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Improving the methodology for managing innovation activity risks in textile enterprises

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Abstract: the article presents an updated methodology for effective management of risks associated with innovational activities in textile enterprises. It examines ways to identify, assess and mitigate possible risks in the planning, implementation and control processes of innovation projects. Through improved methodology, enterprises can more effectively manage innovation activities and increase their competitiveness.

Key words: project planning, globalization, digitization, innovation, efficiency, innovation potential..

INTRODUCTION

The textile industry, as one of the promising sectors of the economy of the Republic, includes several industries that produce finished products, and at the same time a large part of the population employed in it is occupied, which, in turn, serves as the basis for employment of the population. But at the same time, the lack of demand of the structure of the textile industry, low production efficiency and product quality, imbalances in the economic and social development of the network require changes to it, an integrated approach to making innovations. The enterprises of this sector are noteworthy not only in the magnitude of Labor consumption, but also in the fact that free work is carried out in almost all regions of the Republic on the location of its production, opening branches and small enterprises. We can include factors that slow down the development of textile industry enterprises, such as low labor productivity, the inability to make good use of existing technologies and technologies, the lack of nutrition of skilled workers and existing ones, as well as a low level of qualification. In addition to these, the fact that the cost of raw materials and materials supplied to enterprises increases faster than the cost of finished products also has a negative impact on the development of the industry. Therefore, it is necessary to develop all sectors of the industry, textile and sewing, in general, producing finished products, and to ensure that these products do not border on the territory of the Republic, but occupy an alternative place in the export structure, and to ensure the growth of this export volume.

The risks of innovative activities in textile enterprises are understood as uncertainties and potential losses associated with the introduction of new technologies, products or processes. These risks can be divided into financial, technological, market and organizational types.

Financial risks are associated with the financing of innovative projects and the receipt of expected income. Technological risks include problems in the introduction of new equipment or production methods. Market risks, on the other hand, represent the uncertainty in demand for new products.

The process of determining the risks of innovation activity consists of several stages. Initially, a working group is formed, consisting of the management of the enterprise and specialists. This group uses the following methods to identify potential risks:

- Brainstorming sessions
- SWOT-analysis
- Delphi method
- Network diagrams
- Expert surveys

A list of identified risks is compiled and for each risk, its causes, potential consequences and level of impact are assessed. This process is repeated regularly and the list is updated as new threats are discovered.

Quantitative and qualitative methods are used to assess the risks of innovative activities. Quantitative methods represent the likelihood of risk and potential damage in numbers. Qualitative methods, on the other hand, classify risks according to the level of importance, based on the opinion of experts. The textile and sewing-knitting industry is of strategic importance for the economy of our country. According to the information of the State Statistics Committee of Uzbekistan, in January-July 2022, textile products worth 1916.5 million dollars were exported from Uzbekistan, which made up 17% of the

total export supply. Compared to January-July 2021, it increased by 19.2 percent. The main share in the export of textile products is cotton wool (51.3%), as well as ready-made knitwear and sewing products (25.1%). In January-July 2022, more than 494 types of textile products were exported to 67 countries of the world. The role of light industry in the economy of Uzbekistan has increased significantly: its share in the gross domestic product is 8.8 percent, in the volume of production of industrial products -14, 8 percent, and in the volume of production of non-food consumer goods -44 percent. Today, more than 500,000 people work in industrial enterprises. Russia remains one of the largest and most reliable partners of Uzbek textile workers. According to official statistics, textile products worth $698.3 million were sent to the Russian Federation in seven months of 2022, which increased by 35.6% compared to the same period of 2021. The number of Uzbek exporters in the Russian Federation increased by 1.7 times, and the export volume increased by 2.7 times (up to 960 million dollars) during the 5-year period of activity of the "Uztoqimaliksanoat" association. Cooperative relations brought together more than 400 manufacturers of yarn, gauze and knitted fabrics; Investments covered 44 enterprises in Russia and 31 enterprises in Uzbekistan.

Research methodology

In the implementation of these research works, widely used methods in scientific research methodology were used. When studying the trends of innovative activities of textile enterprises, it is effective to use deduction or induction methods in the order from general to individual and vice versa, and the abstract-man-technical method of thinking is important in the systematic analysis of the process. In the process of scientific analysis, these scientific research methods, in particular, observation, generalization, grouping, comparison, analysis, and synthesis and analysis methods were widely used.

Literature review

Research issues of innovative management of employees in companies B. Triker, M. Weber, I. Ansoff, P. Doyle, D. Collis, S. Montgomery, L. Edwinson, S. Malone, R. Kaplan, D. Norton, D. It is deeply researched in scientific works of foreign economists such as Johnson, K. Sholes.

Formation of innovative management in industrial enterprises, features, economic and legal issues of personnel management in enterprises by CIS economists V.V. Avdeev, A.M. Babashkina, Yu.T. Bazarov, L.V. Volkov, P.V. Juravlev, L.V. Kartashova, I.A. Kokorev, V.M. Kolpakov, E.B. Morgunov, I.I. Mazur, D.M. Mikhaylov, I.N. Gerchikova, M.D. Kruk, M.V. Dokuchaev and others have studied to a certain extent in scientific research. Increasing the competitiveness of the national economy of Uzbekistan, improving the theoretical and practical aspects of personnel management in enterprises, as well as the theoretical and methodological foundations of organizing the activities of textile industry enterprises, one of the leading branches of light industry S.S. Gulyamov, K.Kh. Abdurakhmonov, M.A. Makhkamova, A.Sh Bekmurodov, M.R.Boltabaev, Sh.I.Otajonov, I.Yu.Umarov, N.Q.Yoldoshev, D.N.Rakhimova, A.E.Razikov, U.Sh.Yusupov and a number of other scientists.

For this reason, in this article, we tried to propose the problems of implementing innovative activities in our textile enterprises, their solutions, and the evaluation methodology of innovative activities. The experience of the world and our country confirms that the future of the network is impossible without accelerating innovation activities. It is desirable to combine all innovation resources in textile enterprises and control how and how effectively they are used in the enterprise's activities. The research conducted in the practice of textile and sewing-knitting enterprises located in Tashkent shows the urgency of solving this problem.

In the ARIMA model, the correlation function graph is a correlogram.

p – AR model order: (PACF) order determined using the correlogram of the partial autocorrelation function. Here: the correlation between y_t and y_(t-k) is used:

$$y_t = \beta_0 + \beta_1 y_{t-1} + \cdots + \beta_2 y_{t-2} + \cdots + \beta_k y_{t-k} + \varepsilon_t , \quad (1)$$

d - (I) integrated series order: an order determined by the amount of differences to pass from a non-stationary series to a stationary series.

q – MA model order: (ACF) order determined using the correlogram of the autocorrelation function.

$$r_k = AIC + \frac{\sum_{t=k+1}^{n} (y_t - \bar{y})(y_{t-k} - \bar{y})}{\sum_{t=1}^{n} (y_t - \bar{y})^2} , k = 1,2, \quad (2)$$

To determine the d order of the integrated time series, the Dickey-Fuller test is used :

$$\Delta_y = \alpha + \beta_t + Y y_{t-1} + b_1 \Delta y_{t-1} + \cdots + b_{p-1} \Delta y_{t-p+1} + \varepsilon_t , \quad (3)$$

Here: α – is a constant, it is considered to have a unit root (α=1); β – trend coefficient; p – autoregression lag.

This test is used to express the characteristics of non-stationary time series. If the time series is not stationary, then it can be made stationary by slightly shifting the time series:

$$\Delta_y = y_t - y_{t-1}$$

Analysis and results

In the era of globalization and digitalization, the need for natural and high-quality textile products is increasing, on the one hand, the consumer culture of people is increasing, and on the other hand, it requires the rational use of limited resources. In this case, not only developed countries, but also other developing countries are forced to pay special attention to the development of production according to innovative technologies and to increase the level of environmental safety [1]. Today, the textile industry in our Republic is one of the few industries that produce ready-made products. In the development strategy of the new Uzbekistan for 2022-2026, the task of "doubling the volume of production of textile industry products" is set. A number of reforms are being carried out in our country regarding the development of the industry. For this purpose, decrees and decisions on the development of this industry are being adopted by the President and the government of our country. In particular, PF-165 dated June 6, 2022 of the President of the Republic of Uzbekistan "On approval of the innovative development strategy of the Republic of Uzbekistan in 2022-2026", PF-53 dated January 21, 2022 "On measures to encourage the production of deep processing and finished products with high added value in textile and sewing and knitting enterprises, as well as their export", PF-5989 of May 5, 2020 " "Decision on measures to further expand the production of deep processing and finished products with high added value in textile and sewing and knitting enterprises, as well as financial support for their export" and other regulatory legal documents can be brought.

As a result of the study of the innovative development of the textile industry in Uzbekistan, it can be concluded that the main problems of the strategic development of the textile industry in Uzbekistan are: imperfection of legislation in the field of consumer goods market; lack of highly qualified specialists; low level of investment and innovative activity of the industry; Solving these problems should be focused on increasing the economic growth of the industry, increasing the share of local products in the domestic market, increasing the profitability of manufactured goods and services, and developing modern technologies that provide the textile industry with high-quality products . qualified specialists. The establishment of its own design center specializing in the development of modern clothing models in our country, taking into account national traditions and climatic conditions, was one of the important stages of the development of the textile industry of our country. Specialists of the center are constantly studying the latest world fashion trends, conducting marketing research in foreign and domestic markets. Modern design, along with high technical characteristics, makes the products of light industrial enterprises more attractive and allows them to take their place in the international market and compete at a high level with world brands. project is being implemented. This is the future of the textile industry of Uzbekistan - an educational and scientific textile technology park. Here, personnel are trained for new forms of textile enterprises, which are equipped not only with modern equipment, but also with the use of the latest information and communication technologies. In the innovative direction, research is being conducted to create new fabrics that are popular in the world market, waterproof, non-staining, non-deformable, non-shedding.

Model 1: ARIMA, using observations 2012-2022 (T = 11)

Dependent variable: (1-L)^2 Y

Standard errors based on Hessian

	Coefficient	*Std. Error*	*z*	*p-value*
const	209.393	233.102	0.8983	0.3690
phi_1	−0.271765	0.284768	−0.9543	0.3399

Mean dependent var	185.3527	S.D. dependent var	1051.237
Mean of innovations	−15.82750	S.D. of innovations	960.5022
R-squared	0.981196	Adjusted R-squared	0.981196
Log-likelihood	−91.18871	Akaike criterion	188.3774

Schwarz criterion	189.5711	Hannan-Quinn	187.6250

	Real	*Imaginary*	*Modulus*	*Frequency*
AR				
Root 1	-3.6796	0.0000	3.6796	0.5000

TABLE 1 Results of lag values obtained in ARIMA

The ARIMA model is expressed in the form of the following formula:

$$\bar{y}_t = c + \alpha_1 y_{t-1} + \cdots + \alpha_p y_{t-p} + \beta_1 e_{t-1} + \cdots + \beta_q e_{t-q} + e_t \,, \quad (4)$$

Here: y_{t-1} ,..., y_{t-p} – the previous actual values of the time series, where the actual values are from 1 *p*, e_{t-1},..., e_{t-q} shifted to lag value,

-the prior errors of the model are shifted from the true by a lag value of 1 to *q*,

c - model constant, $\hat{y}_t$ – the forecast value of the time series.

Conclusion

We have a lot of things that we need to do. Only domestic workers are able to work in the foreign market. It is said that all types of raw materials needed for weaving are produced in our country, instead of exporting raw materials, we need to export more of them. It is necessary to produce innovative products (services) according to market demand , it needs to be managed. We have confirmed the innovative activity of domestic textile industry professionals in terms of productivity and process innovations, but it has not been observed in the field of marketing and marketing innovations. It is necessary to devote more effort to the development of marketing and production innovations in the management of the innovative spirit of the domestic textile industry. If the nature of the event is to teach the domestic textile industry, the domestic textile industry, marketing, and other technological innovations, then the innovative activity of the people, the children of the domestic textile industry.

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