



Methodology for Practical Analysis of Economic Efficiency Indicators of Clusters

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Abstract

This article analyzes issues related to increasing the efficiency of the cluster and its member enterprises, such as saving resources, efficient use of employee labor, improving the quality of service and its efficiency, and meeting consumer demand. A methodology for practical analysis of cluster economic efficiency indicators has been developed.

Keywords: *Practical Analysis; Economic Efficiency; Indicators; Clusters; Cotton–Textile Clusters; Government Subsidy; Bank Loan; Rating Index; Efficiency Assessment; Efficiency Analysis; Enterprises; Resources; Methodology*

Introduction

One of the goals of our country’s development strategy for 2022–2026 is “to increase the incomes of peasants and farmers by at least 2 times through intensive development of agriculture on a scientific basis, to bring the annual growth of agriculture to a level of at least 5%” [1].

Based on these objectives, in the clusters organized in agriculture in our country, a strategy was chosen to reduce production costs, increase profits and achieve financial stability. To achieve this, special attention is paid to organizing the activities of enterprises included in the cluster and increasing their efficiency. Also, in recent years, many cluster projects have been implemented in various regions of our country. The formation and development of clusters in a market economy requires a scientific methodological and practical–theoretical basis.

Issues related to increasing the efficiency of the cluster and its member enterprises, such as saving resources, efficient use of employee labor, improving the quality of service and its efficiency, satisfying consumer demands, include problems associated with the organization of clusters.

In order to increase the competitiveness of enterprises, it is possible to use a cluster model that combines the processes of production of knitted products with high added value, from the cultivation of raw cotton to its pre–processing, processing of products into textile and sewing–knitting production, enterprises, new innovative technologies, know-how in production process and development, it is urgent to direct investments to such goals as increasing production and export of high–quality and competitive

products, as well as widespread promotion of the national product. brands on global trading markets. By 2025, textile exports will reach \$7 billion. Tasks such as delivery to US dollars have been defined [2].

We analyze issues of the effectiveness of cluster activities on the basis of our research conducted in the cotton–textile clusters of “Navbakhor Textile” LLC, “Bakht–Textile” JV LLC, “Marokand Sifat Textile” LLC and “Samarkand Kamalak Invest Textile” LLC.

Literary Analysis

Some theoretical, organizational and methodological aspects of the problems associated with improving the methodology for increasing the efficiency of clusters in conditions of transformation were highlighted by scientists in our country and foreign scientists. However, their scientific research did not deeply consider such issues as cluster performance indicators, comprehensive performance indicators, and evaluation through KPIs.

According to Dragisovic and Obadic, the effectiveness of clusters is measured using the following indicators: production volume, costs, sales volume, number of jobs created, wages, productivity, prices, value added, number of enterprises, innovation, etc. [3].

According to M. Obidov, when classifying and accounting for costs in clusters, it is necessary to ensure their occurrence and compliance with their economic content, to generate complete and reliable information about the costs of enterprises in the cluster system, and to correctly determine the cost of products [4].

According to A. Avlakulov, an in–depth analysis of the categories “Revenue”, “Expenses” and “Cost” is one of the important issues of accounting, since these categories are important for the correct formation of product costs, which is one of the important issues of accounting. main performance indicators of economic entities [5].

K. Abdurakhmanov studied factors for increasing productivity and labor efficiency in enterprises, methods for measuring them, factors for increasing the efficiency of using labor resources, the socio–economic nature of wages and theoretical aspects of social personnel management of enterprises [6].

T.D. Burmenko’s research examines factors and reserves for increasing efficiency in service sector enterprises, methods for measuring them, factors for increasing the efficiency of using labor resources in an enterprise, the socio-economic nature of wages, forms and methods of payment. its main tasks and functions have been studied [7]. A.A. Boya–Wola conducted a study of employee evaluation and promotion systems, focusing on performance evaluation systems for top, middle and lower management personnel in seven administrative models (Anglo–America, France, Germany, Scandinavia, China, South Korea, Japan) and studied the elements [8]. Researchers from Soochow National University of China Jianjian Gu and Kang Zhao conducted an empirical study on the use of key performance indicators (KPIs) in evaluating employee performance [9].

According to Sh. Mamatov, special attention when implementing a system for assessing employee performance should be paid to: developing a long–term development strategy for the enterprise; approval of the annual business plan, which includes a list of key performance indicators and their significant goals for each period; development of rules on the methodology for assessing the activities of an enterprise, defining the procedure for calculating each indicator of an important performance indicator; development of rules and other documents on bonuses and remuneration, taking into account the results of assessment of an important performance indicator [10].

Research Methodology

During the research process, analysis and synthesis, a systematic approach, comparison, categorization, grouping, absolute and relative quantitative methods of statistical and financial analysis were used.

Analysis and Results

In recent years, the priority in the field of cotton textiles has been the cluster system, proven in international practice in our country, which is of great importance in economic development. In the business plan of clusters, important tasks are the reflection of all expenses, cost management and the development of measures to reduce production costs. Also in the business plan it is necessary to organize a continuous chain of the production process from growing raw materials to selling them as finished products, calculating and controlling the costs spent on these processes, developing measures to reduce the cost of production, launching investment projects and new production facilities, identifying sources of financing and accounting for actual expenditures and forecasts are considered urgent issues.

In cotton–textile clusters, most of the main costs are material costs. Development of econometric modeling for forecasting target parameters for the production and export of textile products with high added value for 2022–2030 based on deep processing of raw materials in the network, based on market requirements, using the programs “E–views”, “Stata”, “Excel” and the possibility of their application in practice has been scientifically substantiated.

In 2021, 25.700 tons on an area of 8.200 hectares of the cotton–textile cluster of “Navbahor Textile” LLC in the Konimex and Navbahor districts, 46.700 tons on an area of 13.800 hectares of the cotton–textile cluster of the “Baht–Textile” JV LLC in the Karmana and Kiziltepa districts, LLC “Maroqand Sifat Textile” on an area of 9.100 hectares of the cotton-textile cluster in the Ishtikhon and Okdaryo districts, 25.300 tons of cotton were grown, as well as 26.841 tons of cotton on an area of 10.934 hectares of the cotton–textile cluster of Samarqand “Kamal Invest Textile” LLC in the Pastdargom and Nurabad districts (Table 1).

Table 1. Cotton Textile Clusters Review (2021)*

№	Cluster name	Cotton area, ha			Gross harvest, tons			Total amount of allocations, million soms		
1	“Navbahor Tekstil” LLC	Konimex	600	8200	Konimeks	1 300	257 00	Konimeks	3120	61680
		Navbahor	7600		Navbahor	24400		Navbahor	58560	
2	“Baht–Textile” JV LLC	Karmana	5400	13800	Karmana	16200	467 00	Karmana	38880	112080
		Kiziltepa	8400		Kiziltepa	30500		Kiziltepa	73200	
3	“Maroqand Sifat Tekstil” LLC	Ishtikhon	8600	9100	Ishtikhon	23900	253 00	Ishtikhon	57360	61720
		Okdaryo	500		Okdaryo	1400		Okdaryo	3360	
4	“Samarqand Kamal Invest Tekstil” LLC	Pastdargom	10434	10934	Pastdargom	25841	268 41	Pastdargom	62019	64419
		Nurabad	500		Nurabad	1000		Nurabad	2400	
Total:		42 034			12 4541			299 899		

*Author’s development based on cluster data

According to the results of the implementation of the profit distribution mechanism based on the contribution of the enterprises included in the cluster to the finished product, the cotton yield in the studied clusters in our farms is 8 (32–27) c/ha in “Navbahor Tekstil” LLC, “Baht–Textile” JV LLC 5 c/ha. It was established that “Maroqand Sifat Tekstil” LLC increased by +9 c/ha, “Samarqand Kamal Invest Tekstil” LLC increased by 9 c/ha (Table 2, 3).

Table 2. Analysis of average yield in cotton–textile clusters (2019–2022, c/ha)*

№	Cluster name	2019	2020	2021	2022	2022 compared to 2019
1	“Navbahor Tekstil” LLC	24	26	30	32	+8
2	“Baht–Textile” JV LLC	27	28	29	32	+5
3	“Maroqand Sifat Tekstil” LLC	27	28	32	36	+9
4	“Samarqand Kamalak Invest Tekstil” LLC	27	30	34	36	+9

*Author’s development based on cluster data

In order to improve the system of financing the activities of clusters as a result of the introduction of the practice of allocating targeted loans through commercial banks to finance the costs of growing cotton raw materials using the credit resources of the state fund and determining the procedure for charging them interest at an increased rate if the loan is not repaid on time, cotton–textile cluster “Navbahor Tekstil” LLC 7.8 billion sum from JSC Agrobank in 2021; the cotton–textile cluster “Bakht–Textile” JV LLC will receive 3.4 billion sum from the JSC Agrobank in 2021; the cotton–textile cluster “Maroqand Sifat Tekstil” LLC will receive \$44.5 billion sum from the JSC Uzsanoatqurilishbank in 2021; the cotton–textile cluster of “Samarqand Kamalak Invest Tekstil” LLC will receive \$115.0 billion sum from the JSC Asakabank in 2021 took a loan in the amount of soums and returned it in the specified order and time frame.

At the same time, as a result of using a system of indicators reflecting the effectiveness of the organizational, economic and financial mechanisms of clusters, and improving the methodology for analyzing indicators, the cotton–textile cluster of “Navbahor Tekstil” LLC will receive 2.7 billion sum in 2021.

In 2021, a state subsidy of 5.6 billion soums, and for 2022–8.1 billion sum; “Bakht–Textile” JV LLC will pay 1.5 billion sum to the cotton–textile cluster in 2021. In 2021, a state subsidy in the amount of 755.1 million sum was allocated. In 2022–911.8 million sum; “Samarqand Kamalak Invest Tekstil” LLC will invest \$1.5 billion sum in the cotton–textile cluster in 2021.

In 2021, a state subsidy in the amount of 118.9 million soums was allocated. In 2022–245.8 million sum ended with a profit in sum (Table 4).

Table 3. Analysis of loans and government subsidies received by cotton–textile clusters from banks (2021, billion sum)*

№	Cluster name	Bank’s name	Credit received	State subsidy	Profit in 2021	Profit in 2022
1	“Navbahor Tekstil” LLC	JSC “Agrobank”	7,8	2,7	5,6	8,1
2	“Baht–Textile” JV LLC	JSC “Agrobank”	3,4	1,5	0,755	0,911
3	“Maroqand Sifat Tekstil” LLC	JSC “Uzsanoatqurilish bank”	44,5	0,70	0,115	0,130
4	“Samarqand Kamalak Invest Tekstil” LLC	JSC “Asakabank”	115,0	0,80	0,118	0,245

*Author’s development based on cluster data

As a result of using a comprehensive indicator for assessing the efficiency of the cluster, i.e. determining the rating of enterprises of the system based on the results of assessing the efficiency of the cluster and the incentive procedure based on rating indicators, the monthly wages of employees of the enterprises of the cotton–textile cluster system of “Navbahor Tekstil” LLC in 2022 will be in 1.5 times higher than in 2021. by 8.0 percent compared to 2019; in 2022, the monthly wages of workers at the enterprises of the cotton–textile cluster system of “Baht–Textile” JV LLC will increase by 2 times compared to 2021, and from 2022, when the KPI system (performance assessment indicator) will be translated into financial efficiency of enterprises will be 4.0% compared to 2019; in 2022, the monthly wages of employees of the enterprises of the cotton-textile cluster system of “Maroqand Sifat Tekstil” LLC will increase by 1.5 times compared to 2021, as well as from 2022, when the KPI system (performance evaluation indicator) will be transferred, financial efficiency enterprises will increase by 12.0% compared to 2019; in 2022, the monthly salary of employees of enterprises of the cotton–textile cluster system of “Samarqand Kamalak Invest Tekstil” LLC will increase 2.0 times compared to 2021, as well as from 2022, when the KPI system (performance evaluation indicator) will be introduced. will be transferred, the financial efficiency of enterprises will be 6.0% compared to 2019. At the same time, the application of mezzanine financing to the activities of clusters and the “European Memorandum”.

As a result of applying the practice of assessing the indicator, in 2022, the cotton–textile cluster of “Navbahor Tekstil” LLC will be allocated 4.8 million US dollars, and the cotton–textile cluster of “Baht–Textile” JV LLC–2.5 million US dollars, and to the cotton–textile cluster of “Maroqand Sifat Tekstil” LLC. The cotton–textile cluster of “Samarqand Kamalak Invest Tekstil” LLC attracted 6.0 million US dollars, foreign investments in the amount of 8.0 million US dollars (Table 4).

Table 4. Analysis of the increase in monthly wages of workers and attracted foreign investment funds at enterprises of the cotton–textile cluster system*

№	Cluster name	Employee Monthly Salary (2022 compared to 2019)	Financial efficiency, 2022 compared to 2019, in% (after applying KPIs)	Amount of attracted foreign investment (2022, million USD)
1	“Navbahor Tekstil” LLC	1,5 times	+8,0	4,8
2	“Baht–Textile” JV LLC	2,0 times	+4,0	2,5
3	“Maroqand Sifat Tekstil” LLC	1,5 times	+12,0	6,0
4	“Samarqand Kamalak Invest Tekstil” LLC	2,0 times	+6,0	8,0

*Author’s development based on cluster data

Also, in order to increase the efficiency of analyzing the effectiveness of organizational economic and financial mechanisms of clusters, we recommend the following: manage the cluster through a special coordinating council consisting of highly qualified specialists; relevant research institutions, higher and secondary specialized educational institutions for the training of highly qualified specialists are engaged in the development and implementation of highly effective methods and technologies, solving scientific and practical problems in the territory that is part of the cluster; the introduction of cluster management technology ensures the production of products with high added value, the introduction of energy production, biogas production and other similar technologies that sharply reduce production costs, as well as the ability to control all parts of the complex using an intelligent machine system; creation of a system that multiplies profits and further enhances the competitiveness of the complex; the results of the implementation of cluster policy will lead to increased productivity and innovative activity of enterprises included in the cluster, the development of small and medium–sized businesses, an increase in the volume of direct investment, as well as an increase in the volume of direct investment. stable socio–economic development of regions based on the cluster; to assess organizational and economic efficiency in clusters, it is necessary to use factors of the financial, client, internal business environment, education and human resources development.

Conclusions

In order to improve the analysis of the economic efficiency of cluster activities, it is necessary to implement the following, using the experience of developed foreign countries: introduce a mechanism for the proper distribution of profits received depending on the contribution of the enterprises included in the cluster to the finished product; making proposals for the allocation of preferential loans and subsidies to state support funds; using a system of indicators reflecting the effectiveness of organizational, economic, financial mechanisms and improving the methodology for analyzing indicators; use of a comprehensive performance assessment indicator and implementation of the KPI assessment method; the application of mezzanine financing to the activities of clusters and the “European Memorandum” to establish the practice of evaluation based on indicators.

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