УДК: 334.012.2

RESEARCH ON THE RELATIONSHIP BETWEEN THE INTEGRATION OF SCIENCE AND INDUSTRY AND REGIONAL ECONOMIC DEVELOPMENT

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Abstract. This article explores the relationship between the integration of science and industry and regional economic development. It argues that in today's context of globalization and the knowledge economy, the integration of science and industry and regional economic development are mutually reinforcing and complementary.

Regional economic development is the foundation for the scientific and industrial integration. First, the level of regional economic development determines the level and development of the integration of science and industry. A prosperous regional economy can lay a solid foundation for the deep integration of science and industry through more abundant funding, a more favorable policy environment, and broader development space. Conversely, a weak regional economy can become a bottleneck for the deep integration of science and industry because it cannot provide the necessary resources and environmental support. Second, the regional industrial structure affects the integration of science and industry. A high-quality regional industrial structure can usually generate a clustering effect of high-tech industries. This clustering effect can not only effectively stimulate the speed of industrial upgrading, but also accelerate the pace of technological updates, thereby generating an urgent demand for the integration of science and industry and ample opportunities for integration. This will further build a powerful engine for the integration of science and industry in the region [1]. Third, regional public policies serve the integration of science and industry. Appropriate fiscal and tax policies will provide high-quality services for the integration of science and industry. The reason is that these appropriate public policies can not only optimize the regional industrial structure, but also create a good incubation environment for technological upgrading. This will provide a solid institutional guarantee for the deep integration of science and industry in the region [2].

Scientific and industrial integration is a booster for regional economic development. First, scientific and industrial integration can promote the transformation and application of scientific research results and promote industrial interaction, drive the coordinated development of the three industries, thereby increasing industrial profits and optimizing the local industrial structure [3]. Second, scientific and industrial integration attracts talent. The continuous gathering of professional R&D personnel can enhance the region's talent resources, optimize the talent structure, and accelerate the continuous upgrading and transformation of industries. Third, scientific and industrial integration promotes the growth of industrial profits and local government fiscal revenue. With the increase of local government fiscal revenue, the government has more funds to improve and build infrastructure, which can accelerate the process of local urbanization and promote local modernization. Fourth, scientific and industrial integration can generate new industries. The integration of science and industry will effectively enhance industrial innovation capabilities and technological development levels [4], which will promote increased production efficiency and stimulate the level of export-oriented economy, thereby generating new industries and ultimately strengthening the core of the regional economy and consolidating its core competitiveness. In addition, regional government support will guide and coordinate the integration of science and industry. Given that the government can provide a series of services such as information, finance, technology and consulting for the integration of science and industry, these services are not only directly and deeply related to the level of integration of science and

industry, but the government can also consciously guide the direction of regional integration of science and industry and improve and optimize the integration process of science and industry.

As can be seen from the above, the integration of science and industry and regional economic development are mutually reinforcing and complementary. On the one hand, regional economic development provides opportunities and guarantees for the scientific and industrial integration. Regional economic development lays the foundation for sound economic and social development, promotes industrial agglomeration, and significantly enhances regional economies of scale. It also provides policy and service support for the scientific and industrial integration, improving the government's financial and technical service capabilities, thereby promoting regional innovation awareness. On the other hand, scientific and industrial integration promotes economic development. It increases the region's total economic output, export earnings, economic openness, and fiscal revenue, thus raising the regional economic level. Simultaneously, the new achievements of the integration of science and industry can effectively promote regional industrial agglomeration and the optimization and upgrading of industrial structure, driving the transformation and upgrading of industries within the region. In addition, the new success of the integration of science and industry can effectively promote the regional industrial agglomeration effect and optimize the industrial structure, and enhance the regional scientific and technological innovation and achievement transformation ability while driving the overall transformation and upgrading of industry. This mutually beneficial, dual-engine driving effect injects strong momentum into the realization of high-tech industrial clusters and the profound enhancement of innovation potential.

Conclusion: This article focuses on exploring the positive interaction and mechanisms between the integration of science and industry and regional economic development. The article reveals a potentially interdependent and symbiotic dynamic cycle between these two forces. Specifically, the integration of science and industry is a fundamental driving force for regional economic development, while regional economic development is a prerequisite for the deep integration of science and industry; a positive causal relationship exists between the two.

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