THE IMPACT OF INNOVATION MANAGEMENT ON ENHANCING EXPORT COMPETITIVENESS IN UZBEKISTAN, FOCUSING ON THE CHALLENGES AND OPPORTUNITIES WITHIN THE HIGH-TECH EXPORT SECTOR.

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Abstract: This study explores how effective innovation management can boost Uzbekistan's export competitiveness, especially in the high-tech sector. Drawing on data from the Global Innovation Index (GII) and a range of academic sources, it evaluates Uzbekistan's strengths in innovation inputs, such as education and labor productivity, and highlights the challenges of converting these inputs into competitive outputs. Despite ranking 82nd globally, Uzbekistan struggles to scale high-tech exports, which account for just 0.1% of total trade[1]. The research suggests that closing the gap between innovation inputs and outputs through better policies, increased venture capital support, and stronger industry-academia collaboration is essential for Uzbekistan's economic future.

Keywords: Innovation management, export competitiveness, high-tech exports, Uzbekistan, Global Innovation Index (GII), venture capital, economic development, knowledge-based economy

Introduction:

Innovation management plays a pivotal role in driving economic growth and enhancing a country’s export competitiveness. Countries that prioritize innovation and manage it well can increase technological advancements, productivity, and the diversity of their export portfolios. For emerging economies like Uzbekistan,

[1]World Intellectual Property Organization. (2023). Global innovation index 2023: Uzbekistan profile. Retrieved from https://www.wipo.int/edocs/ /statistics-country-profile/en/uz.pdf

transitioning from a resource-dependent economy to a knowledge-based one hinges on effective innovation management.

Uzbekistan's economy has traditionally relied on exports of natural resources and low-value-added products. However, to compete globally, especially in the high-tech market, innovation must become central to its economic strategy. Uzbekistan ranks 82nd in the GII[1], indicating strong innovation inputs, including a well-educated workforce in science and engineering. Yet, translating these strengths into high-tech exports remains a challenge. This study investigates the key factors limiting Uzbekistan's ability to commercialize innovation and provides recommendations for improving export competitiveness.

Analysis of thematic literature:

Numerous scholars have explored the relationship between innovation management and economic growth. Fagerberg J. highlights in "The Oxford Handbook of Innovation" [2] that innovation is a critical driver of long-term growth, while Nelson R. and Winter S. emphasize in an article "Evolutionary Theory of Economic Change" that the evolutionary nature of technological change in shaping a country's competitiveness[3]. For Uzbekistan, these principles are particularly relevant as the country attempts to shift from traditional export structures to a more diverse, innovation-led economy.

Balcerowicz L. discusses in "Emerging Markets and Innovation: Growth Opportunities in Developing Countries" how emerging markets can capitalize on innovation to enhance their global competitiveness, noting that strong inputs like education and infrastructure must be matched by outputs such as high-tech exports and patents[4]. Similarly, Afzal M. and Lawrey R. argue in an article "Innovation and Export Growth: The Case of Emerging Markets" that developing economies need targeted

[2] Fagerberg J. (2018). Innovation, Economic Development, and Growth. In J. Fagerberg et al. (Eds.), The Oxford Handbook of Innovation.
[3] Nelson R.R., & Winter, S. G. (1982). Evolutionary Theory of Economic Change. Belknap Press.
[4] Balcerowicz L. (2021). Emerging Markets and Innovation: Growth Opportunities in Developing Countries. Springer.

policies to foster high-tech industries[5]. Uzbekistan's current struggle lies in bridging this gap between innovation input and output, as seen in the stark contrast between its educational strengths and its minimal high-tech export contribution.

Hausmann R. et al. suggest in the article "What you export matters" that what a country exports matters significantly for its growth trajectory, with high-tech exports being a key driver of sustainable development, even though Uzbekistan's current export profile, dominated by low-tech goods, hinders its ability to realise the benefits of innovation management fully[6].

Research methodology:

This research uses both quantitative and qualitative approaches to evaluate Uzbekistan's innovation performance and its impact on export competitiveness. Quantitative data from the Global Innovation Index (GII)[1] is used to assess key metrics such as innovation inputs (e.g., education and labour productivity) and outputs (e.g., high-tech exports and patents). This data is supported by a review of academic literature on innovation management in emerging economies.

A comparative analysis is conducted using frameworks like Porter's Diamond Model to analyze how Uzbekistan's innovation efforts compare with those of countries like Vietnam and Turkey, which have successfully boosted exports through innovation. The research also includes case studies from similar markets to draw lessons for Uzbekistan.

Analysis and results:

Uzbekistan's Innovation Performance

Uzbekistan ranks 82nd in the GII[1], maintaining the same position as in 2022. The country performs better in innovation inputs (72nd) compared to outputs (88th). While it ranks highly in labor productivity (6th) and the number of graduates in science and

[5]Afzal M., & Lawrey R. (2012). Innovation and Export Growth: The Case of Emerging Markets. Journal of Emerging Economies, 5(2), 101-120.
[6]Hausmann R., Hwang J., & Rodrik D. (2007). What you export matters. Journal of Economic Growth, 12(1), 1-25.

engineering (12th), these strengths are not translating into high-tech exports or patent activity.

Table 1.

Uzbekistan's GII Rankings from 2020 to 2023 (ranking position)[1].

Year	GII Rank
2020	93rd
2021	86th
2022	82nd
2023	82nd

Uzbekistan’s export profile remains dominated by low- and medium-tech goods, with high-tech exports accounting for just 0.1% of total trade, placing it 122nd globally.

Innovation Inputs vs. Outputs

Uzbekistan's education system is one of its key strengths, producing a high number of science and engineering graduates. However, without a robust innovation ecosystem to commercialize these capabilities, the country struggles to produce tangible economic benefits. This gap is particularly evident in the lack of venture capital and financial support for startups, especially in high-tech industries. Research by Acemoglu D. and Robinson J. underscores in the article “Why Nations Fail: The Origins of Power, Prosperity, and Poverty” the importance of institutions in converting innovation inputs into productive outputs, suggesting that Uzbekistan's policy framework is not yet conducive to fostering innovation-led growth[7].

High-Tech Exports

As of 2023, high-tech exports make up only 0.1% of Uzbekistan’s total trade. This is a significant limitation when compared to emerging economies like Vietnam, which has developed a strong high-tech export sector through government initiatives and foreign investment.

[7] Acemoglu D., & Robinson J. A. (2012). Why Nations Fail: The Origins of Power, Prosperity, and Poverty. Crown Business.

Table 2.

Composition of Uzbekistan's Exports by Technology Level (percentage)[1].

Export Type	Percentage of Total Exports
Low-tech exports	70%
Medium-tech exports	29.9%
High-tech exports	0.1%

Uzbekistan's reliance on low-tech exports (70% of total exports) severely restricts its ability to compete in the global market. Without targeted policies to develop high-tech industries, Uzbekistan will remain stuck in its current export structure.

Conclusions:

Uzbekistan has made notable progress in strengthening its innovation inputs, particularly in education and infrastructure, as reflected in its GII ranking. However, significant challenges remain in translating these inputs into competitive high-tech exports. The country's inability to convert its strong labor productivity and educational outcomes into tangible economic outputs highlights inefficiencies in its innovation management system.

To improve export competitiveness, Uzbekistan must address several key areas:

1. **Foster stronger industry-academia collaboration**: Closer ties between universities and industries can help commercialize research and technological developments.
2. **Expand venture capital and financial support**: Developing a more robust venture capital ecosystem is crucial for scaling high-tech startups.
3. **Strengthen intellectual property laws**: Clearer protections for innovations will encourage greater R&D investment and commercialization efforts.

By focusing on these areas, Uzbekistan can bridge the gap between innovation inputs and outputs, driving sustained economic growth and improving its position in the global market.

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