Diagnostics of the production factor importance in the territories of the region development

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Abstract. The paper examines the features of the impact of significant factors on the economic and sectoral development of the regions on the example of the Perm Territory. Based on the use of progressive assessment methods, the key role of the production factor in the development of the region's territories has been established. Analysis of the dynamics of the main production and investment indicators of the territories of the Perm Territory made it possible to propose their typology according to four types of development, depending on the nature of the impact of regional factors. The assessment showed a significant intra-regional asymmetry, including in terms of the levels of industry specialization and industrialization of the territories of the region. The results of the study made it possible to state the relevance of procedures for analysing internal management mechanisms, determining driving forces and a comprehensive assessment of the development of territories in the region's space when implementing the necessary management decisions, taking into account the tasks of increasing industry efficiency.

Regional specificity and economic specialization of territories accentuates research interest in the study of spatial aspects of development, stimulates interdisciplinary integration of knowledge in this direction.

Features of spatial development of territories were touched upon in the studies of many scientists: studying the specifics of economic development of regions [1]; approaches to the spatial development of rural areas [2]; development of regional [3] and municipal socio-economic systems [4].

Despite the existing groundwork, the economic sources are not fully, not sufficiently updated and progressive tools of factor analysis at the municipal level of management of sectoral development regions are practically not used. Trends in the development of territories in the space of a region under the influence of various factors, as well as issues of measuring this influence directly indicate the possibility of an additional incentive to unleash the development potential of priority sectors of the economy in a particular constituent entity of the country.

The study of the impact of individual regional factors, as well as the development of recommendations for adaptation to them, is carried out through a number of tools, which are methods and techniques of factor analysis. A number of authors are immersed in the study of this issue. In particular, in the study of I.V. Naumov, the best practices for assessing the level of interregional relationships in the processes of forming the economic development potential of individual regions are presented [5]. In the work of P.A. Minakir and N.G. Dzhurka, one can get acquainted with the system of criteria for assessing the socio-economic development of territories [6]. The works of Yu. G. Lavrikova, V.P. Chichkanov and others are devoted to the problem of the effectiveness of the development of territories [7, 8]. One way or another, most of the works are related to the development
of integral indicators and systems of indicators for measuring the effectiveness of socio-economic development of territories [9]. At the same time, the problems of measuring the factor impact on sectoral development in the territorial context at the intraregional level are almost not studied.

Asking the question of identifying the most significant regional factors that form the level of sectoral industrialization and determine the economic development of the territory, let us turn to the methodology of expert assessment and its varieties. Specifying the given conditions, we get the ranking problem that is the least different from the others and has a meaning of group opinion.

Using the example of the Perm Territory, the following factors were included in the study group: other external factors, economic crises, historical, natural resource, transport, human potential, innovation, investment, production. To a greater or lesser extent, these factors form the sectoral potential of the economic space of this highly industrialized region.

During the preliminary analysis, significant factors were identified, and minor ones were excluded. As a result, the factors are ranked depending on the value of the assigned rank. The experts were representatives of the scientific community, top management of industry-forming enterprises. The grouping of the results is shown in table 1 and figure 1.

| Factors                  | Ranks         |
|--------------------------|---------------|
|                          | Expert group 1| Expert group 2| Expert group 3| Expert group 4| Expert group 5| Expert group 6| Expert group 7| Expert group 8| Expert group 9|
| Other external factors   | 1             | 3             | 2             | 2             | 3             | 4             | 1             | 2             | 1             |
| Economic crises          | 6             | 2             | 3             | 5             | 4             | 5             | 2             | 4             | 9             |
| Historical               | 5             | 9             | 4             | 7             | 8             | 9             | 9             | 9             | 8             |
| Natural resource         | 4             | 6             | 7             | 1             | 9             | 8             | 7             | 5             | 4             |
| Transport                | 3             | 4             | 1             | 3             | 1             | 2             | 3             | 1             | 3             |
| Human potential          | 7             | 5             | 6             | 8             | 7             | 3             | 8             | 8             | 5             |
| Innovation               | 2             | 1             | 5             | 4             | 2             | 1             | 4             | 3             | 2             |
| Investment               | 8             | 7             | 8             | 6             | 6             | 7             | 5             | 6             | 6             |
| Production               | 9             | 8             | 9             | 9             | 5             | 6             | 6             | 7             | 7             |

Table 1. Estimates (ranks) assigned by each group of experts to the analysed factors.

![Figure 1](image-url)
At the second stage, the resulting ranking of factors must be placed as close as possible to the rankings of experts, in fact, by determining the median. Thus, finding the median is the result of identification among the calculated total distances of the minimum from Ri. The opinion of the corresponding expert i (with the minimum R) is the most average and is declared the result of the examination. Table 2 shows the results of calculating the difference between the opinions of experts for all factors.

Table 2. The results of calculating the difference between the opinions of experts on the analysed factors.

| Indicators (factors) included in the group | Ranks          | Estimated rank | Final rank |
|------------------------------------------|----------------|----------------|------------|
| Other external factors                   | Expert 1| Expert 2| Expert 3| Expert 4| Expert 5| Expert 6| Expert 7| Expert 8| Expert 9|            |             |
| Economic crises                          | 1      | 3      | 2      | 2      | 3      | 4      | 1      | 2      | 2      | 2          | 1            |
| Historical                               | 6      | 2      | 3      | 5      | 4      | 5      | 2      | 4      | 9      | 3.67       | 3            |
| Natural resource                         | 5      | 9      | 4      | 7      | 8      | 9      | 9      | 8      | 9      | 9          | 8            |
| Transport                                | 4      | 6      | 7      | 1      | 9      | 8      | 7      | 5      | 4      | 7          | 5            |
| Human potential                          | 3      | 4      | 1      | 3      | 1      | 2      | 3      | 1      | 3      | 2          | 1            |
| Innovation                               | 7      | 5      | 6      | 8      | 7      | 3      | 8      | 8      | 5      | 8          | 7            |
| Investment                               | 2      | 1      | 5      | 4      | 2      | 1      | 4      | 3      | 2      | 3.2        | 2            |
| Production                               | 8      | 7      | 8      | 6      | 6      | 7      | 5      | 6      | 6      | 6          | 4            |

Table 2 contains the values of the calculated and final ranks for each of the factors. According to the table, we see that the most significant for the group in the opinion of experts (first rank place) are two factors: production and investment. In second place is the innovation factor. Human potential is in the third place, etc.

Figure 2 shows the final rating of the factors.

Figure 2. The final rating of factors in relation to the group of data on the economic development of territories.
Thus, identifying significant factors based on the economic development of territories, the most significant factors of this group have been identified: production and investment. In this context, this paper examines the features of assessing the economic development of the territories of the Perm Territory at the present stage. In particular, figure 3 shows the average level of development of territories by individual indicators, which indicates a significant asymmetry, which can be explained by the influence of a number of regional factors.

Let us state the disproportionality of the dynamics of production and investment indicators in the development of the territories of the Perm Territory.

Moreover, if we compare the average and median values of the same indicators, we get the following picture (figure 3).

![Figure 3](image-url)

**Figure 3.** Average and median values of indicators of the territories of the Perm Territory for the period 2014–2020.

This means that the indicators are disproportionate, both among themselves and in comparison with the median values. This asymmetry, together with the peculiarities and diversity of the territories themselves, can lead to the formation of various types of territories.

Thus, the economic development of the territories of the Perm Territory is influenced by a number of significant factors. The results of our research have shown that the key ones are production and
investment. Along with other factors, they determine a significant intra-regional asymmetry, which predetermines the stratification of territories according to various types of development, industry specialization and level of industrialization.

Thus, it can be argued that the development of territories is impossible without analysing the internal mechanisms of action, without determining building a comprehensive assessment of the development of territories in the space of the region. This predetermines the need to implement a comprehensive management solution that consolidates both the tasks of territorial development and the direction of increasing sectoral efficiency at the regional level.

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