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THE DEVELOPMENT COMPETITIVENESS OF SILK INDUSTRY IN NAMANGAN REGION

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Abstract: Nowadays, world's practice shows that cluster is not only means towards to the goals of the industrial policy, but is a powerful tool for the stimulation of regional development that finally can lead to the improvement of the trade balance of region, reinforcement of the employment and etc. The article studies the necessary of cluster system, its essential features in our country. In addition, analyzed effective ways of increasing fodder base of sericulture in region Given recommendations and suggestions of the improvement of silk clusters in Namangan regions.

Keywords: silk industry, sericulture, necessary of clusters, regional silk clusters, geographic territory, group of firms, complementary companies, technological chain, clusterization , fodder base of sericulture.

Introduction. Demand for silk raw materials, especially silk products is growing in the world market. In accordance to International Sericulture Commission, in recent years, about 153,000 tons of cocoon raw materials have been grown in the world. For instance, intensive cultivation of cocoons is mainly due to the Republic of China (104 thousand tons), India (29.2 thousand tons) as well as the third country Uzbekistan (21,4 tons). We think that the demand for silk products is expected to increase in the future according to the rapid growth of the world's population [1].

At present day, in agriculture complex of the Republic of Uzbekistan, especially, sericulture is one of the special branches. Our country ranks along quintuples of the producers of silk-product in the world and certainly, this is connected with presence raw materials resource. In our country is carried out transition on cluster system on agricultural branches. The head of the state of our country has especially paid attention to step by step to proceed on cluster 's method on silk branches and the organizations of manufacture.

In the initiative of the President of the Republic of Uzbekistan Sh. Mirziyoyev issues of clustering of important sectors of our economy have risen to the level of state policy. One of the important tasks is to establish a silk cluster in the market condition through the rapid development of the cocoon industry, the introduction of a cluster system that covers the entire technological chain from the process of growing cocoons to its sale [2].

As we know, clusters suggest that a good deal of competitive advantage lies outside companies and even outside their industries, residing instead in the locations at which their business units are based. This creates important new agendas for management that rarely are recognized. For example, clusters represent a new unit of competitive analysis along with the firm and industry.

Material and methods. In this article is used the laws of the Republic of Uzbekistan, the resolution of the President of the Republic of Uzbekistan, as well as the theoretical foundations of clusters. Analyzed problems that occurred in silk industry. As a

methodology of research is practical econometric analysis and observation methods were used.

Nowadays, all the legal resolutions for the organization of clusters and organizational and economic conditions are created by our state. For instance, over the four years, several resolutions are signed by President of our country [3]. For instance, Resolution of the President of the Republic Uzbekistan №. PP-2856«On Measures to Establish Activity of the Association of Uzbekipaksanoat» in 2017, Resolution of the President of the Republic Uzbekistan. №. PP-4047 "On Additional Measures to Support the Accelerated Development of the Silk Industry in the Republic of Uzbekistan in 2018, Resolution of the President of the Republic Uzbekistan №. PP-4441 "The further development of sericulture and deep processing of production" in 2019, Resolution of the President of the Republic Uzbekistan №. PP-4567 "On additional measures to develop the silkworm feed base in the silkworm industry" in 2020. These resolutions will be make opportunities to increase and establish of the silk industry.

Therefore, the effective use of the cluster system is established in the main sectors of the world. The knowledge about cluster theory has advanced on the publication of the Competitive Advantage of Nations by Michael Porter who helped trigger a large and growing number of formal cluster initiatives in countries, states, cities, and even entire regions [4].

As it is said above, the conception of "cluster" has been entered into the economic literature by Michael Porter according to his scientific research that cluster is the groups of the interconnected companies concentrated to a geographical attribute, specialized suppliers, suppliers of services, firms in corresponding branches, and also the organizations connected to their activity in certain areas competing, but at the same time leading teamwork [5].

Today, the word "cluster" is multiple-valued, uniform term. The clusters began to develop in the foreign countries, we may see a lot of scientific researches about theory of the cluster which belongs to foreign scientists. Firstly, we need to mention about a professor of the Harward Business School M. Porter, who considered theories about clusters. Secondly, in addition to the problems of functioning clusters are engaged by other foreign economic scientists S. Stern, M. Delgado, G. Lindvist, S. Silvell, A. Saxenian, T. Anderson, S. Schwaag, E. Bergman, E. Feser, Ch. Ketels, etc. On researches, these foreign scientists show that the laws and features of functioning cluster are enough described.

Data collection. Currently, the development of a competitive environment in the markets through the establishment of regional clusters in Namangan region that formation of new competitive structures and enhances the competitiveness of cluster-based enterprises. When organize clusters, the main focus is on microeconomic factors which efficient use of natural resources by local enterprises, highly skilled workforce, maximum use of public and innovative infrastructure services and opportunities for attracting investments will be created.

The farms engaged in the production of alive cocoons, silk processing enterprises, silkworm enterprises and other silk goods producing enterprises have sufficient potential, there are opportunity to combine the activities of these economic entities on the basis of a cluster system in Namangan region.

In our opinion, one of the main goals of the silk cluster are the development of the formation of new enterprises in the silk industry, equipped with modern techniques, strengthening the industry's food supply, introduction of effective methods of silkworm care and production of quality cocoons, application of innovations in production of the product creation and export them

First of all, the used of obsolete equipment in the enterprises of the silk industry. Secondly, in recently years the fodder base of the sericulture in Namangan region has decreased. In 2021, the amount of mulberry trees were 5897,7 mln. In addition, 2804,0 hectares of mulberry plantations. The following year, food supply continued falling down. In 2022, the volume of the mulberry trees got to 3723,3 mln. as well as mulberry plantation 2854,0 of mln.ha. The fodder base of the sericulture decrease by 68 % compared to 2021.

- insufficient supply of cocoon raw materials in silk processing enterprises;
- higher production costs that effects profitability of silk processing enterprises;
- insufficient silkworm seeds in producing by silkworm enterprises;
- low level of motivation of the population and workers to participate in the cocoon season by enterprises and etc.

In our opinion, indicated factors will be worse effect to development of silk cluster in Namangan region, especially, fodder base of sericulture industry. We think that there will be to create a market mechanism by increasing the mulberry leaf and its productivity which is a source of food for the silk industry, actually, to create new business opportunities for additional income through the production and sale of mulberry leaves in sericulture industry.

Analysis and results. In this research study, we are going to create opportunities for additional income and employment through the expansion of new business activities. As a result, the final product (mulberry leaf) is prepared and delivered to customers.

To prepare this, what should be done to increase the source of food and what costs should be incurred:

- identification and formation of factors influencing the increase of food resources;
- verification of data on the basis of the factor plan by economic methods in a statistical sequence;
- to give practical results on the basis of the received analyzes.

In particular, the increase in the supply of food in the silk industry depends primarily on the costs incurred in it: the main cost (mulberry navigation) and material and technical costs, as well as the amount of investment. We select these factors as factors affecting nutrition and express them in the following unknown form $X_{1,2,3 \dots n}$:

- main costs (sorts of mulburry) - X_1;
- material and technical costs - X_2;

- amount of disbursed capital (credit) - X_3

Table 1. Complete factor plan and its values in increasing nutrient supply

№	Factors	X_{min}	X_{max}	$\Delta = \frac{X\max - X\min}{2}$	$Xcp = \frac{X\max + X\min}{2}$
1	main costs, mln.sum	20,0	25,0	2,5	22,5
2	material and technical costs, mln.sum	3,7	10,5	33,4	7,14
3	amount of disbursed capital (credit), mln.sum	60,0	300,0	120,0	180,0

Table 2. Check the output parameters of the selected factors.

U_1-feed quantity, tons

№	X_1	X_2	X_3	Y_{ucp}
1	-	-	-	8049,2
2	+	-	-	9582,4
3	-	+	-	8854,1
4	+	+	-	10540,6
5	-	-	+	9659,0
6	+	-	+	11498,9
7	-	+	+	10624,9
8	+	+	+	12648,7

We will process the above results in a separate statistical method in a specific sequence for each of the factors:

- In the same number of parallel tests, we check the homogeneity of the variance, the scattering of the results.

$$S_u^2 = \frac{\sum_{p=1}^{m}(Y_{up} - Y_{ucp})^2}{m-1} = \frac{\sum_{p=1}^{2}(Y_{up} - Y_{ucc})^2}{1}. \quad (1)$$

- Check on the Cochrane criterion:
- We calculate the regression coefficients by the following formula:

$$b_0 = \frac{1}{N}\sum_{u=1}^{N}\bar{y}_u,\ b_i = \frac{1}{N}\sum_{u=1}^{N}X_{iu}\bar{y}_u,\ b_{ij} = \frac{1}{N}\sum_{u=1}^{N}X_{iu}X_{ju}\bar{y}_u,\ b_{ijk} = \frac{1}{N}\sum_{u=1}^{N}X_{iu}X_{ju}X_{ku}\bar{y}_u \quad (2)$$

-The numerical coefficients of the regression coefficients have the following form:

b_0 := 10182.3; b_1 := 925.7; b_2 := 484.9; b_3 := 885.6; b_{12} := 44.1;

b_{13} := 80.4; b_{23} := 42.2; b_{123} := 3.8;

-Using these values, we determine the coefficients and write the regression equation:

$$\hat{y} = b_0 + \sum_{i=1}^{k} b_i x_i + \sum_{i<1}^{k} b_{ij} X_i X_j + \sum_{i<j<l}^{k} b_{ijl} X_i X_j X_l \quad (3)$$

$$y=10182.3+925.7x_1+484.9x_2+885.6x_3+44.1x_1x_2+80.4x_1x_3+42.2x_2x_3+3.8x_1x_2x_3$$

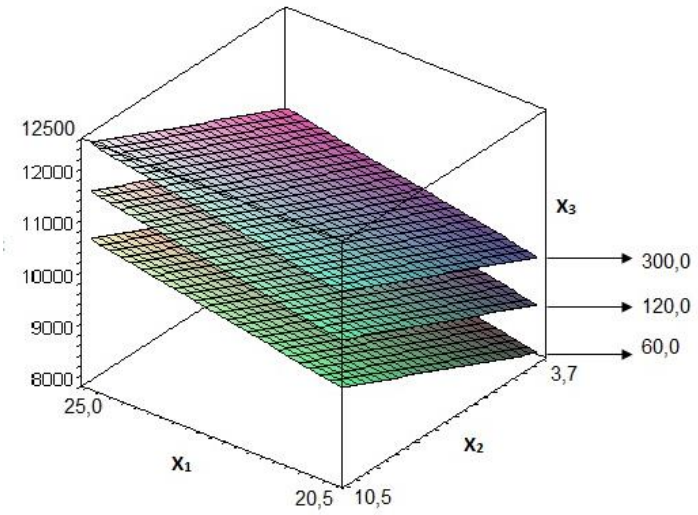
On the next step, we examine the significance of regression coefficients on the student criterion by this formula.

$$\Delta b = t_{\alpha,k} \frac{S_y}{\sqrt{N}} \quad , \qquad (4)$$

Then, we check the adequacy of the regression equation on the Fisher criterion, we use the formula of residual variance:

$$S_{oc}^2 = \frac{\sum_{u=1}^{N} (\bar{Y}_u - Y_{cpu})^2}{N-k-1} = \frac{\sum_{u=1}^{8} (\bar{Y}_u - Y_{cpu})^2}{8}; \quad (5)$$

As a result of the above econometric-mathematical calculations, we make the following dynamic model.



Note: X_1-main cost (sorts of mulburry), X_2- material and technical costs, mln.sum and

X_3 – amount of disbursed capital (credit), mln.sum, Y- fodder base (tons).

Figure 2. A dynamic model in providing a fodder base of sericulture.

Discussion. In this model is stated the relationship of the interrelationships between the factors influencing the increase of the food source in the silk industry was investigated by econometric methods. Based on the improvement of the selected factors X_1, X_2, X_3 in this model, when the minimum values of the main (sorts of mulberry tree) X_1, material and technical costs X_2 and the amount of capital to be mastered X_3 are introduced in the first year, the resulting Y-feed is 11.0 tons. In subsequent years, when the average corresponding values of factors X_1, X_2, X_3 are introduced, the amount of Y-

feed will increase by 12.0 tons. When the maximum values of the selected factors X_1, X_2 are introduced, the amount of Y-feed increases by 12.5 tons. This is explained by the fact that the supply of food in the network has a high tendency to form. Also, in the coming years, the amount of investments X_3 will increase by 300.0 million soums.

In our opinion, in the effective development of the silk industry in Namangan region, first of all, it is important to provide the necessary food supply and the supply of quality cocoon raw materials to enterprises. As a result, silk processing plants will be able to operate at full capacity. This, in turn, affects the increase in the volume of silk products.

Conclusion. Today, due to the expansion and development of this new business, it will be possible to attract family workers (house workers), individuals, businesses engaged in the supply, reproduction and sale of food to the industry, and in the future it will be possible to:

- there is an opportunity to create new intensive methods of mulberry, the widespread introduction of innovations (varieties and agro-techniques);
- when increasing the source of food, there is an opportunity to receive soft loans (commercial bank) or on a partnership basis, at their own expense;
- the population in the regions will be organized additional employment in mulberry groves;
- increasing the amount of food source by the population, the interest in gaining income through its sale, and the direction of its development will expand;
- mulberry leaf shortage will be prevented due to the provision of food sources in the regions;

the level of supply of sufficient cocoon raw materials to cocoon processing enterprises will increase and profitability will increase;

further promotes the effective development of enterprises in the silk cluster in Namangan region.

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