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Use of Cluster System in Development of Cotton-Textile Industry

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Abstract: In this peer-reviewed article, the ways of increasing economic efficiency and the development of the cotton-textile industry through the use of cluster system in the cotton-textile industry and the ways to increase economic efficiency in the industry, the existing problems in the development of the cotton-textile sector are highlighted and proposals and recommendations have been developed on ways to eliminate them.

Key words: cotton-textile industry, production, micro level, macro level, lean production, re-production, export, import, competitive market, management mechanism, localization of production.

Introduction. The stable predominance of production and export of cotton-textile industry products, the production of finished products with high added value, and insufficient capacity to build national brands that can adequately compete freely in the world markets make it impossible for enterprises to improve competitiveness of enterprises.

World experience shows that clusters in developing industries in the form of a vertical chain consisting of a large number of successive networks of ladders that provide equipment and other specialized resources. The formation of clusters accelerates the process in separate industries, which contributes to innovation and increases competitiveness in the global market.

The issue of creating cotton-textile clusters is, of course, the creation of high added value based on the deep processing of products grown in districts specializing in the cultivation of raw cotton, providing the domestic market with high-quality and low-cost textile products, as well as due to the export orientation of the country, sharply increasing foreign exchange earnings, creating new jobs, population increasing their income and improving their lifestyle.

In order to organize cotton-textile clusters and its legal, organizational and economic foundations, it is advisable to first study its theoretical and practical features. In today's economic conditions, textile industry enterprises seek to find additional sources in order to increase their income and will be able to do so at the expense of expanding their activities. In such circumstances, one of the most common methods is the merger of enterprises.

It is known that the integration of enterprises, as well as enterprises of the textile industry, is usually carried out in order to achieve greater efficiency, that is, it is possible to achieve additional efficiency at the expense of combining the resources of enterprises or their cooperation. It is desirable to implement the joint corporate strategy of the enterprises through the merger of organizations, developed to achieve high results.

Literature review on the topic. The establishment of cotton-textile clusters in Uzbekistan will create an opportunity to fully satisfy the demand of the domestic market and rapidly enter the global

textile market, starting from the cultivation of cotton raw materials, to the production of finished textile products based on deep processing. Also, modern job places will be created in rural areas, and their living standards will be drastically improved due to the increase in income of the population.

Although the activity of clusters formed in the industry today is supported by local and centralized state structures in various directions, the mechanism of state support of clusters has not been considered and systematized as a whole. Taking into account this aspect, during the research, the mechanism of state support of textile industry clusters was studied as a whole system, and the improved mechanism was recommended to be used in the process of development and support of textile industry clusters in our country. The mechanism systematised the use of instruments of state support for textile industry clusters, divided into two main periods, namely the period of cluster formation and the period of cluster development after cluster formation.

Experiences accumulated in the formation of clusters in foreign countries and their practice include the following directions:

The first direction is considered to be the Italian model (industrial districts), based on a strong concentration of small enterprises for export expansion, and internal clusters operating on the basis of mutual formal or informal community in entering and occupying the market.[1]

The second direction is considered to be industrial clusters, which form concentric circles (centralized organizations) with a central management system. Such industrial clusters include scientific laboratories, scientific research centers and higher educational institutions. This formation of clusters is reflected in the experiences of Japan, South Korea, Germany and France. They have strong partnerships for international markets and highly developed internal formal relationships.

Dispersion of innovative activity and absence of linear connection are characteristic aspects of this method of cluster formation. Each cluster participant is provided with a chain link to the system's control hardware, and this is the key to ensuring mutual integration. Relying on more financial resources in the process of establishing such a cluster makes it a condition for the intervention of the state and encourages it to participate as the main financial provider. [2]

This method of forming a cluster is considered as the main tool or strategy for increasing the country's competitiveness in the international market, although the state's support and large financial resources are the weak side of its organization.

The third direction is considered typical of the industrialization period, and such clustering strategies were widely used in Scandinavia, Switzerland, and the United States. A more central focus of the triple helix model of clustering is its emphasis on innovation creation, with the main objective being to maintain competitiveness by spilling the innovations created among the cluster participants.[3]

The above-mentioned directions for the formation of clusters are determined based on the current situation of the enterprises of the textile industry in the conditions of Uzbekistan and the competitive environment formed in the market.

Currently, there are several types of strategies, depending on their characteristics, including: increasing efficiency at the expense of the scope of operations (within the integration of sector forces); geographic diversification; ensuring economic security in conditions of vertical integration and strengthening market principles; such as the use of new technologies.

One of the tools for implementing integration strategies is the balanced scorecard (Balanced ScoreCard, BSC). This form of strategy was developed by Harvard Business School professor Robert Kaplan and American management consultant David Norton in the early 90s.

A system of harmonized indicators is a management system based on determining and evaluating the efficiency of the enterprise based on optimally selected indicators that reflect all aspects of the enterprise's activity, that is, both financial and non-financial.

As a result of the research conducted by Robert Kaplan and David Norton, it was concluded that, among other things, at least four factors in the formation of a system of harmonized indicators of

successfully operating enterprises: finance; buyers; internal business processes; should take into account education and development.

The main component of the textile industry cluster (manufacturers, design companies and sales systems) works in cooperation with relevant state authorities, service and support companies, logistics system ensuring the movement of goods and raw materials, as well as structures supporting the cluster activities in its implementation process. Enterprises, organizations and systems related to the mentioned cluster activities also act as cluster members, ensuring processes related to production and sales of products in the textile cluster.[4]

The business system approach is mostly used by large enterprises and corporate business structures. According to this concept, it is planned to apply the methods and tools of management of production systems to all processes and structures of the enterprise. The business system approach is used in conjunction with several other concepts, models, and approaches, such as the Lean system. It should be noted that Lean system and TOC, Lean system and 6 Sigma, Lean system, TOC and Kaizen, Lean system, TOC and 6 Sigma combinations are used in the management and organization of production systems. Thus, the company management tries to take into account the advantages of each approach. However, a single approach is deeply mastered before moving to a format that uses a combination of several approaches. [5]

Lean Production allows you to get an advantage in cost and price only if the domestic enterprise is on an equal footing with foreign competitors and operates on a relatively identical technological platform. No methods of modern business management will be able to ensure the growth of an enterprise's market share if the supplied products do not satisfy the consumer in terms of their functional characteristics and high technology. On the other hand, having significant investment opportunities for the modernization of an enterprise, you can lose them if the production system, along with the production of products, multiplies losses, which greatly increase costs and cannot compete with foreign counterparts. [6]

According to the statistical indicators analyzed on the production of products of the textile industry, Uzbekistan as a weak point in the competition of the textile industry spiritual obsolescence of weaving machines, lack of qualified engineering and technical personnel, low specialization in the production of gauze, fabric products, it was found that the production of domestic fabrics aimed at sewing and knitting did not develop, the level of fiber assimilation in some regions was low, and the number of enterprises that introduced Quality Management in accordance with international standards was low. [7]

The experience of introducing cost-effective technologies shows that no matter how much employees improve the process, no matter how "economical" it is, new ways of eliminating losses are emerging. The process of improvement and value creation is accomplished through the efforts of employees. Employees are the main asset of the enterprise and the owners of the cultural value of economical production. [8]

Based on the experience of foreign companies, it can be concluded that the introduction of lean production technologies to ensure an increase in the efficiency of the production system will significantly reduce costs, increase labor productivity, improve the production process, achieve high financial performance, increase the competitiveness of the enterprise and achieve many other qualitative and quantitative changes. [9]

One of the basic principles of lean manufacturing and the first stage of its implementation is to define the qualities that make the manufactured product value for the consumer. This is where the implementation of lean manufacturing begins. Activities performed in the enterprise that do not create value for the customer are waste. Consequently, even the very initial stage of implementation of lean manufacturing already has an impact on increasing competitiveness. [10]

Improving the model of efficient use of production capacity, increasing labor productivity, enhancing corporate spirit and corporate culture in textile enterprises through the use of cost-effective means of production (Lean production) - 5S system. Substantiate the effectiveness of the

introduction of the organizational system "5S" (sorting, compliance, cleanliness, standardization, improvement) of the concept of cost-effective production to manage the use of production capacity as an element of improving process quality and production culture in textile enterprises. [11]

In our opinion, we can accept the above-mentioned idea of scientists as an important scientific and economic basis for the formation of cotton-textile clusters in Uzbekistan.

Research methodology. In the article, the methods of scientific study, comparative comparison, study of statistical data and economic comparison and analysis, logical thinking, scientific abstraction, analysis and synthesis, induction and deduction are widely used.

Analysis and results. The formation of clusters in Uzbekistan is consistent with the following main strategic goals for increasing the potential of light industry:

1. Deep processing of cotton fiber on the basis of modern technologies is the determination to increase the production volume of ready-made, environmentally friendly textile and light industrial products, which are in high demand in the foreign and domestic market, by 5.6 times in 2030.
2. Taking into account the international experience, it is necessary to organize a showroom of clothing samples, to open a pilot production workshop, which is part of the design fashion center, and to study the experience of the design and fashion centers of France, Germany, and Italy.
3. In order to find a suitable place in the domestic and world markets, it is necessary to regularly search for innovative products, to pay attention to design issues while studying the market conditions, and most importantly, to increase the prestige of the national brand in the world market.

The main direction of in-depth study of the essence of these tasks and ensuring their implementation in practice is to ensure the competitiveness of enterprises producing textile industry products through the development of innovative activities.

Determining the strategic directions for the development of the cotton-textile cluster.

This stage is a continuation of the above-mentioned stages and reflects the main mechanisms and measures for the development of cotton-textile clusters in Uzbekistan in the following directions: production integration between consumers and producers; modernization of production and increase of labor productivity; formation of technical and technological processes; optimization of domestic textile market protection mechanisms, etc.; financial factor - its main goal is to increase profit, reduce costs, increase its share in the domestic and global textile market; customer factor - its main goal is to satisfy customers, retain existing customers and strengthen relations with new businessmen; internal business environment factor - increasing production capacity, purchase of modern and advanced equipment, expansion of product composition and assortment; the factor of increasing education and personnel capacity - maintaining the existing workforce, increasing labor productivity and wages, increasing the level of satisfaction of employees with their work.

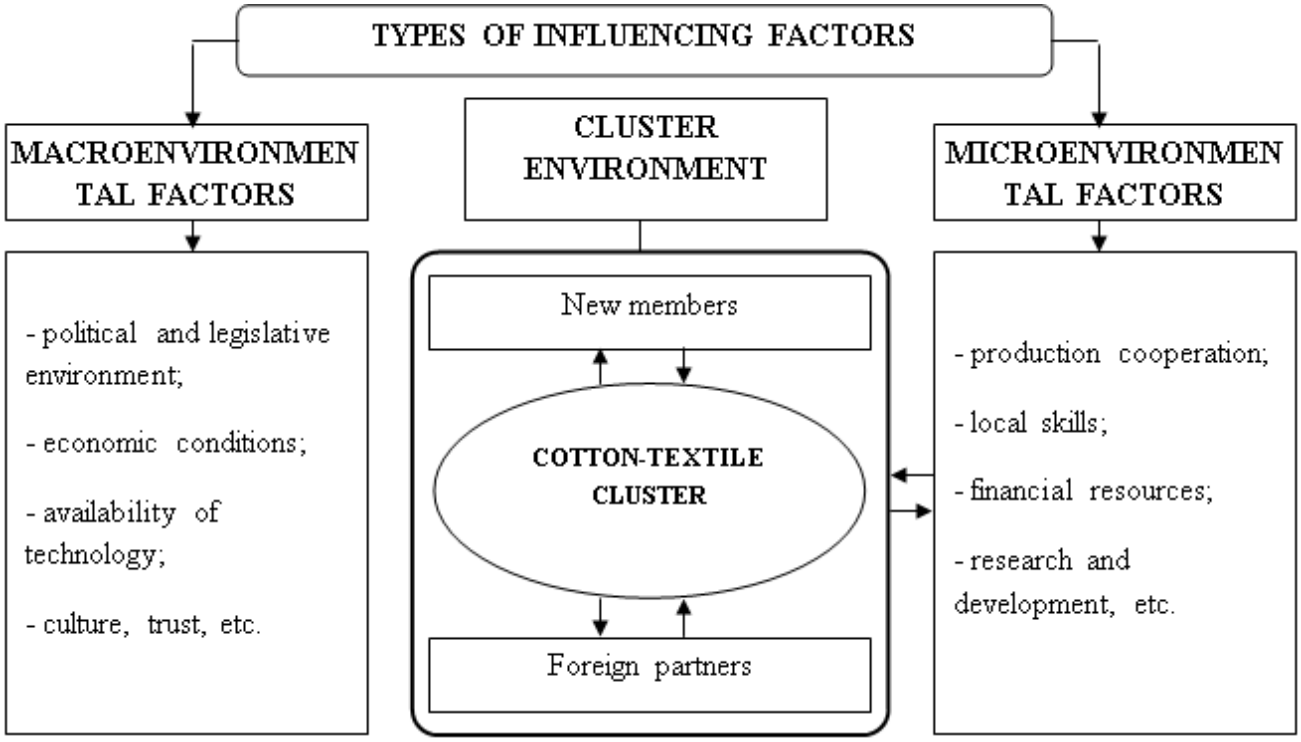

Figure 1. Factors influencing the activity of cotton-textile industry cluster

A high level of cluster efficiency is achieved while maintaining the incentive mechanisms for the development of its subjects. In this case, the analysis of personnel of textile industry enterprises shows the high age of employees and the separation of vocational education in higher education institutions from the production process. Solving this problem is closely related to the development of a system of targeted training of highly qualified specialists by supplementing standard educational programs with special programs focused on the needs of specific textile industry enterprises in the organization of competitive production using new innovative technologies.

In order not to outsource textile production in foreign countries, special attention is paid to improving the productivity of human capital, taking into account the need to improve the mechanism of interaction between existing industrial enterprises, universities and research institutes.

The success of the cotton-textile industry cluster depends on the influence of micro- and macro-level factors. These factors are divided into the most important and less important factors for the sustainable development of the cluster. Defines the sustainable value chain of cotton textile industry products, its main elements are raw materials, semi-finished products, production network, export and trade network. In the formation of the value added chain in the cotton-textile industry cluster, it is important to consider that the process covers the entire value chain, from the production of raw materials, especially cotton, to spinning, weaving and weaving for fabric production and the production of ready-made garments.

Table 1. The main levels of state support for the cotton-textile industry

At the national level	At the local level
Development of the economic policy (concept) of network development based on clustering	Allocation of necessary resources to support cluster activities (training of personnel, production infrastructure, etc.)
Development, standardization and certification of national educational standards for educational institutions that prepare specialists for the cluster	Establishment of support mechanism at a local level in the cotton-textile industry, creation of business incubators, technology parks, etc.
Development of local clustering schools based on business cooperation	Facilitate cooperation between cluster members and local businesses, develop a competitive incentive mechanism for local suppliers
Promotion of research and development between research institutes and cluster enterprises	Support of the venture capital market, financing of new enterprises within the cluster and implementation of business development experience

It is expedient for the state to support the national cotton-textile industry at the macro level in the following directions: developing an economic policy (concept) for the development of the industry based on clustering; development, standardization and certification of national educational standards for educational institutions training specialists for clusters; development of local clustering schools based on business cooperation; promotion of research and development between research institutes and cluster enterprises.

Priority efforts should be made to integrate the cluster approach into industrial and innovation policies, socio-economic development strategies and programs, and network development strategies and programs. It is an important task to provide information-consulting services to enterprises that are members of the cluster. If necessary, the local government system will help attract participants from other countries to the industrial cluster. If the cluster is formed on the borders of two neighboring regions, the state authorities will ensure interregional coordination to solve the most important issues of cluster development.

For a cluster to function effectively, it must have a network of inter-regional producers and raw material suppliers in addition to the main lead firms exporting their goods or services outside the region. A general model of a textile industry cluster, taking into account causal relationships, is shown in Figure beneath. (Figure 2)

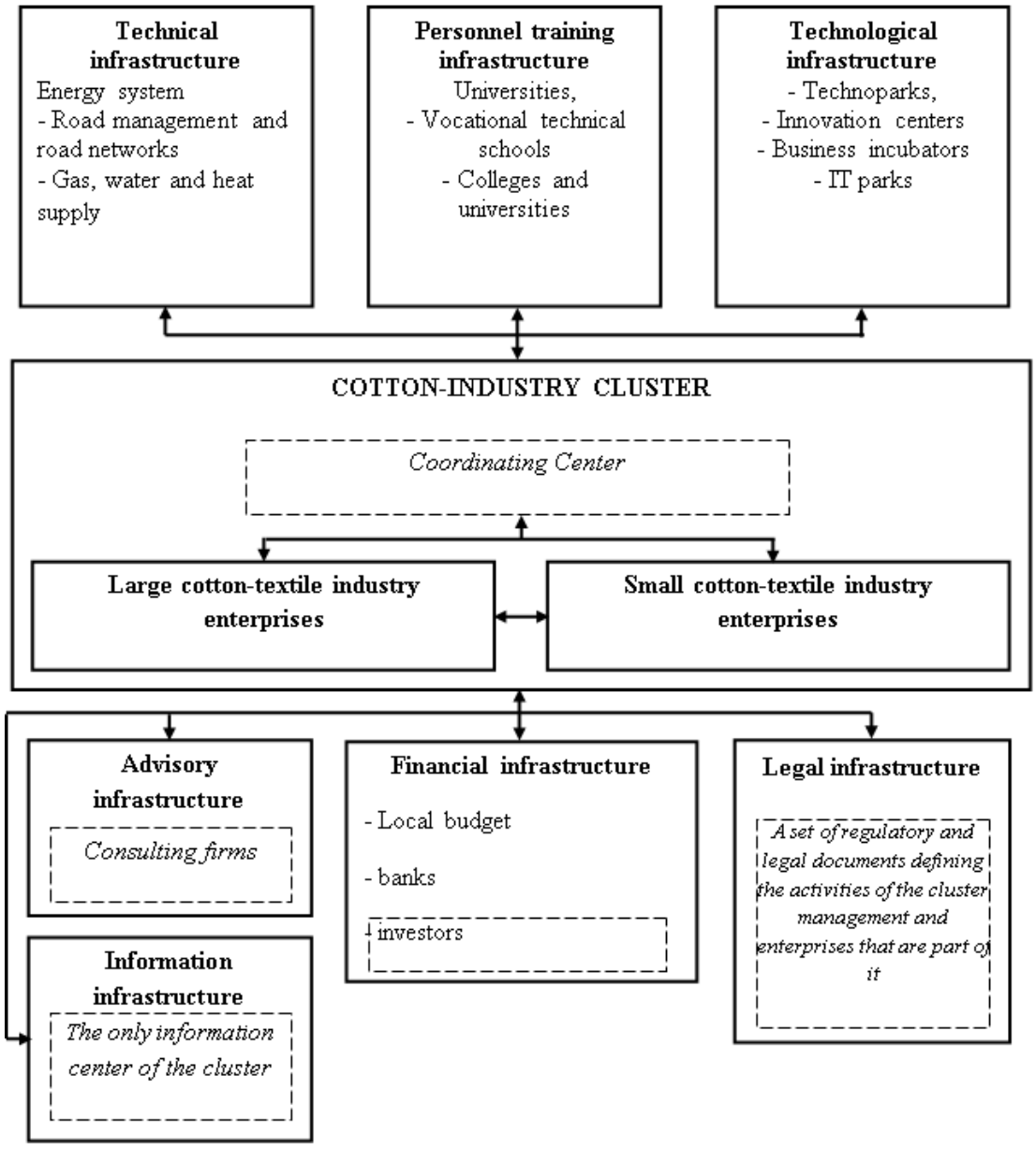

Figure 2. Innovative management model of the cotton-textile industry cluster

Cluster policy is an activity carried out by city and state authorities to support the creation and development of clusters in certain areas. It includes regulatory, investment, financial and budgetary mechanisms and information support measures.

The formation of this system requires re-evaluation of the existing organizational structures of state administration bodies, the involvement of third-party consulting companies, as well as the development of new powers of the regional administration body. At the same time, to support enterprises in terms of marketing, to develop and strengthen network structures and business relationships, to collect and present business and economic information, to develop and maintain websites for the distribution of necessary information among business representatives, to provide the general business community with statistics and includes priority areas such as providing information, providing information and services for the development and expansion of small and medium-sized businesses.

Conclusion. The main focus of the cotton-textile industry clusters is to ensure sustainable development, encourage new cluster initiatives and modernize infrastructure facilities. Within this direction, improvement of the basic infrastructure of the regions, including: increasing and developing the efficiency of higher educational institutions, research institutes and technical research organizations; improving the adequacy and development of transport infrastructure; increase the adequacy and reliability of the energy infrastructure; development of engineering infrastructure; (effective banking system, stock market, collective investment institutions organization support, including the development of leasing and factoring, providing access for companies to risk and enterprise capital, organization of services for currency conversion, etc.); development of telecommunications infrastructure (including development of free access to broadband, support for diversification of services and forms of communication); providing access to land and commercial real estate (creating industrial parks); development of social infrastructure.

Based on the results of the research of relationships related to the processes of formation and management of clusters in the cotton-textile industry, the following conclusions were reached:

1. The resource-oriented approach is the most optimal from the point of view of methodological and methodological support for the study of complex socio-economic systems, including spatial cluster agglomerations. The resource concept and the resource-oriented approach help to more fully reveal and understand the connections and relationships in the logical sequence of the changing states of the life cycle of the economic system: means (as resources) - action (as management) - result (as competitiveness).
2. Cluster members are interconnected in a permanent resource state and in the factor of exchange and distribution. The specifics of the cluster form of spatial economic agglomeration for the organization of territorial management is determined by the specifics of resource-factor exchange and distribution between the cluster members. In order to carry out the production process, each economic entity needs certain resources, which, being production factors, become a finished product. The finished product is then offered to other entities both inside and outside the cluster as a resource element or condition. The development, production and marketing of specific products are carried out based on a joint sequential or parallel understanding of the necessary conditions and factors of production. Such interoperability can be interpreted as inter-industry cooperation.
3. Currently, the methods of evaluating the effectiveness of integration processes are divided into the following groups: quantitative (cost) methods of evaluating the effectiveness of integration; qualitative methods of evaluating the effectiveness of integration; complex methods of evaluating the effectiveness of integration.

The method of evaluating the efficiency of the cluster structure based on the comparative analysis of the performance indicators of industrial enterprises is the profitability index. In addition, integration processes are characterized by an indicator for evaluating the capitalization of integrated enterprises, the level of security of enterprises with intangible assets, and the coefficient of independence of integrated enterprises.

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