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# Development Trends of Innovative Activity of Light Industry Enterprises of the Republic of Belarus

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**Abstract.** The article is aimed at economic diagnostics of the current situation and determination of trends and prospects of innovative development of the light industry of the Republic of Belarus. The article examines the level of susceptibility of enterprises of this industry to innovations in 2016-2020, establishes the direct influence of the dynamics of their use on the stability and competitiveness of the national economy in modern conditions. The factors and trends determining innovative activity are identified, the structure of its financing sources is analyzed. Particular attention is paid to the characteristics of promising areas and tools to stimulate innovative activities of light industry enterprises in Belarus. The materials of the article are of practical value and can be used in the educational process in universities of the Republic of Belarus, as well as by state management bodies and enterprises of the national light industry for further improvement of the scientific and practical foundations of innovation activity and justification of effective directions of its development.

## INTRODUCTION

The stable development of the national economy of the Republic of Belarus is largely determined by the stable functioning of light industry enterprises, which at the present stage is largely associated with the activation of their innovative activities.

A lot of attention is paid to it in the scientific literature due to the importance and significance of the problem of innovation. The founders of the theory of innovative development are considered to be J. Schumpeter, P. Drucker, G. Mensch, N.D. Kondratiev. The scientific discussion related to the definition of the essence of innovation and innovative development, new approaches to this problem are presented in the works of foreign scientists I. Ansoff, K. I. Grasmik [1], B. Twiss [2], F. Kotler, et al. Among Belarusian researchers, the most famous are the publications of V.N. Shimov, E.B. Dorina, N.I. Bogdan [3], L.N. Nekhorosheva [4], V.L. Cluny, V.S. Fateev, A.I. Luchenk, V.Yu. Shutilin, V.F. Baynev, M.V. Myasnikovich, L.N. Davydenko, E.L. Davydenko, G.O. Chitay, et al. It is their scientific achievements that have become the basis of the methodological and practical tools for innovative analysis.

At the same time, despite the long period of study, the issues of developing and implementing innovative development programs in modern Belarusian science are not sufficiently disclosed. There was a need for a more in-depth study and understanding of the innovative potential of light industry enterprises of the Republic of Belarus, assessment of its effectiveness. First of all, this is due to a reduction in the growth rate of production and a decrease in the competitive level of this industry.

The indicated negative aspects are caused by the expansion of imported products, the lag of Belarusian enterprises behind the world leaders, which have significant advantages in terms of costs and other indicators. Overcoming these problems requires the implementation of technological, organizational, managerial, socio-environmental, digital and other modernization and innovative solutions. In this regard, the economic diagnostics of the current situation, the determination of trends and prospects for the innovative development of the light industry of Belarus are very relevant.

This article is aimed to study the main trends in the development of innovative activity of light industry enterprises of the Republic of Belarus, to determine the directions and promising tools for stimulating their innovative activity in modern conditions.

## MATERIALS AND METHODS

The main research methods were statistical method, analysis, and synthesis, the method of grouping and comparison, which make it possible to comprehensively consider and evaluate the factors that determine the innovativeness of enterprises in the light industry of the Republic of Belarus.

## RESULTS AND DISCUSSION

The light industry is the most important production complex in the national economy of the Republic of Belarus, meeting the needs of the country's population in the main types of socially significant goods. About 2 thousand enterprises are involved in the light industry of Belarus, providing more than 3% of the total industrial production and specializing in the production of cotton and linen fabrics, fabrics made of chemical fibers, carpets and carpet products, leather goods, shoes, clothing, corset and hosiery products, and other products. The most significant manufacturers are: Conte Spa JLLC, Milavitsa JV CJSC, Mogotex OJSC, Svitanak OJSC, SvetlogorskKhimvolokno OJSC, Elema OJSC, RUPTE Orsha Linen Mill, Mark Formel LLC, Vitebsk Carpets OJSC, Minsk Industrial Leather Association OJSC, Belvest JLLC, Komintern OJSC, Managing Company of the Belarusian Leather and Shoe Company Marko LLC, Baranovich Cotton Production Association OJSC, Kamvol OJSC, Carpets of Brest JSC.

The competitiveness of these and other enterprises of the industry is largely determined, and will be determined by the development of innovative activities. The intensification of innovation implementation processes should become the basis for increasing production volumes and income growth, which will serve as a financial basis for more efficient functioning.

The legislative basis for the development of innovative processes in the Republic of Belarus is the strategy "Science and Technology: 2018-2040", which is based on the continuity and coherence of the fundamental program documents: Directive of the President of the Republic of Belarus dated June 14, 2007, No. 3 "On Priority Areas For Strengthening the Economic Security of the State", decisions of the Fifth All-Belarusian People's Assembly, Decree of the President of the Republic of Belarus No. 166 dated October 22, 2015, "On Priority Areas of Scientific and Technical Activity in the Republic of Belarus for 2016-2020", the Program for the development of light industry for 2015-2020 with a perspective until 2030 (revision dated May 24, 2018). According to these program documents, in order to increase the competitive level of the Belarusian light industry enterprises, overcome their technological lag behind similar economic entities of the leading countries of the world, it is necessary to make better use of the national scientific potential, increase the volume of innovation development, intensify the cooperation of scientific and industrial activities in the industry.

The following indicators reflect the susceptibility of the Belarusian light industry enterprises to innovation and their awareness of the importance of state policy in the innovation sphere (Table 1).

**TABLE 1.** Indicators characterizing the innovative activity of light industry enterprises of the Republic of Belarus in 2016-2020.

Indicators	2016	2017	2018	2019	2020
Light industry enterprises, total units	409	416	466	501	528
including light industry enterprises (production of textiles, clothing, leather and fur products), units	22	26	26	35	38

Source: [5, 6, 7, 8, 9].

The table shows that the number of enterprises engaged in innovative activities in Belarus increased by 119 units

(from 409 to 528) in 2016-2020, including an increase in the number of enterprises producing textiles, clothing, leather, and fur products by 16 units (from 22 to 38).

At the same time, despite the growing number of participants in the Belarusian light industry using innovations, the quality of their innovative activities is not quite high. As we can see from the data in Table 2, the example of such enterprises as textiles, clothing, leather and fur products, producing the main consumer goods of the industry, is particularly indicative in this respect.

**TABLE 2.** The main indicators of innovative activity of light industry enterprises of the Republic of Belarus (production of textiles, clothing, leather and fur products) for 2016-2020.

Indicator	2016	2017	2018	2019	2020
The volume of shipped innovative products (works, services) in comparable prices, RUB thousand	172,676	98,118	114,467	102,598	131,161
Share of shipped innovative products in the total volume of shipped products, %	7.7	4.5	4.9	4.5	6.0

Source: [5, 6, 7, 8, 9].

According to the data provided, the growth rate of the production of innovative products was negative in the analyzed period, amounting to only 76%. Also, there was a decrease in the share of shipped innovative products in the total volume of shipped products from 7.7% to 6%. Nevertheless, there was a positive trend at the end of the analyzed period. Thus, the volume of shipped innovative products increased by RUB 28,563 thousand, or by 27.8%, in 2020, compared to 2019. The share of shipped innovative products in the total volume of shipped products increased from 4.5% to 6%. This circumstance testifies to the increasing susceptibility of national light industry enterprises to innovations as a means of increasing their competitiveness.

As for such an important indicator of the innovation activity of light industry enterprises in Belarus as financing the development of innovations, its main sources are presented in Table 3.

**TABLE 3.** Funding sources of innovative activity of light industry enterprises of the Republic of Belarus (production of textiles, clothing, leather, and fur products) for 2016-2020, RUB thousand.

Years	Funding for technological innovation costs	including at the expense of					other funds
		own funds	funds from the republican budget	local budget funds	credits and loans	foreign investors, including foreign credits and loans	
2016	51,827	18,666	6,196	-	26,962	-	3
2017	15,271	8,878	1,479	4,894	-	16	4
2018	20,969	8,754	2,655	7,599	1,961	-	-
2019	27,007	10,696	11,138	5,173	-	-	-
2020	31,954	11,695	5,720	10,960	3,547	-	-

Source: [5, 6, 7, 8, 9, 10].

As the table shows, the total amount of expenditures on financing innovative activities of light industry enterprises of the Republic of Belarus during 2016-2020 showed significant fluctuations associated with the consequences of the global financial crisis, which had a negative impact on the national economy. Thus, there was a decline in funding until 2018: the total cost of innovation activities for 2016-2018 decreased by RUB 30,858 thousand, or by 59.5%. 2018 demonstrated a positive trend, which has developed by the end of the analyzed period. As a result, the costs of innovative activities in the light industry increased by RUB 10,985 thousand, or by 52.4%, in 2020, compared to 2018. The main sources of financing throughout the analyzed period were the own funds of enterprises (40% of the total funding), funds from the state and local budgets (38%), as well as borrowed funds

(about 22%). The predominance of own funds among the sources of funding of innovative activities of enterprises should be noted as a positive point.

Funding of innovative activities of the light industry through state and local budgets was directed to the implementation of projects in which the state is the main customer, to support national producers in the face of increased international competition, as well as to significant expenditures (large-scale scientific and technical projects of national importance).

The lower demand for loans in comparison with other sources of funding is explained by high interest rates, which reduce the attractiveness of using borrowed capital.

As for such a source as foreign investment, their receipt was noted only in 2017, which indicates the insufficient investment attractiveness of the Belarusian light industry for foreign investors, as a result of which, unfortunately, funding of the industrial enterprises is not included in the sphere of their business interests.

The effectiveness of innovation activity largely depends on the costs of its development and the efficiency of the use of these funds. The data in Table 4 give an idea of the structure of expenditures on innovative activities of light industry enterprises of the Republic of Belarus.

**TABLE 4.** The structure of expenses for innovative activities of light industry enterprises of the Republic of Belarus (production of textiles, clothing, leather, and fur products) for 2016-2020, RUB thousand.

Cost types	2016	2017	2018	2019	2020
Costs of technological innovation	51,827	15,271	20,969	27,007	31,954
including:					
research and development of new products, services and methods of their production (transfer), new production processes	100	122	139	11	95
purchase of machinery and equipment related to technological innovation	43,724	7,535	15,323	19,676	27,790
purchase of new and high technologies	-	1	-	-	-
purchase of computer programs and databases related to technological innovations	-	6	40	-	3
production design, other types of production preparation for the release of new products, the introduction of new services or methods of their production (transfer)	7,986	7,591	5,087	7,268	4,061
training, retraining and advanced training of personnel related to technological innovations	-	8	22	3	-
marketing research related to technological innovations	17	4	22	16	5
other costs of technological innovation	-	4	336	33	-

Source: [5, 6, 7, 8, 9, 11, 13].

The table data allow concluding that there was a reduction in the costs of implementing innovative activities on the background of the consequences of the global financial crisis in the light industry of Belarus in 2017. At the same time, a steady upward trend in innovation costs was formed starting from 2018, as a result of which, these costs increased by RUB 16,683 thousand, or 2.1 times, by the end of 2020 compared to 2017. This circumstance was facilitated by the desire of the industry enterprises to level out the crisis phenomena and enter the phase of economic growth, mainly due to the purchase of production equipment related to technological innovations. The share of these expenses increased from 84.4% in 2016 to 87% in 2020. The second most important direction of innovation costs in the analyzed period was the cost of production design, other types of production preparation for the release of new products, the introduction of new services or methods of their production. Nevertheless, there was not only an absolute decrease in the amount of RUB 3,925 thousand, but also a decrease in their share in the total cost of innovation activity from 15.4% to 12.7%, which should be characterized as a negative phenomenon. Undoubtedly, this circumstance has negative consequences for the prospects for the development of production and economic activities of enterprises of the national light industry and increasing the level of its efficiency, and also entails the threat of reducing their competitiveness in the domestic and foreign markets. A slight increase in the share of total costs from 0.2% in 2016 to 0.3% in 2020 for the research and development of new products, services and methods of their production, new production processes and costs for marketing research related to technological innovations, did not significantly affect the formed trend.

According to the research, the effectiveness of innovation activity is largely determined by the intellectual potential, which is formed by scientific personnel. The Republic of Belarus is traditionally considered a state with significant scientific and intellectual potential, world-recognized scientific schools, and a developed system of

personnel training. Table 5 shows the dynamics of the intellectual potential of light industry organizations of the Republic of Belarus by categories of personnel.

**TABLE 5.** The composition of the personnel of scientific organizations of light industry enterprises of the Republic of Belarus (production of textiles, clothing, leather, and fur products) for 2016-2020.

Indicator	2016	2017	2018	2019	2020
The number of organizations involved in research and development, units	2	2	1	1	2
List of employees involved in research and development, people	15	6	6	6	35
including those with a degree of					
Doctor of Sciences	-	-	-	-	-
Candidate of Sciences	-	-	-	-	-
including researches	12	-	-	-	3

*Source:* [5, 6, 7, 8, 9, 12].

It follows from the above data that, despite the fact that during the analyzed period the presence of organizations involved in research and development in the industry remained practically unchanged, the number of their employees demonstrated positive dynamics, having increased by 20 people, or 2.3 times. Nevertheless, this is clearly not enough for such a large branch of the national economy as light industry. Also, the qualitative composition of researchers is also unsatisfactory: there are no specialists of the highest scientific qualification (candidates and doctors of sciences) among them. Research workers, whose number also decreased from 12 to 3 people by the end of the analyzed period, are not able to ensure the level and quality of research work that is adequate to modern scientific and technical requirements. First of all, this is due to the insufficient level of remuneration of scientists and, as a consequence, the loss of prestige of this type of activity, their moving to business structures, and departure for employment abroad. The impact of these factors forms a negative trend, which contributes to a decrease in the level of innovation in the production and economic activities of the Belarusian light industry enterprises.

## CONCLUSION

This study made it possible to establish that the development of innovative activities of the light industry enterprises of the Republic of Belarus is characterized by both positive and negative trends. The following positive trends should be highlighted: an increase in the number of the Belarusian enterprises engaged in innovative activities in this area, an increase in the volume of production of innovative products and its share in the total volume of production, positive dynamics of expenditures on innovative activities and the number of personnel engaged in scientific research. The following trends dominate among negative ones forming the main problems of the development of the national light industry: the lack of investment projects that are attractive for foreign investment; the unavailability of loans for many enterprises due to high interest rates; reduction of costs for the long-term development of innovative activities (for production design, production preparation for the release of new products and the introduction of new services or methods of their production, the search for opportunities to enter new markets, the use of technical innovations); an insufficiently high level of scientific research due to the lack of highly qualified specialists.

In order to overcome these negative phenomena and activate the innovative development of the light industry enterprises of the Republic of Belarus, it is necessary:

- to develop new and improve basic industrial technologies to improve the quality of products, reduce production costs;
- to develop innovative products with high added value, involving product modifications and modernization of the technological process;
- to develop industrial and university science, create sectoral scientific and testing laboratories on its basis for the needs of all subsectors of the light industry;
- to ensure the principles of sustainable financing of scientific research and development from the state using various sources (the republican budget, innovation funds, venture funds, grants, own funds of enterprises);
- to develop various forms of international scientific and technical partnership, to expand the geography of the search for business partners in the innovation field abroad.

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