https://doi.org/10.15407/scine16.02.031

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METHODICAL APPROACH TO THE EVALUATION OF INNOVATION CAPACITY OF UKRAINE'S LIGHT INDUSTRY

Introduction. *In the market conditions, under aggravating competition in the industrial market, a comprehensive assessment of the innovation potential of light industry is a relevant and practically significant problem. So far, no general approach has been developed to assess the innovation capacity (or innovation potential) of industrial entrepreneurship, and the level of theoretical, methodological and practical solution to this aspect has a little effect on the business activities.*

Problem Statement. *Innovative development of corporations is an unexplored trend. This fact hinders increasing the competitiveness of industrial corporations and strengthening their competitive market position. In view of this, the problem of complex evaluation of the innovation potential of light industry is very relevant, since its solution can ensure the objectivity of economic results and allow corporations to effectively organize innovation activities.*

Purpose. *To develop a methodological approach to the evaluation of the innovation potential of light industry, which allows corporations to comprehensively summarize their economic results and to make optimal management decisions.*

Materials and Methods. *A methodological approach to measuring the innovation potential of light industry using the taxonomic method has been used.*

Results. *The components of innovation potential have been identified and groups of indices have been formed and calculated according to the characteristic criteria. In order to evaluate this index, the principles for the formation of a system of indices in each area have been proposed. The main stages of calculating the innovation potential of light industry have been highlighted.*

Conclusions. *Based on the calculations, various approaches to defining the concept of innovation as a fundamental factor in the progressive socio-economic development of the country have been generalized. The system of indices has been formed and the developed integral indices of innovation potential of light industry have been simulated.*

Keywords: model, innovation potential, indices, criteria, and light industry.

The knowledge and systematic study of the essence of innovation processes continues to be an extremely relevant scientific and applied task in view of the changes that are caused by aggravating instability of external environment and have a dominant influence on the

Citation: Goncharenko, O.G., Anishchenko, V.A., and Sirenko, K.Yu. Methodical Approach to the Evaluation of Innovation Capacity of Ukraine's Light Industry. *Sci. innov.* 2020. V. 16, no. 2. P. 31—41. https://doi.org/10.15407/scine16.02.031

innovation activities of corporations. Creating innovative products and services is a strategic priority for competitiveness and is considered to be the most important driver of growth in today's economic environment.

However, until recently, Ukrainian researchers have paid insufficient attention to the development of innovative potential of light industry from the standpoint of independent management of reproductive processes. The main prerequisite for such management is the availability of analytical tools for assessing innovation potential that in the best way shows current perceptions of innovative processes in light industry.

In this context, an important research challenge is to find and to use adequate methodological techniques for analyzing and evaluating innovation activities, in general, and in the light industry, in particular.

Consideration of innovation capacity in terms of the ability and willingness to carry out effective innovation activities, becomes especially relevant. Ability is the presence and sustainability of the structure of capacity (resources needed for innovation). Willingness is a sufficient level of capacity development and available resources for innovation, the ability to disseminate new models and technologies in all areas, to cover relevant market sectors, and so on.

Boosting innovation activities, raising their efficiency, identifying effective links between the components of innovation process, expanding the scope of innovation and optimal planning of innovation activities determine the formation and development of innovation potential [1, 28].

Effective assessment of innovation potential depends on the real status of each element, interaction between and complementarity of the elements. In this sense, identifying and evaluating innovation potential and its elements is a particularly urgent task.

Many Ukrainian researchers have been engaged in studying the issues related to innovation potential. Among them there are O. Amosha [1], L. Baibakova, Yu. Bazhal, Ye. Beltiukov, V. Brydun, L. Vodachek, O. Vodachkova, A. Halchynskyi, V. Heyets [2], N. Goncharova, I. Gruznov, V. Gusev, S. Kireev, N. Krasnokutska, M. Kraiukhin, L. Fedulova [3, 4], and S. Yagudina.

The scientific foundation of innovation processes is laid in the works of foreign scientists: M. Albert, I. Anosoff, R. Nelson, R. Akoff, P. Drucker [5], E. Mansfield, B. Szanto [6], R. Foster, J. Schumpeter [7], M. Porter [8], E. Toffler [9], and D. Jacobs [10]. They have developed the concepts of innovation theories: the theory of cyclical development (N. Kondratieff), the classical theory (J. Schumpeter), the neoclassical theory (B. Szanto), the theory of innovation and entrepreneurship (P. Drucker), and the theory of competition (M. Porter).

However, notwithstanding a considerable number of scholarly research works on the subject, it is worth noting that at present there is no single approach to defining the concept of "innovation capacity" and its components. The technique of monitoring innovation processes in economic activities of production industries needs to be improved. Its drawbacks complicate management of innovation activities at the level of industrial enterprise. The optimal assessment of innovation capacity of the domestic industry, as a whole, and the light industry, in particular, has not been elaborated, which actualizes the importance and priority of this issue and requires further research in this direction.

In view of the above, it is advisable to improve the methodological approach to the evaluation of innovation potential of light industry, the use of which will allow enterprises of this industry to comprehensively assess its role in economic activity and to facilitate their innovative renewal.

The primary task is to define the concept of "innovation", because in the domestic and foreign literature, this concept is multifaceted. This is because, as well-known American futurist Alvin Toffler put it, among the problems faced by business there is no more important and complicated issue than innovation [9, 158]. The category "innovation" (from Latin "*novo*") means to

alter, to renew [9, 157]. However, the most common approach is based on the literal translation of the English word "innovation" (*in-* as introduction + *novation* as something new), which literally means "introduction of new". Such interpretation is the most common in relevant thematic sources.

Innovation is an extremely important economic category for today. For the first time the term was used by Joseph Alois Schumpeter, a famous Austrian economist, in his book Business Cycles (1939) [7, 25]. It treats innovation as a new research and organizational combination of production factors created by the entrepreneurial spirit. It was for the first time that "innovation" as term was introduced into scientific circulation. It literally means the embodiment of a scholarly research discovery, a technical invention in a new technology or in a new product. Innovation was considered by J. Schumpeter as a new function of production, "its new combination" [7, 110].

Today, there is no definition of innovation that accurately reflects the content of this phenomenon in terms of economic processes and covers all aspects of its manifestation in economy (Table 1).

The word "potential" comes from the Latin language and means strength, capabilities, capacity, resources, and assets used to achieve results. Therefore, combining these concepts, we get that innovation potential is an opportunity, a power to realize ideas, new products, and technologies for profit-making and development.

"Innovation potential" is a neologism that has recently entered the economic science as an economic category and has a wide range of definitions. In many studies, the authors concentrate their efforts on discovering individual aspects of innovation potential. M.M. Yermoshenko [13, 115] believes that innovation potential means real or probable ability of enterprises to perform purposeful work in the development, production, and implementation of an innovative product or process. The definition of V.A. Verba and I.V. Novikov that innovation potential of an enterprise [14, 22] is a combination of R&D, technological, infrastructural, financial, legal, socio-cultural and other opportunities (resources), which ensure the creation and implementation of innovations is also reasonable.

Table 1. **Approaches to Definition of "Innovation"**

Researcher	Definition	Source
Peter F. Drucker	Innovation is launching a more sophisticated product, providing a new advantage, enhancing the potential of human and material resources to produce tangible assets	[5]
Brian C. Twiss	Innovation is a process in which an invention or idea becomes economically viable	[11]
Nikolai D. Kondratieff	Innovation is the introduction of inventions, discoveries, and achievements of scientific and technological progress	[12]
Alvin Toffler	Innovation is a set of production, technical, and commercial activities leading to the emergence of new and improved industrial processes and equipment in the market	[9]
D. Jacobs	Innovation is the replacement of an old object (phenomenon) with a new one	[10]
Michael E. Porter	Innovation is result of the introduction of pioneer research in the context of a firm's competitive strategy in the market, an opportunity to gain competitive advantages	[8]
B. Szanto	Innovation is a social, technical, economic process, practical application of ideas, inventions, which lead to the creation of the best products, technologies and are focused on economic benefit, profit, additional income, covering the whole range of activities, from R&D to marketing	[6]
Joseph A. Schumpeter	Innovation is revolution in order to introduce and to use new types of consumer goods, production facilities, vehicles, markets, and forms of organization in industry	[7]

The development of innovation potential of light industry enterprises involves various methods: carrying out research and development

(R&D) works, which enables a rapid update of the range of products and, accordingly, an increase in the consumer effect associated with the quality parameters of products; acquisition of knowhow, patents, and licenses; establishment of venture businesses or units for the development and commercialization of innovations; creation of innovative joint ventures; and takeover of enterprises with new technologies, etc. [13, 74].

The stages of studying the innovation potential provide quantitative and qualitative evaluation of available resources, which enables not only simulating the trajectory of development, but also optimizing the whole innovative process of transition from one trajectory to another, as a rule, more efficient one.

As a result of the analysis, the following stages of calculating the innovation potential of light industry have been highlighted:

1) to substantiate the choice of groups of indices that characterize the components of the innovation potential of light industry;

2) to identify the composition of indices for each group, in order to detail and to comprehensively characterize the indices;

3) to simulate dynamics of the main integral indices of innovation potential of light industry of Ukraine by means of general scientific and special methods of scientific cognition, namely, analysis and synthesis, for developing the system of indices of innovation potential of light industry of Ukraine; the experimental method: for structural analysis of the share of each index in the complex assessment, the taxonomic method: for the formation of original matrix of observations and the standardization of the characteristics of the matrix;

4) to objectively assess the level of innovation potential of light industry.

The first stage. Using the principles of systematic analysis for evaluating the innovation potential of light industry, it is possible to create a system of indices that enables identifying relationships between them. Such interrelations are as follows:

- consistency based on which varying the value of each component of an innovation process or index influences altering the integrated assessment of the level of innovation potential as a whole;
- comprehensive coverage of all relevant components and indices, where each index characterizes the impact of a factor or group of factors on innovation activity;
- hierarchy, i.e. ranking of indices based on their values, from general to partial (the first group consists of consolidated indices that provide a complete integral description of the main directions of innovation processes, the second group is composed of indices that complement the general ones, based on the innovation capacity of light industry);
- adequacy, ensuring of the formation of a minimum set of indices of the studied object, which really reflect its status;
- unambiguous interpretation of primary indices as incentives or disincentives of innovation development;
- continuity that means the possibility of adjusting certain indices of the system or introducing additional indices to it, provided new data are received, or developing new methods of calculation, new, more important, indices that are not previously taken into account by government statistics bodies [16, 69].

Based on these principles, the three main groups of qualitative indices for assessing the innovation potential of light industry have been proposed, namely:

— indices of tangible assets;
— indices of innovation efficiency;
— indices of resource allocation.

The second stage. For each area of qualitative indices, the proposed key indices for 2010—2017 are qualitatively assessed, which enables evaluating the general tendency of changes in the studied list of criteria (Table 2).

The elements of the assessment are indices expressed by special indices that have relative units of measurement.

Table 2. **Estimate of Ukraine's Light Industry Innovation Capacity Indices for 2010—2017**

Key Indices of Ukraine's Light Industry Innovation Capacity	Notation	Year								Absolute deviation (+/—)
		2010	2011	2012	2013	2014	2015	2016	2017	2017
Tangible assets indices										
Index of increase/decrease in fixed assets	Ifa	1.007	1.005	0.977	1.042	1.034	1.057	1.100	1.115	0.108
Fixed assets cost index	Ifac	0.033	7.859	6.251	7.917	5.827	0.001	0.001	0.001	—0.032
Index of introduction of new fixed assets	Infa	0.002	0.001	0.002	0.002	0.003	0.003	0.006	0.005	0.003
Fixed assets upgrade index	Ifau	0.002	0.002	0.001	0.001	0.002	0.001	0.003	0.004	0.002
Fixed assets retirement index	Ifar	0.002	1.338	0.002	5.634	8.623	2.209	9.451	9.068	9.066
Fixed assets wear index	Ifaw	0.002	0.001	0.002	0.002	0.001	0.002	0.002	0.003	0.001
Innovation Efficiency Indices										
Index of innovative enterprises	Iie	0.098	0.137	0.144	0.116	0.131	0.131	0.154	0.086	—0.012
Index of the share of innovative products in the total industrial output	Isip/tio	0.022	0.023	0.026	0.020	0.083	0.008	0.014	0.017	—0.005
Index of innovative products introduced	Iipi	0.036	0.029	0.036	0.032	0.028	0.028	0.035	0.016	—0.02
Index of technological processes introduced	Itpi	0.013	0.024	0.026	0.034	0.033	0.052	0.064	0.048	0.035
Index of utility model patents (received by domestic applicants)	Ium	1.637	—	—	—	1.723	—	1.659	—	—
Index of patents of invention (received by domestic applicants)	Ipi	—	—	—	—	—	—	—	0.001	—
Resource Allocation Indices										
Innovation funding index	Iif	3.042	6.007	0.005	0.008	0.012	0.002	0.003	0.010	—3.032
R&D internal funding index	Iifi	0.840	0.943	0.842	0.969	0.941	0.994	0.918	*	—
Index of innovation funding at the expense of borrowings	Iifb	—	0.038	0.109	0.023	0.058	—	0.075	—	—
Index of investments into innovation	Iii	0.117	0.063	0.166	—		—	—	*	—
R&D expenditure index	Irde	0.006	0.002	0.005	0.008	0.012	0.002	0.003	0.010	0.004
Index of costs of machinery, equipment, software	Imesc	0.009	0.002	0.005	0.014	0.011	0.002	0.003	0.014	0.005

* Data are not published for the reason of compliance with the Law of Ukraine on the State Statistics in terms of confidentiality of statistical data..
Source: authors' method based on [17—19].

Material and technical resources of enterprises or indices of tangible assets are the foundation of innovation potential, which determines its technical and technological framework, influences the scale and pace of innovation activity. Therefore, it is important to evaluate as comprehensively as possible the use of the available base and new types of materials, inasmuch as this influences on the quality, completeness, and timeliness of works, production output, and financial status of light industry in Ukraine.

From the data of Table 2, one can see a slight increase in the growth of fixed assets of light industry enterprises, which indicates a slow upgrade of fixed assets, mainly, by means of introducing new fixed assets, while worn assets retire from time to time, which has led to positive dynamics of retirement rate.

According to the State Statistics Service of Ukraine, the fixed assets were replenished at the expense of gross capital investments that gradually increased (UAH 1882.3 million in 2017, UAH 1795.7 in 2016, UAH 987.0 in 2015, UAH 623.0 in 2014, etc. [18]) and aimed at the creation, purchase, and upgrade of fixed assets.

Therefore, a negative trend is that the fixed assets put into service in the light industry do not exceed the retired fixed assets, as a result of disposal, sale, or free transfer, and a poor quality of upgraded fixed assets, i.e. their innovation potential is not progressive (this may be a mere replacement of already depreciated equipment with new or used one, without any significant changing in the quality characteristics).

The dynamics of fixed assets wear testify to the physical and moral aging of the machinery and equipment of light industry enterprises, namely: wet processing and heat treatment equipment, sewing, textile, knitwear, embroidery, and knitting machines, textile printers, equipment for manufacture and repair of footwear, accessories, and spare parts. Because of the economic crisis, the enterprises do not invest enough into the modernization of the equipment and its upgrade. Consequently, their technical and technological backwardness are aggravating, with innovation activity restrained and the industry's innovation potential going down.

The performance indices for innovations and resource support have indicated a significant decrease in the number of innovatively active light industry enterprises in recent years [17]. Also, a small share of innovative products sold leads to dependence on the import of both new technologies and finished knowledge-intensive products and results in a decrease in exports of domestic innovative products of light industry. The indices of new products introduced whose share has been decreasing over the years and the number of new technological processes implemented testify to a low level of innovation performance.

The low level and the adverse dynamics of innovation expenditure indicate that the light industry has no way than to rely on its own funds, i.e. the mechanism for launching the "innovation wave" has not been developed or implemented at the government level.

In general, the results of the analysis have shown a low and unstable level of innovation activity and a significant disparity between own funds and other sources of funding the innovation activity.

The third stage. In order to have a comprehensive system for assessing the innovation potential of light industry in Ukraine, it is necessary to apply the methods for synthesizing an integral index using the taxonomic method, the algorithm of which was considered by Polish researcher W. Pluta.

The method for synthesizing the integral index consists of the following steps:

1) to determine the state and conditions of functioning of light industry enterprises;

2) to form an information system of light industry and an information database for system analysis;

3) to organize the collection of source information; and

4) to form a group of indices or a separate criterion determined as a reference for comparing the quantitative indices of the studied operation in terms of efforts and results obtained [20, 53].

The set of indices or criteria shall meet the following basic requirements:

1) to have a specific physical content;

2) to be decisive and be consistent with the primary purpose of the system, subsystem or element;

3) to take into account the main deterministic and stochastic factors that determine the level of light industry innovation development;

4) to be critical for the analyzed parameters and sufficiently sensitive to them, at the same time.

The taxonomic method involves the implementation of a certain algorithm.

The original observation matrix is formed. The key indices of the matrix will be the indices of

tangible assets, innovation performance, and resources proposed by the authors hereof.

The matrix characteristics are standardized [19, 123]. This method defines a matrix X in which x_{ij} is the value of the j-th index of the i-th object.

$$X = \begin{matrix} X11 & \dots & X1j & \dots & X1n \\ Xi1 & \dots & Xij & \dots & Xin \\ Xm1 & \dots & Xim & \dots & Xmn) \end{matrix}$$

The input data represented as matrix enables studying changes in or meaning of features in different objects that describe the state of a single object over time.

The input data matrixes for:

1) integral index of tangible assets:

$$X = \begin{vmatrix} 1.007 & 0.033 & 0.002 & 0.002 & 0.002 & 0.002 \\ 1.005 & 0.031 & -0.012 & -0.011 & 0.0005 & 0.004 \\ 0.977 & 0.030 & -0.026 & -0.024 & -0.001 & -0.001 \\ 1.042 & 0.029 & -0.040 & -0.037 & -0.002 & -0.002 \\ 1.034 & 0.028 & -0.054 & -0.050 & -0.004 & -0.004 \\ 1.057 & 0.027 & -0.068 & -0.063 & -0.005 & -0.006 \\ 1.100 & 0.025 & -0.082 & -0.076 & -0.007 & -0.007 \\ 1.115 & 0.024 & -0.096 & -0.089 & -0.008 & -0.009 \end{vmatrix}$$

2) integral index of innovation efficiency:

$$X = \begin{vmatrix} 0.098 & 0.022 & 0.036 & 0.013 & 1.637 & 0 \\ 0.137 & 0.020 & 0.034 & 0.011 & 1.625 & -0.001 \\ 0.144 & 0.019 & 0.033 & 0.010 & 1.613 & -0.002 \\ 0.116 & 0.018 & 0.031 & 0.008 & 1.601 & -0.004 \\ 0.131 & 0.017 & 0.030 & 0.007 & 1.589 & -0.005 \\ 0.131 & 0.016 & 0.028 & 0.006 & 1.577 & -0.007 \\ 0.154 & 0.014 & 0.027 & 0.006 & 1.565 & -0.008 \\ 0.086 & 0.013 & 0.025 & 0.003 & 1.553 & -0.009 \end{vmatrix}$$

3) integral index of resource allocation:

$$X = \begin{vmatrix} 3.042 & 0.84 & 0 & 0.117 & 0.006 & 0.009 \\ 6.007 & 0.823 & -0.016 & 0.105 & 0.004 & -0.003 \\ 0.005 & 0.806 & -0.032 & 0.093 & 0.003 & -0.015 \\ 0.008 & 0.789 & -0.048 & 0.081 & 0.001 & -0.027 \\ 0.012 & 0.772 & -0.064 & 0.069 & 0 & -0.039 \\ 0.002 & 0.755 & -0.08 & 0.057 & -0.001 & -0.051 \\ 0.003 & 0.738 & -0.096 & 0.045 & -0.003 & -0.063 \\ 0.010 & 0.721 & -0.112 & 0.033 & -0.004 & -0.075 \end{vmatrix}$$

Let us set vector K, whose elements represent significance of j-th index.

Let us set vector S whose elements take on the following values:

$$K = (k_1 \dots k_j \dots k_n)$$

-1, if j-th index is index is disincentive; $+1$, if j-th index is incentive.

The incentives are indices that reach the maximum value of the best single criteria. The disincentives are indices corresponding to the minimum value of the best single criteria.

Calculation of a reference point; reference point (vector) is the point formed based on the

Table 3. **Division of Indices into the Incentives and Disincentives**

Integral Indices for the Assessment of Innovation Capacity of Light Industry of Ukraine	Index *
Indices of tangible assets	
Index of increase/decrease in fixed assets	+
Fixed assets cost index	—
Index of introduction of new fixed assets	+
Fixed assets upgrade index	+
Fixed assets retirement index	+
Fixed assets wear index	—
Indices of innovation efficiency	
Index of innovative enterprises	+
Index of the share of innovative products in the total industrial output	+
Index of innovative products introduced	+
Index of technological processes introduced	+
Index of utility model patents (received by domestic applicants)	+
Index of patents of invention (received by domestic applicants)	+
Indices of resource allocation	
Innovation funding index	+
R&D internal funding index	+
Index of innovation funding at the expense of borrowings	+
Index of investments into innovation	+
R&D expenditure index	+
Index of costs of machinery, equipment, software	+

Note. * — «+» — the incentives; «—» — the disincentives

following rule: indices with the maximum values and indices with the minimum values are selected among the incentives and the disincentives, respectively (Table 3).

Ranking of the objects by rate of decrease in characteristics. This stage is important in the system of complex analysis in the following cases:

1) when you need to compare the status of several objects based on a single system of indices;

2) when you need to compare the results of the operation of the object in time.

The ranking is done as follows:

— firstly, it is necessary to determine the distance between the points that characterize the studied objects and the reference point P_0:

$$C_{i0} = \left[\sum (Z_{ik} - Z_k)^2\right]^{\frac{1}{2}}. \quad (1)$$

From the distance between the i-th element and the point, one can make preliminary conclusions about the ranking of the object when assessing the quality of the system. The smaller the distance, the higher the quality of object protection in terms of this characteristic.

The calculations can be refined using the formula

$$D_i = 1 - \frac{C_{i0}}{C_0}, \quad (2)$$

which is interpreted as the closer to the unity is the index value, the higher is the object quality.

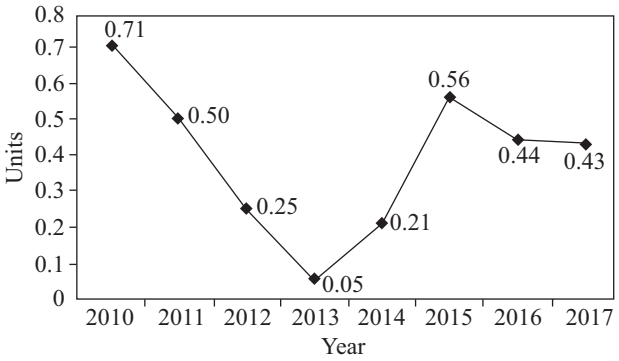

Fig. 1. Simulation of integral index of tangible assets
Source: developed by the authors.

The evaluation structure is characterized by the share of each index in the comprehensive evaluation. The calculated indices of innovation potential of light industry of Ukraine by components are given in Table 4.

Thus, the use of the given system of indices and their thresholds enables making an objective assessment of the level of innovation potential of the light industry. The criterion for its evaluation is to consider the integral index formed on the basis of partial indices grouped by strategic directions. Simulation of dynamics of integral indices of innovation potential of Ukraine's light industry for 2013—2017 is shown in Figs. 1—3.

The fourth stage. The dynamics of the calculated integral indices show that the innovation

Table 4. **Indices for Simulating the Level of Innovation Capacity of Ukraine's Light Industry in 2010—2017**

Year	Index					
	Integral index of tangible assets	Absolute deviation from the indices of 2010 (+/—)	Integral index of innovation efficiency	Absolute deviation from the indices of 2010 (+/—)	Integral index of resource allocation	Absolute deviation from the indices of 2010 (+/—)
2010	0.71	—	0.51	—	0.15	—
2011	0.5	—0.21	0.28	—0.23	0.53	0.38
2012	0.25	—0.46	0.19	—0.32	0.29	0.14
2013	0.05	—0.66	0.17	—0.34	0.11	—0.04
2014	0.21	—0.5	0.23	—0.28	0.21	0.06
2015	0.56	—0.15	0.1	—0.41	0.18	0.03
2016	0.44	—0.27	0.26	—0.25	0.49	0.34
2017	0.43	—0.28	0.15	—0.36	0.37	0.22

Source: developed by the authors.

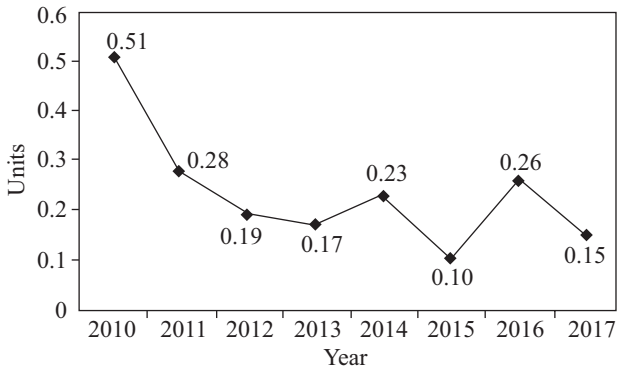

Fig. 2. Simulation of integral index of innovation efficiency
Source: developed by the authors.

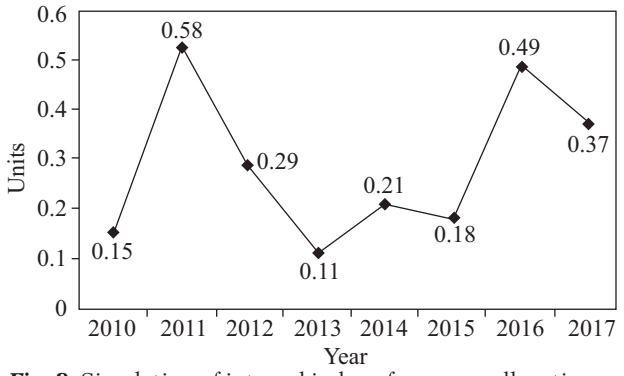

Fig. 3. Simulation of integral index of resource allocation
Source: developed by the authors.

potential of light industry has not been fully utilized for the following reasons:

1) technical and technological backwardness accompanied with moral and physical deterioration of fixed assets and a low share of upgraded ones (3–5%); the lack of advanced chains of technological processing of raw materials, which leads to a high material consumption, energy intensity, and complexity of production and a high cost of production;

2) the lack of advanced infrastructure for the innovation investment market and of complete information base of new technologies, markets, and investors who are willing to implement investment projects; the lack of efficient organization of the production process at most enterprises; the lack of enterprises' own funds; a high cost of borrowings; a rise in the cost of energy resources; the absence of a clear mechanism for setting the purchase prices for raw materials and an insufficient level of their quality in terms of the requirements of the World Trade Organization;

3) the lack of budget funding for R&D and proper support of investment activity both at the central and the local government bodies; the difficulties in obtaining long-term loans for manufacturers;

4) the lack of specific programs to support the development of light industry; the fact that enterprises are operating mainly under job-processing contracts (the give-and-take basis), which leads to dependence of their operation on the seasonal factor, and therefore cannot ensure a stable profitability of enterprises; dependence of the textile industry on imported raw materials.

CONCLUSIONS

Thus, the simulation of the developed integral indices of tangible assets, innovation efficiency, and resource allocation has confirmed the validity and practical significance of the calculations. Proceeding from the above, it can be stated that the proposed methodological approach to assessing the innovation potential of light industry ensures the uniqueness and objectivity of the evaluation results, which allows enterprises to effectively organize innovation activities and to respond to changes in the internal and external environment in a timely manner. The integral indices of innovation potential reflect the aggregate changes that have occurred in the key indices over a given period, which emphasizes the representativeness of the quantitative estimates obtained.

Proceeding from the above, at this stage, the urgent task is to reform the domestic light industry, which should be accompanied with triggering the innovation activities, directing knowledge towards the search of substitutes for conventional raw materials, the development of domestic engineering and chemical industry, advanced techniques for the production of natural raw materials (flax, hemp) and the creation of new management systems that help increase the production efficiency; the improvement of consumer

properties of products through upgrade and modernization of basic production facilities, automation and computerization of processes of designing and manufacturing the products; orientation of production towards the most demanded, advanced models of products; the certification of production and the accreditation of enterprises, the standardization and certification of all products manufactured in light industry; the widespread introduction of material-saving production technologies, the use of environment friendly materials and technologies.

In our opinion, in order to enhance the innovation potential of light industry, it would be advisable to adapt to the forms and instruments of government support of innovative enterprises, which have been tested abroad, in particular: budget funding, grants, soft loans, and preferential tax treatment for R&D works at enterprises and organizations that develop and implement mass production of technological innovations for light industry; to escalate long-term soft lending, introduction of various forms of financial leasing and government subventions to enterprises that implement process innovations using high-tech domestic equipment and machines; and to grant tax exemptions to businesses that reinvest their own income to innovate.

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Received 20.02.19
Revised 22.04.19
Accepted 15.05.19

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МЕТОДИЧНИЙ ПІДХІД ДО ОЦІНЮВАННЯ ІННОВАЦІЙНОГО ПОТЕНЦІАЛУ ЛЕГКОЇ ПРОМИСЛОВОСТІ УКРАЇНИ

Вступ. В ринкових умовах господарювання та загострення конкуренції на промисловому ринку всебічна оцінка інноваційного потенціалу легкої промисловості є актуальною й практично значимою проблемою. На сьогодні не сформовано загального підходу щодо оцінки інноваційного потенціалу промислового підприємництва, а рівень теоретико-методологічного та практичного розв'язання зазначеного аспекту мало впливає на результативність їхньої господарської діяльності. .

Проблематика. Інноваційний розвиток підприємств є недослідженим напрямком, що перешкоджає підвищенню конкурентоспроможності промислових підприємств, посиленню їх конкурентної ринкової позиції. Зважаючи на це, гострою є проблема комплексного оцінювання інноваційного потенціалу легкої промисловості, що забезпечить об'єктивність їхнього результату та дозволить підприємствам ефективно організовувати інноваційну діяльність..

Мета. Розробка методичного підходу до оцінювання інноваційного потенціалу легкої промисловості, використання якого дозволить підприємствам комплексно узагальнити отримані результати та прийняти оптимальні управлінські рішення.

Матеріали й методи. Застосовано методичний підхід до вимірювання інноваційного потенціалу легкої промисловості за допомогою таксонометричного методу.

Результати. Визначено складові елементи інноваційного потенціалу, а також сформовано та обчислено групи показників за критеріями, що визначають його. З метою оцінювання зазначеного показника запропоновано принципи щодо формування системи індикаторів за кожним з напрямків. Виділено основні етапи розрахунків інноваційного потенціалу легкої промисловості.

Висновки. На основі проведених розрахунків узагальнено різноманітні підходи до визначення поняття «інновація» як фундаментального чинника прогресивного соціально-економічного розвитку країни. Використовуючи принципи системного аналізу сформовано систему індикаторів та здійснено моделювання розроблених інтегральних показників інноваційного потенціалу легкої промисловості.

Ключові слова: модель, інноваційний потенціал, індикатори, критерії, легка промисловість.