UDC 711.433:001.895

METHODICAL APPROACHES TO THE ASSESSMENT OF DEVELOPMENT OF TERRITORY'S SPATIAL CAPITAL

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The peculiarities of models of unevenness of economic space (central-peripheral model, model of factors of "first" and "second" nature) are investigated. Indicators and methods of quantitative assessment of uneven development of spatial capital are generalized.

Key words: spatial capital; the Atkinson index; the Taylor index.

МЕТОДИЧЕСКИЕ ПОДХОДЫ К ОЦЕНКЕ РАЗВИТИЯ ТЕРРИТОРИАЛЬНОГО ПРОСТРАНСТВЕННОГО КАПИТАЛА

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Проанализированы особенности моделей неравномерности экономического пространства (центрально-периферийная модель, модель факторов «первой» и «второй» природы). Обобщены показатели и методы количественной оценки неравномерности развития пространственного капитала.

Ключевые слова: пространственный капитал; индекс Аткинсона; индекс Тейла.

The economic space is heterogeneous due to the fact that economic activity is concentrated in certain places with competitive advantages and causes the flow of people and capital from one territory to another and to concentrate them in other territories. The result of the forces of gravity localization of economic activity is the dynamic advance development of individual territories and the slowdown in the development of other spaces. The unevenness of territorial development is manifested, first of all, in the disparity of the level of spatial capital development.

Reducing inequality has been recognized as one of the 17 UN Sustainable Development Goals, which emphasizes that inequality is a paradox of time. Over the last decade, there has been an innovative explosion in the world, poverty reduction in all regions, and boom in emerging markets. And inequality not only persists but also increases, its various forms intersect and reinforce each other [1].

The uneven economic space can be explained by two models:

1. Central-peripheral model in which central cities attract human, natural, financial resources from their periphery [2]. Due to this there is an opportunity for innovative development of the center, and then the periphery will be touched, but with a considerable time lag. Cities in this model are the key drivers for redistributing upgrades to the periphery. This model is characteristic of large world agglomerations as well as regional and local centers.

2. The second model of spatial development emerged within the framework of the "new economic geography". It sees the reason for the development of economic unevenness is the process of concentrating economic activity in those territories that have comparative advantages. Thus, P. Krugman, as such advantages, distinguished the factors of the "first" nature, which are little dependent on man [3]:

– provision of natural resources (mineral, land) that are in demand in the market;

– favorable geographical location (within agglomerations, coastal and border on the routes of global trade), which reduces transport costs.

There are also factors of a “second” nature that are more related to the activities of society and the state [3]:

– agglomeration effect and high population density, which provide economies of scale;
– developed infrastructure that allows to reduce economic distance;
– human capital (education, health, work motivation, mobility and adaptability of the population);
– institutions that influence the entrepreneurial climate, increase the mobility of the population, distribute innovations and more.

However, the above resources are not sustainable. It is believed that factors of “first” nature, which are practically independent of man, are characteristic of industrial society; factors of a “second” nature are of paramount importance to post-industrial society, as they play a significant role in the modernization of society, while the excessive use of resource advantages slows down territorial development.

Today, a set of indicators and indicators of different levels of coherence and validity are used to assess the status of territorial differences. Most experts are convinced that [4, 5] it is more correct to use the so-called resource parameters and indicators, ie relative indicators, since the use of absolute indicators without specific explanation does not reflect the complete picture of the territories’ development.

If the absolute indicators: area of the territory, agricultural lands, mineral and organic raw materials, population, value of basic production assets, length of roads and railways, etc., express the potential (resource potential) of the territory, then relative – potential realized. Of course, the first and second parameters of the territory are to be compared, however, in order to evaluate the possibilities of the territorial system, the second ones are more correct than the first ones because they characterize the realized potential and not the potential.

When choosing methods for estimating the inequality of spatial capital development, it is also appropriate to carry out their systematization according to three criteria: the scale, structure and dynamics of inequality (table 1).

In all three groups of inequality indicators there are the Taylor index and the Atkinson index, which allow to identify the scale, dynamics and structure of inequality by the indicator under study. Other inequality indicators are less informative, although they are prevalent in the work of many researchers on this issue. Ukrainian researchers are usually limited to simple measurements of inequality, such as the mean square deviation, the coefficient of variation, the Williamson variation coefficient, the Klotzvog-Magomedov, coefficient of variation, the coefficient of funds, the decile coefficient, Most of these indicators (with the exception of the the Williamson variation coefficient, the Klotzvog-Magomedov, the Gini index) do not allow for such an important factor as the population of the spatial system, depend on the units of the indicator being studied, and do not correspond to five axes: measurement scales, independence of population, symmetry (anonymity), Pigou-Dalton transfer principle, decomposition. The Taylor index and the Atkinson index are devoid of these shortcomings.

Table 1 – Indicators and methods of quantitative estimation of inequality of development of territory’s spatial capital (compiled by the author according to [6, 7])

Grouping by classification criterion	**Indicators / methods**	
The first group: extent of inequality	Indicators Scattering	Dispersion Mean square deviation The coefficient of variation The Williamson variation coefficient The Klotzgov-Magomedov coefficient
	Coefficient of funds Decile coefficient The Ginny index The Hoover index The Taylor index The Atkinson index The Colma index	
	Spatial correlation index	The Moran index The Giri index

End of Table 1

Grouping by classification criterion	Indicators / methods	
The second group: indicators (methods) that characterize the structure of inequality	Local index of spatial autocorrelation	The Getis-Ord index
	Statistical characteristics of the distribution	The asymmetry coefficient The excess coefficient
	Cluster analysis The Taylor index The Atkinson index	
The third group: methods that characterize the dynamics of inequality	Indicators Scattering	Dispersion Mean square deviation The coefficient of variation The Williamson's coefficient of variation The Klotzgov-Magomedov coefficient
	The Ginny index The Hoover index The Taylor index The Atkinson index The Colma index Convergence analysis	

Thus, heterogeneity is a key feature of the distribution of spatial capital and, accordingly, of economic activity. The heterogeneity of spatial development is characteristic of the whole world and can be caused by various factors: from the natural characteristics of territories to their institutional conditions and the impact of agglomeration effects.

There are many approaches to assessing the state of development of territory's spatial capital, but most often special indicators of differentiation and polarization by level of development are used. The main ones are considered in the paper. According to the author, it is advisable to use the Taylor index, the Atkinson index, that allow you to identify the scale, dynamics and structure of the uneven development of each component.

References

1. SDGs Today [Electronic resource]. – URL : https://sdgs.undp.org/2019-inequality/en/?utm_source=social&utm_medium=undp&utm_campaign+sdgstodayinequality. – Date of access : 06.02.2020.

2. Cohen S. B. Geography and Politics in Divided World / S. B. Cohen. – London, 1994.

3. Krugman P. Increasing Returns and Economic Geography / P. Krugman // Journal of Political Economy. – 1991. – Vol. 99. – № 3. – P. 483–499.

4. Indicators for territorial and urban development. ESPON [Electronic resource]. – URL : https://www.espon.eu/sites/default/files/attachments/Working %20Paper %20Indicators %20for %20integrated %20development.pdf. – Date of access: 06.02.2020.

5. European Commission. 2014. Guidance Document on Monitoring and Evaluation. Concepts and Recommendations [Electronic resource]. – URL : http://ec.europa.eu/regional_policy/sources/docoffic/2014/ working/wd_2014_en.pdf. – Date of access : 06.02.2020.

6. ESPON. 2012b. "ESPON SIESTA – Spatial Indicators for a Europe 2020 Strategy Territorial Analysis" [Electronic resource]. – URL : https://www.espon.eu/programme/projects/espon-2013/applied-research/siesta-spatial-indicatorseurope-2020-strategy. – Date of access : 06.02.2020.

7. European Commission. 2016. Guidance for Member States on Integrated Sustainable Urban Development [Electronic resource]. – URL : http://ec.europa.eu/regional_policy/sources/docgener/informat/2014/ guidance_sustainable_urban_dev elopment_en.pdf. – Date of access : 06.02.2020.