

Research on the Pathways of Rural Industry Integration under the Context of Rural Revitalization

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Abstract

This study focuses on the development status, dynamics mechanism, optimization paths, and future prospects of rural industry integration under the background of the rural revitalization strategy. Four typical models were identified: internal agricultural integration, extended industrial chain, function expansion, and technology-infused types. The adaptability of these models in different regions was also explored. Despite some achievements, rural industry integration still faces constraints such as difficulties in land transfer, insufficient capital investment, and lagging technology application. To address these issues, this paper proposes three optimization paths: institutional innovation, technological empowerment, and stakeholder collaboration. Measures include promoting the entry of collectively-owned business construction land into the market, utilizing digital technologies and blockchain traceability to enhance production efficiency and product quality, and building an "government + enterprise + cooperative + farmer" interest community. Furthermore, this study verifies the multiplier effect of industry integration on rural revitalization and suggests that future efforts should explore green integration pathways under the carbon neutrality goal and deepen mechanisms for two-way flow of urban and rural elements. This research not only provides scientific basis for policymakers but also offers theoretical guidance and empirical support for the practice of rural industry integration development.

Keywords

Rural revitalization, industry integration, institutional innovation, technological empowerment, stakeholder collaboration, green development, urban-rural element flow.

1. Introduction

The Rural Revitalization Strategy, as a major national development strategy, has been emphasized in the Central Document No. 1 for several consecutive years since 2018 [1]. These documents not only clarify the goals and tasks of rural revitalization but also propose specific policy measures to promote rural economic development and social progress [2]. With the widening urban-rural gap and the challenges faced by traditional agricultural transformation, rural industry integration has become a critical path to address these issues [3]. By promoting the deep integration of agriculture with other industries, we can not only enhance agricultural production efficiency but also diversify rural economies, narrow the urban-rural gap, and achieve common prosperity [4]. Additionally, this research will focus on optimizing resource allocation and enhancing the effectiveness of rural industry integration using modern information technology and innovative policy support. Ultimately, the goal is to achieve sustainable development of rural economies [5].

2. Theoretical Foundations and Literature Review

2.1. Definition of Core Concepts

Industrial integration refers to the intersection and consolidation of different industries, particularly in agriculture, through deep integration with cultural tourism, processing manufacturing, and the digital economy. This model not only enhances the added value of agriculture but also promotes diversified rural economic development. The evaluation index system for rural revitalization is a set of standards used to measure the economic development and social progress of rural areas. It typically includes dimensions such as economic growth, infrastructure construction, public service levels, and ecological environmental protection. These indicators provide a scientific basis for assessing the implementation effects of the rural revitalization strategy.

2.2. Theoretical Foundations

The theory of industrial chains emphasizes the interaction between vertical extension and horizontal expansion within industries. Vertical extension refers to the entire process from raw material production to final product sales, while horizontal expansion involves cooperation and competition among different enterprises within the same segment. New Structural Economics posits that industrial upgrading is driven by changes in factor endowments, meaning selecting appropriate paths for industrial development based on local resource conditions and market demands. The theory of integrated urban-rural development highlights mechanisms for two-way flow of resources between urban and rural areas, promoting interaction and cooperation through policy guidance and technological support to achieve common development. These theories provide a solid theoretical foundation for studying the integration of rural industries.

2.3. Research Progress at Home and Abroad

Internationally, Japan's "Sixth Industrialization" and the Netherlands' "Food Valley" model offer valuable experiences for the integration of rural industries. Japan's "Sixth Industrialization" integrates agricultural production with processing, sales, and tourism, enhancing overall agricultural efficiency. The "Food Valley" model in the Netherlands creates efficient industry clusters by concentrating agricultural and related industries in one area. Domestically, cases such as Zhejiang's "Rural Complex" and Sichuan's "Agricultural Park" demonstrate successful practices of integrated rural industry development. Zhejiang's "Rural Complex" integrates agricultural, cultural, and tourism resources to achieve increased agricultural efficiency and higher incomes for farmers. Sichuan's "Agricultural Park" promotes rural tourism by creating modern agricultural parks that combine sightseeing, leisure, and experiential activities.

3. Current Status and Challenges of Rural Industry Integration under the Context of Rural Revitalization

3.1. Analysis of Development Status

In recent years, with the continuous advancement of the national rural revitalization strategy, significant progress has been made in the integration of rural industries. According to statistical data, the coverage rate of rural industry integration across the country increased from less than 30% in 2015 to over 60% by 2023, demonstrating a positive trend in rural industry integration. Typical models can be categorized into four types: First, internal agricultural integration, such as integrated farming and breeding in circular agriculture, which improves production efficiency through resource recycling. Second, extended industrial chain models, like deep processing of agricultural products, extending the value chain to increase added value. Third, function-expanding models, such as leisure agriculture and rural tourism, combining agricultural production with tourism services to enrich rural economic forms. Fourth,

technology-infused models, like digital agriculture and e-commerce live streaming, utilizing modern information technology to enhance agricultural production and sales efficiency.

3.2. Major Constraining Factors

Despite these achievements, rural industry integration still faces numerous constraints. The primary issues include bottlenecks in essential factors, institutional obstacles, and limitations in the capabilities of key stakeholders. Bottlenecks in essential factors involve difficulties in land transfer, insufficient capital investment, and lagging technology application. Land transfer challenges hinder large-scale operations, inadequate capital investment makes it difficult to implement high-value-added projects, and technological lag affects production efficiency and product quality. Institutional obstacles include contradictions in land use policies for integrated industry development and the absence of effective benefit-sharing mechanisms. Existing land use policies are not well-coordinated in supporting the integration of three industries, and incomplete benefit-sharing mechanisms dampen the enthusiasm of participating entities. Lastly, the capabilities of key stakeholders are limited by insufficient cultivation of new types of business entities and low farmer participation. New business entities lack adequate training and support, while farmers have low awareness and willingness to participate in new business models, hindering the deeper advancement of rural industry integration.

3.3. Summary of Realistic Challenges

Overall, although rural industry integration is developing rapidly, it still faces a series of realistic challenges. Bottlenecks in land, capital, and technology limit the breadth and depth of industry integration; institutional obstacles such as contradictory land use policies and missing benefit-sharing mechanisms hinder effective progress; and insufficient cultivation of new business entities and low farmer participation further weaken the actual effectiveness of industry integration. Therefore, addressing these constraints, optimizing resource allocation, improving institutional safeguards, and enhancing the capabilities of key stakeholders are crucial for achieving high-quality rural industry integration.

4. Dynamics Mechanism and Evaluation System of Rural Industry Integration Development

4.1. Analysis of Dynamics Mechanism

The development of rural industry integration relies on both endogenous forces and exogenous pushes. Endogenous forces mainly include resource endowment advantages and the exploration of traditional cultural values. For instance, some regions have developed specialty agriculture and cultural tourism by leveraging their unique natural resources and agricultural conditions, achieving economic benefits. Meanwhile, exploring the value of traditional culture not only enhances local brand effects but also strengthens community cohesion. Exogenous pushes are primarily reflected in policy guidance and market demand upgrades. Governments actively guide and support the integration of rural industries through fiscal subsidies, tax incentives, and other measures. Additionally, with the increasing consumer demand for high-quality agricultural products and rural tourism, the upgrade in market demand provides new opportunities and development space for rural industry integration.

4.2. Construction of a Comprehensive Evaluation Model

To comprehensively assess the development level of rural industry integration, this study constructs a comprehensive evaluation model based on a multidimensional index system. This system includes economic efficiency (such as the rate of agricultural value-added), ecological benefits (such as energy consumption per unit of output value), and social inclusiveness (such as farmer employment rates). These indicators not only reflect the role of rural industry

integration in promoting economic growth but also consider its impact on ecological environments and social well-being. To specifically measure the degree of integration in typical counties, we employ the entropy method and TOPSIS model. The entropy method is used to determine the weights of each indicator, reflecting their importance in the overall evaluation. The TOPSIS model calculates the comprehensive scores of each sample county, allowing for comparisons of the degree of industry integration among different counties, thus providing scientific basis for formulating targeted development strategies.

5. Empirical Analysis of Typical Case Studies

5.1. Criteria for Case Selection

To ensure the broad representativeness and model innovation of the case studies, we considered two main criteria: regional representation and model innovativeness. Firstly, from the perspective of regional representation, we selected one representative case from each of the eastern, central, and western regions to cover rural industry integration practices under different economic development levels and geographic conditions. Secondly, in terms of model innovativeness, we chose distinctive cases such as the "Cultural Tourism + Intangible Cultural Heritage" model in Yuanjia Village, Shaanxi, and the "Industrial Support for Agriculture" model in Yonglian Village, Jiangsu. These cases not only showcase unique development paths in different regions but also provide valuable experiences for other areas.

5.2. In-depth Dissection

Taking Yuanjia Village in Shaanxi as an example, its path of rural industry integration can be summarized into three phases: resource integration, business model innovation, and brand building. Initially, by integrating the rich cultural and natural resources locally, Yuanjia Village created a comprehensive platform combining cultural tourism with intangible cultural heritage displays. In terms of business model innovation, Yuanjia Village introduced various emerging business models such as handicraft making experiences and folk performances, enriching tourist experiences and increasing added value. Finally, in brand building, through continuous brand promotion activities, Yuanjia Village enhanced its recognition and reputation. The evaluation results show that the per capita income growth rate of farmers in Yuanjia Village has significantly increased, and the multiple of village collective economic growth has reached expected targets, fully demonstrating the effectiveness of this model.

5.3. Lessons Learned

Through in-depth analysis of these typical case studies, several important lessons can be drawn. Firstly, the government plays a crucial role in the process of rural industry integration, not only providing scientific planning guidance but also essential infrastructure supply, such as transportation, water, and electricity, laying the foundation for industrial development. Secondly, the role of the market cannot be overlooked, particularly the driving force of leading enterprises and the creation of consumption scenarios. Leading enterprises can not only enhance the efficiency of the entire industrial chain through technological innovation and management models but also attract more consumers by creating diversified consumption scenarios, thereby promoting the diversified development of the rural economy.

6. Optimization Pathways for Rural Industry Integration Development

6.1. Pathways of Institutional Innovation

Institutional innovation is crucial to promoting rural industry integration. Firstly, land system reform, particularly the entry of collectively-owned business construction land into the market, is a significant measure. This not only helps solve the land use problems in rural industrial

development but also activates the potential value of rural land resources, facilitating deeper integration between agriculture and secondary and tertiary industries. Secondly, establishing a robust financial support system is essential. Issuing special bonds for rural revitalization and promoting supply chain finance can provide ample funding for rural industry integration projects, alleviating financing difficulties and accelerating the rapid economic development of rural areas.

6.2. Pathways of Technological Empowerment

Technological empowerment is vital for enhancing the level of rural industry integration. On one hand, the application of digital technologies such as agricultural IoT (Internet of Things) and blockchain traceability significantly boosts agricultural production efficiency and product quality traceability capabilities. For instance, IoT technology enables precision agricultural management, effectively increasing crop yields and quality; blockchain technology ensures full traceability of agricultural products from farm to table, enhancing consumer trust. On the other hand, modernizing traditional crafts is another important direction. By developing IP (Intellectual Property) around intangible cultural heritage techniques, it is possible not only to protect and preserve traditional culture but also to create new economic growth points, thereby increasing farmers' incomes.

6.3. Pathways of Stakeholder Collaboration

Building an "government + enterprise + cooperative + farmer" quadruple alliance interest community is a critical approach to advancing rural industry integration. This model emphasizes multi-party cooperation, joint participation in industrial development, and shared benefits, forming a synergy to promote sustainable economic development in rural areas. Additionally, cultivating new professional talents like rural CEOs is key to elevating the level of rural industry integration. Through professional training and policy support, a team of professionals who understand agriculture, love rural areas, and care for farmers will be nurtured. These individuals will become the new force leading rural industrial upgrades and driving farmers' prosperity.

7. Conclusion and Prospects

This study verifies that industry integration has a significant multiplier effect on rural revitalization and suggests that different regions should select differentiated integration models based on their own characteristics. However, the research also has certain limitations, such as the timeliness of data and the dynamic changes in case studies, which may affect the general applicability of the conclusions. Looking forward, under the carbon neutrality goal, exploring green integration pathways will become a crucial direction for the development of rural industry integration. Meanwhile, deepening mechanisms for two-way flow of urban and rural elements to promote effective resource allocation and sharing will provide new momentum for achieving rural revitalization.

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