

UDC 332.14

doi: 10.15330/jpnu.5.3-4.44-49

THEORETICAL BACKGROUND OF COMPETITIVENESS INDEX DETERMINATION IN REGIONS

OLENA DYMCHENKO, VICTORIA BELIAVTSEVA, OLHA RUDACHENKO, YURIY TARARUEV

Abstract. It is determined in the article, development and implementation of methods to justify management decisions to be essential when concerning the increase of competitiveness and investment attractiveness of the regions. Based on the European and local experience in the regions rate determination analysis, the basic principles and stages of calculating the regional rating were formed. The index numbers included in the rating are characterized and the necessity of their use is justified. The calculation procedure and method of the regions index of competitiveness is offered.

Keywords: competitiveness, region, aggregate indicator, development level of a region, competitive advantage.

1. INTRODUCTION

Currently, improving the competitiveness level of regions is an up-to-date issue. The country's economy is constantly developing at priority rates, it is the key for the development and further functioning of the state.

Thus, one of the most important current regional management problems in conditions of limited economic resources is the necessity to develop and implement new modern methods of administrative decisions motivation concerning increase of regions competitiveness. This problem's solution is relevant for all countries, regardless of their development level, as the growth of regional competitiveness determines the competitive status of the country in the world.

2. RESULTS

As of today the majority of the economic activity processes are directed to the competition. At the current stage, regional competition increase in importance, it is one of the most important factors in the regions development and interaction between them.

It is certainly worth it to mention that region competitiveness is defined as a territory's ability to manufacture goods and to furnish services on condition of effective use of existing factors of production (economic strength), attraction of existing and creation of new competitive advantages, preservation (increase) of a living standard while meeting international economic standards.

Competitive advantages of the regions are provided by the availability and use of natural resources, favorable conditions for goods manufacturing, the presence of qualified manpower, a developed academia, the level of education and health care, etc.

However, the competitiveness analysis makes sense only when comparing the state of the object (region) at different times (intervals), or when comparing the object (region) with other objects–competitors (other regions). Thus, the competitiveness level of the region can be estimated by applying an integrated assessment of the competitiveness of the region, comparing it with an integrated assessment of the competitiveness of the region – standard. As a reference region, it is appropriate to use the region, which has the best competitiveness characteristics.

Today the issues related to the study of the “competitiveness” concept are one of the current research objectives, it is due to the several factors.

Firstly, the impact of globalization processes, which resulted not only in intergovernmental relations, but also between countries and regions. Secondly, there are new factors in the global economy that have been able to displace leaders in their traditional markets. Thirdly, the economic activity globalization has exacerbated the struggle for markets, foreign investment, innovations and new technologies.

Table 1 presents interpretations of the “competitiveness” concept of the different scientist’s views [1, 2].

Definition	Author
Competitiveness – is a synthesis of quality and a possibility of successful production sale of products in a competitive local or international market at a certain time by achieving competitive advantages	T. Grinko
Competitiveness – is an ability to provide a better position than a competing enterprise	B. Karloff
Competitiveness – is the economic, social and political position of a country or an individual producer in the local and foreign markets	M. Porter
Competitiveness – is the result of the maintenance creation over a long period of time and the total assessment of competitive advantages	N. Drobitko
Competitiveness – is an aggregate of advantages and ability of the subject in comparison with similar, seeking to attain the goal, specific to them, under the conditions of the law hold in a particular environment (system)	A. Dementieva
Competitiveness – is a property of the object that characterizes the degree of real or potential satisfaction of a specific need in comparison with similar objects presented in a particular market	R. Fatkhutdinov

Tab. 1. Definition of interpretation of the “competitiveness” concept

In order to get an accurate understanding of the competition nature and role, table 2 shows its main types [1, 2].

By genetic characteristic	By structure	By the level of products interchangeability (services)	By manifestation forms
- perfect; - oligopoly; - imperfect; - monopoly;	- sectoral; - intersectoral;	- trademarks competition; - industry competition; - formal competition; - general competition; - unfair competition;	- pricing; - non-pricing;

Tab. 2. Competition types

It is widely known that the competitiveness of any kind of economic activity is controlled by the state. Statutory regulation is carried out primarily by the Verkhovna Rada of Ukraine through the adoption of relevant laws [3].

Thus, one latterly observes a competition increased between regions in different markets of goods and services, that provides the relevance of the evidence-based proposals development on the order and method of the competitiveness index of regions calculation.

Nowadays, there are a lot of methods of index of regional competitiveness calculating, which depends on many factors (the conditions of monitoring, the method of calculating the composite indices of regional development indicators, the availability of initial information, the specificity of the object of study, etc.).

However, among the indicators groups that reflect the level of economic development of the regions, the condition of infrastructure, awareness of regional governance structures, the most problematic is the set of indicators that reflect the characteristics of the institutional environment of the region. It is directly related to the complexity of identifying and measuring institutions that affect regional competitiveness. In fact, it is necessary to fully evaluate the quality of the institutional environment and the effectiveness of interaction between the authorities and management, business community engaged in the economy, have a significant impact on the competitiveness of the economy. Such an approach overcomes the narrow framework of the functional format in the study of competitiveness and establishes the priority of analysis from the perspective of business entities.

Comparison of integrated level of competitiveness evaluation obtained by the selected methods allows us to conclude that in the current context it is essential to subsequently improve the methodological tools for evaluation of the regions competitiveness. Necessary adjustments and justifications of the indicators list that characterize the region competitive advantages, as well as improving approaches to the calculation of the integral indicator [4, 5].

Based on the results of the authors' analysis of the European and native experience in determining the regions rating, it is useful to formulate basic principles and stages of calculating the regional rating [4].

The principles of the proposed rating formation include:

1. Usage of public information.
2. Accounting of European experience.
3. Refusal to conduct surveys and use their results.
4. Application simplicity.
5. The integrated nature of the rating.

It is worth noting that the calculation of the regions competitiveness rating in Ukraine is carried out in order to analyze main trends of regional development to justify the decisions concerning: a) state financing volumes of regional development; b) definition and development of priority sectors of the economy of the regions in the conditions of limited public funds c) the attraction and use of foreign investment for the development of regional infrastructure, etc. The competitiveness of regions rating is determined annually by the results of the necessary statistical and other information analysis, since such a periodicity, when accumulating sufficient amount of information, allows to use a significant number of indicators and get a full concept of the main trends and patterns of regional development in modern economic conditions. What is more, in order to improve the efficiency and objectivity rating level, it makes sense as well to calculate the main and additional rating indicators on a quarterly basis. Nowadays all regions are included in a single rating, as it is practiced in European countries (views on practicality of comparing different regions, regardless of the country of location, have acquired a special prevalence). But if necessary, it is possible to detect and take into the account the specifics of the Ukraine's regions, in accordance with the priorities of their development, which is consistent with the objectives of the development Strategy of Ukraine until 2020, the State strategy for regional development for the same period and other equally important documents. Particularly, increasing the competitiveness of the regions of Ukraine is one of the priorities of the State strategy for regional development. And one of the ways to achieve this goal is to ensure effective specialization of the

regions. Taking into the account the main areas of the strategy implementation, among the regions of Ukraine one can distinguish:

- industrial;
- agricultural;
- touristic;
- innovational;
- focused on the priority education and science development;
- those to have a high investment attractiveness, or (and) developed infrastructure, etc.

Such a regions classification, depending on their specialization, requires a particular study and may be one of the areas of refinement of this rating, which is based on the European trends, as it is already noted.

International organizations with experience in the field may also be involved in determining the regions competitiveness rating of Ukraine. Such an approach provides displaying of trends and patterns of Ukraine's regions development, taking into the account the world's and European experience in this field.

Thereby, below one presents the calculation of the regions competitiveness with the definition of the corresponding integral indicator – the index of competitiveness of regions (GCE), that is determined by the implementation of the following stages:

1 stage. Justification of indicators and groups formation

2 stage. Calculation of indicators by competitiveness groups.

Formulas for calculating the indicators [5, 6] are represented below, they are formed using absolute and relative indicators.

$$I_{ABC} = \frac{A_P/A_K}{H_P/H_K}, \quad (1.1)$$

$$I_{BIDH} = \frac{B_P}{B_K}, \quad (1.2)$$

where I_{ABC} , I_{BIDH} – indicators, evaluated based on the use of absolute and relative indicators, unit fraction;

A_P , A_K – the absolute value, for the region and the country as a whole, respectively;

B_P , B_K – the value of the relative indicator, for the region and the country as a whole, respectively;

H_P , H_K – the number of permanent population of the region and the country as a whole, measured in thousands of people [7, p. 26–27]

3 stage. The competitiveness of regions rating by groups.

The formula for rating of regions determination in the context of groups can be given as follows:

$$IKP_i = \frac{1}{n} \sum_{j=1}^n I_j, \quad (1.3)$$

where IKP_i – index of regional competitiveness for the group, unit fraction;

n – indicators number in the group i ;

I_j – j -th group i indicator, unit fraction.

4 stage. The calculation of the regions competitiveness rating.

To determine the integral indicator of the regions competitiveness, it is essential to combine the previously calculated indicators into the one indicator and it is proposed to complete using the “radar method”. It is widely known, that this method involves comparing the area of the polygon (which depends on the actual values of the competitiveness of the enterprise or region) with the area of the circle of a predetermined maximum diameter. We believe such an approach particularly underestimates the results obtained. Therefore, it is proposed to compare the “radar” regions with the maximum of the calculated values.

Taking into the account, that 9 groups of factors have been created, $\sin(40^\circ)$ is used to determine the radar area, which is reduced while calculation. In such a manner a formula for determining the integral indicator of regional competitiveness can be given as follows:

$$IKP = \frac{a_1a_2+a_2a_3+\dots+a_9a_1}{A_1A_2+A_2A_3+\dots+A_9A_1} 100, \quad (1.4)$$

where a_1, a_2, \dots, a_9 – regions competitiveness indicators on groups, unit fraction;
 A_1, A_2, \dots, A_9 – the maximum value of the hypothetical region competitiveness, unit fraction.
 Multiplication by 100 in this case is necessary for the convenience of displaying the results.

Consequently, it is proposed to include 10 groups in the competitiveness rating:

1. Natural wealth.
2. Ecology and environmental protection
3. Culture.
4. Infrastructure.
5. Macroeconomic environment.
6. Health, social protection and safety.
7. Education.
8. Economic activity.
9. Business.
10. Innovation activity.

Along with this, however, the method proposed by the team of authors is based on the processing of a large amount of basic data. It is a consequence of the fact that the competitiveness index of the particular region results from the analysis of nine groups of indicators, while each has from two to ten components that are bounded to the population of the region. Such a calculation amount significantly complicates regions index of competitiveness determination, and demands efforts and resources expense.

What is more, the indicators used to evaluate the competitiveness of the region are heterogeneously to compound, that reflects the proposed methodology complexity and affirms the information completeness, which displays the resulting index of the regions competitiveness. For this reason, in the future it is advisable to assign calculations for each individual group to specialists in each particular field for rating determination. It is needed as a specialist in the field of "Health Protection" cannot properly calculate the indicators for the group "Macroeconomic environment", etc. Thus, it is necessary to involve various specialists for the region competitiveness index calculation, it leads to the cost increase while using technique, as along with the cost of finding and hiring such specialists, there are costs, necessary for conducting seminars for explaining how to apply the technique of calculating the competitiveness index of the region.

At this rate, for the in time and correct regions competitiveness determination it is worth to attract a contracting agency with a list of functions including search of specialists for each field of assessment, their study, conducting evaluation and results analysing. As a disadvantage of this approach one considers the increase in the services cost of such organizations. In the framework of the issue according to the analysis results, the team of authors revealed that the cost of competitiveness indices calculating for all regions of Ukraine does fluctuate from one hundred and fifty to one hundred and eighty thousand hryvnias. This value sums from the costs of wages, social security payments, general expenses and the profit. It is also worth noting that a significant share of the work cost to determine the competitiveness rating of the regions is the last two elements. Yet their size to a large extend depends on the pricing policy of the contracting agency.

3. CONCLUSIONS

Thus, according to the authors, the proposed method of calculating the regions competitiveness indices is relevant and accessible from the standpoint of obtaining initial data, that is confirmed with

usage of data sources to the calculation of modern statistical and other publications, information is widely available.

REFERENCES

- [1] Kuzmin O.Ye. *Management of international competitiveness on the enterprise*. Kompakt-LV, Lviv, 2005. (in Ukrainian)
- [2] Piddubnyi I.O., Piddubna A.I. *Management of international competitiveness on the enterprise*. INZHEK, Kharkiv, 2004. (in Ukrainian)
- [3] Zakharchenko S.V. Competitiveness of the regions of Ukraine: assessment, forecast and mechanism of increase (according to the methodology of the international Institute of management development). Abstract thesis of PhD: 08.00.05. Chernihiv, 2013. (in Ukrainian)
- [4] Bezugla V.O. Integrated assessment of the regions competitiveness of Ukraine. *Municipal Economy of Cities*, **70** (2006), 53–60. (in Ukrainian)
- [5] Artemenko V. Indicators of regions sustainable socio-economic development. *Regional Economy*, **2** (2006), 90–97. (in Ukrainian)
- [6] Antonyuk L.L. The way of Ukraine's integration into the global innovation system. In: Lukianenko D.H. (Ed.) *Common EES: harmonization of mega-regional contradictions*. KNEU, Kyiv, 2007. (in Ukrainian)
- [7] Annoni P., Kozovska K. *EU Regional Competitiveness Index 2010*. Available at: http://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/2010_competitiveness_index.pdf

Address: Olena Dymchenko, Victoria Beliavtseva, Olha Rudachenko, Yurii Tararuev, O. M. Beketov National University of Urban Economy in Kharkiv, 17, M. Bazhanova Str., Kharkiv, 61001, Ukraine.

E-mail: dymchenkoov@gmail.com, polkin87@ukr.net

Received: 25.08.2018; **revised:** 14.11.2018.

Димченко Олена, Белявцева Вікторія, Рудаченко Ольга, Тараруєв Юрій. Теоретичні основи визначення показників індексу конкурентоспроможності регіонів. *Журнал Прикарпатського університету імені Василя Стефаника*, **5** (3-4) (2018), 44–49.

У статті визначено необхідність розробки та впровадження методів обґрунтування управлінських рішень, що стосуються підвищення конкурентоспроможності та інвестиційної привабливості регіонів. За результатами аналізу європейського та вітчизняного досвіду визначення рейтингу регіонів були сформовані базові принципи та етапи розрахунку регіонального рейтингу. Охарактеризовано показники, що входять до складу рейтингу та обґрунтовано необхідність їх використання. Запропоновано порядок та методичку обрахування індексу конкурентоспроможності регіонів.

Ключові слова: конкурентоспроможність, регіон, інтегральний показник, рівень розвитку регіону, конкурентна перевага.