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Improving organizational and economic mechanisms for increasing the efficiency of innovation activities

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Abstract. Today, textile industry companies are paying particular attention to research aimed at rationally organizing production processes, creating innovative textile products, and improving the organizational and economic mechanisms of environmentally sustainable and energy-efficient production to increase their competitiveness and meet market demand. In the process of creating a new Uzbekistan, reforms are being carried out to create a competitive textile industry, produce goods in demand on global markets, and create a complete value chain.

INTRODUCTION

In the context of constantly growing demand and need for textile products in the world, it is important to rationally use natural and production resources, as well as to increase synergistic efficiency taking into account innovative technologies. In 2024, taking into account the socio-economic importance of the industry, among the countries exporting textile products in the largest volumes, there are traditional leaders: Pakistan ($19 billion), Spain ($20 billion), the United States ($24 billion), Italy ($34 billion), Turkey ($35 billion), Germany ($40 billion), India ($44 billion55), Vietnam ($43 billion), Bangladesh ($46 billion) and China ($billion).[1]. These countries demonstrate growth trends in textile exports, which is an important factor influencing the global market.

To successfully achieve strategic objectives in improving economic efficiency at industrial enterprises, assessing economic indicators, improving the scientifically based planning and analysis framework for the production process, and studying the factors influencing the full utilization of resources are of primary importance. The primary goal of improving the efficiency of innovative activities at any industrial enterprise is to generate revenue and profit, as well as secure investments to strengthen and develop its financial stability. [2].

EXPERIMENTAL RESEARCH

To successfully achieve strategic objectives in improving economic efficiency at industrial enterprises, assessing economic indicators and improving the scientifically based planning and analysis framework for the production process, as well as studying the factors influencing the full utilization of resources, are of paramount importance. The primary goal of improving the efficiency of innovative activities at any industrial enterprise is to generate revenue and profit, as well as secure investments to strengthen and develop its financial stability.

To implement an innovation mechanism in textile companies, it is necessary to consider the environment at both the micro and macro levels. To develop an innovation mechanism, each industry must develop its own strategy and create an innovative product, as well as set marketing and market positioning goals. In the long term, this will lead to solutions for many sectors of the economy, medicine, ecology, mechanical engineering, road construction, agriculture, and others.

The largest share of textile exports went to the Russian Federation ($910.7 million, 31.1%), China ($636.3 million, 21.7%), Turkey ($461.1 million, 15.8%), and the Kyrgyz Republic ($401.1 million, 13.7%). These countries

accounted for 83% of total exports ($1.6 billion). Uzbekistan's textile exports totaled $56.5 million at the end of 2023 [3].

Uzbekistan exported textiles to 56 countries. In January-February 2024, Uzbekistan exported textile products worth $519.4 million. This figure accounted for 14.3% of total exports, an increase of 3% compared to the same period last year. [4].

The improvement of organizational and economic mechanisms for increasing the efficiency of innovation activities was developed based on an econometric model for improving the system of measures to increase the efficiency of innovation activities in textile enterprises, the development of new methods for the reuse of textile products, and forecast indicators for 2022-2030.

Efficiency functions are used to study the effective use of innovative technologies in textile manufacturing companies. An efficiency function (SF) is a mathematical function that represents the relationship between the quantity of a product produced and the cost of producing that product. In this function, the dependent variables are the volume of output produced, and the dependent variables are the volume of resources consumed or used.

An innovative production process is a production process that integrates raw materials (XI), capital (K), and labor (L) based on a specific technology. The inputs to the process are raw materials and supplies (XI), capital (K), and labor (L), and the outputs are finished products.

At the beginning of our study, we will examine the sequence of factors influencing the production process at “Hilale Textiles” LLC and “Takro Osiyo” LLC. [5].

RESEARCH RESULTS

To create the econometric analysis for the enterprise, we used indicators of total cost (NV), resource intensity (RI), sales revenue (SP), wages (SF), and the value of fixed assets (LTA). Based on this case,

Y – exports (E)

X1 – sales revenue (SP)

X2 – wages (SF)

X3 – value of fixed assets (LTA)

X4 – resource intensity (RI)

X5 – technical condition (TS)

TABLE 1. Results of autoregressive analysis in textile enterprises.

	Standard error	**Plural R^2**	**Individual R^2**	**F statistics**	**P probability**
dx1	972500	0,9381	0,6364	16,75	6,41305
dx2	165400	0,9367	0,7775	7,366	5,00483
dx3	229700	0,9889	0,8235	6,022	4,09428
dx4	445900	0,9299	0,9909	16,17	3,92805
dx5	445900	0,9299	0,7909	16,17	2,92805
dx6	386250	0,9821	0,5276	8,844	0,001929
dx7	325998	0,9598	0,4474	9,541	0,001381

1	Standard error	0,0044
2	Plural R^2	0,9378
3	Individual R	0,9493
4	F statistics	53,78
5	P probability	0,0384

According to calculations performed in the software, the coefficient of determination for AKTM is R=0.9493, and the multiple R2=0.8378. The calculations show that the final cost indicator is 74 percent dependent on other indicators, and 26 percent can change as a result of other, unforeseen factors. We will study the process of efficient resource utilization at an enterprise operating in the textile industry of the Republic of Uzbekistan using the Cobb-Douglas production function. Using the statistical performance indicators of Hilale Textiles LLC for the relevant years, we will compile production functions based on them.

The Cobb-Douglas production function (CP) is a function that expresses the dependence of the volume of production of net product (net income) on the amount of capital and labor resources used (the costs of their use) and has a multiplicative form.

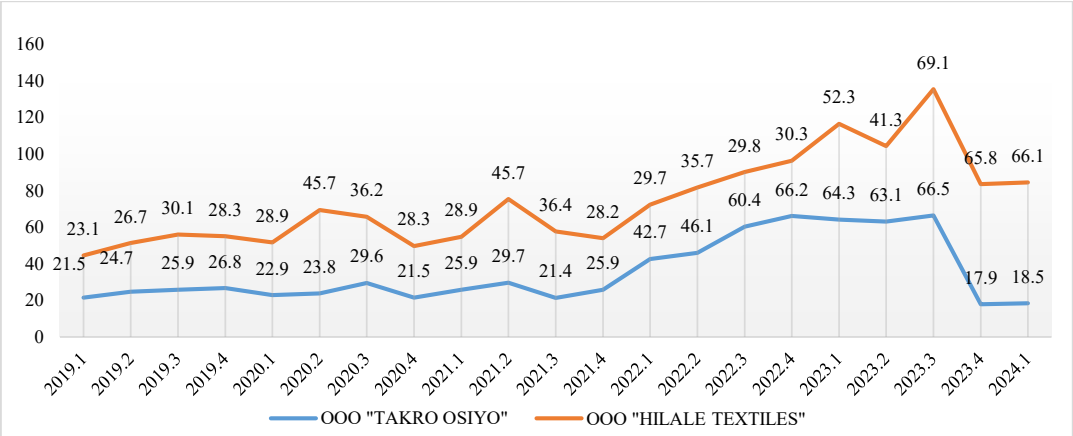

FIG. 1. Volume of innovative production at the enterprises of Takro Osiyo LLC and Hilale Textiles LLC .

Therefore, from the Cobb-Douglas production function of rank (2*), calculated based on enterprise data, it can be seen that if the value of fixed assets (K) at an enterprise increases by an average of one percent, then the enterprise's gross product (Y) can increase by an average of 0.67 percent. While the number of employees at the enterprise (L) increases by an average of one percent, the enterprise's gross product (y) increases by an average of 0.41 percent. [8].

From the Cobb-Douglas production function with a potentiated power, it can be seen that if the value of fixed assets (K) at an enterprise increases by an average of one percent, then the enterprise's gross product (Y) can increase by an average of 0.73 percent. While the number of employees at the enterprise (L) increases by an average of one percent, the enterprise's gross product (Y) increases by an average of 0.46 percent. [9].

Let's determine the average labor productivity at Hilale Textiles LLC for 2019-2024, shown in Fig. 1

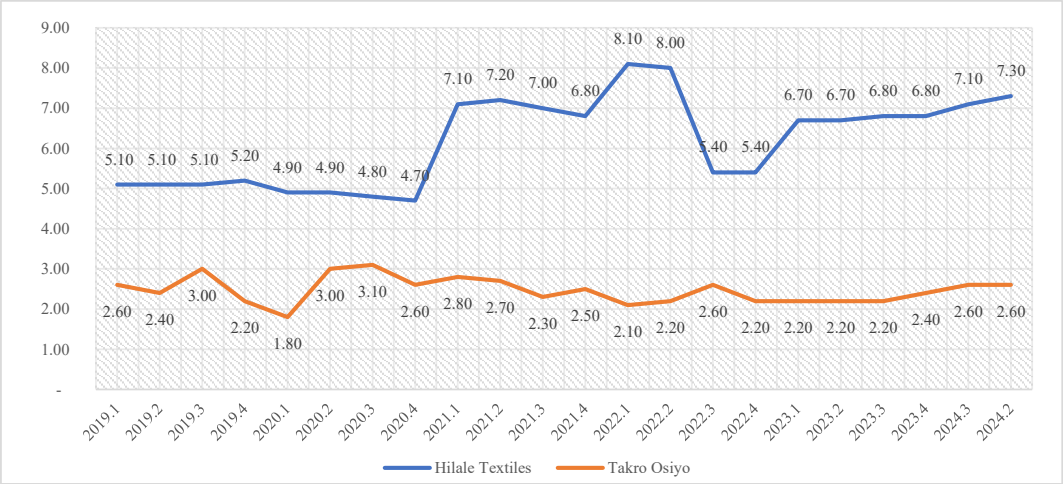

FIG. 2. Average estimated resource volume at the enterprises of Takro Osiyo LLC and Hilale Textiles LLC

The calculation result and the multifactor econometric model show that the volume of production (lnX1) at the enterprise Hilale Textiles LLC increases by 1 percent, and the volume of sales of products (lny) of the enterprise increases by an average of 3.12 percent.

Thus, since Dscore>dwu, there is no autocorrelation in the residuals of the resulting factor (product sales volume – (lny)). The analysis results show that the efficiency level has changed significantly due to the increase in sales volumes at the enterprise. [10].

During the forecast period, production volume is expected to grow by 2%. The growth rate is 3.26 times in the fourth quarter of 2024 compared to the fourth quarter of 2023. The main reason for this is the increase in production volumes at the enterprise.

The average increase in the efficiency of innovative activities at the enterprise in 2018-2024 was 3.06 percent (even in 2019 it was 5.27 percent, in 2020 it was 5.30 percent). According to the enterprise's development strategy, the share of innovative activities is expected to increase by 2.4 percent. This, of course, will ensure production efficiency and save certain financial resources. During the forecast period, it can be observed that the enterprise's costs are decreasing by 2/3.

During the forecast period, it is possible to see an increase in the volume of production at the enterprise in the 4th quarter of 2025 compared to the 1st quarter of 2022 by 1.07 times. The volume of profit in production at the enterprise is shown to increase by 2.3%. The wages of employees at the enterprise increased by 8.53 times from the 1st quarter of 2019 to the 4th quarter of 2019. If in the 4th quarter of 2019 the wages at the enterprise amounted to 266607.5 million soums, then in the 4th quarter of 2025 it is observed that it will amount to 770235.9 million soums and the growth rate is 2.89 times. The volume of wages at the enterprise has a growth trend during the forecast period.

The total expenses allocated to exported products at the enterprise for the quarters of 2018-2024 amounted to an average of 8.3475 million soums. During the forecast period, it is expected to reach 14.8429 million soums. This indicator indicates an increase of 2.75 times compared to the 4th quarter of 2024.

The conducted research shows that in terms of the volume of sales of products at textile industry enterprises we will obtain the following forecast indicators. [11].

Uzbekistan is the first country to receive GSP+ status in the last 5 years and the ninth country to receive GSP+ beneficiary status after Armenia, Bolivia, Cape Verde, Kyrgyzstan, Mongolia, Pakistan, the Philippines and Sri Lanka.

The application of the GSP+ system creates additional opportunities for increasing the volume of trade between the European Union and Uzbekistan, as duties will be eliminated on a number of important export goods. The number of goods that Uzbek manufacturers can export duty-free under the GSP+ scheme to the European Union countries has reached 6,200. This is twice as many as before, including more than 1,000 types of all types of textile products, including:

-cotton yarn;
-yarns, non-woven fibers;
-carpets;
-fabrics, textile materials, canvases;
-finished textiles, clothing;

The textile industry is one of the promising sectors of the Uzbek economy, increasing its export potential by supplying finished products with high added value to foreign markets. The volume of exports of textile products produced in Uzbekistan is increasing every year, and its geography is expanding.

CONCLUSIONS

Based on the analysis, the EU has currently developed and implemented harmonized standards (directives) providing for technical regulations and product labeling procedures for more than 30 types of products entering the European market. Efforts are needed to establish investment cooperation with major business associations and EU financial institutions to further expand production capacity in the republic for new types of products that are highly valued in the European market and to establish their future supply to EU member states.

Improving the efficiency of innovation activities at textile enterprises was used to justify the long-term development of Hilale Textiles LLC and Takro Osiyo LLC based on projected indicators for improving the mechanism for 2023-2030. The proposal calls for an increase in the overall efficiency of innovation activities by 2.3 percent by 2030 due to factors such as the efficient use of internal capacities.

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