



THE IMPACT OF EXPENDITURES ON INNOVATIVE TECHNOLOGIES IN REGIONAL TEXTILE INDUSTRY CLUSTERS ON ECONOMIC EFFICIENCY RESULTS

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ABSTRACT

This article analyzes the impact of expenditures directed towards innovative technologies on the economic performance indicators of regional textile industry clusters. The relevance of the study is explained by the crucial role of innovative technologies in enhancing competitiveness within the textile sector, generating high added value, and expanding export potential. The research examines data from 2019 to 2023, including sales revenue, costs, net profit, profitability levels, technological transfer expenses, and the dynamics of fixed assets.

Introduction

Today, the sustainable development of industrial sectors in the world economy is directly related to the level of implementation of innovative technologies. In particular, the textile industry is one of the strategic sectors where global competition is increasing and high demands are placed on product quality and cost. The use of digitalization, energy-efficient equipment, automated control systems and resource-saving technologies in modern production processes is becoming an important factor in increasing the efficiency of enterprises.

The textile industry is one of the leading export-oriented sectors in the economy of Uzbekistan and has been developing on the basis of a cluster system in recent years. Regional textile clusters serve to increase added value, provide employment and expand export potential by forming a single chain from raw material production to finished product production. However, there is a need for a deep scientific analysis of the real impact of the costs associated with the implementation of innovative technologies on economic efficiency indicators.

Practice shows that innovative technological costs can lead to an increase in production costs in the short term, but in the long term they provide economic efficiency through increased labor productivity, energy efficiency, product quality and export volumes. Therefore, assessing the impact of these costs on economic performance indicators, determining the level of their interdependence and developing mechanisms for optimizing them is an urgent scientific and practical issue.

The results of the study serve to improve regional industrial policy, stimulate innovative activity in textile clusters and scientifically substantiate the processes of making investment decisions.

LITERATURE REVIEW

The practice of introducing clusters as an effective strategy for innovative development of the regions of Uzbekistan, ensuring competitive advantage, is gaining increasing attention. The introduction of clusters is mainly aimed at revitalizing the processing industry in agriculture, adapting farms that have specialized only in the production of agricultural products to modern scientific and technical progress, and especially training the rural population in new professions. The introduction of industry and innovative technologies in agriculture not only provides the population with new jobs and professions, but also leads to the introduction of various areas of service provision in the countryside, including social and innovative infrastructure.

Clusters are not a modern concept, but this practice has been used in foreign countries for a long time. The first to introduce clusters was the economist A. Marshall¹ mentioned them in his scientific works, interpreting them as "Industrial areas". Clusters, in their content, corresponded to A. Marshall's term of industrial areas, and later became a popular term. Clusters formed as a separate economic system that united different industries². Currently, clusters are being formed with the aim of breaking down the vertical management of industries and organizing large-scale production horizontally.³

Because the development of innovations, as a result of a sharp increase in consumer demand for new products, required the transformation of raw materials, which were prepared separately at each stage, into a single complex product. This situation showed the need to transform production into a single system. M. Porter defines the clusters that emerged in this situation as: "A group of large enterprises that are close in geographical terms and can develop in a mutually dependent manner."⁴. Such approaches represent a synergistic effect between sectors and within the sector. The effect of synergy appears when internal and external resistances are combined, the sum of achievements is achieved. The term "Synergy" is used in the organization of company structures to achieve the result of collective action A.A. Bogdanov⁵, Used by I. Ansoff⁶.

Synergy is understood as a promising advantage resulting from the merger of several enterprises into one industry⁷. Clusters have formed as a single system that combines the capabilities of entrepreneurs. Cooperation, which is carried out as a result of mutual agreement of entities operating in the same industry, acting together in accordance with the laws of the market, reduces production costs and creates synergy in them. Their agreement mobilizes not only the cluster members, but also the surrounding population and existing

¹ Маршалл, А. Основы экономики / А. Маршалл. - М.: Издательство. "Прогресс", 1993. - Т.3. - 351 с.

² Бабкин А.В., Шамина Л.К. Анализ использования методических подходов в управлении экономическими системами // Научно-технические ведомости СПбГПУ. Серия «Экономика». - 2008. № 1 (53). - Стр 18-22.

³ Бабкин А.В., Бахмутская А.В., Кудрявцева Т.Ю. Разработка Эффективный механизм региональной промышленной политики // Экономический рост России. - 2013. - № 4 (61). - С. 204-2012

⁴ Портер, М. Конкуренция. Пер. с англ. // - М.: Издательский дом «Вильямс», 2005. - 608 с.

⁵ Богданов, А.А. Тектология – всеобщая организационная наука. [Текст] – Т. I, II. – М.: Экономика, 1989.]

⁶ Ансофф, И. Новая корпоративная стратегия / И. Ансофф. – СПб.: Изд-во «Питер», 1999. – 416 с.]

⁷ Синергетический подход в управлении [Электронный ресурс] // Режим доступа: <http://www.viktorova-ts.ru>].:

resources. As the population's income increases, it creates the basis for the emergence of various service networks. Clusters create the opportunity to implement innovative developments and technology transfers. The reason is that they perform large-scale work that one entity could not do through beneficial cooperation.

In world practice, there are two different views on the emergence of clusters. First, there is M. Porter's free market theory, in which clusters are formed on the basis of mutually beneficial cooperation based on market laws. It is not given any privileges or preferences by the state. Because the market situation requires it. Secondly, local authorities, having noticed the socio-economic benefits of clusters, try to unite entrepreneurs who are close to each other, forming special zones and providing them with benefits. This was first seen in European countries in the agricultural and mechanical engineering sectors. Cooperation between clusters and local authorities is carried out in two ways. First, with local entrepreneurs, if they have sufficient technology and resources, and secondly, with foreign partners, if the technology is not new enough and the resources are sufficient.

RESEARCH METHODOLOGY. The research process used the methods of analysis and synthesis, induction and deduction, systematic approach, comparative and dynamic analysis. Economic and statistical methods, including growth rates, ratios and structural analysis, were used to process statistical data. In order to determine the relationship between innovative technological costs and economic efficiency indicators (sales revenue, net profit, profitability, labor productivity, etc.), it was assumed to use elements of correlation-regression analysis.

ANALYSIS AND RESULTS.

The technological state of the agricultural production and processing industry in the Republic of Uzbekistan does not meet modern requirements, which is the reason for the decrease in the added value created in the sector. Therefore, in order to create an added value chain in the regions of our republic, especially in order to activate the process of transition from raw materials to finished products in the agricultural sector, a reform of the introduction of clusters in the agricultural sector was carried out in cooperation with local and foreign entrepreneurs. Economic, organizational, and legal conditions were created for the organization of cotton-textile, grain-growing, fruit-vegetable, pharmaceutical, karakul, and cocoon-growing clusters in the regions.

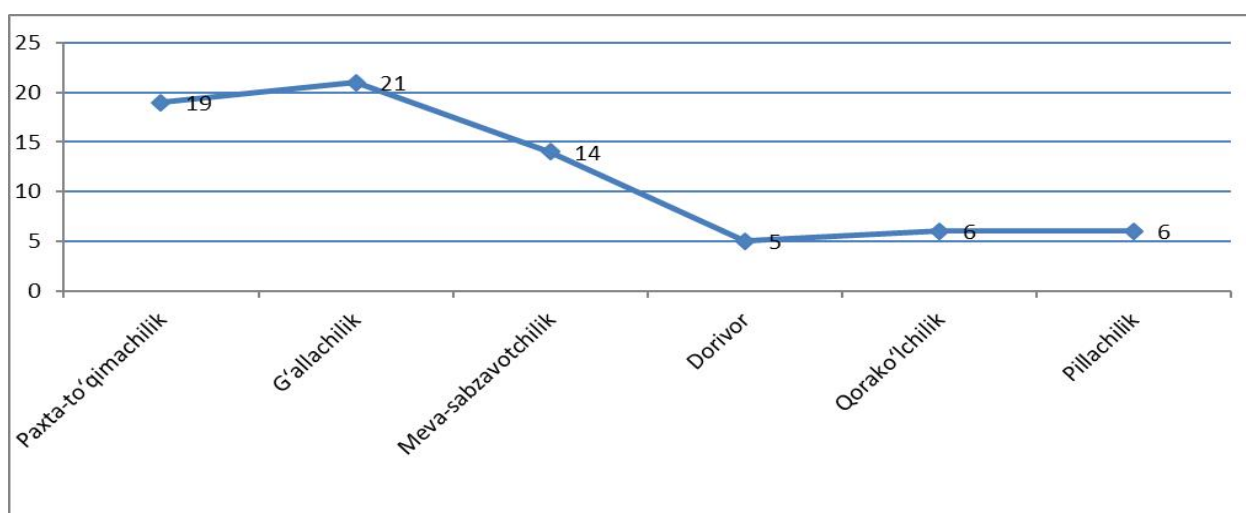


Figure 1. Number of clusters in Kashkadarya region, units.

In Kashkadarya region, 180,300 tons of fiber were produced in 2023, an increase of 74.2% compared to 2022. Yarn production increased by 73.2%, finished sewing and knitted products by 81.0%, and oil production by 73.1%.

The number of cotton-textile clusters in Kashkadarya region was 19, of which only 9 produce yarn, fabric, and finished sewing and knitted products. These are the initial manifestations of the entry of clusters into the economy of Uzbekistan.

Since 2017, the legal framework for the development of clusters in the agricultural sector has been created. However, the entry of foreign and local investors into this area has been slow. Starting from 2021-2023, clusters began to replace processing industries.

We can take clusters as an object of implementing the results of innovation activities in the Kashkadarya region.

Innovation efficiency indicators of textile clusters in Kashkadarya region⁸

Table 1.

Indicators	O'lchov birligi	2019- year	2020- year	2021- year	2022- year	2023- year	46 Change in 2023 compared to 2019, times
Sales revenue	Billions of soums	141,3	211,2	115,25	3412,8	4837,9	34,2
Cost	Mrd. so'm	141,8	326,4	166,79	331,71	412,58	29,1
Net profit	Mrd. so'm	-0,53	-115,2	-515,4	95,6	711,9	X
Profitability, %	Mrd. so'm	X	x	X	2,9	17,3	X
Technology transfer costs	Mrd. so'm	227,6	181,04	176,59	181,94	388,26	17,1
Fixed assets	Mrd. so'm	178,8	713,4	101,26	136,58	178,92	10,0
Goods and material reserves	Mrd. so'm	49,3	695,2	193,48	221,96	391,28	79,2
Number of employees	Kishi	5596	6383	7212	8159	7872	1,4

The table data shows that the dynamics of financial and economic indicators in the regional textile industry cluster during 2019–2023 have undergone sharp positive changes. In particular, sales revenue increased by 34.2 times, from 141.3 billion soums in 2019 to 4,837.9

⁸ Qashqadaryo viloyati statistika boshqarmasi ma'lumotlari, asosida muallif ishlanmasi.

billion soums in 2023. This growth is explained by the expansion of production volumes, increased export potential, and diversification of the product range. At the same time, the volume of expenses also increased by 29.1 times, from 141.8 billion soums to 4,125.8 billion soums. However, the faster growth of income relative to expenses contributed to a positive change in financial results starting in 2022.

In the first three years of the analyzed period, net profit was negative (–0.53 billion soums in 2019, –515.4 billion soums in 2021). This is due to the high share of production modernization, technological innovation and investment costs. While in 2022 a positive net profit of 95.6 billion soums was formed, in 2023 it reached 711.9 billion soums. As a result, the profitability rate increased from 2.9% in 2022 to 17.3% in 2023. This indicates that innovative investments are beginning to pay off. Technology transfer costs increased by 17.1 times, from 227.6 billion soums in 2019 to 3,882.6 billion soums in 2023. This indicator confirms the expansion of production capacities in the cluster and the introduction of modern technologies, in line with the 10-fold increase in the value of fixed assets. An increase in the volume of inventories by 79.2 times indicates a sharp expansion of the scale of production, but it also indicates the need to further improve working capital management.

The number of employees increased by 1.4 times, from 5,596 people in 2019 to 7,872 people in 2023. This indicates an increase in the importance of the cluster in ensuring regional employment. In general, the results of the analysis confirm that innovative technological costs increased financial pressure at the initial stage, but led to a significant improvement in economic efficiency indicators in the medium term.

CONCLUSION. Analysis of the impact of expenditures on innovative technologies on economic efficiency indicators in regional textile industry clusters showed that, although the processes of modernization and technological renewal initially entail an increase in the financial burden, they ensure stable economic growth in the medium and long term. In particular, investments in technological transfer and fixed assets served to expand production volumes, improve product quality, and strengthen export potential. As a result, a significant positive shift was observed in sales revenue and net profit indicators, and the profitability level entered a stable growth trajectory.

The analysis confirms the existence of a direct and inextricable relationship between innovation expenditures and economic efficiency. Although a loss-making situation was observed in the early years, this was mainly a natural consequence of the investment stage. In the subsequent period, modernized production facilities strengthened financial stability by creating high added value, optimizing costs, and increasing labor productivity.

Therefore, it is important to consistently support innovative activities in regional textile clusters, improve technological transfer mechanisms, and evaluate investment decisions based on economic efficiency criteria. In general, innovative technological spending is emerging as a strategic factor in increasing the competitiveness of clusters, accelerating regional industrial development, and ensuring sustainable growth of the national economy.

PROPOSALS.

1. Introduce a system of efficiency-oriented planning of innovative technological expenditures. It is advisable to develop a system of indicators based on cost-benefit analysis when planning innovative investments in regional textile clusters.

2. Develop an integrated indicator for assessing the effectiveness of technological transfer. In practice, innovative expenditures are often assessed only through financial results. Therefore, it is recommended to form a complex index (for example, based on profitability, energy efficiency, export share, product quality indicators) that covers the economic, production and social effects of technological innovation.

3. Improve the diversified mechanism for financing innovative expenditures. In order to stimulate innovative activities in regional clusters, it is necessary to expand public-private partnerships, preferential loans, tax preferences and grant mechanisms.

References:

1. Маршалл, А. Основы экономики / А. Маршалл. - М.: Издательство. "Прогресс", 1993. - Т.3. - 351 с.
2. Бабкин А.В., Шамина Л.К. Анализ использования методических подходов в управлении экономическими системами // Научно-технические ведомости СПбГПУ. Серия «Экономика». - 2008. № 1 (53).–Страницы 18-22.
3. Бабкин А.В., Бахмутская А.В., Кудрявцева Т.Ю. Разработка Эффективный механизм региональной промышленной политики // Экономический рост России. - 2013. - № 4 (61). - С. 204-2012
4. Портер, М. Конкуренция. Пер. с англ. / ./–М.: Издательский дом «Вильямс», 2005.–608 с.
5. огданов, А.А. Тектология–всеобщая организационная наука. [Текст]–Т. I, II.–М.: Экономика, 1989.]
6. Ансофф, И. Новая корпоративная стратегия / И. Ансофф.–СПб.: Изд-во «Питер», 1999.–416 с.]
7. Синергетический подход в управлении [Электронный ресурс] // Режим доступа: <http://www.viktorova-ts.ru>].:
8. Савелева, Е. А. Создание промышленных кластеров и повышение конкурентоспособности Самарского региона / Е. А.Савелева // Вестник Самарского государственного аэрокосмического университета. - 2009. -№3 - С. 178-192.
<https://stat.uz/>
<https://invest.gov.uz/>
<https://lex.uz/e>
8. SPIEGEL-online