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# CLUSTER DEVELOPMENT IN UZBEKISTAN'S ECONOMY: PRODUCTION VOLUME, INVESTMENT FLOWS, AND EXPORT DYNAMICS (2022–2024)

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**ABSTRACT**

This article analyzes the formation and development of the clustering process in the economy of Uzbekistan. Although the cluster system is relatively new, it plays an important role in attracting investments, expanding production volumes, and increasing export potential. The purpose of the study is to study the dynamics of production, investment, and export indicators of clusters. Statistics for 2022-2024 showed that cluster production volumes are growing steadily, investments are modernizing infrastructure, and export indicators are increasing competitiveness in international markets. The results confirm the formation of the cluster system as a modern production model in the economy of Uzbekistan.

**KEYWORDS**

Clustering, production volume, investment flows, export potential, innovative technologies, competitiveness, modernization, economic efficiency, national economy

## Introduction

Today, the term "cluster" is frequently encountered in our daily discourse. In the economies of developed countries, this concept is regarded as the highest stage of development, representing a highly flourishing sector. This system is seen as a key contributor to economic growth by prioritizing the implementation of scientific advancements, ensuring the efficient utilization of the labor force, and leveraging modern technologies, including the capabilities of artificial intelligence. Although the clustering process has been recently introduced into the national economy of Uzbekistan, it is already demonstrating gradual positive effects and is emerging as an integral component of our economic structure.

The term "cluster" encompasses a very broad meaning, with the process holding a distinct role across various sectors. Essentially, this mechanism ensures that all production stages-from the initial source of raw materials to the final manufacturing process of any finished product-are interconnected and intrinsically linked. This process not only facilitates the production of specific goods but also ensures the population is supplied with high-quality and reliable consumer products, contributes to the

improvement of the country's socio-economic status through job creation, and serves as a primary driver for efficient economic growth.

**Literature Review**

Historically, the term "cluster" was initially utilized predominantly within the scientific and academic domain. It was in 1990 that Professor Michael Porter introduced the term into economic processes, defining it as "a geographically and sectorally grouped set of enterprises that enhances competitiveness"[1], and carried out his foundational research based on this definition. According to Michael Porter's research, a cluster is defined as "a geographically proximate group of interconnected companies and institutions in a particular field, linked by commonalities and complementarities, which includes suppliers, service providers, scientific institutions, and related organizations"[2]. This implies that the system forms a highly specialized production infrastructure by extensively utilizing modern scientific achievements and innovative technologies. The cluster operates based on the deep processing of local raw materials and inherent capabilities, serving as a complex, integrated sector that provides employment for the population, particularly in skilled labor fields.

Clustering within the agrarian sector began to be adopted starting in the 1990s. This system was initially implemented in developed countries such as the USA, Germany, France, and Japan. According to a report published in the United States in 1990 on the formation and development stages of the country's agricultural sector:[3]

**California State**, holding the largest market share in the United States for fruit and vegetable production, was where the initial manifestation of clustering began to take shape within fruit and vegetable cultivation.

Conversely, **Iowa State** achieved high profitability in grain and legume production despite its typically dry climate, leading to the commencement of clustering efforts in the cultivation of these primary grain and legume commodities.

Similarly, in **Texas State**, large-scale farms specializing primarily in livestock breeding and cotton cultivation began to emerge, and the initial forms of utilizing the cluster system also took shape within these processes.

It is evident that the early clustering experiences of these developed countries have significantly influenced the widespread dissemination and subsequent development of this system globally.

According to various research findings, clusters currently account for 50 percent of the economies of developed nations worldwide. For example, clusters contribute to 60 percent of the Gross Domestic Product (GDP) of the United States. Furthermore, in Italy, 43 percent of the industrial labor force is employed within clusters, and over 30 percent of the country's total export volume is attributed to this sector.[4]

The cluster system commenced its rapid development within the national economy starting in 2018. An examination of the performance indicators reveals that, initially:[5]

- Six chemical technology clusters were established on the basis of large manufacturing enterprises,

[1] https://economie.ens.psl.eu/IMG/pdf/porter_1990_-_the_competitive_advantage_of_nations.pdf
[2]https://www.isc.hbs.edu/Documents/pdf/Cluster%20Mapping%20as%20a%20Tool%20for%20Development%20_%20report_ISC%20WP%20version%2010-10-17.pdf
[3] https://ers.usda.gov/sites/default/files/_laserfiche/publications/42396/31544_aib770_002.pdf
[4] https://imrs.uz/publications/articles-and-abstracts/cluster Komiljon Qo'ziyev's Article
[5] https://imrs.uz/publications/articles-and-abstracts/cluster Komiljon Qo'ziyev's Article

- Enterprises within the machine-building industry—one of the most crucial sectors of the economy—including manufacturers of passenger vehicles, trucks, buses, and agricultural machinery, also established machinery clusters,
- Looking at the regional breakdown, Tashkent Region alone accounted for 41 industrial clusters.
- An Electric Vehicle (EV) cluster was established for the localization of component and material production, targeting the newly emerging EV manufacturing segment within the machine-building industry.
- Large-scale cluster networks, such as the gas-chemical cluster, were established in the Shurtan Gas Chemical Complex.

**Methods**

This scientific article is aimed at analyzing cluster performance within the economy of Uzbekistan. The methodology heavily relied on established analytical techniques, including observation, aggregation, comparison, and contrasting methods (comparative analysis).

These methods were utilized to assess the following key economic parameters:

- The annual growth rates of production, investment, and export indicators.
- The ratio of export volume to total production volume.
- The overall share and strategic significance of clusters within the national economy.

The analysis process was strictly informed by official governmental documents, statistical reports, and relevant academic literature to ensure the reliability and validity of the findings.

**Results**

In the economy of Uzbekistan, clusters have emerged as a contemporary production model, forming a complex system that integrates the processes of manufacturing, processing, and export into a single cohesive chain. The essence of this system lies in the fact that all stages-from the cultivation of raw materials and their deep processing to the production of finished goods and their delivery to both domestic and international markets-operate in an organically interconnected manner.

Consequently, clusters not only increase production efficiency but also enhance value addition, create new job opportunities, develop the services segment, and expand export potential. Statistical data obtained in recent years demonstrate a significant dynamic in the economic indicators of the clusters. Specifically, the volume of production is increasing annually, investment flows are directed towards the modernization of cluster infrastructure, and the export volume serves to enhance competitiveness in international markets. This process demonstrates the strategic significance of clusters in the modernization, diversification, and sustainable growth of Uzbekistan's economy. Furthermore, clusters are strengthening the stability of the economic system by boosting regional economic activity, promoting the efficient use of local resources, introducing innovative technologies, and expanding cooperation with scientific research institutions.

Therefore, the study analyzes the key performance indicators of cluster activity—production volume, investment flows, and export results-based on separate tables. In each table, the indicators' growth rates, dynamics, and their economic implications are thoroughly interpreted. This approach enables a clearer demonstration of the clusters' role in the national economy, the assessment of their strengths and weaknesses, the determination of their impact on regional development, and the identification of

future development prospects. Detailed analysis and interpretations based on each table are presented below.

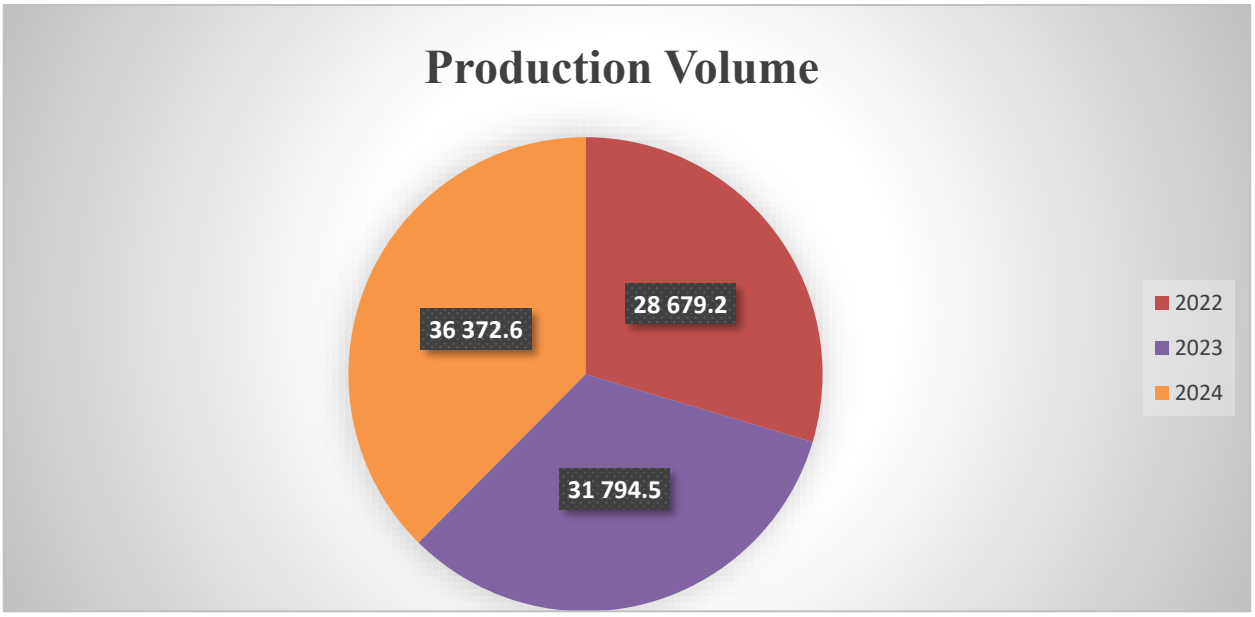


**Table 1. Volume of Industrial Output Produced by Enterprises within the Cluster Structure(bln UZS)**[6]

In the national economy, the number of enterprises within the cluster structure reached 509 in 2022, collectively producing 28,679.2 billion UZS worth of industrial output. Concurrently, 47.8 billion UZS worth of construction work was executed using the enterprises own funds.[7] In 2023, cluster enterprises increased their industrial output to 31,794.5 billion UZS, while the volume of construction work executed amounted to 44.9 billion UZS.[8] Compared to 2022, the volume of output increased by approximately 10.9 percent in 2023. Although the number of enterprises within the cluster structure decreased to 433 in 2024, they produced 36,372.6 billion UZS worth of industrial output during the January-December period.[9] The volume of production recorded a further increase of 14.4 percent in 2024 compared to 2023. The acceleration of this growth rate suggests that investment inflows have successfully modernized the production processes within the cluster sector, resulting in improved product quality and demonstrating the sector's continued trajectory of stable growth.

**Table 2. Investment Volume in Fixed Assets of Cluster Enterprises(bln UZS)10**

| Year | Volume (bln UZS) | Growth (%) |
|---|---|---|
| 2022 | 2 066,5 | – |
| 2023 | 3 584,3 | +73,5 |
| 2024 | 3 677,8 | +2,6 |

[6] Source: Author's compilation
[7] https://stat.uz/images/miz-press-reliz-uz.pdf
[8] https://stat.uz/img/zb.pdf
[9] https://stat.uz/img/miz-uz-press-reliz_p28918.pdf
[10] Source: Author's compilation

Despite the cluster system being a relatively new direction in our economy, it is rapidly emerging as one of the key sectors for attracting investment. This sector has quickly established its position in the national economy, yielding significant results in expanding production volume and enhancing export potential. While 2,066.5 billion UZS was attracted to clusters in 2022, this figure surged by 73.5 percent in 2023, reaching 3,584.3 billion UZS. These capital investments quickly demonstrated their effectiveness, as evidenced by a 10.9 percent growth in the volume of products manufactured by cluster enterprises in 2023. Furthermore, 3,677.8 billion UZS was directed to the cluster sector during 2024, representing a 2.6 percent increase compared to 2023. This indicator signifies the stabilization of investment flows, with the volume of capital investments being sustained at a high level. Concurrently, the yield of these investments is manifesting as an acceleration in production volume, contributing to the enhanced efficiency of clusters within the economy.

Overall, this process demonstrates that the cluster system is acquiring strategic importance within the national economy, and that both the industrial production infrastructure and export potential are being strengthened through targeted investment flows.

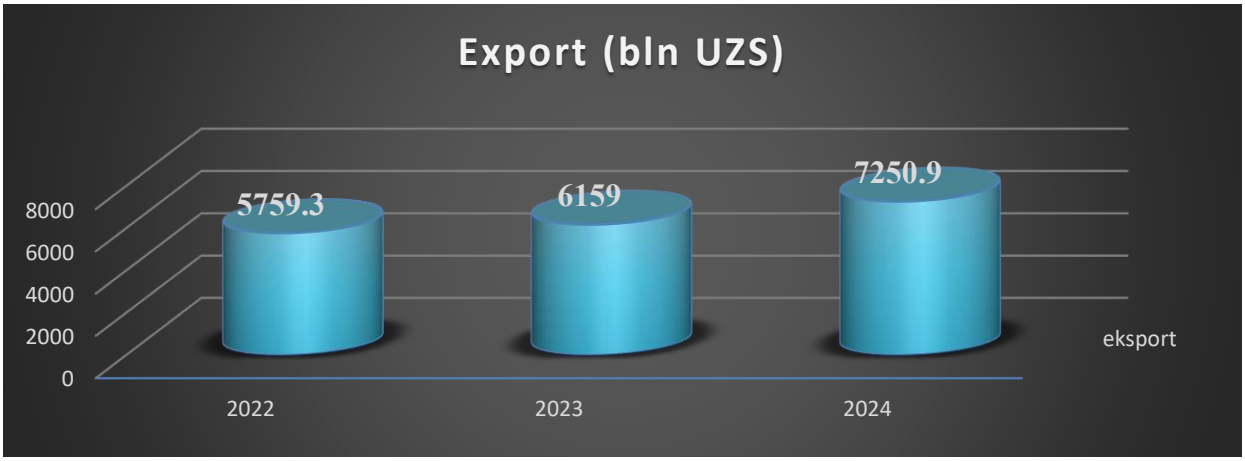


**Table 3. Export Volume of Cluster Enterprises (bln UZS)** [11]

It is well-known in economics that the export of goods, works, and services produced by any country is critically important. Export activities improve a country's economic status, raise the living standards of the population, and stand as a fundamental indicator for strengthening the national currency. The quantity of products exported by cluster enterprises can be observed from the data. The volume of exports showed stable growth throughout the 2022–2024 period. Specifically, the export volume totaled 5,759.3 billion UZS at the end of 2022, and this figure increased by 6.9 percent in 2023, reaching 6,159.0 billion UZS. This result is assessed as the outcome of investments made and reforms implemented within the sector. Furthermore, in 2024, the export volume grew by 21.7 percent, totaling 7,250.9 billion UZS. This indicator confirms that the clusters have quickly transformed into a crucial and indispensable sector of our country’s economy within a short timeframe.

Furthermore, the increase in export volume demonstrates that clusters are enhancing their competitiveness in international markets and securing a vital position in the national economy's foreign trade balance.

[11] Muallif tomonidan shakllantirildi

**Conclusion**

The clustering process in the economy of Uzbekistan is yielding significant results within a short period. The research findings indicate that clusters are emerging as an integrated complex, unifying production, processing, and export into a single value chain, thereby making a substantial contribution to the stable growth of the national economy. Over the 2022–2024 period, the volume of production by cluster enterprises accelerated, rising from 28,679.2 billion UZS to 36,372.6 billion UZS. This growth is primarily attributable to the effective channeling of investment flows and the modernization of the production infrastructure. Investment volume sharply increased from 2,066.5 billion UZS in 2022 to 3,584.3 billion UZS in 2023, subsequently stabilizing at 3,677.8 billion UZS in 2024. This trend demonstrates that the capital attracted to the cluster sector is manifesting its yield in terms of production volume and exports. Furthermore, the export volume grew by 25.9 percent over two years, reaching 7,250.9 billion UZS in 2024, up from 5,759.3 billion UZS in 2022. This confirms that clusters are increasing their competitiveness in international markets and securing a crucial position in the national economy's foreign trade balance. Furthermore, clusters play a vital role not only in expanding production volume but also in creating new job opportunities, developing the services segment, and ensuring overall socio-economic stability. However, certain issues persist, such as high creditor indebtedness, the weakness of the services segment, and the lag effect of investment returns. Addressing and resolving these challenges is crucial for enhancing the future efficiency and sustainability of the clusters.

Overall, clustering is emerging as a strategic direction in the modernization and diversification of the Uzbekistan economy. The growth in production volume and exports through clusters, the effective distribution of investment flows, and the strengthening of social stability serve as crucial factors in enhancing the national economy’s competitiveness. Therefore, the further development of the cluster system, strengthening the services segment, and ensuring financial sustainability must be a priority objective in Uzbekistan's economic policy.

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