of Siberia until 2020" [<http://www.nsc.ru/win/anons/1689/10/str-razv-sib.pdf>] possesses unique natural recreational resources, extensive scientific and human potential, which should serve the development of the tourism industry and become the basis for the social and economic development of all regions of the Siberian Federal District.

Despite the unique advantages of the Siberian region, there are a number of disadvantages that affect tourist flows in the region:

- difficult climatic conditions that reduce the time of the tourist season;

- distance from the main world centers of tourism leads to an increase in the cost of tickets for tourists;

- transport infrastructure is poorly developed: there are few highways, the federal highways include M-54 Yenisei, M-52 Chuysky Trakt, M-51 Baikal, M-53 Baikal, M-55 Baikal with a length of 9238 km. The region has 58 airports / airdromes (12 of them international), as well as 20 river and 3 seaports [2]. Given that the territory of the Siberian Federal District is 30% of the entire territory of the Russian Federation, this is not enough;

- the incomplete nature of the economy, in which the service sector is given mediocre importance, and the mining industry remains the advantage.

II. MATERIALS AND METHODS

Let us consider the dynamics of domestic and inbound tourist flows in the Siberian Federal District to obtain data on the efficacy of the region's strategic development program.

We will conduct a trend analysis of domestic and inbound tourists who arrived in the Siberian Federal District in 2009-2017. Figure 1 demonstrates the corresponding data.

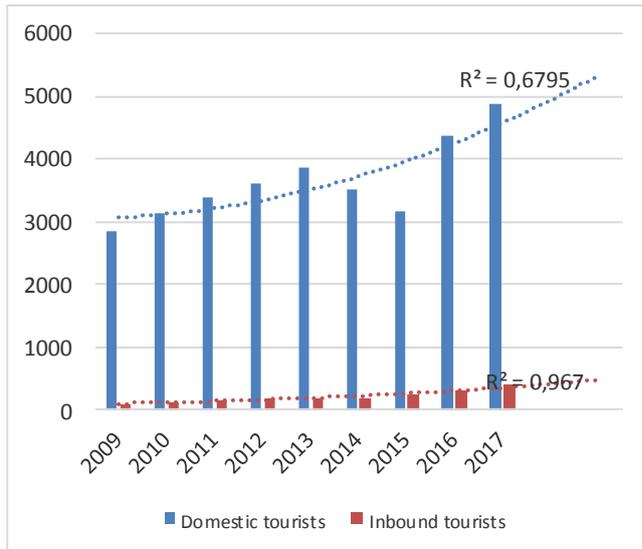


Fig. 1 Dynamics of the number of domestic and inbound tourists staying in accommodation facilities in the Siberian Federal District in 2009-2017, thousand people [3].

According to the data in Figure 1, from 2009 to 2017, there is an irregularly increasing trend for domestic tourism. The R-square of 67.95% shows a fairly close relationship between the parameters and allows to build a forecast for the next two periods. According to this forecast, the number of Russian tourists in 2019 will be more than 5 million people, and the number of foreign tourists will increase to 500 thousand people. This will positively affect the development of the tourism industry in the Siberian Federal District.

Let us consider the tourist flows in the individual structural units of the Siberian Federal District in 2017. Figures 2 and 3 demonstrate the corresponding data.

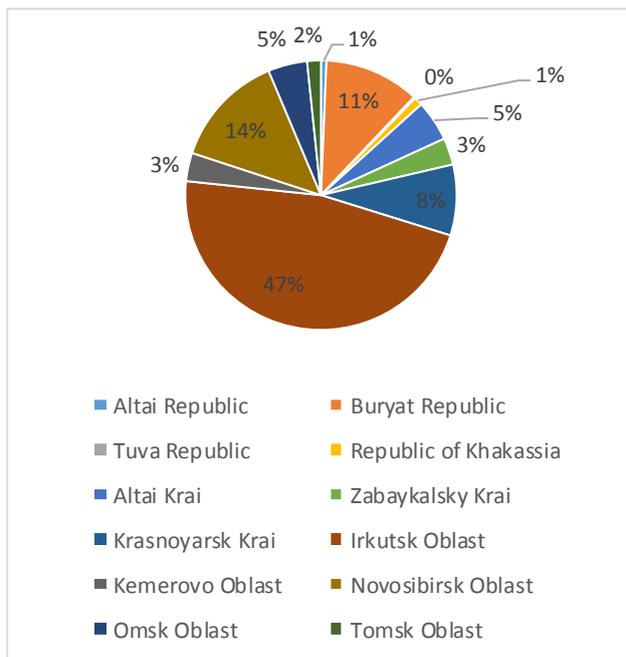


Fig. 2 The number of foreign tourists in 2017 by regions of the Siberian Federal District, % [3]

Figure 2 shows that the largest number of foreign tourists visited the Irkutsk region - 47%, as well as the Novosibirsk region - 14% and the Republic of Buryatia - 11%. The smallest tourist flows are in the Altai Republic - 0.65% and Tuva - 0.2%.

Such a strong stratification is connected with the desire of foreigners to visit the deepest lake in the world - Baikal, which is located on the border of the Irkutsk region and the Republic of Buryatia. Therefore, the remaining regions are less known abroad. In addition, some regions of the Siberian Federal District are actively promoting their brand on the Internet, making it recognizable. For example, in the Novosibirsk Region they are developing a destination brand [4] in conjunction with authorities to increase tourist flow, while in the Republic of Tyva the tourism portal [5] does not work.

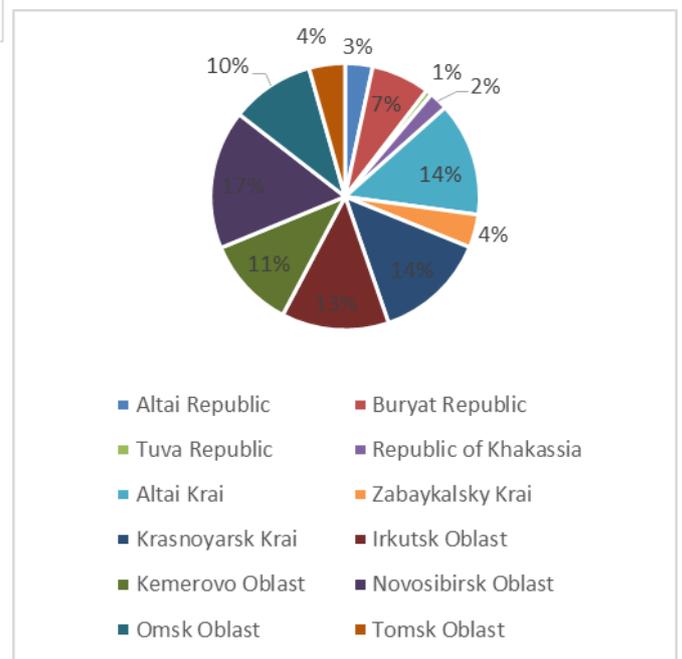


Fig.3 The number of Russian tourists in 2017 by regions of the Siberian Federal District, % [3]

Figure 3 shows that Russian tourists prefer other regions of the Siberian Federal District. In 2017, the leader was the Novosibirsk Region - 17%, Altai and Krasnoyarsk Krai - 14% and Irkutsk Region - 13%. The smallest tourist flow was registered in the Republic of Khakassia 2.3% and the Republic of Tuva - 0.7%.

Let us construct a correlation-regression model of the relationship between the number of tourists in the Siberian Federal District and the volume of paid services provided by collective accommodation facilities. This information will be used for calculating the prospects for generating income from the hospitality industry when the tourist flow to the region changes.

Table I reflects the required data for making forecasts of the economic relationship between indicators based on a statistical analysis of their development.

TABLE I. DYNAMICS OF INBOUND TOURISM FLOWS IN THE SIBERIAN FEDERAL DISTRICT IN 2009-2017

Year/ Parameter	Dynamics of the number of tourists entering the Siberian Federal District for various purposes, thousand people	Dynamics of the number of foreign tourists entering the Siberian Federal District for various purposes, thousand people	The volume of paid services of collective accommodation facilities in the Siberian Federal District, million rubles
2009	2948.6	107.2	6688.9
2010	3271.3	132.5	7231.1
2011	3551.5	149.4	7985.5
2012	3784.6	175.9	9454.8
2013	4047.7	180.4	10720.4
2014	3723.7	203.9	11227.3
2015	3419.6	244.7	11363
2016	4696.09	330.5	12325.2
2017	5254.98	396.8	13273.6
Total	34698.07	1921.3	90269.8
Mean	3855.34	213.48	10029.98
Median	3723.7	180.4	10720.4
Maximum value	5254.98	396.8	13273.6
Minimum value	2948.6	107.2	6688.9
Range of variation	2306.38	289.6	6584.7
Dispersion	521332.0677	9104.044444	5372947.269
Mean deviation	540.6103704	73.68148148	1946.580247
Root-mean-square deviation	722.0332871	95.41511644	2317.961878
Variation coefficient	19%	45%	23%

Table 1 shows that the average number of tourists in 2009-2017 is 3855.34 thousand people. The average number of foreign tourists visiting the Siberian Federal District for the same period is 213.48 thousand people. The total volume of paid services provided to tourists by collective accommodation facilities is 10,029.98 million rubles.

The median shows that in the first half of the period the number of tourists and the volume of paid services are less than in the second half.

The range of variation for the indicator of tourism is 2306.38 thousand people, including 289.6 thousand people for inbound tourism. This means that there is a large fluctuation in the flow of tourists due to the impact of social and economic reasons. The range of variation for the volume of paid services provided to tourists by collective accommodation facilities is 6584.7 million

rubles, which reflects the increased number of tourists in the region.

To measure the degree of variability of individual values of tourist flows and the volume of paid services the following general indicators of variation are calculated from the mean data: variance, standard deviation and coefficient of variation.

The obtained values indicate a large heterogeneity of these indicators from 2009 to 2017. A large dispersion value and the mean square deviation reflect the heterogeneity of the considered values.

The coefficient of variation less than 33% indicates the variability. However, it allows us to consider the values of factors as a homogeneous set.

An increase in the number of inbound tourists certainly contributes to an increase in the number of paid hotel services. Let us construct a regression equation to estimate this dependence (Fig. 4) based on the data obtained from 2009-2017.

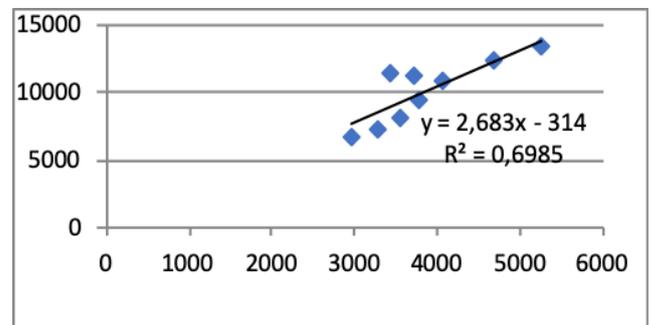


Fig. 4 Dependence of the volume of paid services provided by collective accommodation facilities and the total number of tourists arrived in the Siberian Federal District in 2009-2017.

The model $y = 2,683x_i - 314$ indicates that an increase in inbound tourist flow in the Siberian Federal District leads to an increase in the volume of paid services. With an increase in the corresponding trips per unit, the volume of paid services increases by an average of 2,683 thousand. rub. Using the data for the expected number of inbound tourists in the Siberian Federal District in 2019 (5500 thousand people) in the obtained model, we calculate the expected value of the volume of paid services in 2019: $2.683 * 5500 - 314 = 14,442.5$ million rubles.

According to the forecast made on the basis of correlation-regression and trend analysis, the volume of paid services in the Siberian Federal District is growing, which indicates the positive impact of increased tourist flows on the social and economic condition of the Siberian Federal District. Thus, it is necessary to increase the number of tourists by creating new routes and developing event and business tourism.

III. RESULTS

The development of cruises is proposed as one of the directions of tourism development in the Siberian Federal District. The relevance of cruise tourism in the Siberian Federal District is justified by the fact that this region has unique competitive advantages: a significant length of rivers, diverse climatic zones, rich historical and cultural heritage, unique natural monuments, etc. [6].

Moreover, with developed infrastructure, there is a chance to take a leading position in the global river cruise market.

Cruise travel is considered to be one of the elite types of recreation. However, a cruise vacation is not only for wealthy people. Cruise vacations include a wide range of ships and routes, as well as price diversity. Cruises are usually classified by the following types: transatlantic, sea, by lakes, by rivers and by channels [7].

Cruise vacations are good for many categories of passengers. It combines informative, entertaining, medical and health tourism, as well as shopping tours. It has become more democratic and more aimed at the mass consumer. For example, a cruise on the Lena River on the ship "D. Bedniy" for a period of 10 days costs from 58,500 rubles (May-June 2019) [8].

The cruise expedition "To the End of the World in Dikson by the Yenisei and the Kara Sea" costs 2,920,000 rubles for the entire ship [9].

Table 2 shows the prices for the Arctic Voyage cruise on the ship M. Svetlov.

TABLE II. THE PRICES FOR THE ARCTIC VOYAGE CRUISE ON THE SHIP M. SVETLOV IN 2019 PER CABIN

Cabin	Price			
	4 passengers	3 passengers	2 passengers	1 passenger
4-passenger	339000	314000	289000	
2-3-passenger	-	302000	289000	209000
1-passenger + additional place	-	-	234000	172000
Semi-luxe	-	-	320000	228000
Luxe	-	-	418000	

This trip beyond the Arctic Circle is much cheaper than Arctic tours with other means of transport.

The main advantages of a cruise vacation is a cruise package, which includes:

1. accommodation;
2. transfers;
3. meals;
4. entertainments;
5. tourist program, shopping.

Cruise tourism can be either river or sea. The territory of Russia has a developed river network, which makes river tourism the most popular type of cruise tourism in the country.

Cruise holidays in Russia have never been supported by the government. All the ships operating at the moment were built during the Soviet era, the average life of ships is 45-50 years. Therefore, it can be said that one of the most significant disadvantages and the main reasons that impedes the popularization of cruise holidays in Russia is the large deterioration of the Russian cruise fleet.

Based on the fact that there is currently no state funding for ships and new ships not being purchased, it

can be predicted that in the next 15 years the number of cruise ships will decrease by more than 2 times.

It should be noted that domestic tourists are ready to accept a new experience of discovering a cruise vacation. However, the interest of the population in most cases is focused on foreign routes and liners, since there is greater trust in them, and they demonstrate a better combination of price and quality.

Currently, in the Siberian Federal District there are not so many companies that organize cruise vacations, however, according to the statements of company leaders, they are very popular [10] with both Russian and foreign tourists. Cruises are carried out on the rivers Lena, Yenisei, Amur, Ob from May to September.

The main problems faced by companies, which offer cruise routes, are:

- short tourist season;
- ageing of the river fleet;
- low-level services and failure to fulfill obligations;
- lack of recognizable brands of cruise companies;
- insufficient positioning and popularization of cruise tourism in Siberia in the Russian and foreign markets;
- lack of professional event marketing that complements cruise along the rivers of the Siberian Federal District;
- administrative obstacles.

For example, the head of the Nika cruise company notes [10] that the administration of the village located on the cruise route asked for firewood for its residents, and the Omsk Culture Committee demanded 7.5 million rubles for allowing the company to accept and send in their city tourists. However, tour operators also note positive cases of interaction with government agencies.

IV. CONCLUSIONS

Based on the abovementioned statements, it is recommended:

1. to optimize interaction with city authorities responsible for the cruise route;
2. to include river cruises in governmental programs aimed at tourism development;
3. to provide services of appropriate quality;
4. to provide a high-quality on-board entertainment system.

The prospects for developing river cruises in the Siberian Federal District are enormous for both domestic and inbound tourism. Given that the number of tours and fleet capacity is quite small, and demand exceeds supply, it is necessary to provide comprehensive support for the development of cruise tourism.

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