

On the Mechanism and Optimization Path of Digital Economy Empowering Rural Industrial Revitalization

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Abstract

At present, the rural revitalization strategy is an inevitable requirement for promoting steady rural development and improving rural living standards, and industrial revitalization is the key to rural revitalization. Promoting high-quality development of rural industries in the new era requires the use of new driving forces of the digital economy. However, there are still problems in the current development process of rural digital industry, such as imbalanced development of the digital economy, low level of development, lack of talent reserves, and incomplete industry sharing mechanisms. It is necessary to overcome development difficulties, fully develop and utilize the potential of the digital economy, and assist in the revitalization of rural industries. This article first studies the mechanism by which the digital economy empowers the revitalization of rural industries. Secondly, the practical challenges of the development of rural digital industry in China were analyzed based on the path of action. Finally, the implementation path for the revitalization of rural digital industry was proposed. Accelerate the construction of rural digital infrastructure, improve the mechanism for talent cultivation and industrial information sharing, in order to enhance the digital level of rural industries and achieve the revitalization of rural industries.

Keywords

Digital economy; Revitalization of rural industries; Mechanism of action; Optimize the path.

1. Introduction

In recent years, the digital economy has been rapidly developed and widely applied globally, which has had a positive impact on economic growth, employment, and social development. The report of the 20th National Congress of the Communist Party of China clearly proposes to "accelerate the construction of an agricultural power". Agriculture is a fundamental industry that is related to the national economy and people's livelihood. Nowadays, promoting the transformation and upgrading of agriculture has become an important global trend. Therefore, promoting the transformation of China's agricultural economic development mode requires guiding the integration of digital economy and its development. In 2018, the No. 1 central document first proposed the concept of "digital village", which promoted the process of rural industry digitalization in China. In 2019, the "Outline of Digital Rural Development Strategy" jointly issued by the General Office of the Communist Party of China Central Committee and the General Office of the State Council provided a digital development path for the revitalization of rural industries in the new era; In 2020, the process of rural industry digitalization in China was accelerated, and the Rural Development Plan of digital agriculture (2019-2025) and the Key Points of Digital Rural Development in 2020 were successively issued, providing direction guidance for the improvement of digital production capacity during the "14th Five Year Plan" period. The No. 1 central document of the Central Government in 2021 further emphasizes the

need to vigorously promote the construction of digital countryside and strengthen the construction of rural information infrastructure. In general, the government's policies and measures have promoted the rapid development and application of rural industry digitalization in China. Therefore, during the new journey of building a socialist modern country in an all-round way, it is necessary to study the mechanism and implementation path of digital economy driving rural industry revitalization, so as to continue to help rural revitalization and promote common prosperity.

In recent years, the academic community has conducted research on the relationship between the digital economy and the revitalization of rural industries, with the following characteristics: firstly, the research methods are diverse. Tianye et al. (2022) [2] explored the internal mechanism of digital economy empowering rural industrial revitalization through the mediation of urban-rural development. Wan Shiwei and Tang Kai (2022) [3] believe that the digital economy can empower rural industrial revitalization through efficiency improvement, industrial transformation, and structural optimization. Guo Chaoxian and Miao Yufei (2023) [4] believe that the digital economy promotes the revitalization of rural industries mainly through two paths: "agriculture+" and "digital+". Tang Hongtao and Xie Ting (2022) [5] explored the impact of the digital economy on the connection between industrial poverty alleviation and industrial revitalization by constructing a coupled collaborative model of industrial poverty alleviation and industrial revitalization. The study showed that the digital economy can consolidate and expand the effective connection between industrial poverty alleviation and industrial revitalization. The second is the diversification of research subjects. When exploring the rural digital industry, some scholars have specifically studied specific rural industries. Li Xiang and Zong Zupan (2020) [6] analyzed the mode and path of rural digital cultural industry revitalization. Xia Tianhua and Chen Junyu (2023) [7] took Xiangxi Miao embroidery as the research object to explore the internal mechanism and promotion path of digital economy empowering the development of Xiangxi Miao embroidery intangible cultural heritage industry. In terms of traditional rural industries, Xie Yunhui (2022) [8] took the jujube industry as an example and proposed a digital upgrading path based on the current situation of industrial transformation and upgrading. Wang Jingyuan (2022) [9] studied the idea of Digital transformation of rice industry. Thirdly, the research scope is broad and extensive. The research on the digital rural industry is not limited to the whole. Cheng Xin (2023) [10] analyzed the highlights and challenges of the current development of digital rural industries in Jiangsu, and conducted research on the empowerment of rural industry revitalization by digital economy under the new development concept. Shen Zhen et al. (2022) [11] studied the rural industry in Hengyang City and analyzed the mechanism of digital economy empowerment.

Overall, existing literature has focused on the past two to three years, with diverse opinions on how the digital economy drives the revitalization of rural industries and promotes the construction of digital rural areas. This has provided useful explanations and laid the foundation for the theory and methods of digital economy and rural industry revitalization. But generally speaking, most of the studies use the qualitative research method, which is not strong in theoretical support. Based on this, this study first clarifies the concepts and scope of the digital economy and rural industry, summarizes the mechanism of the digital economy empowering rural industry revitalization, and analyzes the current challenges of rural digital industry development in China based on relevant statistical data. Finally, based on the research results, it proposes suggestions for the implementation path of digital economy driving rural industry revitalization, thereby promoting the realization of rural revitalization.

2. The Mechanism of Digital Economy Empowering Rural Industrial Revitalization

2.1. Digital economy transforms agricultural production methods

With the widespread use of agricultural information infrastructure, the development of rural industries in China is constantly improving, gradually moving towards digitization and intelligence. The transformation of agricultural production methods in the digital economy is mainly reflected in two aspects. One is that data elements stimulate the vitality of agricultural production. Data is a key production factor in the digital era. With the support of reliable digital infrastructure, it can be fully integrated with agricultural production, promote modern agricultural development, continuously adjust rural industrial structure, and fully stimulate the vitality of agricultural production. Secondly, digital information technology promotes the transformation and upgrading of rural industries. By effectively utilizing the Internet and the Internet of Things, digital information technology can promote the research and innovation of agricultural production technology, and promote the development of modern smart agriculture. At the same time, the application of digital information technology will promote the vigorous development of rural e-commerce. It can not only expand the sales channels of agricultural products and their processed products, increase employment opportunities, and increase farmers' income, but also promote the integration and development of related industries, and promote the modernization transformation of the agricultural industry.

2.2. Optimizing rural industrial structure through digital economy

The rural industrial structure is an important component of the rural economic structure. The traditional rural industrial structure mainly refers to the agricultural industrial structure. The digital economy, with its efficient and intensive advantages, can promote the transformation and upgrading of the traditional agricultural industrial structure, while effectively promoting the integration of the three industries and stimulating their vitality. Digital technology promotes the development of new industries by deeply exploring potential production factors in rural areas, analyzing and evaluating consumer markets. Firstly, fully tap into the potential of rural tourism, develop ecotourism, sightseeing tourism, and leisure tourism, promote industrial integration and upgrading of industrial structure. The second is to cultivate new farmers with digital literacy, build modern agricultural industrial parks, achieve digitization, modernization, and specialization of rural industries, and develop industries with rural characteristics and advantages.

2.3. Digital economy reduces the cost of rural industries

The digital economy not only optimizes the structure of rural industries, but also improves the quality and efficiency of production, thereby reducing production costs and promoting high-quality development of rural industries. Rural enterprises can use digital technology to integrate and analyze data resources, build a complete industrial chain, and plan product production reasonably, fully utilize resources, and save production costs; In addition, the digital economy can drive specialized division of labor and intelligent production, thereby improving production efficiency and reducing human resource costs. At the same time, smart agricultural production systems can provide the most basic and complete information guarantee for the development of rural industries, and improve product quality.

3. The Realistic Problems of Empowering Rural Industry Revitalization with the Digital Economy

3.1. Imbalance in the development of the digital economy

The imbalance in the development of China's digital economy is manifested in regional and urban-rural differences. From the perspective of economic development levels in various regions, the overall level of agricultural and rural informatization development in China in 2020 was close to 38%, with Zhejiang, Jiangsu, and Shanghai located in economically developed areas ranking in the top three, far above the average level. The reason is that the rural digital infrastructure in economically developed areas is relatively sound, and the level of integration and development of digital economy and rural industries is relatively high. There is a sound digital rural industrial chain that can effectively promote the transformation and upgrading of rural industries. However, the development level of rural digital economy in underdeveloped areas is relatively low, and the digital rural industry is still in its infancy. The development platform for modern smart agriculture has not yet been established, and there are significant differences in the development of digital rural industry among regions. At the same time, there is a significant gap in the development level of digital infrastructure between urban and rural areas. Although the internet penetration rate in rural areas has improved in recent years, there is still a lot of room for improvement compared to urban areas, which hinders the development of rural digital industries. Therefore, it is necessary to optimize the digital industry development system in rural areas and further narrow the urban-rural development gap.

3.2. Low level of digital development

With the development of the information age, more and more people have joined the internet industry, using the internet for shopping, travel, tourism, etc. In the era of digital economy, digital technology has become an important driving force for the development of rural industries. However, currently, the level of digital development in rural areas is relatively low, with a significant gap compared to urban areas. Digital technology has not been reasonably applied in agricultural production, processing and sales, as well as raw material procurement. At the same time, the development of rural digital industry is still mainly focused on the production of agricultural products. In 2020, the national level of agricultural production informatization was 22.5%, which is 3.9 percentage points higher than in 2018, while the degree of digitization in other aspects is relatively low. Especially, digital technology has not played a strong role in building rural networked logistics and distribution, and the industry is relatively isolated and closed, without forming a complete industrial chain.

3.3. Relatively scarce talent reserves

The development of the digital economy needs to be supported by a rich talent reserve. For many years, cities have attracted a large number of talents based on their own industrial, environmental, and educational advantages, and a rich talent reserve can promote the rapid development of the digital economy. At the same time, due to the uneven development of urban and rural areas, the rural population continues to migrate to urban areas, resulting in a shortage of digital talents in rural areas. Moreover, the permanent residents in rural areas are the elderly and children, who generally have low educational levels and are unable to accept the changes in life and production brought about by digitization. They still rely on traditional production and business models, and the development level of the digital economy is relatively backward.

3.4. Incomplete industry sharing mechanism

The integration of three industries can achieve high-quality development of rural industries. At present, there are still many problems and challenges in the process of digital economy promoting the integration of three industries, among which the most prominent is the

imperfect sharing mechanism between industries. This ultimately leads to a lack of close communication between farmers and production enterprises, which cannot effectively protect the rights and interests of farmers. The level of industrial integration and development is not high, and the production of agricultural products is relatively scattered and low in scale. The brand effect has not yet formed, and there is a lack of unified planning and guidance. The uneven quality of agricultural products leads to low sales. The smart tourism platform has not yet been established, and the integration of rural tourism development with ecological agriculture and sightseeing agriculture still needs to be further strengthened.

4. The Implementation Path of Empowering Rural Industry Revitalization with Digital Economy

4.1. Improving Digital Infrastructure

Accelerate the construction of digital infrastructure, promote its effective connection with rural revitalization strategies, and provide guarantees for the high-quality development of rural industries empowered by digital technology. Firstly, accelerate the layout and improvement of digital infrastructure construction, and promote its application in agriculture, tourism, e-commerce and other fields, narrow the gap between digital economy regions and urban-rural development, promote its effective integration with rural industries, and provide guarantees for the high-quality development of rural digital industries; Secondly, we need to accelerate the digital transformation of traditional infrastructure such as agricultural production facilities, agricultural product production and processing, and rural logistics, improve the level of rural infrastructure construction, and provide long-term material support for the development of digital rural industries.

4.2. Improving the digital level of the industry

Given the current situation of rural industrial development, efforts should be made to improve the digital level of rural industries and make industry planning tailored to local conditions. Firstly, improve the industrial chain and enhance digital supply capacity. To achieve high-quality development in rural industries, on the one hand, it is necessary to accelerate the construction of networked, integrated, and digital industrial supply chains. On the other hand, the advantages of the digital economy should be fully utilized to achieve digital innovation in the rural industrial chain, integrate the digital economy into rural industries, provide innovative products and services for consumers, and improve their satisfaction. Secondly, through market research, develop characteristic e-commerce products to meet the needs of consumers. When conducting product research and service innovation, it is necessary to fully utilize the Internet to implement precise promotion, actively create modern agricultural industrial parks, sightseeing agriculture, and smart agriculture, and improve the quality of development. Finally, enhance the digital content and capabilities of rural industries. Accelerate the application of high-tech technology, utilize artificial intelligence, the Internet of Things, and other advanced technologies to create new formats for the development of rural digital industries.

4.3. Enriching the reserve of rural talents

Digital technology empowers the high-quality development of rural industries, which cannot be separated from the support of a talent team with professional digital literacy. On the one hand, it is necessary to build a platform for digital talents to go to the countryside, provide professional network basic knowledge popularization and network technology application training for rural residents, and improve residents' information literacy and digital technology application ability; On the other hand, it is necessary to improve the talent incentive system,

strengthen the training and support for rural digital talents and new farmers, attract more talents from cities to rural areas, and assist in the revitalization of rural industries.

4.4. Improve information sharing mechanism

The sustainable development of rural digital industry requires improving the information sharing mechanism between industries and building a safe and efficient rural industry service platform. Firstly, by actively creating rural industry exhibition parks, further promoting the integration and development of rural industries. Secondly, innovate business methods, closely connect interests, support and guide enterprises and farmers to cooperate in shareholding, and encourage farmers and family farms to participate in enterprises through labor, land, capital, and other means. Finally, actively develop rural ecological agricultural tourism, use online platforms to expand the visibility of rural tourism, combine digital economy with rural tourism, improve tourist participation and satisfaction, and promote the integrated development of the digital industry.

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