DEVELOPMENT OF MANUFACTURING INDUSTRY AND THE IMPACT OF INVESTMENTS IN HUMAN CAPITAL ON ECONOMIC GROWTH

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1 INTRODUCTION

The article examines the development of industrial policy in Kazakhstan with an emphasis on the transformation of the manufacturing industry in the period 2019–2023. The analysis of key indicators, such as the share of industry in GDP, investment volume, export dynamics, and technological modernization, is conducted. Particular attention is paid to the impact of investment in human capital, including education, research and development (R&D), and innovation processes, on the country's economic growth.

2 MATERIAL AND METHODS

The research methodology is based on historical analysis, a systems approach, as well as correlation and regression analysis to identify the relationship between investment in human capital and GDP growth rates. The use of statistical data collected from official sources allowed for a comparative analysis of the dynamics of the industrial sector. Methods of comparative analysis of industrial strategies in various countries were also used, which made it possible to identify successful practices and adapt them to the conditions of Kazakhstan. The analysis used data from the Statistics Committee of the Republic of Kazakhstan, the World Bank, as well as the results of scientific research on this topic.

3 RESULTS

The results of the study show that investments in education, training and innovative technologies have a significant impact on the efficiency of the industrial sector. In particular, increased spending on scientific research contributes to productivity growth, but low levels of R&D funding remain one of the key problems. According to the World Bank, in 2022, the share of R&D spending in Kazakhstan was less than 0.2% of GDP, which is significantly lower than the level of developed economies. International experience shows that countries that actively invest in scientific research (for example, South Korea and Germany) demonstrate higher rates of growth in industrial production and economic competitiveness. Legal mechanisms

for supporting industry, including government programs and special economic zones (SEZs), are also studied. The analysis shows that strengthening the legislative framework can contribute to technological modernization and the creation of favorable conditions for the growth of the manufacturing sector. In particular, government support for cluster initiatives aimed at developing innovative ecosystems and stimulating the digitalization of production plays a significant role. For example, within the framework of the Digital Kazakhstan program, a number of initiatives are being implemented to automate production processes and introduce Industry 4.0 technologies.

4 CONCLUSIONS

Based on the data obtained, recommendations were developed to improve industrial policy. The main ones include:

- Development of innovative clusters and increased integration of scientific research with industrial enterprises;
- Increased funding for research and development, in particular in the field of advanced technologies and digitalization;
- Targeted programs to improve the skills of the workforce, including retraining of specialists in accordance with the requirements of the modern industry;
- Optimization of state support for industrial enterprises through tax incentives and grant financing of innovative projects;
- Development of international cooperation mechanisms to attract advanced technologies and investment in the high-tech sector;
- Increasing the level of digitalization and automation of industrial enterprises, which will significantly increase productivity and competitiveness;
- Implementation of a clearer strategy to stimulate R&D through public and private investment, as well as tax incentives for innovative projects;
- Development of a long-term policy to support small and medium-sized businesses in the manufacturing industry to expand their participation in value chains;
- Creation of specialized educational centers and training programs focused on the needs of industry, which will ensure the training of qualified personnel for the digital economy;
- Development of programs to attract foreign specialists and exchange experience with leading global industrial centers;
- Introduction of special grants and subsidies for enterprises implementing energy efficiency and sustainable development technologies.

Additionally, it is predicted that in the next 5–10 years, Kazakhstan will be able to significantly increase the share of non-resource industry in GDP if it consistently implements the proposed measures. According to expert estimates, by 2030, industrial production may grow by 25–30 % due to the active implementation of digital solutions and R&D support. The key challenges remain the need to reduce the technological gap, adapt the workforce to new conditions and integrate into global production chains.

Thus, the results of the study allow us to propose comprehensive measures to increase the competitiveness of the manufacturing industry of Kazakhstan, its sustainable development and successful adaptation to modern economic challenges. In the future, these measures can significantly increase the level of industrial growth and the integration of Kazakhstan into global production processes. Improving the personnel training system, more active implementation of digital technologies and innovative solutions, as well as expanding international cooperation can make Kazakhstan one of the leaders in industrial development in Central Asia. State support plays a key role in this process, including programs to subsidize high-tech industries and stimulate private investment in the industrial sector.

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