

Analysis of the Construction of Evaluation Index System for Scientific and Technological Talents under the Innovation-Driven Development Strategy

Yufei Zhang^{1,2*}, Shuyuan Deng¹

¹Shenyang Urban Construction University, Shenyang 110167, China

²Liaoning Yufei Decoration Design Engineering Co., Ltd., Shenyang 110000, Liaoning Province, China

*Corresponding author: Yufei Zhang, 521088388@qq.com

Copyright: © 2024 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract: Talent is indispensable as the pillar of innovative development. The key factor driving innovation is nothing more than talent. In the process of promoting the construction of an innovative country and responding to the new normal of economic development, China must be committed to cultivating and optimizing the team of scientific and technological talents to meet strategic needs and practical challenges. Building a comprehensive evaluation index system for scientific and technological talents is not only the core basis for cultivating, utilizing, and introducing scientific and technological talents but also plays a significant leading role in the growth of scientific and technological talents in this regard. This article focuses on analyzing the construction of the evaluation index system for scientific and technological talents under the innovation-driven development strategy from three aspects. Firstly, a detailed analysis was conducted on some overviews related to technological talents. Secondly, the principles for constructing the evaluation index system for scientific and technological talents under the framework of innovation-driven development strategy were discussed, as well as other related construction steps. Finally, insights were put forward on how to promote the construction of the evaluation index system for scientific and technological talents under the guidance of the innovation-driven development strategy. This includes a talent evaluation mechanism guided by goals and achievements, promoting scientific research achievements to go out of the laboratory, clarifying their development direction, promoting the in-depth implementation of scientific and technological talent evaluation, optimizing institutional construction, strengthening the guarantee system, and providing reference materials for relevant personnel's research work.

Keywords: Innovation-driven; Development strategy; Technology talents; Evaluation indicators; System construction

Online publication: July 9, 2024

1. Introduction

The connotation of innovation-driven development lies in the leading role of talent in innovation. The core

elements of talent innovation mainly lie in the guidance of projects and resources, which will have a direct impact on the achievements of talent innovation to a large extent. Given the globalization trend of modern economy and technological information technology, countries are vigorously cultivating and attracting innovative scientific and technological talents as a new strategic goal to effectively achieve a leading position in international competition. The evaluation of scientific and technological talents also involves the identification, exploration, cultivation, and management of scientific and technological talents. In addition, it involves the cultivation of outstanding scientists, the shaping of scientific and technological innovation teams, and the promotion of key talent projects. The construction of a technology talent evaluation index system to promote the implementation of the innovation-driven development strategy is mainly a crucial foundational work in the process of implementing the National Innovation Technology Talent Promotion Plan and creating a complete technology talent management system. Under the strategy of innovation-driven development, the construction of an evaluation index system for scientific and technological talents must adhere to the principle of classification evaluation. Targeted evaluation indicators and standards are adopted for the unique characteristics and growth patterns of various evaluation objects, and corresponding evaluation processes and methods are applied ^[1].

2. Definition of technology talents

Many scholars have shared their views on the definition of technological talents from multiple perspectives such as education, professional titles, practice, and contributions. Under the influence of the innovation-driven development strategy, technology talents are divided into two categories. Firstly, they are technological innovation talents who possess strong independent innovation ability and spirit and engage in innovative scientific research, technological research, and other related activities and services for a long time in their actual work. Secondly, they are technology entrepreneurial talents who possess excellent management skills, innovative spirit, and market expansion abilities. In the field of high-tech, they master core technologies and rely on independent intellectual property rights to stand invincible in fierce market competition, contributing to the country's technological progress and effectively achieving the goal of founding a company ^[2].

3. Construction principles and processes

3.1. Principles for constructing the evaluation index system for scientific and technological talents

The core of technology talent evaluation should focus on promoting the achievement of innovation-driven development strategic goals, constructing an adaptive evaluation system, adhering to the principles of problem-oriented and goal-oriented, and continuously leveraging its own leading and strategic advantages.

3.1.1. Principle of purposiveness

The fundamental goal of building an evaluation index system for scientific and technological talents is to adhere to the principle of practicality, to more accurately identify and effectively manage talents and to provide more correct guidance for the future growth of scientific and technological talents. In the context of the innovation-driven development strategy, the evaluation index system for scientific and technological talents urgently needs to focus on stimulating social innovation and entrepreneurship vitality, with innovation as the core driving force, to accelerate the process of social development. To promote the implementation of this strategy more efficiently, it is necessary to gather an excellent team of scientific and technological talents to support

the innovation-driven development strategy. In the process of establishment, attention should be paid to talent evaluation standards centered on ability and performance, avoid excessive emphasis on academic qualifications and academic papers, and thus achieve a balance in the evaluation system ^[3].

3.1.2. Principle of scientificity

The core of promoting the innovation-driven development strategy is to promote the deep integration of economy and technology while attaching great importance to the transformation and application of scientific research achievements. In the process of constructing an evaluation index system for scientific and technological talents, it should be based on scientificity, firmly adhere to the principle of innovation leading, forge ahead in continuous exploration, comprehensively consider the growth and research laws of scientific and technological talents, establish rigorous and applicable evaluation criteria, clarify the weights of each indicator, to achieve optimization of goals, maintain the clarity of the indicator system, maintain reasonable spacing between different levels, and ensure coordination and balance between various parts. When analyzing problems, it is necessary to comprehensively examine various factors, explore potential connections and impacts, and avoid one-sided views of the problem. Develop specific solutions for key links to ensure that all indicators do not interfere with each other. Based on the evaluation objectives, conduct a comprehensive evaluation of the actual abilities and levels of talents with completeness, objectivity, and accuracy.

3.1.3. Principle of operability

The realization of application value largely depends on the operability of the evaluation index system for scientific and technological talents. When selecting evaluation indicators for scientific and technological talents, it is necessary to ensure that they can be scientifically and reasonably evaluated, strive for simplicity and clarity, and prevent excessive complexity and difficulty in understanding. It is essential to make quantifiable indicators clear and specific, to effectively ensure the accuracy and measurability of each indicator. In addition, considering the complexity and uniqueness of the evaluation index system for scientific and technological talents, importance is attached to the improvement of qualitative evaluation methods, to effectively achieve the organic combination of qualitative analysis and quantitative evaluation.

3.2. Discussion on the process of constructing a technology talent evaluation index system

The construction of a scientific and reasonable evaluation index system for scientific and technological talents is of great significance for promoting the construction of China's scientific and technological talent team, and the construction of the scientific and technological talent evaluation system is only its basic link. However, ensuring the full effectiveness of the technology talent evaluation system has a crucial impact on achieving goals. Therefore, under the strategy of innovation-driven development, the process of building an evaluation index system for scientific and technological talents can be roughly divided into the following two stages.

3.2.1. Elaboration stage

When constructing a technology talent evaluation index system, the first step is to clarify the evaluation object. In other words, it is to evaluate which group of people to target. In the evaluation process, it is necessary to distinguish based on the characteristics of each type of talent and clearly define the evaluation objectives. According to the continuous changes in evaluation objectives, corresponding assessment content and criteria also need to show a certain degree of difference accordingly ^[4]. Therefore, under the influence of the innovation-driven strategy, it is necessary to comprehensively examine the important role of various innovative talents in driving innovation, which is also the core reason for dividing innovative talents into technological innovation

talents and technological entrepreneurship talents ^[5].

3.2.2. Construction phase

Organizational experts use specific forms such as the Delphi method and interview method to review various talent evaluation indicators and effectively establish the weights of corresponding indicators. At this stage, it is necessary to pay attention to the comprehensiveness of selecting organizational experts, to ensure a wide range of innovative talents, while ensuring that the established indicators and weights have high credibility and effectiveness, follow scientific principles, and achieve the application of flexible and diverse talents based on various industries and fields. In addition, at this stage, it is necessary to clarify the workflow and institutional guarantees of the evaluation index system for scientific and technological talents, to ensure a fair, just, and transparent evaluation process, fully reflecting the innovation orientation of the evaluation index system for scientific and technological talents, and effectively promote the creation of a good innovation atmosphere in the whole society.

4. Measures for constructing an evaluation index system for scientific and technological talents under the strategy of innovation-driven development

In the context of an innovation-driven development strategy, China is committed to promoting the prosperity and progress of science and technology, effectively promoting sustainable economic and social development. However, in measuring the innovation ability of scientific and technological talents in the fields of applied research and technological development, and comparing it with innovation value and contribution, the evaluation indicators of innovation ability are less highly valued in the academic community. The emergence of this phenomenon may be due to the innovation-driven development strategy, where professionals, scholars, and others, based on the perspective of scientific and technological talents, conduct an in-depth analysis of China's economic and social development, evaluate its actual value and contribution to China's scientific and technological development according to this standard, and therefore pay more attention to the guidance and practical application of scientific and technological innovation. Compared to other aspects, innovation ability, as a key quality of technological talent, often fails to receive sufficient attention in its crucial position. In terms of the relevant aspects of the third-level indicators, when evaluating indicators with higher weights, high attention should be paid to the scientific and rational analysis methods, to effectively ensure the accuracy and credibility of the evaluation results. Among them, it mainly covers technological innovation, integration ability, and good implementation of major theoretical breakthroughs, all of which are key indicators for evaluating the professional ability and level of scientific and technological talents. On the other hand, economic benefits and industrial influence are measured from the perspective of innovation achievements and industrial value. After comprehensively examining various factors, a comprehensive evaluation of the contributions made by scientific and technological talents is conducted to effectively ensure the accuracy and objectivity of the evaluation results. Therefore, under the innovation-driven development strategy, the evaluation of scientific and technological talents in the fields of applied research and technological development focuses on exploring the economic value they create in the process of scientific and technological innovation, while also paying attention to the innovative activities and practical fields of scientific and technological talents ^[6].

4.1. Guided by goals and achievements as the talent evaluation mechanism, promote scientific research achievements to expand out of the laboratory

It is necessary to adjust and optimize the talent evaluation mechanism guided by goals and results to achieve

a more accurate and comprehensive evaluation to improve the talent evaluation mechanism and adjust the excessive focus of technological innovation talents on the number of papers. This enables it to value the quality and practicality of scientific and technological talent's research and innovation achievements in the evaluation process. The research output ability of scientific and technological talents can be reflected in multiple aspects such as papers, projects, and technological awards. The challenges of project competition and competition for the first installment should be overcome to achieve easier development. The core direction of the reform of the evaluation index system for scientific and technological talents is to solve the problems faced by them in filling out forms, project competition, and first job competition, to achieve smoother progress.

4.2. Clarify one's development direction and promote the in-depth implementation of technology talent evaluation

The concept of application as the core is firmly adhered to, advocating for different innovative entities, and creating an evaluation index system for scientific and technological talents. This involves developing a targeted evaluation index system for the specific needs of innovative talents through various forms of innovative entities, optimizing the functions and responsibilities of enterprise units in the evaluation and cultivation of scientific and technological talents, reducing the impact and limitations of external factors on the evaluation of scientific and technological talents, advocating and guiding various innovative entities to closely align with the needs of national development strategy. This can establish their own development goals to firmly move forward and achieve steady growth, thereby promoting the in-depth implementation of scientific and technological talent evaluation ^[4].

4.3. Optimizing institutional construction and strengthening the guarantee system

Cultivating innovative talents is of great significance for the development of the country and society. Therefore, it is necessary to pay close attention to them. The promotion of this research work has a significant impact on the long-term development of the country. Therefore, some issues related to the cultivation of innovative talents should be closely monitored and given high attention by all parties. This involves Identifying it as one of the key tasks, gradually improving the talent training mechanism, and comprehensively promoting the implementation of talent training strategies. Governments at all levels should improve systems related to scientific and technological innovation, and increase publicity efforts. To inspire talents from all sectors of society to actively participate in the cause of scientific and technological innovation, China is committed to accumulating rich talent reserves in the field of scientific and technological innovation. In addition, the government should expand the channels for raising funds for scientific and technological innovation, to effectively ensure talent cultivation and obtain more sufficient economic security. The government should optimize resource allocation strategies, enhance policy implementation, enhance technological innovation capabilities, and promote sustainable development of the modern economy and society. The government should also optimize the efficiency of integrating innovative resources and showcase the unique style of scientific research institutions. By relying on scientific and technological innovation projects as the pillar, the government can effectively promote the cultivation of scientific and technological innovation talents, build a highly integrated scientific competition system, focus on exploring the innovation potential of members of the scientific and technological innovation team, improve the overall innovation efficiency, enhance the quality and efficiency of talent cultivation, promote the transformation and application of scientific and technological achievements, ensure that scientific and technological achievements fully realize their economic benefits and social value, and effectively assist the vigorous development of China's scientific and technological cause ^[7].

5. Conclusion

In summary, in the construction of the evaluation index system for scientific and technological talents, innovation is emphasized as the core orientation. Technological talents make significant contributions to social and economic development, especially under the strategy of innovation-driven development. They play a crucial role in driving development and are their most basic foothold and ultimate pursuit. Although considering the differences in the growth path of technological talents in various functional departments and fields, it is necessary to seek a unified and modern development strategy that is in line with the actual situation to promote the comprehensive improvement of the construction of scientific and technological talent teams. Following the laws of innovation to cultivate and attract outstanding scientific and technological talents, and following market rules to enable them to flow more freely, further realizing the scientific and rational allocation and full utilization of talent resources, to achieve the goal of fully exploring talents, unleashing talents, and achieving results. Based on this, fully pay attention to the particularity of scientific and technological talents in various fields, and formulate targeted measures to achieve comprehensive and balanced development.

Funding

The basic scientific research project approved by the Department of Education of Liaoning Province in 2023; Subject title: Application of digital technology in the construction of scientific and technological talent evaluation system: taking Liaoning as an example. Subject number: JYTMS20231548

Disclosure statement

The authors declare no conflict of interest.

References

- [1] Zhang LH, 2021, Research on the Abuse of Quantitative Indicators and Response Strategies in the Evaluation of Science and Technology Talents in Shanxi Province, thesis, Shanxi University of Finance and Economics.
- [2] Chen HN, 2021, Practice and Reflection on the Reform of Science and Technology Talent Evaluation: Taking the Chinese Academy of Agricultural Sciences as an Example. *China Science and Technology Talent*, 2021(01): 53–58.
- [3] Fu WZ, Li XJ, 2020, Evaluation of Talent Innovation Efficiency and Spatial Characteristics in the Yangtze River Economic Belt: Based on an Innovation Driven Perspective. *Technology and Economics*, 39(07): 89–98.
- [4] Zhong JL, Zeng QC, Yu QM, 2019, Construction of Evaluation Index System and Evaluation Model for Innovation and Entrepreneurship Talents: A Case Study of Science and Technology Oriented Small and Medium Enterprises in Guangdong Province. *Research on Science and Technology Innovation Development Strategy*, 3(05): 74–83.
- [5] Jiang XC, 2020, Research and Comprehensive Evaluation of Agricultural Science and Technology Park Planning and Design Based on Innovation Driven Orientation, thesis, Anhui University of Science and Technology.
- [6] Wang XP, 2020, Research on Technological Innovation Driving the Integrated Development of Rural Primary, Secondary, and Third Industries, thesis, Shanxi University of Finance and Economics.
- [7] Chen YY, Sun R, 2018, Research on Talent Evaluation in Local Major Science and Technology Talent Introduction Projects under the Background of Innovation-Driven Development. *Yunnan Social Sciences*, 2018(04): 59–64.

Publisher's note

Bio-Byword Scientific Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.