

## **SOCIO-ECONOMIC PROBLEMS OF SUSTAINABLE DEVELOPMENT IN THE SPHERE OF SANATORIUM AND HEALTH-RESORT SERVICES OF THE NIZHNY NOVGOROD REGION**

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### **Abstract**

The article presents the main results of the study of the potential of the sanatorium and health-resort sphere in the Nizhny Novgorod region, the key significance of its development for the regional economy, as well as the main negative factors that are currently hindering this process. Scientific information was derived from publications on the above topic, from the statistical analysis of official data characterizing both the industry under study and the economy of the region as a whole, as well as from the interviews with specialists from executive authorities and business representatives. The authors come to the conclusion that the Nizhny Novgorod region has significant sanatorium and health-resort potential, the implementation of which will significantly improve the socio-economic indicators of the region. However, today this is hampered by a number of negative factors of the economic, organizational, informational and social nature.

**Keywords:** Sustainable development, Sanatorium and health-resort sphere, Macroeconomic indicators, Statistical analysis, Regional economy.

## **1. INTRODUCTION**

Sustainable development of the sphere of sanatorium and health-resort services is of particular importance for the growth of the main socio-economic indicators of the region. Today treatment, rehabilitation and recreation at the institutions of this sphere are becoming increasingly popular and affordable for most of the population of Russia. If we talk about the statistically average region of the Russian Federation (and the Nizhny Novgorod region here is not an exception), then in general the development of the sphere of sanatorium and health-resort services in the foreseeable future should inevitably lead to positive results as follows:

- Growth in the number and share of small and medium-sized businesses in the tourism, hotel and restaurant businesses;
- Growth of tax revenues to the budget;

- Increase in the number of jobs, wage growth, reduction of unemployment;
- Development of basic and related infrastructure (sanatorium-resort complexes, hotels, public catering facilities, transport);
- Increase of the overall investment attractiveness of the region.

The Nizhny Novgorod region is a subject of the federation with great potential for the development of the sanatorium and health-resort sphere (Danilova, & Kalugin, 2017). Currently in the region there are dozens of sanatoriums providing treatment and rehabilitation after illness, including dispensaries, boarding houses, children's sanatoriums and health camps. A number of sanatoriums have their own wells with medicinal mineral water and mud baths.

Sanatoriums in the region specialize in the treatment of diseases of the cardiovascular, digestive, musculoskeletal, nervous, endocrine and reproductive systems. Health programs "Mother and Child", programs for pregnant women, as well as rehabilitation after professional diseases and work injuries have been developed and implemented. Almost all sanatoriums in the Nizhny Novgorod region have modern medical devices and use widely non-drug therapies such as physiotherapy, therapeutic baths, SPA procedures, physical therapy, massage, manual therapy, bees and leeches, and acupuncture (2016).

However, today, the sanatorium and health-resort sphere and tourism similar to it are not fundamental sectors for the regional economy, although it would seem that there are all the prerequisites for this. This is due to a number of factors, the main one of which is the underestimation of the importance of sanatorium and health-resort activity for the regional economy by the regional authorities, and, as a result, the lack of state support for this sector. Serious attention to the marketing and promotion of sanatorium and health-resort services and related tourist services in the region started to be paid in the last few years, but so far these efforts are not enough.

## 2. LITERATURE REVIEW

Edronova V.N., Sadovskij N.M. (2014) demonstrated a variety of innovative growth factors of the regional economy. Zykova T.V., Kochkurova E.A (2017) quoted many documents on the development of sanatorium and resort activities and the related tourism industry.

## 3. METHODS

In the study, the authors used sociological methods and, in particular, the analysis of various sources to obtain the most accurate information for the period 2012-2017.

To study the statistical relationship between the indicators of the development of the sanatorium and resort sphere and the main macroeconomic indicators of the Nizhny Novgorod region, correlation analysis was used and, in particular, the Pearson correlation criterion.

$$r_{xy} = \frac{\sum(d_x \times d_y)}{\sqrt{(\sum d_x^2 \times \sum d_y^2)}}$$

Where, X1, X2 and X3 were factor signs, and Y1 and Y2 are selected resultant signs. With the help of additional calculations, the linear Pearson pair-correlation coefficients and the corresponding determination coefficients were determined.

Graphic methods and tabular tools were used to present the research results.

## 4. ANALYSIS AND RESULTS

The authors analyzed the official data of the territorial authority of the Federal State Statistics for the Nizhny Novgorod region for the period 2007–16, which revealed the following trends. Over the past decade, the regional GRP and its main components grew very evenly, both in absolute values and in comparison with other regions of the Privolzhsky Federal District, as well as throughout the Russian Federation (RF) (Fig. 1-2)

Fig. 1 shows well-marked linear growth of GRP (red color shows the regression line, which reflects the trend, and on top of the graph there is the equation of this line).

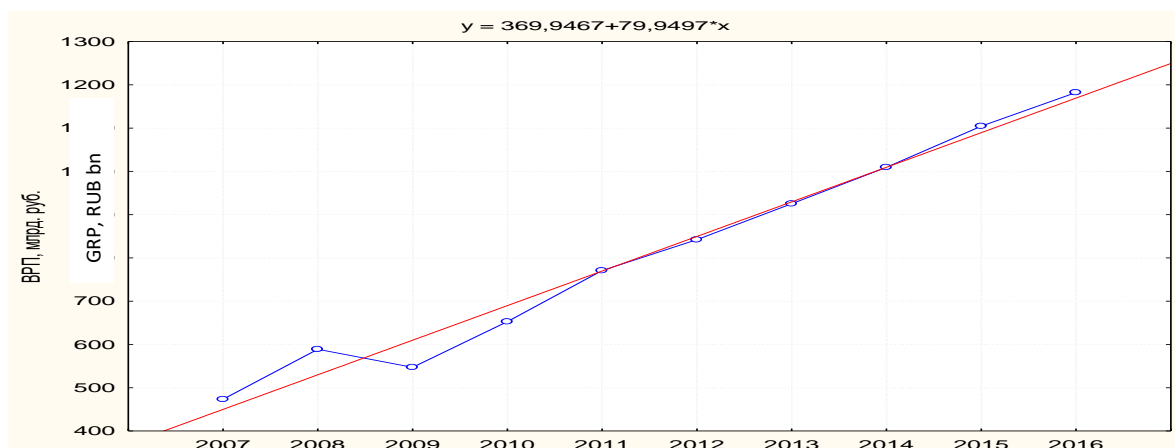


Fig.1. Dynamics of the regional GRP for 2007-16 (built by the author based on the official source <http://nizhstat.gks.ru/>)

Fig. 2 shows the dynamics of GRP per capita (in the graph this is NgO), on average for the subjects of the Privolzhsky Federal District (PFO) and in the Russian Federation (RF). We see that changes in the level of GRP per capita in the region practically repeat those in the Privolzhsky Federal District and in the Russian Federation, but the level of GRP in the Russian Federation itself is noticeably higher than in the region under consideration and the Privolzhsky Federal District. In addition, the same deviation from linear growth is noticeable as in fig. 1, falling on the crisis year 2008, which was not observed even in the economically difficult 2014 year. We also note that in 2016, the growth of GRP slowed down slightly.

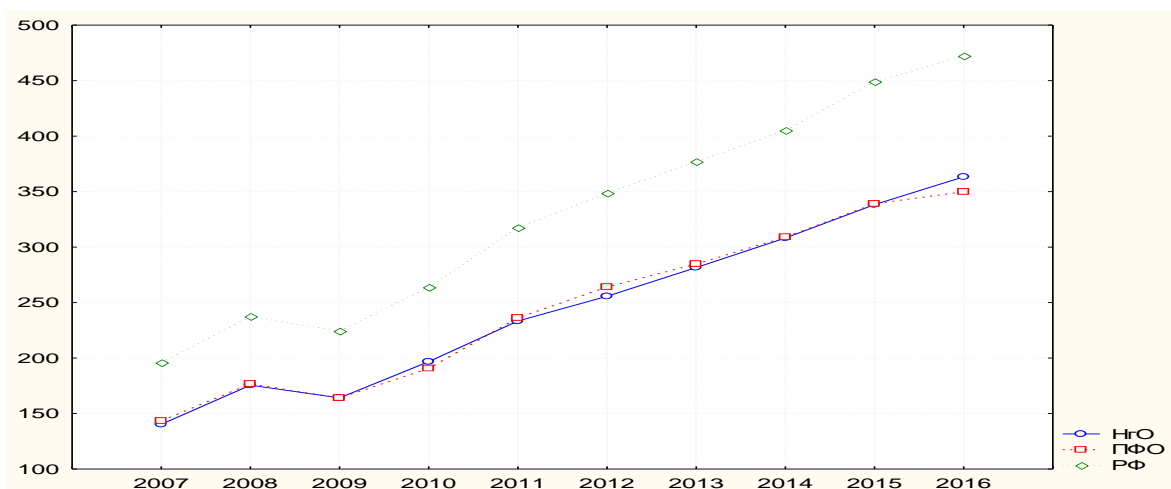


Fig. 2 Dynamics of GRP per capita in the region, Privolzhsky Federal District and in the whole of the Russian Federation for 2007-16. (built by the author based on the official source <http://nizhstat.gks.ru/>)

The growth of actual final household consumption at market values has also slowed down, and this slowdown has taken place since the crisis of 2014. Approximately the same thing happened with the dynamics of this indicator after the 2008 crisis year (Fig. 3).

Finally, fig. 4 shows changes in the levels of actual final household consumption per capita (in thousand rubles) for the Nizhny Novgorod region (NgO), for subjects of the Privolzhsky Federal District (PFO) and for the Russian Federation. In fig. 4 it is easy to notice that changes in the level of the final household consumption in the Nizhny Novgorod region are similar to the changes in the Privolzhsky Federal District and the Russian Federation as a whole, but at the same time, in the region, this indicator looks slightly better than in the Privolzhsky Federal District, although it is behind the national one.

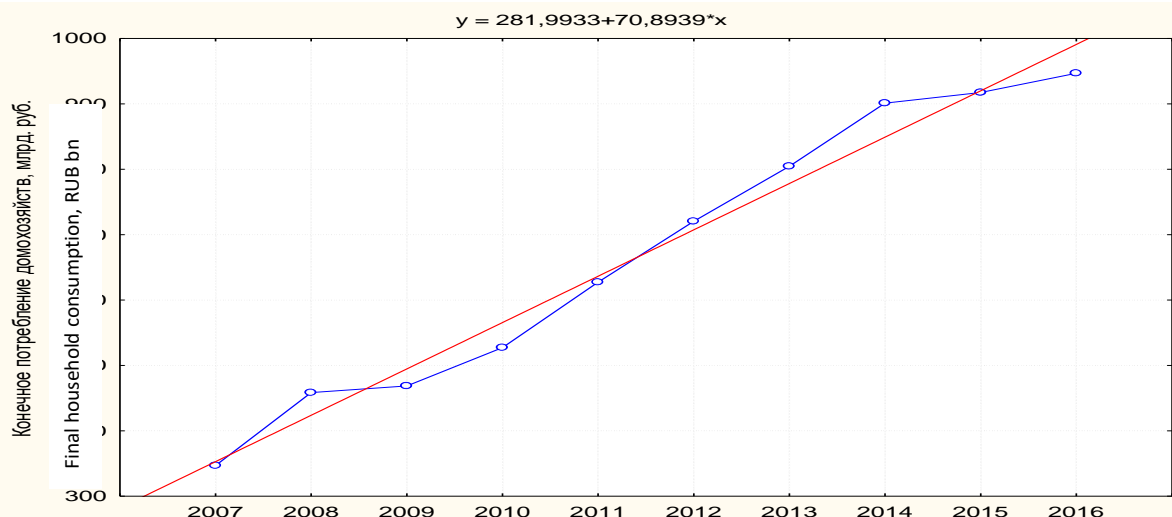


Fig.3 Dynamics of actual final household consumption at market values in the region for 2007-16. (built by the author based on the official source <http://nizhstat.gks.ru/>)

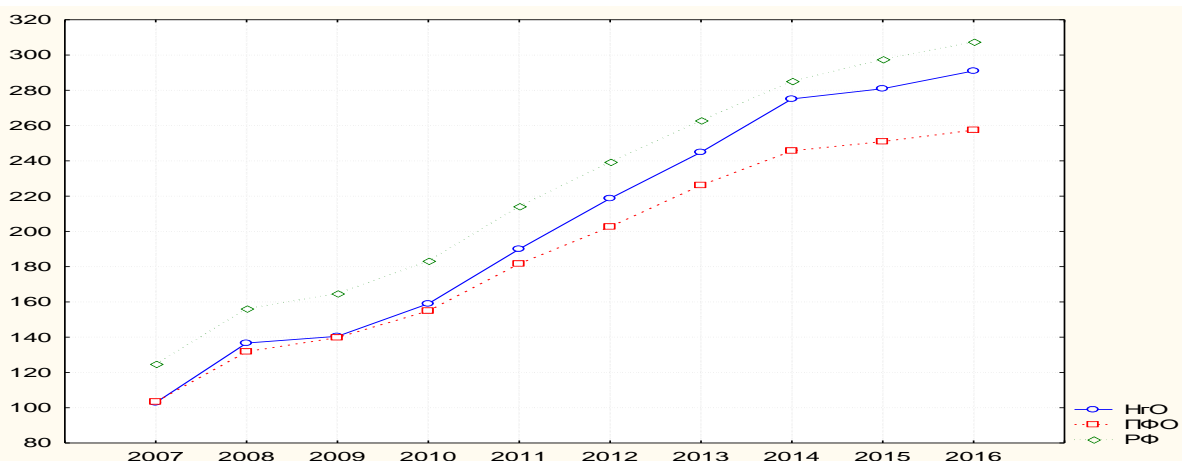


Fig. 4 Dynamics of actual final household consumption in the region, in the Privolzhsky Federal District and throughout the Russian Federation for 2007-16 (built by the author based on the official source <http://nizhstat.gks.ru/>)

In general, based on the data of fig. 1-4, we can conclude that the economy of the Nizhny Novgorod region is slightly behind the national level, although it shows a positive trend. The search for industries that can have a positive impact on economic growth in the region, leads us to the need to ensure the sustainable development of the sanatorium and health-resort sphere for the reasons described above.

The authors analyzed the structure of paid services rendered to the population in the region. The largest share of paid services to the population of the region, related to the sanatorium and health-resort sphere (in their overall structure), belongs to medical services, and this share tends to grow, despite the 2014 crisis year. This is followed by travel agency services, tour operators, other booking and related services, but the growth in their share stopped after the crisis and even has a certain tendency to decrease. Finally, the share of hotel and similar services for the provision of temporary housing has a rather clear tendency to decrease, while the shares of physical culture and sports services and specialized collective accommodation facilities do not have clear tendencies (up or down), but at the same time they are small - 1%, whereas, say, the share of medical services is already more than 7%.

Further, statistical data on the average monthly wages of employees of regional companies by types of economic activity were studied (Statistical yearbook Nizhny Novgorod region, 2017) It was noted that activities related to the sanatorium and health-resort and related tourism industry are characterized by lower wages compared to the salary for the economy of the region as a whole. If we take the arithmetic average

value for all activities in the region under consideration, we will get 22,714.8 rubles (about 300 euros), which is also significantly less than the average for the region. This is to say that sanatorium and health-resort activity is more likely on the periphery of the economy of the Nizhny Novgorod region, which is confirmed by the data given earlier (Fig. 1-4). This is also the principle of the regional household expenditure structure (Table 1).

**Table 1. Composition of household consumer spending of the Nizhny Novgorod region (based on a sample survey of household budgets, on average per a household member, RUB / month) \***

| Spending type / year                              | 2013    | 2014    | 2015    | 2016    | 2017    |
|---|---------|---------|---------|---------|---------|
| Consumer spending, total                          | 13719,9 | 14770,7 | 17377,7 | 17548,7 | 16562,5 |
| Including consumption purpose:                    |         |         |         |         |         |
| - food  | 3214,8  | 4098,6  | 4666    | 5176,2  | 4885,7  |
| - alcohol drinks, tobacco goods                   | 280,2   | 366,4   | 442,5   | 391,1   | 351,8   |
| - clothing and footwear                           | 1298,8  | 1416,5  | 1732,3  | 1682,5  | 1705,4  |
| - housing and utilities services, fuel            | 1327,5  | 1545,9  | 1631,1  | 1803,7  | 1466,5  |
| - household goods, consumer electronics, homecare | 1020,2  | 1190,2  | 934,7   | 986,6   | 704,3   |
| - health care                                     | 487     | 937,1   | 963,9   | 765     | 1467,5  |
| - transport                                       | 3074,1  | 1950,8  | 3143,4  | 3037,2  | 1951,7  |
| - communications                                  | 429,1   | 492,4   | 464,1   | 539,3   | 438,7   |
| - recreation organization and cultural events     | 1114,9  | 1362,2  | 1419,5  | 1420,9  | 1873,1  |
| - education                                       | 86,6    | 177,2   | 119,1   | 89,6    | 71      |
| - hotels, cafes and restaurants                   | 723,7   | 396     | 703     | 495,2   | 522,8   |
| - other goods and services                        | 663     | 837,4   | 1158,1  | 1161,4  | 1124    |

\* compiled by the author based on the source: Statistical yearbook Nizhny Novgorod region (2017).

It is noticeable that consumer household spending on organizing recreation and cultural events, health care, as well as hotels, cafes and restaurants, even in sum, do not represent a significant part of such expenses. If you look at the share of household expenditures in their overall structure for medical and sanatorium and health services (% of the total), it becomes clear that such expenditures begin to play a slightly more significant role in household consumption (Table 2).

**Table 2. The share of medical and sanatorium and health services in the total household expenditure in the region, %\***

| Spending type / year                    | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|------|------|------|------|------|
| 1. Medical services                     | 1,2  | 3,4  | 2,7  | 1,4  | 5,4  |
| 2. Health improving (sanatory) services | 0,9  | 0,8  | 0,4  | 1,1  | 2,6  |

\* compiled by the author based on the source: Statistical yearbook Nizhny Novgorod region (2017).

Obviously, the trends presented in table 2 are very uneven. The general trend is towards a noticeable increase in household expenditures of the Nizhny Novgorod region for medical and health-improving services in their overall structure.

The most important indicator of the development of the sanatorium and health-resort sphere is the availability and number of specific companies and institutions providing relevant services. These data are presented in Table 3.

**Table 3. Sanatorium and health-resort companies and recreation companies of the Nizhny Novgorod region (excl. rest boarding houses) \***

| Value per year  | 2012   | 2013   | 2014   | 2015   | 2016   |
|---|--------|--------|--------|--------|--------|
| Number of sanatorium and health-resort companies and recreation companies | 76     | 76     | 81     | 87     | 93     |
| Number of beds in the above   | 12461  | 12181  | 12163  | 13152  | 13397  |
| Number of persons served  | 197721 | 204327 | 206770 | 250596 | 242206 |

\* compiled by the author based on the source: Statistical yearbook Nizhny Novgorod region (2017).

We can see that although the number of such companies increased during the period under review, as well as the number of beds in them increased (although it did not increase evenly), the number of people served in them decreased slightly in the last year.

A separate type of sanatorium and health-resort organization is a children's health camp. Here, the situation

in the region is noticeably worse in comparison with the types of the institutions and values above, as almost all parameters related to children's camps in the Nizhny Novgorod region are growing worse, although slowly but steadily (Table 4).

**Table 4.Children's health improvement camps in the region \***

| Value per year   | 2014   | 2015   | 2016   | 2017   |
|--|--------|--------|--------|--------|
| Number of children's health improvement camps, total                 | 1517   | 1504   | 1519   | 1469   |
| of which:  |        |        |        |        |
| - out-of-town health improvement ones                                | 70     | 68     | 65     | 65     |
| - health improvement ones with daytime stay                          | 1200   | 1183   | 1177   | 1165   |
| Number of children who rested in the above in summer – total persons | 115970 | 117249 | 121454 | 115941 |
| of whom those who rested in:   |        |        |        |        |
| - out-of-town health improvement camps                               | 34420  | 36232  | 36378  | 33228  |
| - health improvement camps with daytime stay                         | 68055  | 68039  | 69370  | 69806  |

\*compiled by the author based on the source: Statistical yearbook Nizhny Novgorod region (2017).

If we carefully analyze the data in Table 4, it turns out that the number of children's health improvement camps in the region decreased during the period under consideration, as well as the number of children who rested in them decreased. Although this decline itself was small, the change of quality of this rest is very important. Such a decrease is made up of the positive dynamics of the number of children who have rested in health improvement camps with daytime stay (+1751 persons or + 2.57% for 4 years), and a negative one – number of children who rested in out-of-town health improvement camps (–1192 persons or –3.46% for 4 years) ), i.e. there was an overflow of resting children from out-of-town health improvement camps to daytime stay camps, which can only be considered formally as health improvement institutions or recreation centers for children - in fact, this is a way to take care of children when they have no classes, and their parents are at work. Therefore, this fact can be considered a uniquely negative trend.

The fact of the strong statistical connection between the indicators of the development of this sphere and the main macroeconomic indicators of the Nizhny Novgorod region also indicates the importance of developing the sphere of sanatorium and health-resort services in the region (Table 5).

**Table 5.The main macroeconomic indicators of the Nizhny Novgorod region and some indicators of the development of the sanatorium and health-resort sphere of the region \***

| Value per year   | 2012   | 2013   | 2014   | 2015   | 2016   |
|--|--------|--------|--------|--------|--------|
| GRP at basic values, RUB bn ( $Y_1$ )  | 842,2  | 925,2  | 1009,5 | 1104,6 | 1182,3 |
| Actual household end consumption at market values, RUB bn ( $Y_2$ )                              | 720,4  | 804,6  | 901,1  | 917,4  | 946,8  |
| Number of sanatorium and health-resort companies, and recreation companies ( $X_1$ )             | 76     | 76     | 81     | 87     | 93     |
| Number of served persons ( $X_2$ )   | 197721 | 204327 | 206770 | 250596 | 242206 |
| Number of hotels and similar places of accommodation including boarding (guest) houses ( $X_3$ ) | 135    | 140    | 171    | 204    | 324    |

\* compiled by the author on the basis of the data in Fig. 1, Table 3

In Table 5, the selected factor signs are designated as  $X_1$ ,  $X_2$ , and  $X_3$ , and the selected resultant characteristics are designated as  $Y_1$  and  $Y_2$ . Then the linear Pearson pair-correlation coefficients ( $r$ ) and the corresponding determination coefficients ( $r^2$ ) will be:

- $r(X_1, Y_1)=+0,967$ ;  $r^2=0,935$ ;
- $r(X_1, Y_2)=+0,895$ ;  $r^2=0,801$ ;
- $r(X_1, Y_3)=+0,899$ ;  $r^2=0,809$ ;
- $r(X_2, Y_1)=+0,861$ ;  $r^2=0,742$ ;
- $r(X_2, Y_2)=+0,785$ ;  $r^2=0,617$ ;
- $r(X_2, Y_3)=+0,765$ ;  $r^2=0,585$  (Fig. 5).

Pearson's correlation coefficient shows the magnitude and direction (sign) of a linear statistical relationship between two variables, and if it is numerically (in magnitude) greater than 0.7, then the relationship is considered strong. The linear correlation is considered to be the case if the arithmetic average of the resultant attributes changes in a regular way with a change in the values of the factor sign.

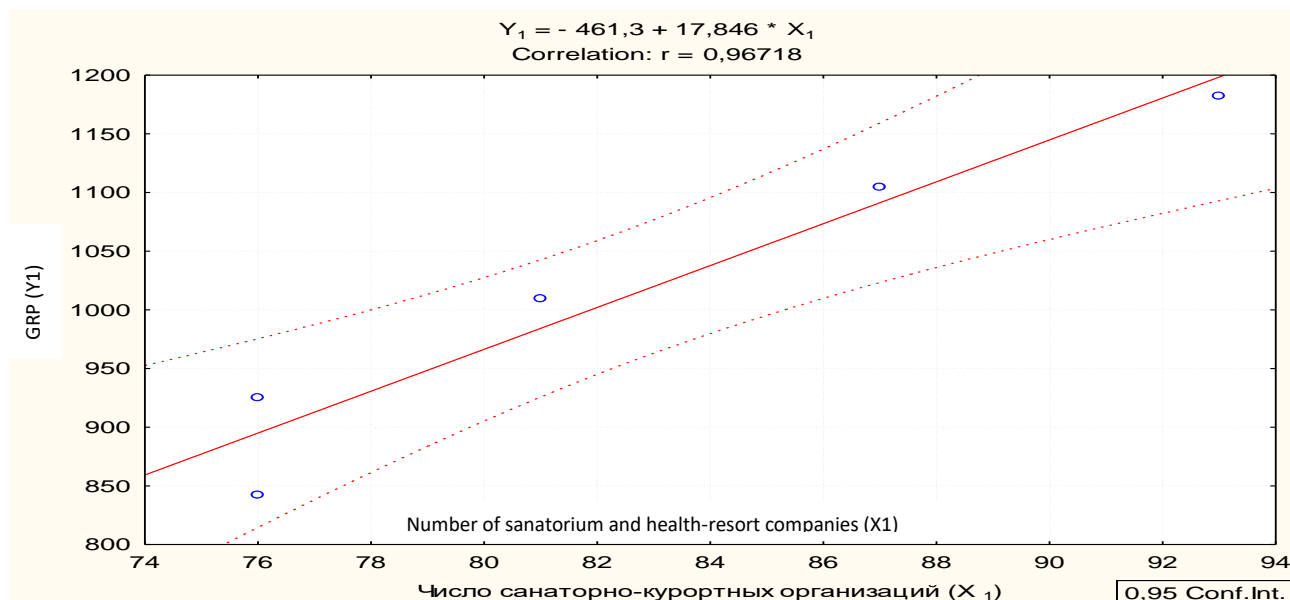


Fig. 5 A scattering graph showing the correlation between the number of sanatorium and health-resort companies in the Nizhny Novgorod region and the GRP; the continuous line shows the regression right line (its equation is at the top of the graph), the dotted lines indicate the 95% confidence interval (built by the author based on the data in Table 5)

The coefficient of determination shows the “contribution” of changes in the values of the factor sign to the variation of the resultant, in other words, the proportion of such variation. Signs selected here as factor and resultant ones are not the only possible ones in terms of demonstrating the importance of the sanatorium and health-resort sphere for the economic development of the region, but they are rather key and informative ones. In addition, the rest of the indicators give just about the similar relationship evaluation. Consequently, the dependence of the macroeconomic indicators of the Nizhny Novgorod region on the level of development of the sphere of sanatorium and health-resort services is strong (everywhere the correlation coefficient is above 0.7), and statistically such indicators by 58.5-93.5% (the coefficient of determination from 0.585 to 0.935) depend on development indicators of the sphere under consideration. It stands to reason, the dependence here is mutual, i.e. the general macroeconomic position of the region influences the level of development of the sanatorium and health-resort sphere, but one cannot deny the significant role of this sector in the regional economy with the resulting need for its planned development.

## 5. CONCLUSIONS

In order to ensure the sustainable development of the sanatorium and health-resort and related tourism sector, an integrated approach should be applied, which evenly takes into account all the components of the socio-economic environment where the industry operates. Among those it is necessary to distinguish the following components:

1. Financial. Usually it is formed by the corresponding (financial) institutions, i.e. banks, insurance companies, investment funds, etc., which the fact of the functioning of the sanatorium and health-resort and tourist cluster companies depends on.
2. Informational. As a rule, these are mass media and communications, both traditional (television, radio, etc.) and modern (Internet and social networks), as well as any other means and methods of communication interaction between sanatorium and health-resort and tourist companies with surrounding socio-economic subjects.

3. Social. This is the public in the broadest sense of the concept (non-profit organizations, civil society activists and ordinary people who are not members of any organizations). In fact, this is the part of the environment that is a social background for creating an atmosphere of comfort, relaxation and hospitality.

4. Professional. This primarily includes specialists directly involved in the sanatorium and health-resort, and tourism sector, i.e. employees of companies that provide the services themselves to clients (Zykova, Kochkurova & Aliev 2017).

It is necessary to develop regularly, systematically and inseparably from each other all the above elements of the socio-economic environment where the companies and institutions of this sphere function. Without such an approach, it will not be possible to achieve its sustainable development and, accordingly, it will not be possible to render that beneficial effect on the economy of the region as a whole, which follows from the key role and importance of the sphere of sanatorium and health-resort services, which is fully confirmed by the results of the statistical analysis.

The sanatorium and health-resort sphere is a direct source of income for companies, residents and the budget of the region, it stimulates the development of industries associated with the release of relevant consumer goods, as the influx of industry clients and tourists increases the demand for many types of goods and services, thereby developing production, development of many related businesses. In this case, regional and local authorities pay more attention to relevant resources (capable of ensuring an influx of more tourists), preserving cultural heritage sites (monuments, museums, natural parks), and creating various means of attracting customers. Tax revenues from the sanatorium and health-resort activities increase the budget revenues (Borisov, Plehanova & Kovylkin, 2015).

Sustainable development of the sanatorium and health-resort and tourism sphere leads to a direct and indirect increase in incomes of both the population and the budget. A direct increase in revenues is an increase in the profits of companies engaged in sanatorium and health-resort, and related spheres, an increase in wages in them, an increase in the level of employment of the local population, etc. Indirect increase is manifested in the creation and further development of related infrastructure and services: transport, communications, personal services, shops, sports facilities, cafes and restaurants, various entertainment facilities. At the same time, the permanent population, as well as the guests of the region, uses all these objects in their daily practice (Tochenaja & Bludova, 2010).

In addition, the sphere of sanatorium and health-resort services is in modern conditions one of the few industries that are not subject to mechanization and automation. Consequently, the relevant companies and infrastructure attract labor resources and increase the number of jobs in the region. In this case, there is often a multiplication effect, that is, the consumption of some services in this area necessitates the acquisition of a whole range of other goods and services. For example, accommodation in a sanatorium entails the use of additional proposals for customer service, such as bedding, housing and public utility services, communications and other. The multiplicative effect contributes to the further attraction of investments both in the sector of the economy under consideration and in related sectors, which ultimately leads to overall economic growth in the region.

However, in order to ensure the sustainable development of the sanatorium and health-resort sphere, in addition to investments and a number of organizational issues, a long and laborious explanatory work is required for the promotion of projects in this area, as well as territorial marketing, advertising and PR of relevant services. The fact is that the overwhelming majority of the population of our country still perceives only the Black Sea coast of Russia as resorts within the country and, to a somewhat lesser extent, resorts of Caucasian mineral waters. Many people only briefly hear from the news on the health resort and tourism potential of other regions, including the Nizhny Novgorod region, completely ignoring this information.

In fact, in the Nizhny Novgorod region, several investment projects in the sphere of sanatorium and health-resort services are currently being implemented at once, which may well become the locomotives for the growth of the regional economy, but information about them is scarce and contradictory. So, one of the key problems in the region is the poor marketing and advertising strategy of the sanatorium and health-resort and tourism business. Most of the local population, without mentioning potential customers from other regions, does not have a clear idea of where and at what prices in the region one can get quality sanatorium and health-resort services, resulting in most of the objects of the region that may be involved in the provision of such services are forced to idle. This leads not only to lost income, but also to the lack of the necessary permanent investments in infrastructure, which inevitably deteriorates in such conditions, which will subsequently require additional investments to restore it (Edronova & Sadovskij, 2014).

Thus, the sanatorium and health-resort potential in the Nizhny Novgorod region should be recognized as very high, its implementation will significantly improve the regional macroeconomic indicators, improve the level and quality of life of the local population. This is clearly evidenced by the results of the analysis of possible directions for the development of the sphere of sanatorium and health-resort services in the region, and of the statistical analysis of the connection between the main macroeconomic indicators of the Nizhny Novgorod region and indicators of the development of the industry under consideration. However, at present, this potential cannot be realized due to a number of negative economic, organizational, informational and social factors. The systematic overcoming of these factors is an urgent task of the socio-economic development of the subject of the federation under consideration.

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