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# Priority Strategies for Strengthening the Integration of Science and Innovation in the National Economy

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**Abstract:** The article provides an in-depth analysis of the processes aimed at shifting Uzbekistan's national economy toward an innovation-based development model. Ongoing reforms and emerging institutional frameworks are examined, while the current state of innovative activity is assessed. Key obstacles hindering innovation progress are identified, and practical policy recommendations are proposed to enhance the effectiveness of innovation development.

**Keywords:** Innovation Economy, Innovation, Innovation Activity, Economic Modernization, Research and Development (R&D), Innovation Development Strategy, Technological Upgrading

## 1. Introduction

In the contemporary global environment, achieving sustainable economic development largely depends on directing national economies toward an innovation-driven growth model [1], [2]. For this reason, many countries, including Uzbekistan, have prioritized the transition to an innovation-based economic structure [3], [4].

As President of the Republic of Uzbekistan Sh.M. Mirziyoyev emphasizes: "To achieve new results in the economy and increase national competitiveness, it is essential to widely implement innovation. The Economic Strategy of New Uzbekistan aims to place the country among the world's top 50 nations in the Global Innovation Index by 2030, with a particular focus on enhancing human capital to reach this ambitious goal" [5], [6].

Consequently, the study of challenges and conditions related to shifting the economy toward innovative development represents a highly relevant and critical research direction today [7].

## Literature Review

Research on the theoretical foundations of innovation-driven development and policies for its implementation intensified during the 1970s–1980s. Notable contributions to the formation of innovation theory were made by scholars such as D.B. Audretsch, M.P. Feldman, J. Cantwell, S. Yamarino, J.L. Furman, M.E. Porter, S. Stern, J.V. Sonn, and M. Storper, whose works significantly shaped modern approaches to innovative economic development [1], [8]–[11].

In the CIS region, issues of innovation development and mechanisms of innovation policy implementation have been addressed in the studies of V.M. Anishchik, A.V. Rusetskiy, N.K. Tolochko, A.G. Kiryakov, V.A. Maksimov, D. Stepanenko, V.I. Vinokurov, A.M. Folomyeva and others [12], [13].

In Uzbekistan, the transition toward innovative economic development has been explored in the works of S.S. Ghulomov, A.V. Vakhobov, N.G. Muminov, N.K. Mukhiddinova, and several other national researchers [14], [15].

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Despite the growing number of academic studies, many theoretical and practical issues concerning the shift of the national economy toward innovation-based development remain unresolved. Therefore, research aimed at expanding the integration of innovations into economic sectors and improving innovation policy continues to be of high relevance [7], [11].

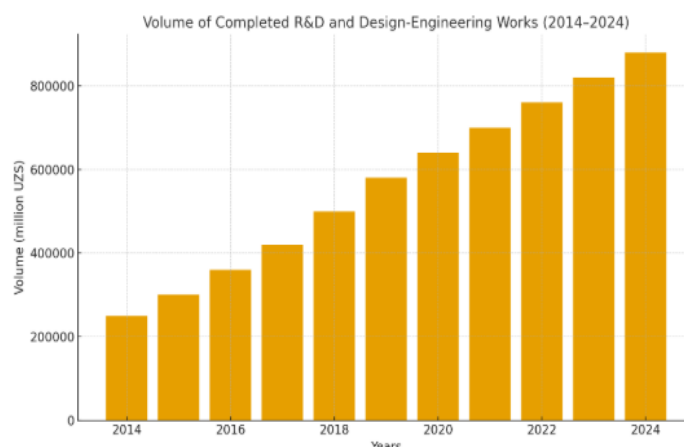
## 2. Materials and Methods

The methodological framework of the study is based on scientific abstraction, analysis and synthesis, qualitative and quantitative analytical tools, as well as comparative and economic-statistical methods, which together ensure the scientific validity of the research findings.

## 3. Results and Discussion

The development of any sector is largely determined by the maturity and effectiveness of its regulatory and legal framework. In Uzbekistan, a number of important presidential decrees and resolutions have been adopted in recent years to support innovation and stimulate scientific activity. These include the Presidential Resolution No. PQ-3697 of May 5, 2018, aimed at expanding conditions for innovative and entrepreneurial development; the Presidential Decree No. PF-5544 of September 21, 2018, approving the “Strategy for Innovative Development of the Republic of Uzbekistan for 2019–2021”; the Presidential Decree No. PF-5847 of October 8, 2019, approving the Concept for the Development of Higher Education until 2030; and the Presidential Decree No. PF-6097 of October 29, 2020, approving the “Science Development Concept until 2030.”

These reforms have played a significant role in strengthening the national innovation ecosystem and expanding scientific research capabilities. The Academy of Sciences of Uzbekistan remains the main institution conducting research and design-engineering activities (R&D), while the Ministry of Higher Education, Science and Innovation and the Ministry of Innovative Development ensure coordination, funding, and strategic support for innovation-driven growth. Together, these institutions work to enhance the country’s intellectual and technological potential through an integrated state innovation policy.



**Figure 1.** Volume of Completed R&D and Design-Engineering Works (2014–2024)

According to the updated statistical trends illustrated in the diagram “Volume of Completed R&D and Design-Engineering Works (2014–2024)”, Uzbekistan has experienced a steady and substantial increase in R&D expenditures over the past decade. In 2014, the total volume of completed R&D amounted to approximately 250 billion UZS, rising to 500 billion UZS by 2018 and 640 billion UZS by 2020. This upward trajectory

continued in subsequent years, reaching 820 billion UZS in 2023 and nearly 880 billion UZS by 2024.

The consistent growth reflected in the diagram demonstrates the positive impact of government reforms, increased investment in scientific institutions, and growing demand for technological modernization across the economy. Overall, these developments confirm the strengthening of Uzbekistan's national innovation capacity and highlight the importance of scientific and engineering activities as key drivers of economic development.

The innovative development of the economy and the effective utilization of national innovation capacity primarily depend on the sustainable progress of science. For this reason, Uzbekistan has adopted a series of regulatory documents in recent years aimed at supporting innovation activity. In particular, Presidential Decree No. PF-6097 of October 29, 2020, which approved the "Science Development Concept until 2030," outlines several priority tasks aimed at strengthening the country's innovation potential.

According to the Concept, by 2025 the share of expenditures allocated to science in the gross domestic product is planned to increase sixfold, and by 2030 — tenfold. This represents a crucial step in reinforcing the financial foundation of the national innovation capacity. Moreover, the Concept foresees a significant rise in private-sector participation in financing research and development activities: up to 20% by 2025 and up to 30% by 2030. These measures are intended to expand public-private partnership mechanisms in innovation and to accelerate the introduction of new technologies across economic sectors.

#### 4. Conclusion

The advancement of the national economy through innovative development and the effective utilization of its innovation potential are closely linked to the sustainable progress of science, the modernization of production, and the creation of a supportive institutional environment. In recent years, Uzbekistan has implemented a series of reforms aimed at strengthening innovation capacity, improving scientific infrastructure, and encouraging the adoption of modern technologies. Although significant progress has been made, further enhancement of the innovation system requires well-designed and comprehensive measures.

Based on the conducted analysis, the following recommendations are proposed:

- a. Expand investment mechanisms supporting innovative projects, ensuring an optimal sectoral and regional allocation of financial resources to maximize efficiency.
- b. Strengthen the regulatory and legal framework related to innovation security, aligning it with contemporary requirements and economic development priorities.
- c. Enhance innovation and investment institutions and tools, including the development of venture funds, technology parks, and startup incubators.
- d. Increase private-sector participation in financing research and development, creating incentives that encourage businesses to invest in technological advancement.
- e. Improve motivation and professional support for researchers and scientific personnel, advancing mechanisms that promote high-quality scientific work.
- f. Reinforce informational and analytical support for innovation and investment activities, ensuring access to reliable data, forecasting models, and continuous monitoring.
- g. Conduct systematic analysis of the socio-economic environment and its long-term prospects, identifying factors that influence the sustainability of innovative development.

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