EFFICIENCY OF USING SCIENTIFIC AND TECHNICAL DEVELOPMENTS IN SMALL BUSINESSES

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Abstract. *The article analyzes the effectiveness of using scientific and technical developments in small business enterprises. The study examines the mechanisms for implementing scientific developments in business processes, increasing production efficiency, improving the quality of products and services, optimizing resource use, and enhancing competitiveness. It also highlights the possibilities of implementing scientific and technical developments in small business through startup projects, innovative products, technoparks, and incubators, increasing the innovative potential of business entities, and enhancing economic efficiency. The results of the study reveal the strategic importance of scientific and technical developments in the development of small business and serve to develop practical recommendations.*

Keywords: *Small business, scientific and technical developments, innovative development, improving product quality, production efficiency, efficient use of resources, competitiveness, startup projects, technoparks, incubators, innovative products, economic efficiency, science and business integration.*

Introduction

In the conditions of the modern economy, increasing the competitiveness of small business enterprises, strengthening production efficiency and improving product quality are among the urgent issues. In this regard, the implementation of scientific and technical developments is of strategic importance for small business entities. Scientific developments allow the introduction of new technologies, raising products and services to an innovative level, optimizing production processes and effectively using resources. A distinctive feature of small business is that it is characterized by flexibility and the ability to make quick decisions, therefore, through the implementation of scientific and technical innovations, it can significantly increase its competitiveness in the market.

The process of introducing scientific and technical developments into small businesses is carried out through startup projects, innovative products, technoparks and incubators. This process allows enterprises to effectively use scientific and technical resources, increase production efficiency, create new products and adapt to market requirements. At the same time, scientific developments help to develop an innovative culture in enterprises, improve personnel skills and modernize internal processes.

In the conditions of Uzbekistan, the use of scientific and technical developments in small business enterprises is closely related to the country's economic strategies, innovative development and startup development programs. Financial and institutional support mechanisms, grants, acceleration programs and technoparks created by the state expand the opportunities for small business entities to introduce scientific and technical developments, develop startup projects and create innovative products. Thus, the implementation of scientific and technical developments serves not only to increase economic efficiency, but also to strengthen the adaptability of enterprises to market requirements and ensure their global competitiveness.

Therefore, increasing the efficiency of using scientific and technical developments in small business enterprises, stimulating the processes of creating startup projects and innovative products, optimal use of resources and strengthening the competitiveness of enterprises are considered one of the most urgent scientific and practical tasks of today. This article analyzes the efficiency of using scientific and technical developments in small business enterprises, mechanisms for their implementation, and practical recommendations.

Main part

The effectiveness of the use of scientific and technical developments in small business enterprises is directly related to the process of innovative development of the modern economy. Scientific developments allow enterprises to improve the quality of products and services, optimize production processes, effectively use resources and increase their competitiveness. In this regard, the implementation of scientific and technical innovations for small business entities serves not only as a means of increasing economic efficiency, but also as a means of quickly adapting to market requirements, creating new products and developing startup projects.

The process of implementing scientific and technical developments allows small businesses to create innovative products, automate production processes, modernize technological processes and optimally use resources. At the same time, scientific developments create an opportunity to develop an innovative culture in enterprises, improve personnel skills and effectively manage internal processes. The inherent flexibility of small businesses allows for the rapid implementation of scientific and technical innovations, which significantly increases the competitiveness of enterprises.

The implementation of scientific developments through startup projects, technoparks, incubators and acceleration programs is an important tool for increasing the innovative potential of small businesses. Technoparks provide enterprises with laboratories, experimental bases and technological resources, while incubators manage the processes of financing startup projects, organizing a mentoring system and commercializing scientific developments. Thus, the implementation of scientific and technical developments in practice helps enterprises improve product quality, increase production efficiency and strengthen their competitiveness.

In the conditions of Uzbekistan, the use of scientific and technical developments will be more effective through the integration of small businesses with state policies and innovative development strategies. Grants, acceleration and incubation programs, financial and institutional support mechanisms will expand the opportunities for small businesses to implement scientific developments, create new products and develop startup projects. This will allow enterprises to adapt to market requirements, improve the quality of their products and ensure global competitiveness.

Also, the use of scientific developments serves to improve the skills of personnel in small businesses and develop innovative thinking. The practical application of scientific and technical developments in enterprises increases the adaptability of employees to technological processes, allows them to acquire new knowledge and skills, and creates a creative and innovative environment in enterprises. At the same time, scientific developments expand the possibilities of small businesses to effectively use resources, reduce production costs, and increase the added value of products.

As a result, the effective use of scientific and technical developments in small business enterprises allows to increase the competitiveness of enterprises, develop startup and innovative projects, optimize production processes, effectively use resources and improve product quality. Therefore, the application of scientific and technical developments in small business is considered not only as an effective mechanism for increasing economic efficiency, but also for the country's innovative development, the formation of a startup ecosystem and strengthening economic stability.

Conclusion

In conclusion, the use of scientific and technical developments in small businesses allows them to increase their competitiveness, increase production efficiency, improve the quality of products and services, and optimize the use of resources. The process of implementing scientific and technical developments is carried out through startup projects, technoparks, incubators, and acceleration programs, which allows enterprises to create innovative products, implement scientific developments, and adapt to market requirements.

The results of the study show that the effective use of scientific and technical developments serves to develop an innovative culture in enterprises, improve the skills of personnel, modernize production processes and increase economic efficiency. At the same time, the implementation of scientific developments significantly increases the ability of small businesses to implement startup and innovative projects, create new jobs and produce competitive products.

In general, the effectiveness of the use of scientific and technical developments in small business enterprises is considered not only to increase economic efficiency, but also as an important means of innovative development of the country, the

formation of a startup ecosystem, the creation of innovative products and ensuring economic stability. Therefore, the application of scientific and technical developments in small business is a strategic factor in increasing the competitiveness of enterprises, creating innovative products and strengthening economic efficiency.

REFERENCES:

1. Dadabaev, U. A. U., Isadjanov, A. A., Sodikov, Z. R., Mukhitdinov, S. Z., & Batirova, N. S. (2021). Ways to increase the export potential of agricultural products of Uzbekistan in a pandemic. *International Journal of Modern Agriculture ISSN*, 2305-7246.

2. Мухитдинов, Ш. З. (2021). Тадбиркорлик субъектларида хатарларни бошқаришнинг назарий-услубий асослари. *Scientific progress*, *1*(6), 939-943.

3. Мухитдинов, Ш. З. COVID-19 ПАНДЕМИЯСИНИНГ ЎЗБЕКИСТОН ҚИШЛОҚ ХЎЖАЛИГИ СОҲАСИ ВА УНИНГ ТАЪМИНОТ ЗАНЖИРИГА ТАЪСИРИ.

4. Мухитдинов, Ш. З. (2019). Пути совершенствования механизмов эффективного управления многопрофильными фермерскими хозяйствами в Узбекистане. In *Формирование инновационной экономики будущего* (pp. 54-58).

5. Muxitdinov, S. Z., Shakirova, N. A., Turdubayeva, G. A., Osmonova, G. S., & Asanova, G. A. (2023). Theoretical Basis of Risk Management in Manufacturing Enterprises. In *Sustainable Development Risks and Risk Management: A Systemic View from the Positions of Economics and Law* (pp. 403-405). Cham: Springer International Publishing.

6. Мухитдинов, Ш. (2023). ОРГАНИЗАЦИОННО-ЭКОНОМИЧЕСКИЕ МЕХАНИЗМЫ РИСКОВ И УПРАВЛЕНИЕ ИХ НА ПРОИЗВОДСТВЕННЫХ ПРЕДПРИЯТИЯХ. *Экономическое развитие и анализ*, *1*(2), 192-199.

7. Ziyavitdinovich, M. S., Kamilovna, A. M., Ugli, J. A. J., Adxamovna, B. S., & Ogli, T. F. R. (2021). Covid-19 Pandemia in Uzbekistan Agriculture and its Impact on the Supply Chain. *Alinteri Journal of Agriculture Sciences*, *36*(1).

8. Muxitdinov, S. (2025). Kichik biznesni innovatsion rivojlantirish strategiyasi. *MUHANDISLIK VA IQTISODIYOT*, *3*(9).

9. Muxitdinov, S. (2023, June). Results of econometric modeling of management in multifunctional farms. In *American Institute of Physics Conference Series* (Vol. 2789, No. 1, p. 040060).

10. Muxitdinov, S. (2023). MAIN CHARACTERISTICS OF THE RISK MANAGEMENT MECHANISM IN MANUFACTURING ENTERPRISES. *Scientific and Technical Journal of Namangan Institute of Engineering and Technology*, *8*(1), 259-262.

11. Muxitdinov, P. S. Z., & G'ulomjonovna, S. M. The Importance of Foreign Investments in the Development of the Country's Economy. *World Bulletin of Social Sciences*, *17*, 122-125. Rashidovna, M. N., & Urmonovich, N. O. Comparative Characteristics of the Leaving of Glutathione From Cells of Different Types. *International Journal on Orange Technologies*, *2*(10), 79-82.

12. Yusupova, M., Irisova, S., & Numonov, O. (2024). Biology Of Pomegranate Pests, Control Measures And First Aid In Case Of Pesticide Poisoning. In *BIO Web of Conferences* (Vol. 82, p. 01014). EDP Sciences.

13. Urmonovich, N. O. (2023). MANGOSTEEN NUTRITIONAL PRICE AND FUNCTIONAL PROPERTIES. *ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ*, *14*(5), 3-5.

14. Abdukhamidovich, N. A., Urmanovna, M. D., & Urmonovich, N. O. (2023). Strip Till Age of Soil for Deuteric Sowing (Second Crop). *International Journal on Orange Technologies*, *3*(4), 71-74.

15. Abdukhamidovich, N. A., & Urmonovich, N. O. (2021). The Results of Theoretical Studies of the Chisel Cultivator Rack Frontal Surface Shape. *Annals of the Romanian Society for Cell Biology*, *25*(4), 5930-5938.

16. Юсупова, М. Н., & Нумонов, О. У. (2024). ЗАЩИТА ТУТОВОГО ДЕРЕВА ОТ ВРЕДИТЕЛЕЙ. *Экономика и социум*, (6-1 (121)), 1500-1503.