Research on the Mechanism of Innovation and Integration of Industry, University and Research in Forestry Industry Enterprises

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Abstract: With the proposal of the national "dual carbon" strategy and the promotion of the concept of "low-carbon", environmentally friendly and energy-saving lifestyles have gradually become the mainstream of today's social life. Developing the forestry industry is crucial for promoting a low-carbon and green economy. The forestry industry is a low-carbon, environmentally friendly, and sustainable green industry, and its raw materials have natural carbon sequestration functions. By leveraging the exemplary and leading role of leading enterprises in the forestry industry, it can promote industrial transformation and upgrading, effectively promote industrial structure adjustment, and play an important role in the high-quality development of the forestry industry. The innovative development of leading enterprises in the forestry industry should first clarify their dominant position in innovation, as well as the key role of integrated development of industry, academia, and research in implementing innovation driven development strategies. Enterprises, universities, and research institutes are located at different stages of the innovation chain and have different functional positioning. Leading enterprises in the forestry industry should combine independent innovation and collaborative innovation, and integrate enterprise innovation with industry, academia, and research. This can enable enterprises, universities, and research institutes to showcase their strengths and achieve complementary advantages in scientific and technological innovation. It is of great significance to unleash innovation vitality, promote the orderly flow and efficient allocation of technological elements.

Keywords: Forestry Industry, Mechanism, Leading Enterprise, Innovation

1. Introduction

Standing at the height of maintaining global survival and sustainable development, the Party Central Committee and the State Council have issued relevant documents on green development and comprehensively promoted the carbon neutrality national strategy in recent years [1]. The central government and relevant national departments have successively issued specific implementation documents, including the Opinions on Establishing and Improving the Value Realization Mechanism of Ecological Products, the Implementation Opinions on Green Development, the Guiding Opinions on Accelerating the Establishment and Improvement of a Green and Low Carbon Development Economic System, the Guiding Opinions on Coordinating and Strengthening the Work Related to Climate Change and Ecological Environment Protection Measures for the Administration of Carbon Emission Trading (Trial). According to the spirit of the document, it is necessary to base on the new development stage of the "14th Five Year Plan", implement the new development concept, build a new development pattern, adhere to the system concept, handle the relationship between development and emission reduction, overall and partial, short-term and long-term, bring "carbon

peak, carbon neutrality" into the overall social and economic development, take the comprehensive green transformation of economic and social development as the guide, and take green and low-carbon energy development as the key, Accelerate the formation of an industrial structure, production mode, lifestyle and spatial pattern that saves resources and protects the environment, unswervingly follow the high-quality development path of ecological priority, green and low-carbon, and ensure that "carbon peak, carbon neutrality" is achieved as scheduled [2-5].

With the proposal of the national "dual carbon" strategy and the promotion of the concept of "low-carbon", environmentally friendly and energy-saving lifestyles have gradually become the mainstream of today's social life. Developing the forestry industry is crucial for promoting a low-carbon and green economy. As a leading enterprise in the forestry industry, it has absolute industrial advantages in terms of raw material resource acquisition, park network layout, and the core position of the "dual carbon" strategy. It should fully leverage the demonstration and leading role of the forestry industry, better promote the development of emerging industries such as bamboo industry, understory economy, wood and bamboo building materials, forest source medicinal materials, biomass energy, forest and grass carbon sequestration, promote the development and application of forest products, and accelerate the prefabrication of wood and bamboo building materials products The progress of standardization and industrialization has assisted the development of physical industries [6-8].

The report of the 20th National Congress of the Communist Party of China pointed out that strengthening the dominant position of enterprises in scientific and technological innovation, leveraging the leading and supporting role of technology-based backbone enterprises, creating a favorable environment for the growth of technology-based enterprises, and promoting deep integration of innovation chain, industrial chain, capital chain, and talent chain. Enterprise innovation is a channel to achieve rapid value-added of enterprise value, and a key factor in determining the direction, scale, and speed of a company's development. From overall company management to specific business operations, innovation runs through every department and every detail of the enterprise. If the driving force of enterprise innovation is insufficient, it will cause the enterprise to fall into development difficulties. According to the current status and role of Chinese enterprises in the practice of collaborative innovation between industry, academia, and research, there are mainly three modes:

The first model is a multiparty industry university research cooperation led by enterprises. Led by enterprises, focusing on major industrial scenarios, aiming to break through the bottleneck problem of key core technologies in the industry through industry-university-research cooperation and innovation. This type of industry university research cooperation mainly involves collaborative research with innovative entities such as universities and research institutions. The second mode involves enterprises participating in industry university research cooperation led by universities and research institutions. Industry university research cooperation led by high-level research universities or national research institutions, with a focus on technology driven, is conducive to integrating the advantages of market driven and scenario driven. The third mode is for enterprises to participate in government led industry university research cooperation. Led by the government, determine research and development needs, task objectives, cooperation conditions, cooperation procedures, incentive mechanisms, supervision and management, and provide resources, policies, and other guarantees. Colleges and universities provide technology supply and intellectual support, while enterprises provide funding, industrial resources, and other support, and promote the transformation of scientific and technological achievements. Joint research and development is carried out through commissioned research and development or "unveiling and leading" methods [9-12].

Based on the above three models, combining independent innovation of enterprises with collaborative innovation of industry, academia, and research, it is necessary to give full play to the leading role of forestry industry enterprises in innovation, find the intersection of industry, academia, and research collaborative innovation, and stimulate the innovation motivation of leading enterprises, universities, and research institutions. Leading enterprises, universities, and research institutes in the forestry industry are located at different stages of the innovation chain and play different roles. On the one hand, leading enterprises in the forestry industry are located in the leading position of the forestry industry chain, with an urgent need for advanced science and technology and the ability to transform achievements; On the other hand, as an enterprise, due to the cross-border integration of various resource elements and the lack of integration and intensification capabilities, relying solely on self-innovation and technological breakthroughs of the enterprise is easily constrained by layers of constraints in terms of time, technology, and cost. Universities and research institutes have obvious advantages in scientific research, such as deeply integrating the innovation of forestry industry leading enterprises with universities and research institutes, and working together to strengthen the construction of innovative ecological clusters for the integration of industry, academia, and research. This can provide more opportunities and resources for various entities, facilitate the rapid formation of endogenous development momentum for enterprises, shorten innovation time, and reduce innovation costs, We will better play the role of leading enterprises as the locomotive of forestry Economic restructuring, and take on the major mission of leading the green and high-quality development of forestry [13].

2. Research Ideas and Objectives

2.1. Research Ideas

The forestry industry is a low-carbon, environmentally

friendly, and sustainable green industry. Its raw materials have natural carbon sequestration functions, bringing clean environment and fresh air to nature, enabling human sustainable development. Giving full play to the exemplary and leading role of leading enterprises in the forestry industry, promoting industrial transformation and upgrading, and cultivating forestry industry clusters can effectively promote rural revitalization and income growth, playing an important role in promoting high-quality development of the forestry industry. The innovative development of leading enterprises in the forestry industry should first clarify the main position of leading enterprises in innovation, and the key role of integrated development of industry, academia, and research in implementing the innovation driven development strategy of leading enterprises in the forestry industry.

The main research content of the project is the path analysis and effectiveness testing of the innovation factors of leading enterprises in the forestry industry and the integration of industry, academia, and research. The overall research approach is based on its own development strategy, analyzing the innovation path and integration mechanism of industry, academia, and research of leading enterprises in the forestry industry, deeply exploring the core factors that enhance the innovation driving force of leading enterprises in the forestry industry, analyzing the internal reasons and mechanisms for the differences in innovation driving forces among different leading enterprises, in order to truly promote enterprises to become the main body of innovation decision-making, research and development investment, and achievement transformation, and to promote the innovation chain, industrial chain, and capital chain Deep integration of talent chain..

2.2. Research Objectives

Analyzing the innovation paths of leading enterprises in the forestry industry based on the characteristics of the industry. Enterprise innovation should have conditions such as a sound system, a good research environment, and support for innovative talents. The main characteristics of enterprise innovation are self-reliance, creativity, originality, breakthrough, knowledge intensity, and scientificity. The path of enterprise innovation is to establish the enterprise as the main body of independent innovation; the combination of industry, academia, and research is the condition and driving force for enterprises to become innovative entities; Further improving institutional guarantees conducive to independent innovation by enterprises.

By analyzing the path of enterprise innovation and the integration of industry, academia and research, explore the driving factors of enterprise innovation. The innovative development of leading enterprises in the forestry industry requires leveraging their own role and effective external guidance, and by deepening the supply side structure reform of new forestry management entities, promoting the clustering of innovative elements towards leading enterprises in the forestry industry. The integration path of industry, academia, and research includes: (1) establishing a

cooperation platform. Establish a good cooperation platform between enterprises, universities, and research institutes to jointly promote industrial integration and innovation; (2) Strengthen talent cultivation. Strengthen talent exchange among enterprises, universities, and research institutes by establishing a mechanism for industry university research cooperation; (3) Strengthen technological innovation. Strengthen cooperation between scientific research institutions and enterprises, increase investment in science and technology, etc; (4) Strengthen policy support. Introduce a series of industrial integration and innovation policies to strengthen support for industrial integration and innovation [14].

Example analysis of innovation driving factors, implementation paths, and performance testing of leading enterprises in the forestry industry. We plan to analyze the driving factors and implementation paths of innovation in forestry industry leading enterprises by selecting a certain number of representative forestry industry leading enterprises from four aspects: innovation subject (forestry industry leading enterprises), innovation object (resources of leading enterprises), innovation path (innovation goals), and innovation conditions (integration conditions of industry, academia, and research), using the fsQCA method to analyze the mechanisms under different innovation paths. At the same time, examine the performance of enterprises from a financial perspective, in order to analyze the impact of the integration of industry, academia, and research on the innovation performance of enterprises.

3. Research Methods

The driving force for the continuous development of the industry comes from method innovation. In the development of modern forestry, how to achieve innovation and improvement of forestry technology is the key to ensuring sustainable development and improving comprehensive benefits in the new era of development. It has become a highly focused issue in the industry. With the deepening development of China's market economy and the progress of science and technology, the degree of market competition faced by forestry is becoming increasingly fierce. Therefore, enhancing the competitiveness of forestry through innovation in forestry technology has become an important task at this stage. It has strong practical significance to correctly handle the contradiction between traditional forestry models and technological drawbacks, and to deeply analyze and explore the innovation of forestry technology and the current situation of modern forestry development [15].

During the project research process, literature comparison method, case analysis method, questionnaire survey method, fsQCA method, and performance evaluation method were used in this study. By conducting on-site and online research and literature search on leading enterprises in the forestry industry, typical cases were sorted and analyzed. Based on this, combined with the fsQCA method, the driving factors for innovation and the integration of industry, academia, and

research in leading enterprises in the forestry industry were explored.

4. Key Issues to Be Resolved

Analyzing the mechanism of the innovation driving force of forestry industry leading enterprises in the process of innovation and integration of industry, academia, and research.

Analyzing the relationship between the factors that affect the innovation of leading enterprises in the forestry industry, and whether there are interactive and substitutive effects among these factors.

Evaluating the changes in value and performance of leading forestry industry enterprises after innovation and deep integration of industry, academia, and research, and test the effectiveness of industry, academia, and research integration.

Exploring how agricultural and forestry universities can promote the integration of scientific research and theoretical education in practical training, in the context of innovation and integration of industry, academia, and research in leading enterprises in the forestry industry, in order to achieve the goal of cultivating composite talents.

This project selects forestry industry leading enterprises as the research object for enterprise innovation, precisely because forestry industry leading enterprises have become the main body of agricultural and forestry production and operation, and the core of agricultural and forestry industry development. The development of leading enterprises in the forestry industry can effectively promote the structural adjustment of the forestry industry, promote the in-depth development of modern forestry construction, and drive farmers to become rich. Leading enterprises in the forestry industry, while developing themselves, have become the locomotive and propeller for the structural adjustment of the forestry industry, and are an important way for the development of modern forestry. The integration of industry, academia, and research can enable leading enterprises, universities, and research institutes in the forestry industry to showcase their strengths and achieve complementary advantages in scientific and technological innovation. It is of great significance for unleashing innovation vitality, promoting the orderly flow and efficient allocation of technological elements.

5. Conclusion

Currently, with the deepening of supply side reform, forestry development has also entered a new stage of reform and innovation, where technological innovation is an important link and also a core issue of concern for the future development of the industry. Especially with the gradual expansion of the forestry industry pattern, the shortcomings in current technology have gradually revealed their drawbacks. In this context, it is necessary to attach importance to technological innovation and upgrading, and not be limited to the current technological difficulties or satisfied with the achievements of current forestry development. Instead, we should continuously seek innovative development from a technological perspective to promote the sustainable development of China's forestry.

This paper selects leading enterprises in the forestry industry as the research object for enterprise innovation. Through theoretical analysis and case studies, it explores the innovation path of leading enterprises in the forestry industry and the integration mechanism of industry, academia, and research. It deeply explores the core factors that enhance the innovation driving force of enterprises, analyzes the internal reasons and mechanisms of the differences in innovation driving among different leading enterprises, and promotes enterprises to truly become the main body of innovation decision-making, research and development investment, and achievement transformation, truly shoulder the major mission of leading the green and high-quality development of forestry.

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