DEVELOPMENT OF THE ECONOMY OF UZBEKISTAN BASED ON INNOVATIVE ACTIVITIES

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Abstract

This article explores the trajectory of Uzbekistan's economic development through the lens of innovation and scientific advancement. It emphasizes the role of state-supported initiatives, legal frameworks, and institutional mechanisms in fostering a national innovation ecosystem. The study analyzes the historical and current strategies aimed at transitioning Uzbekistan towards an innovation-driven economy, with particular focus on the Strategy for Innovative Development. By examining global best practices and local achievements in research commercialization, technological infrastructure, and human capital development, the article highlights both progress and existing challenges. The findings confirm that innovation plays a crucial role in enhancing economic competitiveness, ensuring sustainable development, and securing national economic resilience in the global arena.

Keywords: innovation economy, national development strategy, research commercialization, technological advancement, Uzbekistan.

Annotatsiya

Ushbu maqolada O‘zbekiston iqtisodiyotining rivojlanish yo‘nalishlari ilm-fan va innovatsion yondashuvlar asosida tahlil qilinadi. Unda innovatsion ekotizimni shakllantirishda davlat tomonidan ko‘rsatilayotgan qo‘llab-quvvatlash choralari, huquqiy-me’yoriy asoslar va institutsional mexanizmlarning tutgan o‘rni yoritilgan. Tadqiqotda innovatsion rivojlanish strategiyasining mazmuni va natijalari, shuningdek, ilmiy tadqiqotlarni tijoratlashtirish, texnologik infratuzilmani kengaytirish va inson kapitalini rivojlantirish borasidagi yutuqlar tahlil qilinadi. Olingan xulosalar innovatsiyalar iqtisodiy raqobatbardoshlikni oshirish, barqaror taraqqiyotni ta’minlash va global maydonda iqtisodiy xavfsizlikni mustahkamlashda muhim omil ekanligini tasdiqlaydi.

Kalit so‘zlar: innovatsion iqtisodiyot, milliy rivojlanish strategiyasi, ilmiy ishlanmalarni tijoratlashtirish, texnologik taraqqiyot, O‘zbekiston.

Аннотация

В данной статье рассматривается развитие экономики Узбекистана через призму инноваций и научно-технического прогресса. Особое внимание уделяется государственной поддержке, нормативно-правовой базе и институциональным механизмам, способствующим формированию национальной инновационной экосистемы. В рамках исследования

анализируются цели и результаты Стратегии инновационного развития Республики Узбекистан, а также достижения в сфере коммерциализации научных разработок, расширения технологической инфраструктуры и развития человеческого капитала. Полученные выводы подтверждают, что инновации играют ключевую роль в повышении конкурентоспособности экономики, обеспечении устойчивого развития и укреплении экономической безопасности страны в условиях глобализации.

Ключевые слова: инновационная экономика, стратегия национального развития, коммерциализация научных исследований, технологический прогресс, Узбекистан.

INTRODUCTION

In the context of economic globalization, the dependence of national economies on the world market and the factors determining its development is significantly increasing. Scientific and technical potential is developing at an accelerated pace and the intellectualization of the main factors of production is growing. Innovative activity has actually become the main driving force behind economic growth, which has led to increased international competition in this area and prompted many countries to increase spending on R & D, the latest technologies and the promotion of innovative products to ensure leadership in the emerging global economy. New knowledge embodied in technologies, equipment, personnel training, and advanced forms of production organization in developed countries accounts for 70 to 85% of GDP growth. The introduction of innovations has become a key factor in market competition, allowing leading firms to achieve superprofits by appropriating the intellectual rent generated by the monopoly use of new, more efficient products and technologies. This, in turn, determines not only the prospects for economic growth, but also serves as an indicator of the level of economic independence and well-being of the country, its national status.

The President of the Republic of Uzbekistan Shavkat Mirziyoyev, speaking with a Message to the Parliament of the country, noted that “today we are moving to the path of innovative development aimed at fundamentally improving all spheres of life of the state and society… Innovation means the future. If we start building our great future today, we must do it, first of all, on the basis of innovative ideas, an innovative approach.[1]

World experience convincingly proves that innovative technologies have become the most important means and condition for the development of modern production and the economic potential of the state. They combine the advanced achievements of science, the possibility of modernizing production, mastering the production of new types of products, its mass distribution and market sales.

LITERATURE REVIEW

The issues of formation and functioning of the innovative economy (in some literature it is called the knowledge economy) attract the attention of a wide range of

[1] Message of the President of the Republic of Uzbekistan to the Oliy Majlis of December 22, 2017.

foreign and domestic scientists. The need to form an innovative economy is considered by foreign scientists in monographs. The theoretical foundations of the transformation of the industrial economy into an innovative one and its importance are considered in publications. The factors and models of its formation are studied in works. In our republic, the problems of formation and development of the innovative economy are studied in publications. However, these studies are characterized by discreteness, lack of consistency from the point of view of the Strategy of Actions and new mechanisms for ensuring the competitiveness and innovativeness of entrepreneurial structures.

Such scientists as F.Kotler, J.Schumpeter, P.Drucker, G.Mensch, M.Porter, T.Kuhn were engaged in the study of innovative development as a scientific research. Among the Russian researchers in this area, one can single out such scientists as A.G. Gryaznova, L.I. Agalkina, A.A. Dynkina, V.V. Kulikova, I.N. Myslyaeva. Our domestic scientists Olimjonov A.U., Voronin S. Gulyamov S.S., Abdullaev A.M. are also dealing with issues related to the features of the innovative development of the economy.[1]

METHODOLOGY

Innovation economics involves investigating and applying economic principles in the context of technological advancements. Its goal is to assess the impact of innovation on competitiveness and productivity while developing frameworks and policies that foster innovation.

Figure 1. Innovation Economics Definition[2]

This field serves as a guide for governments and firms, particularly emphasizing understanding innovation dynamics. Innovation economics encompasses entrepreneurship, market dynamics, technology, and intellectual property. Applying these principles has led to job creation, economic development, and increased business competitiveness.

Innovation economics involves analyzing and applying economic principles within the realm of technological progress and inventive developments.

It assesses the effect of innovation, measures its impact on competitiveness and efficiency, and establishes a framework with strategies that encourage and stimulate innovative practices.

[1] Mukumova N. N., Abdukhalikov Zh.A. "Peculiarities of innovative development of Uzbekistan" . Problems of architecture and construction (Scientific and technical magazine), 2022, № 1(Part 2), p.122-124
[2] Author's work

Notable benefits include driving economic growth, enhancing competitiveness, creating value for companies, fostering job creation, addressing societal challenges, improving quality of life, and promoting sustainable development.

RESULTS AND DISCUSSION

Most countries of the world set themselves the task of transitioning to an innovative economy based on knowledge, in which the creation and use of the results of scientific and technical activities are the main conditions for sustainable economic growth. Therefore, in sovereign Uzbekistan, since the first days of independence, much attention has been paid to the development of domestic science, leading scientific schools and innovative research. These processes are regulated at the legislative level, which can be seen in a number of laws and decrees of the President of the Republic of Uzbekistan, and relevant government decrees adopted in the field of innovative development.

After achieving independence, one of the first regulatory documents in this area are the Decree of the President of the Republic of Uzbekistan "On state support for science and the development of innovation" dated July 8, 1992 and the Resolution of the Cabinet of Ministers "On measures for state support for the development of science and innovation" dated 21 July 1992, which created the basis for stimulating the country's innovative development.

In accordance with the Decree of the President of Uzbekistan "On measures to improve the coordination and management of the development of science and technology" dated August 7, 2006, reforms in the field of management and financing of domestic science, focusing its efforts on priority areas for the country were continued. Thus, the Decree of the President of the Republic of Uzbekistan “On additional measures to stimulate the introduction of innovative projects and technologies into production” dated July 15, 2008, was of great importance for the development of science and innovation, in accordance with which structural reforms were carried out in the system research management. [3]

The gradual development of the science management system made it possible to improve the mechanism for promoting research: from fundamental and applied developments to innovative work aimed at their practical application. Annual republican fairs of innovative ideas, technologies and projects have become one of the important tools for the implementation, as well as commercialization of research results, ensuring a closer connection between science and production, manufacturers of innovative products and its consumers. In the recent years, more than 4,000 innovative ideas, developments and technologies have been demonstrated at the fairs. More than 3 thousand contracts were signed with a total value of more than 110 billion soums. As a result, more than 1.0 trillion rubles worth of new products were produced. soums. Particular attention is paid to the creation of new research and innovation centers. So. For example, over the past 5 years, a number of scientific innovative institutions of a new type have been created in Uzbekistan: the Interdepartmental Center for Genomics and Informatics, the International Institute of Solar Energy with the participation of the Asian Development Bank, the educational and scientific center

of high technologies, created jointly with the University of Cambridge, the Uzbek-Japanese Youth Innovation Center at the Tashkent State Technical University named after Islam Karimov. In order to train personnel for the innovative economy, a number of branches of leading universities in our country have been created and are actively operating.

Innovation was again a front-of-mind theme in Davos at the World Economic Forum's annual assembly of political and business leaders in 2020.

The global conversation centered around the ability of countries to innovate in the face of changing times. An economy's response to megatrends, such as tech breakthroughs and the risks of climate change, can dictate its long-term success.

The following table presents the top 10 most innovative economies in the world.

Table 1.

The 10 Most Innovative Economies[1]

Rank	Country	Score	YoY Rank Change	Best-performing Metric
#1	Germany	88.21	+1	High-tech density, Patent activity (tied)
#2	South Korea	88.16	-1	R&D intensity
#3	Singapore	87.01	+3	Tertiary efficiency (Ranked #1)
#4	Switzerland	85.67	0	R&D intensity, Researcher concentration (tied)
#5	Sweden	85.50	+2	R&D intensity
#6	Israel	85.03	-1	R&D intensity (Ranked #1)
#7	Finland	84.00	-4	Productivity, Researcher concentration (tied)
#8	Denmark	83.22	+3	Researcher concentration (Ranked #1)
#9	United States	83.17	-1	High-tech density, Patent activity (Tied, Ranked #1 for both)
#10	France	82.75	0	High-tech density

For the first time in years, Germany clinched the top spot for the most innovative economy, ending South Korea's winning streak. The European nation scores in the top five for its manufacturing value-added, high-tech density, and patent activity metrics.

However, even winners have some room for improvement. As the global economy sways ever more in the direction of services over manufacturing, Germany could improve its rate of higher education to achieve an even better score on the index.

Ranking third overall, Singapore leads the charge for tertiary efficiency, with almost 85% gross enrollment in higher education as of 2017. In contrast, Germany's enrollment stood at around 70% in the same year.

In order to accelerate the development of the country based on modern achievements of world science, innovative ideas, developments and technologies, as well as the consistent implementation of the tasks identified by the Action Strategy in five priority areas of development of the Republic of Uzbekistan in 2017 - 2021, the Strategy for Innovative Development of the Republic of Uzbekistan for 2019 was approved - 2021 years. [2]

[1] Global Innovation Index (GII)

The main objectives of the Strategy to achieve the main goal:

1. Entry of the Republic of Uzbekistan by 2030 into the 50 leading countries of the world according to the rating of the Global Innovation Index;

2. Improving the quality and coverage of education at all levels, developing the system of continuous education, ensuring the flexibility of the training system, based on the needs of the economy;

3.Strengthening the scientific potential and efficiency of scientific research and development, creating effective mechanisms for integrating education, science and entrepreneurship for the wide implementation of the results of research, development and technological work;

4. Increasing the investment of public and private funds in innovation, research, development and technological work, the introduction of modern and efficient forms of financing activities in these areas;

6. Ensuring the protection of property rights, creating competitive markets and equal conditions for doing business, developing public-private partnerships;

7. Creation of a sustainable socio-economic infrastructure.

As a result of the implementation of the Strategy for Innovative Development of the Republic of Uzbekistan for 2019-2021, great success has been achieved in ensuring and stimulating innovative and technological progress in the sectors of the economy and the social sphere, including agriculture, energy, construction, education, healthcare. In particular:

- The republic has risen by 36 positions compared to 2015 in the ranking of the Global Innovation Index, which is assessed by 81 indicators.
- The volume of annual funds allocated from the state budget for innovation and scientific spheres increased by 3 times compared to 2018 and reached 1.5 trillion soums.
- If in 2018 the number of young scientists was 6.5 thousand, then this figure in 2022 reached 10.8 thousand people, that is, an increase of one and a half times is ensured.
- Over the past four years, the number of specialized institutions for financing innovative activities (innovation funds, venture organizations and others) has been increased to 28 units.
- Held annually since 2018, the International Week of Innovative Ideas – Innoweek.uz is turning into an innovative technology platform that brings together foreign scientific and innovation centers, investment funds, technology agencies, technology parks and business incubators on the way to one goal.
- At the same time, the degree of commercialization of scientific and innovative developments, the level of cooperation between science, education and industry in the real sector of the economy remain relatively low.

Summing up the reasoning, it is possible to interpret innovative development region as a socio-economic process, which is based on the formation of a regional innovation system capable of increasing innovative potential of the region and its implementation through the creation of innovative goods and services.

The innovative development of the region is based on the following principles:

- Innovative development of the region is carried out in the conditions of the regional innovation environment.
- The process of innovative development of the region is formalized by building
- regional innovation system.
- The basis of the innovative development of the region is the ability for innovative thinking and perception of both the individual and the whole society.
- The effectiveness of the innovative development of the region directly depends on regional innovation culture, i.e. an extended system of motivation
- Innovative activity.
- The state innovation policy has a controlling effect on the innovative development of the region.
- The ability of the region to innovative development is characterized by the level of regional innovation potential.

According to these principles, it is possible to build an organizational and economic model of the innovative development of the region, taking into account the peculiarities territorial and economic interests, the specifics and level of development of the region, the ratio of technological structures of the economy, in order to increase the competitiveness of the economy of the region as a whole.

In conclusion, it should be noted that the above measures to improve innovation activity and develop human capital contribute to the development of scientific and technological potential, sustainable growth, increased competitiveness of the national economy and the creation of guarantees for the country's economic security.

CONCLUSION AND RECOMMENDATIONS

The analysis confirms that Uzbekistan has made considerable progress in shaping an innovation-driven economy, guided by comprehensive legal reforms, strategic state programs, and international cooperation. Noteworthy achievements include increased funding for research and development, a significant rise in the number of young researchers, the establishment of innovation hubs and science parks, and improved international rankings in the Global Innovation Index. The government’s consistent focus on promoting a knowledge-based economy has resulted in more effective institutional mechanisms and a broader innovation culture.

However, the commercialization of scientific research remains relatively low, and integration between academia, industry, and government is still developing. Regional disparities in innovation potential and the need for a stronger innovation infrastructure are also among the ongoing challenges.

Recommendations

Enhance commercialization mechanisms by strengthening public-private partnerships and creating innovation accelerators to bridge research with market application.

Promote regional innovation systems tailored to the specific socio-economic conditions of each region to ensure balanced and inclusive growth.

Invest in digital transformation across all sectors to improve productivity and global competitiveness.

Strengthen international cooperation with leading research institutions and innovation networks to accelerate technology transfer and expertise exchange.

Develop innovation-oriented education by aligning curricula with the demands of the digital and green economies, while expanding STEM education and entrepreneurship training.

Expand innovation financing through venture capital, innovation funds, and tax incentives for R&D-intensive enterprises.

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Marketing

ilmiy, amaliy va ommabop jurnali

2025-yil, mart, 3-son

Mazkur jurnalda maqolalar chop etish uchun quyidagi havolalarga murojaat qilish mumkin.
Ilmiy maqola, ommabop maqola, reklama, hikoya va boshqa ilmiy-ijodiy materiallar yuborishingiz mumkin.
Materiallar va reklamalar pullik asosda chop etiladi.

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Jurnalning rasmiy sayti: https://marketingjournal.uz

Marketing jurnali O‘zbekiston Respublikasi Oliy ta’lim, fan va innovatsiyalar vazirligi huzuridagi **Oliy attestatsiya komissiyasi rayosatining 2024-yil 04-oktabrdagi 332/5 sonli qarori** bilan milliy ilmiy nashrlar ro‘yxatiga kiritilgan

“Marketing” ilmiy, amaliy va ommabop jurnali 2024-yil 15-martdan O‘zbekiston Respublikasi Prezidenti Administratsiyasi huzuridagi Axborot va ommaviy kommunikatsiyalar agentligi tomonidan **C-5669517** reyestr raqami tartibi bo‘yicha ro‘yxatdan o‘tkazilgan. **Litsenziya raqami: №240874**

“Marketing” ilmiy, amaliy va ommabop jurnalining xalqaro darajasi: **9710.** ГОСТ 7.56-2002 " Seriyali nashrlarning xalqaro standart raqamlanishi" davlatlataro standartlari talablari. **Berilgan ISSN tartib raqami: 3060-4621**