

ASSESSMENT OF THE INNOVATION POTENTIAL OF THE CENTRAL ASIAN COUNTRIES AND THE REPUBLIC OF KAZAKHSTAN

Akylbekova Dana

Master's student, Al-Farabi Kazakh National University, Almaty, Kazakhstan

Abstract. This article comparatively analyzes the innovative potential of the countries of Central Asia and the Republic of Kazakhstan. In particular, the main leading principles of the economic system that contribute to the economic development of the countries of the Central Asian region, including Kazakhstan, are considered: Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan. An overview of the main steps in diversifying the economies of these countries will be conducted, the main approaches to attracting investments and improving the quality of life of citizens will be analyzed.

Today, the innovation system is one of the most pressing problems. Analyzing the current state of the innovation system in Central Asia and determining the main directions for assessing the potential of innovative development in the region, it can be concluded that Kazakhstan is a country with high economic activity and innovative potential, ahead of the development trajectory of the Central Asian countries

Keywords: innovation potential, strategy, economic activity, development trajectory, digitalization.

Introduction. Innovation plays a key role in the pursuit of economic progress and sustainable development of Central Asian countries, including the Republic of Kazakhstan. Rich in resources and cultural heritage, this region is becoming more and more attractive to investors and innovators. The innovative potential of these countries is determined by their unique geographical and economic characteristics, as well as strategies aimed at stimulating the development of high technology and scientific research sectors. Despite its potential, Central Asia faces a number of difficulties in developing its innovative system. However, thanks to the active support of public and private initiatives, as well as international cooperation, the region has the opportunity to become the main center of innovation, attracting the attention of investors and entrepreneurs from all over the world. In this article, we will consider the current state of innovation potential in Central Asia, assess its potential and discuss the development prospects, identifying the main factors contributing to the emergence of this region as a center for innovation on a global scale.

Literature review. Thanks to the works of foreign scientists studying the innovation system, the theoretical basis of this area was formed. Among them are M.M. Barbary, A.R. Tawfiq, C.V. Nguyen, J.G. Ingersoll, J.F. Moore, D.J. Isenberg, B. There is Cohen. A review of this literature highlights various definitions of innovative potential. For example, Moore viewed innovation systems as clusters of interacting entities such as firms, research parks, universities, and government that coexist and develop [1]. Isenberg gave a theoretical basis for innovation potential by suggesting that resource configuration increases service productivity beyond the factors of production that affect economic results [2]. Cohen subsequently theorizes as interrelated entities of a particular geography focused on Sustainable Development [3]. One of the main sources of information on the state of the innovation system in Central Asia is the work of T. Narbayev and Sh. Amirbekova "innovative potential of Central Asia: problems and prospects". In this article, the authors analyze the current state of the innovation sector in the countries of Central Asia, discuss

the main obstacles to its development and suggest ways to overcome them [4].

Discussion and results. The socio-economic development of each country always requires meeting the needs of travel, promoting trade and commodity exchange, tourism and investment, as well as economic development [5]. The main guiding principle of any economic system should be [6]. Central Asian countries are striving to diversify their economies, attract investment from developed states, and improve the standard of living of their population. For the effective implementation of such a goal, it is necessary to be able to correctly direct national finances to a market system with sustainable development.

There are also international organizations interested in the development of the innovative potential of Central Asia. One of them is the United Nations. The organization believes that in order to increase the sustainable economic growth and competitiveness of seven Central Asian countries (Azerbaijan, Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan), a systematic experiment with innovation or new ideas is necessary. These projects are aimed at achieving sustainable development in accordance with the UN Agenda for the period up to 2030. The Sustainable Development Goals are prioritizing innovation to ensure the transition to a knowledge-based economy and as a tool to address national economic and social challenges, including poverty reduction and access to basic infrastructure and services, and the transition to circular economy principles [7].

Another factor that directly affects the innovative potential of the countries of Central Asia and the Republic of Kazakhstan is the issue of digitalization. According to international experts, Kazakhstan's innovative system can serve as an example for the countries of Central Asia. It was announced at the regular meeting of the Asian Development Bank in Almaty. It assumes the formation of a powerful foundation for Higher Education, Science, Technology and innovation [8].

According to the Global Innovation Index 2023, Kazakhstan ranks 3rd in terms of innovation in the countries of Central and South Asia-after India and Iran. Such a rating was published by the World Intellectual Property Organization (WIPO).

According to the govtech15 (GTMI) Maturity Index developed by the World Bank to assess the level of digitalization of Public Administration in Central Asian countries, Kazakhstan, Kyrgyzstan and Uzbekistan pay significant attention to state Technologies (category «B»). However, Turkmenistan is the only country in the region with the lowest level of Public Sector Modernization (category «D») [9]. Given the likelihood of such unforeseen events, it is very important to identify their patterns and develop active measures to ensure that countries are ready to respond to events related to them [10].

To compare the level of innovative development of different countries, it is customary to use the study of the INSEAD International Business School, which since 2007 publishes an annual rating of countries based on various innovation indicators. The so-called " Global Innovation Index " is calculated on the basis of two groups of indicators [11].

In order to observe the level of innovation potential of Central Asian countries in innovative development, as well as pay attention to the features of creating their national innovation potential, let us turn to the above-mentioned rating at the end of 2023.

Table 1.

Global Innovation Index 2023

Place in the ranking	State	Index
1	Switzerland	67,6
2	Sweden	64,2
3	US	63,5
4	UK	62,4
5	Singapore	61,5
81	Kazakhstan	26,7
82	Uzbekistan	26,2

106	Kyrgyzstan	20,2
111	Tajikistan	18,3
Warning. Compiled by the author on the basis of a source of analysis of indicators of innovation ecosystem leadership countries [12]		

As can be seen from the above table, the countries of Central Asia, including Kazakhstan, took the 81st place, Uzbekistan-the 82nd place, Kyrgyzstan-the 106th place, Tajikistan-the 111th place. In addition, the World Intellectual Property Organization (WIPO) suggested that according to 2023 data, Kazakhstan is among the three leaders in the development of innovation in Central and South Asia [13].

Having studied the main features of the innovative potential of the Central Asian states, it is possible to conduct a comparative analysis of them for a number of important indicators.

Table 2.

Comparative analysis of innovative systems

Indications	Kazakhstan	Uzbekistan	Kyrgyzstan	Turkmenistan	Tajikistan
Population in the state, million.man	20 053 665	36 800 000	6 813 306	6 577 801	10 284 246
Gross domestic product (GDP), billion. dollar	104 560,6	86,1	41,2	58,52	54,2
Costs in relation to gross domestic product	0,13%	0,13%	0,08%	0,03%	0,09%
Education spending as a percentage of GDP	21%	20,5%	16,5%	28%	19,9%
Number of enterprises, units	1 657 570	477 000	51762,7	205 054	29 700
Number of patents issued per 1 billion GDP, units	651	298	39	68	
Warning. Compiled by the author based on sources from the World Intellectual Property Organization (WIPO) [14]					

Based on the above indicators, the data of the five Central Asian countries for 2023 are shown. The leading country in terms of population is Uzbekistan, although Kazakhstan ranks first in terms of gross domestic product (GDP). If we pay attention to costs in relation to GDP, the minimum amount of losses is allocated to Turkmenistan, in turn, special attention is paid to the field of Science and research. For example, at the competition of scientific work among the youth of Turkmenistan in 2023, 1 thousand 362 people presented their developments, of which 67 young scientists won prizes [15]. Although costs were low, overall education costs accounted for 28% of GDP. In terms of the number of enterprises and the number of patents, Kazakhstan is also at the forefront.

Conclusion. The assessment of the innovation potential in Central Asia shows that there are a number of key factors contributing to its development. First of all, the strategic location of the region provides access to the markets of Eastern Europe, China, Russia, the Middle East and South Asia, which creates favorable conditions for International Cooperation and integration into global innovation chains. Secondly, the presence of qualified personnel, especially in the field of information technology, will become the basis for the development of technological startups and innovative projects. In addition, state support, investments in education and infrastructure, as well as active initiatives to create innovation clusters and technoparks contribute to the creation of favorable conditions for entrepreneurship and innovation.

References:

1. Moore, J.F., 2017. Predators and prey: a new ecology of competition. *Harv. Bus. Rev.* 71 (3), 75–86
2. Isenberg, D.J., 2010. How to start an entrepreneurial revolution. *Harv. Bus. Rev.* 88 (6), 40–50.
3. Cohen, B., 2018. Sustainable valley entrepreneurial ecosystems. *Bus. Strat. Environ.* 15 (1), 1–14
4. Narbaev T, Amirbekova D. Research Productivity in Emerging Economies: Empirical Evidence from Kazakhstan. 2021; 9(4):51. Стр. 19. (Basel, Switzerland) Процентиль Scopus CiteScore – 79%, Scopus квартиль (Q1) <https://doi.org/10.3390/publications9040051>
5. Nguyen C.V. Air Transport Resilience, Tourism and Its Impact on Economic Growth. *Economies*. 2024; 12(9):236. <https://doi.org/10.3390/economies12090236>
6. Ingersoll JG. Inequality in the Distribution of Wealth and Income as a Natural Consequence of the Equal Opportunity of All Members in the Economic System Represented by a Scale-Free Network. *Economies*. 2024; 12(9):232. <https://doi.org/10.3390/economies12090232>
7. UNECE, 2023. United nations economic commission for Europe New Innovation Policy for transition economies in the SPECA subregion UNECE Policy Handbook. ISBN: 978-9-2100-2963-6. <https://unece.org/sites/default/files/2024-01/NIPTE-SPECA-2023-EN-WEB%20SIGNED.pdf>
8. 24kz TV channel. Elımızdñ innovasiyalıq jüiesı Orta Azia elderine ülgı bolmaq [Kazakhstan's innovation system will serve as an example for Central Asian countries]. https://www.youtube.com/watch?v=m2A8g_44VTg
9. Farrukh Khakimov. The overview of national digitalization strategies of Central Asian states: challenges and opportunities for development. https://cabar.asia/wp-content/uploads/2022/10/Policy-Brief_Digitalization_en.pdf
10. Vasin SM, Timokhina DM. Specific Effect of Innovation Factors on Socioeconomic Development of Countries in View of the Global Crisis. *Economies*. 2024; 12(8):190. <https://doi.org/10.3390/economies12080190>
11. Muhamedov Rustam. Digital Transformations in Central Asia: Current State and New Perspectives. 16 October 2021, Bishkek. URL: <https://osce-academy.net/upload/file/2.pdf>
12. Kulishova A.V., Antokhin Yu.N. «Analiz pokazatelei innovatsionnyh ekosistem stran mirovogo liderstva» [Analysis of indicators of innovative ecosystems of world-leading countries] // Университет ИТМО, 2019 No.2. URL: <https://books.ifmo.ru/file/pdf/2846.pdf>
13. Soumitra Dutta, Bruno Lanvin, Lorena Rivera León and Sacha Wunsch-Vincent. Global Innovation Index 2023 Innovation in the face of uncertainty. WIPO Publication No. 2000EN/23. URL: <https://www.wipo.int/edocs/pubdocs/en/wipo-pub-2000-2023-en-main-report-global-innovation-index-2023-16th-edition.pdf>
14. Gulnara Doroshkevich. Kazakhstan voşel v top-3 indeksa innovasi v Senträlnoi i Ğujnoi Azii [Kazakhstan entered the top 3 of the innovation index in Central and South Asia]. 31.10.2023. <https://digitalbusiness.kz/2023-10-31/kazakhstan-voshel-v-top-3-indeksa-innovatsiy-v-tsentralnoy-i-yuzhnoy-azii/>
15. UNESCO. Displaying 0-0 of 0 results for «In 2023, at the competition of scientific work among the youth of Turkmenistan, 1 thousand 362 people presented their development». [Electronic resource]. URL: <https://uis.unesco.org>