

INTEGRATION OF SMALL BUSINESS INTO THE FUNCTIONING OF INNOVATION CLUSTERS AND TECHNOPARKS

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Abstract: *This article analyzes the participation of small businesses in the activities of innovation clusters and technoparks, their role in the economy and their integration with science. Innovation clusters allow small businesses to effectively use the results of scientific research, create new products and technologies. Technoparks, in turn, play an important role in supporting startups, transferring technology and providing them with qualified personnel. In Uzbekistan, the innovative development strategy considers the participation of small businesses in the activities of technoparks as a factor in increasing the production and export potential of competitive products. The article highlights the advantages, existing problems and prospects of this process.*

Keywords: *Small business, innovation cluster, technopark, startup, technology transfer, competitiveness, science and technology integration, economic development.*

In today's conditions of globalization and increasing competition, the sustainable development of the country's economy directly depends on innovative approaches. As an important component of the innovative economy, small businesses play a special role in creating new products and services, introducing modern technologies, and quickly responding to market needs. At the same time, the effective operation of small businesses cannot be fully realized without integration with scientific achievements and technologies.

Innovation clusters and technoparks are one of the most important mechanisms that ensure this integration. Clusters attract small businesses to cooperation with large industrial enterprises, research institutes, and educational institutions. Technoparks, in turn, create the necessary infrastructure, financial support, and an innovative environment for startups. As a result, small businesses will have the opportunity to produce competitive products not only in the domestic market, but also in the international arena.

In the Republic of Uzbekistan, within the framework of the concept "New Uzbekistan - on the path of innovative development", a number of reforms are being implemented to expand the activities of innovative clusters and technoparks and strengthen the participation of small businesses. Therefore, studying this topic is of great importance in more effectively organizing the

integration of small business with science and identifying priority areas of innovative development.

This study used a comprehensive approach to studying the participation of small businesses in the activities of innovation clusters and technoparks. The article is aimed at combining theoretical and practical foundations, and several scientific and methodological methods were used.

Firstly, the method of theoretical analysis was used, and international and local scientific literature on innovation clusters, technoparks, small business and science integration was studied. The concepts of innovative development of scientists such as Porter, Lundvall, Freeman were chosen as the theoretical basis.

Secondly, the experience of developed countries (USA, Germany, South Korea, China) was compared with the conditions of Uzbekistan through the method of comparative analysis. In this, the participation of small businesses in technoparks, state support mechanisms and sources of financing were studied.

Thirdly, using the method of statistical analysis, the share of small businesses in innovative sectors, indicators of technopark activity, and the dynamics of the number of startups were analyzed based on data from the State Statistics Committee of the Republic of Uzbekistan, the Ministry of Innovative Development, and IT-Park.

Fourthly, as an empirical approach, the practical activities of some technoparks and clusters were studied. In particular, the role of the Yashnobod technopark and IT-Park in supporting small business entities was analyzed as an example.

Fifthly, based on a systematic analysis, the role of small businesses in innovative development and their interrelation with the activities of technoparks and clusters were considered as a whole.

These methodological approaches made it possible to analyze the integration of small businesses with the science sector, identify existing problems, and define promising directions in the study.

The participation of small businesses in technoparks and clusters is of particular importance in the formation of an innovative economy. Small businesses are by their nature flexible economic units that can quickly respond to market demands and quickly absorb new technologies. Therefore, their direct cooperation with the science and technology sector, their operation as part of technoparks and clusters is considered an important tool in increasing the country's innovative potential. Technoparks provide the necessary production infrastructure, laboratories, technological incubators, business incubators and consulting services for small businesses. This creates broad opportunities for

the implementation of startup projects, rapid development and commercialization of new products and services. Innovation clusters, by their nature, represent the cooperation of various business entities, research centers and educational institutions in the same region or within the same industry. The participation of small businesses in clusters allows them to operate on an equal footing with large enterprises and increase production efficiency through the use of scientific developments. In addition, cooperation within the cluster expands the opportunities for efficient use of resources, reducing production costs and entering new market segments.

In Uzbekistan, the activities of technoparks and innovation clusters have been developing significantly in recent years. The Yashnobod technopark, IT-Park and other regional technoparks established in Tashkent are becoming important schools of experience in supporting small businesses and startups. For example, IT-Park is being taken to a new level by providing tax incentives for small businesses producing software, opportunities to enter foreign markets and qualified personnel. In addition, the active participation of small businesses is also noticeable in the agrocluster system. In such clusters, small businesses are increasing their potential by using scientific developments in the processes of growing, processing and exporting agricultural products.

At the same time, there are also problems that limit the participation of small businesses in the activities of innovation clusters and technoparks. Firstly, the lack of financial resources creates difficulties for many small businesses in implementing scientific developments in practice. Secondly, the insufficient development of mechanisms for commercializing the results of scientific research hinders their widespread implementation. Thirdly, the uneven development of innovation infrastructure for small businesses in all regions is also considered a significant obstacle.

However, despite the existing problems, the prospects for expanding the participation of small businesses in innovation clusters and technoparks are very high. First of all, additional tax incentives, grants, and mechanisms for financing innovative projects created by the state support the activities of small businesses. Also, strengthening ties with foreign technoparks and research centers within the framework of international cooperation is opening new opportunities for small businesses. The integration of small businesses with science in modern digital technologies, artificial intelligence, biotechnology, and other high-value-added areas is expected to yield more effective results.

In general, the participation of small businesses in the activities of innovation clusters and technoparks is considered one of the important factors in the modernization of the country's economy, the creation of new jobs,

increasing export potential, and strengthening international competitiveness. Therefore, supporting this process, eliminating existing problems, and further strengthening the integration of small businesses with science remains one of the priority tasks of Uzbekistan's innovative development policy.

The participation of small businesses in the activities of innovation clusters and technoparks is an important factor for the sustainable development of the modern economy. Such cooperation allows small businesses to quickly master new technologies, implement scientific developments and create competitive products. Within the framework of clusters, small businesses are integrated with large industrial entities and scientific centers, have the opportunity to effectively use resources and adapt to market requirements. Technoparks, in turn, lead small businesses to innovative development by supporting startups, providing infrastructure and consulting services.

In the conditions of Uzbekistan, the development of technoparks and clusters is taking small business activities to a new level. The activities of IT-Park, agroclusters and other innovative regions serve to widely implement scientific achievements. However, limited financial resources, insufficient development of commercialization mechanisms and uneven development of infrastructure in the regions still remain important problems.

However, the prospects for further strengthening the participation of small businesses in innovation clusters and technoparks are of great importance. The support mechanisms created by the state, the use of international experience, and the strengthening of close cooperation with scientific institutions will accelerate this process. Thus, innovative development based on the integration of small businesses with science will become one of the decisive factors in increasing the competitiveness of the Uzbek economy and entering a new stage of development.

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