

## METHODOLOGICAL APPROACHES TO THE EVALUATION OF THE UKRAINIAN REGIONS POTENTIAL

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*The goal of the paper is theoretical and methodological analysis in the evaluation of the level of innovative potential of regions. The novelty is the approach to the estimation of innovative potential of regions, which is based on the calculation of resulting index of innovative potential of the regions which is improved methodologically on the basis of four subindexes of the relevant components compared with the existing potential. Key words: human capital, knowledge economy, economy index, knowledge index, innovative potential, regions of Ukraine, regional ranking.*

Human capital is one of the determining factors of human development and economic growth and it becomes the main source of wealth.

The term “human capital” appeared rather long ago. It developed very quickly only in the second half of the twentieth century. For this reason it is important to evaluate the already extracted economic theory of scientific knowledge on the definition of its essence.

The classics of political economy A. Smith , D. Ricardo, K. Marx, I. Fischer and others laid methodological basis of the research. The main development of human capital theory has been in the works of T. Schultz and G. Becker.

W. Petty was one of the first who used the concept of human capital in 1674 comparing the loss of weapons and other instruments of war with the loss of human life. He believed that human life had a monetary value, specifying the loss of human life in war as the monetary loss to England.

Human capital is the value of the stock of skills, experience, knowledge, which are involves in the process of management and capitalized on the basis of hiring and they bring added value (profit).

The term “human capital” is determined by human knowledge, health, skills, experience used by the individual for making profit. Under the concept of “human capital” we understand:

1. The acquired knowledge, abilities, and skills;

2. This stock should be used in different spheres of public activities. It promotes the growth of labor productivity and production;

3. The usage of this reserve leads to the growth of salary of the employee in the future declining of the part of its current consumption;

4. The increased income promotes the growth interest of employee, and this leads to further investment in human capital;

5. These human abilities, talents, knowledge, etc. are an integral part of each person;

6. This motivation is a necessary element for the reproduction process which means the formation, accumulation and the usage of human capital.

The typical forms of investment in human capital are the following activities:

1. Education.

2. Training.

3. Migration and the search for work.

4. Health and nutrition.

This also applies to Ukraine, because in our territory human capital is the most valuable of all types of capital. The insufficient level of human capital at the present time is the main obstacle for the economic renewal of the country. According to experts, the increase of human capital by 1% leads to the growth of labor productivity in 3,81% and acceleration of rates of growth of GDP per capita by 1-3%.

One way to increase the total amount of human capital in the country is investing in people, namely in their health and education.

The investments in human capital increase the professional qualification and the productive capacity of a person and thus the performance of his work.

Investments in human capital are carried out in different forms – in the form of training at the educational establishment and in the apprenticeship at a workplace.

In the context of globalization and rapid development of scientific and technological progress knowledge becomes the main driving force of competitiveness, moving material resources into the background. Almost all countries in the world have understood that only through knowledge it is possible to improve the competitiveness and provide the modern level of life.

The founder of the knowledge economy is an American economist F. Machlup, who thoroughly examined the contents of the knowledge economy in 1962 .

In his work “The Production and distribution of knowledge in the United States”, he tried to give the definition of “knowledge industry”, which classifies education, research and development, communications, informational engineering and information activities.

The formation of the knowledge economy requires an assessment of the state of components of the knowledge economy and identification of the problems of their formation. The assessment of the level of economy of knowledge is a real instrument for investors who select countries for companies whose activities are based on knowledge.

Scientists and research institutes made some attempts to assess the level of knowledge economy of Ukraine. However, the most comprehensive approach to the measurement of the economy based on knowledge, was proposed by the world Bank in the framework of "Knowledge for development" (Knowledge for Development - K4D). The index of the economy of knowledge (Economy Index or KEI) and the index of the knowledge Index ( KI) were calculated with the help of this method.

Knowledge economy index represents the average of the four subindexes: "Economic incentives and institutional system", "Education and qualification", "Information infrastructure", "Innovatvation".

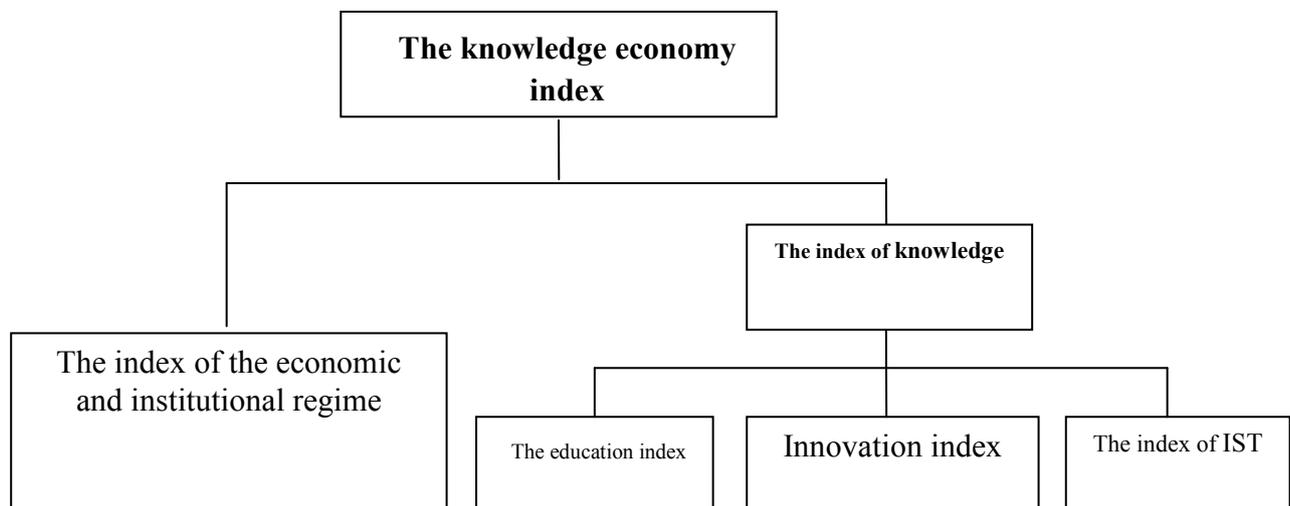


Fig.1 - The structure of Index of knowledge

The goal of the paper is theoretical and methodological analysis in the evaluation of the level of innovative potential of regions.

To achieve this goal the following scientific tasks should be considered:

- a) to analyze the historical background of the development of the concept of human capital;
- b) to analyze the methodological approaches to the assessment of the knowledge economy;
- c) to analyze the innovation activity of enterprises in Ukraine;
- d) to assess the regions of Ukraine at the stage of transition to the knowledge economy;
- e) to assess the regions of Ukraine in terms of innovation potential.

The object of research is theoretical and methodological approaches to the assessment of the level of innovative potential of regions.

The subject of research is methodical approaches to innovation development of regional economy.

The scientific novelty of the paper is: the approach to the estimation of innovative potential of regions, which is based on the calculation of resulting index of innovative potential of regions which is improved methodologically on the basis of four subindexes of the relevant components compared with the existing potential; the further development of methodical approaches to definition of structure of innovative potential. These approaches consider organizational, personnel, financial, economic and industrial components; the usage of methodical approaches to the formation of the content vector of evaluation models for the sustainable way of life in contrast to the existing features of the regional innovative development.

In this paper we proposed the original method of estimation of innovative potential of the region, which is based on the calculation of integral index (Index of innovative potential of the region) based on four groups of indicators: organizational, personnel, financial-economic and production.

The resulting Index IPR allows to evaluate innovative activities and to analyse the innovative potential of regions, and to identify opportunities for growth in the region. The content of the Index of the investment program is shown in the table 1.

Table 1 - The content of the Index of the investment program

<b>Group</b>	<b>Indicators of innovation</b>
Organizational	Number of organisations engaged in R&D Number of innovation active enterprises in industry, by innovation activity direction
Connected with personnel	Staff engaged in R&D Staff with the highest qualifications engaged in the economy
Financial and economic	Domestic current expenditure for R&D operations performed by scientific organizations Distribution of total expenditure by innovation activity direction
Productive	Innovation products output Implementation of advanced technological processes in industry Implementation of innovation products in industry

On the basis of these indicators we made a comparative analysis of this index on 1, 100, 1000 people in the region and then defined the rating position of each region and held a normalization procedure rank of each of the areas.

On the basis of the obtained data the average number of the regions from 2010 to 2012 was conducted.

Table 2 - The average number of the regions from 2010 to 2012

Rank	Regions	"O"	"P"	"FE"	"P"
21	AR Crimea	4,52	5,43	6,34	2,98
22	Vinnitsa	3,99	2,21	1,39	2,68
23	Volyn	0,81	0,64	2,25	2,09
20	Dnipropetrovsk	3,52	7,30	7,18	3,16
13	Donetsk	2,46	6,52	7,38	4,26
14	Zhytomyr	2,96	0,72	2,44	4,04
17	Zakarpatska	0,70	2,55	1,18	3,19
2	Zaporozhye	7,78	4,34	7,22	8,86
7	Ivano-Frankivsk	6,41	2,73	3,52	6,08
13	Kiev	1,98	4,24	4,96	3,86
10	Kirovograd	2,51	0,67	2,99	4,71
9	Lugansk	2,43	1,02	3,48	4,78
13	Lviv	3,59	7,20	3,32	2,51
10	Mykolaev	6,32	1,99	6,66	3,92
12	Odessa	2,46	6,70	4,08	1,34
7	Poltava	2,07	4,95	4,95	5,69
11	Rivne	1,30	1,10	2,17	0,97
4	Sumy	3,01	3,67	5,79	7,08
6	Ternopil	3,48	2,15	1,82	4,86
4	Kharkiv	6,47	8,27	8,38	7,08
4	Kherson	5,27	4,13	4,70	6,11
6	Khmelnysky	5,31	1,90	3,89	2,78
3	Cherkasy	3,07	2,30	3,09	7,14
4	Chernivtsi	4,26	3,33	3,41	3,61
3	Chernigov	4,07	3,33	3,94	4,17
2	Kyiv	9,44	10,00	10,00	8,33
1	Sevastopol	10,00	10,00	10,00	10,00

Thus, from the table we can see that such areas as the Crimea, Vinnytsia, Volyn, Dnipropetrovsk have a high grade, because its value lies in the range from 19-23, Donetsk, Zhytomyr, Zakarpattia, Kyiv, Kirovohrad, Luhansk, Lviv, Mykolayiv, Odessa, Rivno have an average level, because their values lie in the range from 9 to 18, and such areas as Zaporizhia, Ivano-Frankivsk, Poltava, Sumy, Kharkiv, Kherson, Cherkasy, Khmelnytsky, Chernivtsi, Ternopil, Khmelnytsky, Chernihiv, Kiev and, Sevastopol have low level, because their values are in the range from 1 to 8.

We can see from the table that Sumy region has the low level of rank, which is 4 in the regional ranking and is 3,01 in «Organisational terms», 3,67 in "the Human component", 5,79 in the "Financial-economic component" and 7,08 in "the Industrial component".

Also we made calculations of the resulting index of innovative potential of regions by 2011.

Table 3 – The calculations of the resulting index of innovative potential of regions

<b>Regions</b>	<b>2011</b>	<b>Rank</b>
AR Crimea	4,82	9
Vinnitsa	2,57	22
Volyn	1,45	24
Dnipropetrovsk	5,29	5
Donetsk	5,16	5
Zhytomyr	2,54	20
Zakarpatska	1,90	20
Zaporozhye	7,05	4
Ivano-Frankivsk	4,68	7
Kiev	3,76	11
Kirovograd	2,72	16
Lugansk	2,93	15
Lviv	4,15	8
Mykolaev	4,72	6
Odessa	3,65	10
Poltava	4,41	6
Rivne	1,39	11
Sumy	4,89	5
Ternopil	3,08	9
Kharkiv	7,55	3
Kherson	5,05	3
Khmelnysky	3,47	6
Cherkasy	3,90	3
Chernivtsi	3,65	4
Chernigov	3,88	3
Kyiv	9,44	2
Sevastopol	10,00	1

Thus, from the table we can see that such areas as Vinnytsia, Volyn, Zhytomyr, Zakarpatska have a high rate, because their values lie in the range from 19 to 24, Odessa, Rovno, Ternopol have the average rate, because their values lie in the range from 9 to 18, and such areas as the Crimea, Dnipropetrovsk, Donetsk, Zaporizhia, Kyiv, Lviv, Mykolayiv, Poltava, Sumy, Lugansk, Kirovograd, Ivano-Frankivsk, Kharkiv, Kherson, Khmelnytsky, Cherkasy, Chernivtsi, Chernihiv, Kiev, Sevastopol have low rate, because their values are in the range from 1 to 8.

As the table shows, Sumy region has quite low rate of index of innovative potential of regions, which is only 4,89 and takes only the 5th place in the regional ranking.

In conclusion we'd like to make recommendations and suggestions for improvement in the areas:

1) areas that have a high rank, should support those areas which have low rank. They need to sign an agreement on mutual assistance.

2) to improve the organizational component, you need to change the system of managing of this component. Other components can be increased using the same principle.

3) you need to introduce more innovative products that facilitate life and increase profitability, and therefore the rank of the region will be increased too.

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