

ANNOTATION

Dissertation work of Serikbayeva Elmira Asilbekovna on the topic: «Creation of a cluster as an effective mechanism for the development of the domestic pharmaceutical industry» submitted for the degree of Doctor of Philosophy (PhD) in the specialty 6D074800 – «Technology of pharmaceutical production»

1. Relevance of the topic.

The main task of the state program of industrial and innovative development of the Republic of Kazakhstan for 2015 - 2019, developed on the basis of the decree of the president of the republic of Kazakhstan dated February 1, 2010 №922 «on the strategic plan for the development of the Republic of Kazakhstan until 2020» and the message of the head of state to the people of Kazakhstan dated January 17 2014 «Kazakhstan way - 2050: common goal, common interests, common future» is to impart a new level of technological effectiveness to priority sectors of the pharmaceutical industry and create a basis for the development of sectors of the future through the formation of innovative clusters.

Based on the task, the plans of the government of the Republic of Kazakhstan include the introduction of modern lines for the production of medicines, the construction of factories and bringing the production of domestic medicines in the country up to 50%, since there is a high internal demand for medicines, confirmed by imports and the level of expenses for these goals. Foreign trade analysis demonstrates the extreme dependence of the pharmaceutical industry of the Republic on imported products, for example, the volume of imports of pharmaceuticals in the Republic of Kazakhstan is 98%, against 2% of exports. Taking into account this import dependence (imports satisfy 85% of domestic consumption of medicines, at the same time, the pharmaceutical industry of Kazakhstan satisfies only 15% of domestic consumption), the key task in creating regional clusters remains to increase the production capacity of enterprises of the pharmaceutical industry in Kazakhstan, that is, the creation of export-oriented industries.

Germany has been the largest supplier of medicines to Kazakhstan for many years. The share of German products in the volume of imports is 16%, followed by France - 9%, Austria - 6% and India - 6%. According to marketing research, Western pharmaceutical companies, whose products have a good reputation in the international market, are counting on great opportunities in the retail segment of Kazakhstan, due to the growing purchasing power of the population. This factor demonstrates the huge market potential for the sale of pharmaceutical products in Kazakhstan.

The formation and development of clusters requires the purposeful implementation of a number of prerequisites - economic, social, organizational. First, a special socio-cultural environment is needed that characterizes the

atmosphere of renewal and growth. Secondly, economic growth is needed, manifested in expanded production and quality renewal. Thirdly, certain and sufficiently strong driving forces are required. Fourth, the harmonious combination of the national economy with the world economy. Fifth, the cluster model must necessarily be both a model of an innovation process and an increase in productivity. Sixth, a coordination system is also needed to balance the interests of different cluster participants. The development of dynamically functioning clusters is one of the most rational mechanisms on the way to a modern economy. Thus, successful deepening and expansion of clusters turns out to be an integral part of economic development. The Republic of Kazakhstan is characterized by: a sufficient level of education, the development of public institutions, high qualifications of specialists, natural resources, etc. The structural links that make up the cluster mutually enrich each other in the processes of introducing higher-level technologies, improving the product, developing organizational management methods, and introducing innovations.

The concentration of a cluster in a geographic space is especially important for countries with developing economies, like in Kazakhstan, which have a significant differentiation of the infrastructural and economic level of the territory. In general, the formation and development of clusters is a long and gradual process that requires special regulation methods at each stage. Initiatives related to the functioning of the cluster require further measures aimed at their formation, which is associated with partnerships between various actors operating in the economic space, which include state and regional government bodies, private business, universities and other organizations whose activities need to focus on clusters.

The cluster principle is important, first of all, because with the help of clusters it is possible to overcome the contradictions between the large territorial scale of our economy and flexibility. Assessing the possibilities for the development of clusters in Kazakhstan, it should be noted that in this respect there are some constraining factors, since the culture of entrepreneurship has not yet taken root in the country, competition is not always fair, in general, the entrepreneurial side is not saturated with an atmosphere of trust of economic agents to each other. Kazakhstan is in the early stages of accumulating competitiveness potential due to basic factors (natural resources, cheap labor). The objective need to create clusters arises at higher levels, when such factors as modern infrastructure, highly qualified specialists, scientific potential, and innovative technologies are fully involved.

The urgency of creating a pharmaceutical cluster in the Almaty region confirms the presence of a developed complex of the pharmaceutical industry. The share of the Almaty region in the volume of domestic production of pharmaceutical products is significant and amounts to about 28%. Based on this, the industry can be called dynamically developing at the regional and sectoral levels.

The developed complex of the regional pharmaceutical industry is represented by such large companies as «Nobel JSC», «VivaPharm LLP», «Fitoleum LLP», «Kelun-Kazpharm LLP», etc. Since 2018, there has been a gradual transition of the activities of pharmaceutical enterprises in the region to GMP standards.

More than 20 thousand plant species grow in the foothills of the Tien Shan ridge, 6 thousand of them contain biologically active substances. Of these six thousand plants, only 600 species can be used as a semi-finished product for the production of medicinal substances, and from more than 500 species, finished medicinal products can be obtained.

The existence of a high research, production and personnel potential, which is concentrated in the Treasury KazNMU named after S.D. Asfendiyarov, is also a fundamental feature of the cluster development of the pharmaceutical industry in the region.

Based on the foregoing, it follows that in the Almaty region there are all the necessary conditions for creating a pharmaceutical cluster.

From the preliminary literature review, we concluded that there is not enough research on the development of scientific and methodological approaches to clustering pharmaceutical industries in Kazakhstan.

All of the above contributed to the definition of the main goal and objectives for conducting this study.

2. The purpose of the study.

This study is to create a cluster as an effective mechanism for the development of the domestic pharmaceutical industry.

3. Objects and subjects of research.

- pharmaceutical cluster associations of the Republic of Kazakhstan, countries of the far and near abroad;
- pharmaceutical workers in the field of drug treatment of the Republic of Kazakhstan.

4. The subject of research.

Regularities and trends in the development of domestic and foreign cluster processes.

5. Research objectives.

1. To conduct a comparative analysis of the cluster policy of the countries of the far and near abroad on the basis of a literature review;
2. Justify the need to organize a pharmaceutical cluster in the region;
3. Propose a conceptual model for the functioning of the pharmaceutical cluster at the regional level.
4. Develop scientifically-based recommendations for the organization of a scientific and educational pharmaceutical cluster.
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6. Scientific novelty of research.

1. For the first time, a methodology for assessing the possibility of forming a pharmaceutical cluster in the region will be proposed;
2. For the first time, scientifically grounded recommendations will be developed for organizing a scientific and educational pharmaceutical cluster in the Republic of Kazakhstan;
3. For the first time, a conceptual model for clustering pharmaceutical industries at the regional level will be developed.

7. Main provisions to be submitted for defense.

1. Justification of the formation and development of a pharmaceutical cluster in Almaty and Almaty region.
2. The results of the development of the Conceptual model of functioning at the regional level and implementation in the practical sphere.

8. Practical significance of the study.

Based on the results of the study, they were developed and implemented in practical and educational pharmaceutical activities:

1. Methodology for assessing the possibility of forming a pharmaceutical cluster in the region;
2. Conceptual model of clustering of pharmaceutical industries at the regional level;
3. Scientifically-based recommendations for the organization of a scientific and educational pharmaceutical cluster in the Republic of Kazakhstan.

9. Personal contribution of the dissertator.

The dissertator independently collected materials, conducted an experimental study, analysis and generalization of literary data on the topic of the dissertation. The author conducted a sociological study among pharmaceutical workers in the field of drug treatment in Almaty and Almaty region in the form of a sociological survey, which revealed the need for clustering of pharmaceutical industries in Almaty and Almaty region.

The author carried out statistical processing of the obtained data, summarized and presented the results in the form of a dissertation, articles and methodological recommendations.

10. Approbation of dissertation results.

The main provisions of the dissertation were reported and published in the materials: Materials of the international scientific conference «Modern aspects of medicine and pharmacy: education, science and practice» dedicated to the 40th anniversary of the South Kazakhstan Medical Academy (Bulletin of the South Kazakhstan Medical Academy 2019);

Materials of the International Scientific Conference «The current state of the pharmaceutical industry: problems and prospects» (Uzbeksitan Tashkent, 2020);

Materials of the international scientific conference «Modern Science. Scientific Research Management and Standards» - (Prague, Czech Republic, 2020).

11. Information about publications.

According to the results of the research, 17 papers were published, including: 3 publications in the international journal included in the Scopus database (h index = 1); 7 publications in journals recommended by the CCSON of the Ministry of Education and Science of the Republic of Kazakhstan; 5 publications in the materials of international scientific and practical conferences; 2 methodological recommendations approved at the Meeting of the Senate of the NAO «KazNMU named after S. D. Asfendiyarov»

12. The volume and structure of the thesis.

The dissertation work consists of an introduction, a review of literature, materials and research methods, 5 sections of experimental research, a conclusion, a list of used sources and applications.