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Salohiddin Ochilovich Ibragimov

Tashkent Institute of Architecture and Civil Engineering
Senior Teacher

Department of Economics and Real Estate Management

SUPPORT AND DEVELOPMENT OF INNOVATIVE CLUSTERS IN THE PRODUCTION OF BUILDING MATERIALS IN UZBEKISTAN

Abstract: This article is based on analysis of the construction materials industry and its importance in the Republic of Uzbekistan, and additionally it provides potential recommendations for improvement on the basis of an innovation cluster.

Key words: construction economics, investment, building materials, manufacturing, clusters, innovation, regional development.

Language: English

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Introduction

Nowadays, our country pays great attention to the implementation of market relations and practices that have been experienced in international practice, and playing an important role in the development of country economy. One of them is known as “clusters” which are currently being established and developed in many sectors of our economy comprising textiles, light industry, agriculture and construction materials manufacturing industry. As noted in the Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis on December 29, 2020: “From now on, each village or mahalla will be developed based on its direction and growth points. To this end, I propose to create a regional infrastructure development fund worth 3 trillion Uzbek sum on the next year. The fund will be used to co-finance infrastructure projects based on suggestions from local councils. Furthermore, 100 techno parks, small industrial zones, regional clusters and logistics centers will be established in 84 districts and cities to further increase the industrial potential” [1]. In this regard, it is important to support and develop the organization of innovative cluster approaches in the building materials industry. So, what is a “cluster” used as a new term in Uzbek? Several definitions of the concept of “cluster” have been shown on the researchers’

analysis.

The term “cluster” is a French word, which in Uzbek means “bond”, “group”, “and “gathering”. The theory of “cluster” is based on the views of Alfred Marshall in his article named as “Principles of Economics”, written in the late XIX century, on the integration of specialized industries in individual regions. In the development of ‘cluster theory’ we can see the achievements of four important American, British, Scandinavian and Russian scientific schools [2].

Among the American scientists on the term cluster are M. Porter “Theory of Competitiveness”, M. Enright, S. Rezenfeld, P. Maskell and M. Lorentsen “The Concept of Regional Clusters”, A. Marshall “Theory of industrial zones”, P. Bekatin Theories of Italian industrial districts », M. Storper created theories «Ideal regional cluster». Theories of these scientists emphasize that clusters have highly effective in increasing competitive advantage among the manufacturers that they are a system integrated with the activities of educational, scientific, technological, economic and other service entities in the region [3].

According to British scientists J. Dunning, K. Briman and J. Humphrey, clusters are institutional theories that define the basis of the economy as a

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system of interacting institutions. According to Scandinavian scientists B.O. Lundval, B. Johnson, B. Asheim and A. Isaacson, the evolutionary development of a cluster goes through a number of stages, that is, from its emergence to its end [4].

In addition, Russian scientists A.A. Ugryumov, A.B. Voronin, A.A. Voronin and H. Asaul studied the role of clusters in the development of the building complex and building materials industry [5].

Uzbekistan has created a solid foundation for the modernization of the construction industry, the development of an innovative system, large-scale research in chemistry, energy, biology, education, medicine, electronics, agricultural sciences and other areas.

Currently many literature, scientific manual papers and scientific articles related to the problems of the construction materials industry are being published by our country's scientists. Among them, A.Sh. Bekmurodov, B.B. Berkinov, N.G. Yuldashev, B.K. Goyibnazarov, Sh.N. Zaynutdinov and R.I. Nurimbetov's [6] research works can be exemplified. The researches of these authors comprise of great scientific importance, and additionally they have made a significant contribution to the development of modern methods and techniques for the production of building materials in our country.

However, the research conducted by these scientists does not pay enough attention to the issues of improving manufacturing in the building materials industry on the basis of innovative clusters.

Main part

In the development of the economy and development of manufacturing the construction materials industry, at the present time, the most optimal way is considered the implementation of innovative clusters. The practical application of innovative clusters will require highly competitive industries to establish partnerships with relevant sectors rather than separately.

As a result, the construction materials industry is developing in our industry, and the production of modern, competitive building materials is accelerating. In turn, the state should contribute to the development of all clusters in the country. In this regard, a new direction known as "clusters" is being functioned and formed in our country. As a result of the establishment and development of innovative clusters on the building materials industry, it triggered the optimal development of industry in the country, the growth of investment and economic recovery of the country [7]. In this regard, the indicators of brick material, which is one of the products of construction materials, by regions are given in Table 1 below.

Here are the indicators of brick production in the regions for 2013-2019, the table shows that the highest in Tashkent region in 2019 was 331.9 million units, in Bukhara region - 144.7 million units, and in Khorezm region - 103.6 million units [8]. The lowest production rate was 33.2 million bricks in Sirdarya region, 39.4 million bricks in Samarkand region and 47.0 million pieces in Tashkent.

Table 1. Production of building bricks in 2013-2019 (million units)*

| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Republic of Uzbekistan | 1388,6 | 1267,4 | 1322,0 | 1487,1 | 1567,2 | 1758,5 | 1254,5 |
| Andijan region | 59,4 | 67,1 | 59,6 | 74,4 | 62,1 | 84,6 | 53,7 |
| Bukhara region | 151,3 | 152,2 | 221,4 | 162,3 | 147,4 | 135,3 | 144,7 |
| Jizzakh region | 27,8 | 28,1 | 27,1 | 27,7 | 28,5 | 50,7 | 48,8 |
| Kashkadarya region | 193,7 | 59,0 | 49,6 | 84,3 | 116,4 | 96,7 | 78,9 |
| Navai region | 125,7 | 136,4 | 132,5 | 151,9 | 158,5 | 115,6 | 63,7 |
| Namangan region | 65,4 | 62,8 | 74,2 | 82,3 | 83,0 | 100,5 | 63,7 |
| Samarkand region | 62,1 | 60,3 | 58,1 | 66,4 | 68,5 | 64,2 | 39,4 |
| Surkhandarya region | 63,4 | 62,3 | 64,6 | 74,2 | 87,6 | 111,0 | 81,2 |
| Syrdarya region | 22,1 | 25,7 | 23,7 | 30,5 | 27,4 | 42,7 | 33,2 |
| Tashkent | 300,6 | 289,4 | 259,2 | 363,8 | 385,9 | 517,6 | 331,9 |
| Fergana region | 95,0 | 55,7 | 83,7 | 105,2 | 96,8 | 121,9 | 97,7 |
| Khorezm region | 115,1 | 121,0 | 138,9 | 139,6 | 167,5 | 160,3 | 103,6 |
| Tashkent region | 54,5 | 72,3 | 55,4 | 56,1 | 56,8 | 53,1 | 47,0 |
| Republic of Karakalpakstan | 52,5 | 75,1 | 74,0 | 68,4 | 80,8 | 104,2 | 66,8 |

*Source: compiled by the author on the basis of data from the Statistics Committee of the Republic of Uzbekistan

The most important indicators of the development of the material and technical base of construction in the form of the dynamics of production of building materials (Table 2). It should be noted that significant results have been achieved in the country,

as the production of many materials has grown significantly compared to last year, new types of materials have been mastered, production technology has been updated, for example, most of the cement produced [9]. This allows you to significantly reduce

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energy consumption. In general, analyzing the above indicators, we can say that there is a stable positive trend.

Table 2. Dynamics of production of basic building materials*

| | 2015 | 2016 | 2017 | 2018 | 2019 |
|-----------------------------------|---------|---------|--------|--------|--------|
| Cement (thousand tons) | 7052,0 | 7061,0 | 7639,7 | 8459,8 | 8645,9 |
| Slate (million conditional tiles) | 417,3 | 420,8 | 407,3 | 356,6 | 405,5 |
| Building bricks (million pieces) | 1350,6 | 1388,6 | 1267,4 | 1322,9 | 1487,1 |
| Window (thousand square meters) | 80013,2 | 82444,8 | 5825,5 | 7226,0 | 7283,0 |

*Source: compiled by the author on the basis of data from the Statistics Committee of the Republic of Uzbekistan

A distinctive feature of the industrial stage after the development of society is the acceleration of the innovation process and the modernization of the economy. Currently, the fourth technical revolution is taking place, with the rapid development and application of ICT, digital technologies in industry 4.0 and all areas of industrial activity [10].

Conclusion

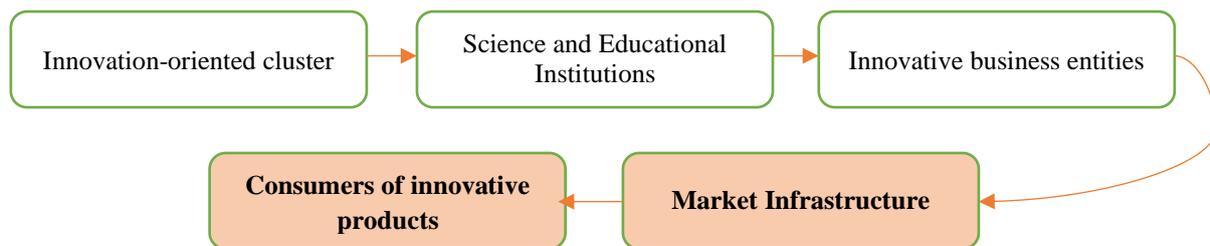
During this period, the construction sector plays an important and priority role in the modernization of the national economy. This direction is designed to ensure the effective execution of tasks at one of the most difficult stages of the investment and construction process.

Builders are mastering new construction technologies, using new building materials, products and structures, updating the material and technical base of construction and the fleet of existing construction equipment using modern financing methods.

The development of the construction industry is influenced by various external and internal factors, the composition and strength of which change over time.

The study of these factors allows for the purposeful and rational influence on the development of construction, as an important link in the national economy.

Based on the above, the scheme of the organizational and economic model of the innovation-oriented cluster is given (pic.1).



Pic.1. Scheme of the organizational and economic model of the innovation-oriented cluster is given.

The peculiarities of the formation of innovative clusters in the building materials industry include:

- the areas where the resources of enterprises are interconnected;
- the need to consider the regions in the organization of innovation clusters;
- associated with the acceleration of innovative processes that require the use of new methods of management;
- a cluster approach to the organization and management of a group of economic entities in one industry, especially the organization of innovative clusters, will allow for sustainable development of the country;

- the cluster has its own life cycle as an organizational formation and goes through several stages. In addition, support for the organization of innovation clusters predetermines the formation of a number of elements in the form of innovative potential of enterprises (industries), as well as others.

In conclusion, the establishment, support and development of innovative clusters in the construction materials industry of Uzbekistan has a significant impact on increasing manufacturing capacity and improving the quality of building materials in the country, meeting domestic demand for construction materials, and additionally growing of employment rate.

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