

Unlocking Rural Revitalization through the Digital Economy: A Journey of Exploration

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Abstract. Digital economy, centered around information technology, encompasses digital content, digital industries, digital commerce, and represents a new global economic form. Its application can bring about new development opportunities and enhance efficiency. Rural revitalization is an important recent national strategy aimed at strengthening economic, social, and ecological aspects of rural development, promoting sustainable urban-rural integration. This involves the development of agriculture, rural infrastructure, the creation of beautiful rural landscapes, and ensuring the livelihood of rural residents. The digital economy plays a crucial role in rural revitalization, relying on information technology and employing digitalization, networking, and intelligence to drive industrial transformation, enhance efficiency, and promote innovation, thus forming a new economic model. Specifically in rural areas, the digital economy builds rural e-commerce platforms, offering new sales channels for farmers, creating smart agricultural ecosystems, establishing environmentally friendly foundations for sustainable agriculture, and upgrading rural financial services through digitization, optimizing the allocation of rural financial resources. This accelerates the digitization of rural tourism development and spurs the growth of surrounding rural service industries. Therefore, the digital economy holds significant practical importance for rural revitalization.

1 Introduction

The digital economy relies on digitized knowledge and information as key production elements, is driven by digital technology at its core, and uses modern information networks as essential carriers. Through the deep integration of digital technology with the real economy, it continuously enhances the levels of digitization, networking, and intelligence in economic and social aspects. This accelerates the restructuring of economic development and governance models, creating a new economic paradigm. Rural revitalization, on the other hand, involves the promotion of economic, social, and ecological development in rural areas through policy guidance, financial investment, and industrial development[1].

China's digital economy ranks second globally in terms of total volume and first in terms of growth rate, offering a strong development foundation and vast growth potential[2]. However, it is crucial to recognize that the development of China's digital economy faces challenges in areas such as establishing a robust data element market, enhancing digital technology innovation capabilities, promoting the digital transformation of traditional industries, managing cybersecurity risks, reshaping digital governance rules, and curbing the expansion of the digital divide. Addressing these issues requires the concerted efforts of industry stakeholders, academia, and policymakers to reach consensus and collaborate in driving solutions[3].

2 Literature Review

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2.1 Digital Economy

The digital economy is a new economic form that revolves around information technology and employs digital, networked, and intelligent means to drive industrial transformation, enhance efficiency, and promote innovation. It comprises three main components: digital industries, digital commerce, and digital economic services. Digital industries involve upgrading industries through digital technology innovation, applications, and industrialization, including electronic information manufacturing, e-commerce, digital media, and more[4]. Digital commerce encompasses business models based on digital technologies like the internet and mobile internet, such as online stores, e-commerce platforms, and social commerce. Digital economic services refer to providing digital services in various fields, such as finance, healthcare, transportation, education, and culture, using information technology and the internet[5].

2.2 Rural Revitalization

Rural revitalization is a significant national strategy put forth in the process of comprehensively building a socialist modernized country to address urban-rural disparities and uneven development. Its objective is to promote rural economic development, enhance rural livelihoods, and strengthen rural agriculture and infrastructure as core measures to advance urban-rural integration, promote the development of a modern economic system, and foster societal progress[6].

The main components of rural revitalization include industrial revitalization, rural development, and talent revitalization. This can be achieved through the development of specialty agriculture, craftsmanship, and agrotourism to establish competitive advantages and differentiation, speeding up the transition to a digital economy. The creation of a digital agricultural ecosystem, a digital agricultural product supply chain, and the promotion of ecological agriculture development enhances the quality and efficiency of agricultural development, protects the rural ecological environment, and provides a foundation for the sustainable development of rural industries[7].

3 Analysis of the Main Challenges Faced by Rural Revitalization with the Assistance of the Digital Economy

3.1 Lack of Comprehensive Rural Digital Infrastructure Coverage

The acquisition, circulation, and utilization of data are critical factors for the development of the digital economy, and the effectiveness of data acquisition, circulation, and utilization depends on the establishment of digital infrastructure. The integrated development of agriculture, rural economies, and the digital economy is a systematic process, and without robust digital infrastructure as a support system, the successful implementation of this project becomes challenging. There are two types of digital infrastructure: hybrid and dedicated. Hybrid infrastructure integrates digital technology into traditional architecture, while dedicated infrastructure includes specialized digital foundations, including broadband. Currently, internet penetration in China continues to grow, but in rural areas, internet accessibility remains relatively low. Although various e-commerce platforms are establishing express logistics systems, the limited level of rural information technology and smart infrastructure hinders the integration and development of informatization and the rural economy[8].

3.2 Lack of Highly Skilled Digital Economy Professionals to Support Rural Revitalization

To achieve the integrated development of rural revitalization and the digital economy, a pool of highly skilled digital economy professionals is essential. Presently, there is a shortage of individuals who have received basic training in the knowledge and skills necessary for rural revitalization assisted by the digital economy. Moreover, some of these individuals lack a certain level of cultural knowledge and do not fully understand the role of the digital economy in rural revitalization and development. Many town and township leaders lack adequate digital literacy, and highly educated young people are rarely returning to work in rural areas. Most professionals in the field of digital economy are concentrated in large and

medium-sized cities, leaving a shortage of digital economy practitioners in rural areas. Digital economy professionals in rural areas need to continually enhance their professional and technical skills as well as their overall qualifications[9].

4 Analysis of the Primary Pathways for Digital Economy's Contribution to Rural Revitalization

4.1 Formulating Incentive Policies and Optimizing Relevant Laws and Regulations

A thorough understanding of the current status and key characteristics of rural digital economic development is essential. For rural areas with lower economic development, supportive policies should be formulated. Leading enterprises and organizations in the digital economy should receive incentives and necessary support. A well-devised plan for the widespread adoption and use of digital resources should be implemented, accompanied by a series of policies and strategies aimed at fostering robust rural digital economic growth. This ensures the smooth and orderly operation of network operators and provides guidance for businesses and related organizations to vigorously develop the digital economy and rural economy[10]. To foster digital economy development in rural areas, it is imperative to establish a comprehensive legal and regulatory framework to promote social order and an ecological system. On this foundation, a sound financial innovation service system must be constructed to meet the development needs of rural economies in China. In the context of rural development, an innovative, comprehensive, and all-encompassing financing service system should be developed to promote innovation and diversity in financial financing.

4.2 Nurturing High-Quality Digital Economy Professionals to Support Rural Revitalization

To achieve the ultimate goal of rural revitalization, there is a need to actively recruit and employ highly qualified, technically proficient professionals who can support rural revitalization through the digital economy. A specialized talent pool comprising digital economy

professionals should be established to enhance the overall competence of rural grassroots officials. For existing staff, regular training and knowledge exchange activities related to digital economy technology should be organized to elevate their knowledge and skills. In the course of business operations[11], employees should be encouraged to develop and improve their skills continually, fostering self-learning capabilities and creativity. Furthermore, a comprehensive assessment of rural grassroots officials should be reinforced, with targeted training and specialized learning conducted to equip them for the evolving landscape of financial digital technology. Efforts should be accelerated to cultivate a substantial number of practical talents with expertise in both agriculture and digital economy technology[12].

4.3 Optimizing Industrial Structure and Creating a Strong Synergy

Rural areas are characterized by large populations, small town sizes, and suboptimal industrial layouts, which have impeded the development of rural digital economies. Rural areas must vigorously develop distinctive economies, emphasizing the features of digital industries. This allows more businesses to leverage their strengths, create large-scale industry chains with agglomeration effects[13], and bolster the development of distinct digital economic industries, ultimately promoting sustainable rural revitalization and distinctive economic development.

4.4 Improving Rural Governance Services to Ensure an Amicable Living Environment

Integrating digital network platforms, government and relevant departments, and social organizations into the rural economic governance system can define governance authority, responsibilities, and obligations clearly, forming a diverse cooperative governance system and model. The development of the digital economy not only plays a significant role in cultural knowledge dissemination but also enhances the efficiency of rural governance. Integrating the digital economy into rural economic development helps construct a positive and healthy rural culture absorption model, fostering the development of rural public culture. On the other hand,

leveraging internet technology and digital economy technology allows for information sharing and the creation of a "lock-in effect," ensuring a favorable rural environment. In the context of the digital economy's support for rural revitalization, modern digital monitoring software and platforms should be widely employed to monitor rural pollution effectively. Reasonable utilization of full media is essential to disseminate extensive knowledge about diversified cultural tourism products, thereby promoting the sustainable development of the rural cultural tourism industry, supporting the circulation and sales of local rural specialty products[14].

4.5 Utilizing Digital Technology to Create a Sound Residential Services System

First, encourage major urban professional service providers to expand into rural areas through direct operations, franchise agreements, and similar approaches, establishing a "service reaches the countryside" model. Second, promote the development of e-commerce services for rural residents. In the context of rural "hollowing," rural areas exhibit a growing demand for localized services, especially in fields such as elderly care and the arts. Additionally, there is an increasing demand for services related to tourism and dining. Third, promote the orderly development of rural sharing economy services to meet the basic needs of rural residents. "Sharing economy" refers to a new model based on resources such as human resources, land, and housing, striving to maximize the development of rural living services with minimal costs and simple conditions. The core content revolves around promoting the sharing of rural labor[15]. With the aging population and rural "hollowing," the demand for living services is steadily increasing. To provide these services to customers, innovation is required in business models. Leveraging existing human resources can not only reduce costs but also enhance the timeliness of services, promoting the sustainable development of rural digital economies.

5 Conclusion

The use of the digital economy as a driving force has effectively addressed the issues of imbalance and

insufficiency in the development of the rural revitalization strategy. Digital technology has mitigated problems such as information asymmetry and high transaction costs, opening up new horizons for rural economies and steering them from traditional small-scale agriculture toward eco-agriculture and smart agriculture. Strengthening the digital infrastructure in rural areas, enhancing rural informatization, and promoting rural modernization have become prevailing trends in rural development. The integrated development of the digital economy and rural agricultural economy has gradually become a powerful driving force for advancing agriculture, rural progress, and farmers' development, rendering considerable potential to China's agricultural economy in the future. It is essential to harness the advantages of "latecomer + top-level design + innovation-driven + local characteristics" to facilitate breakthroughs in digital technology achievements, continually and steadily promote the integrated development of the digital economy and rural agricultural economy. This approach not only supports the advancement of supply-side structural reform in agriculture but also enhances China's competitiveness and sustainable development capabilities in agricultural development. Furthermore, it can achieve the organic integration of the digital economy and rural revitalization strategy through "consensus, collaboration, and joint action," fundamentally promoting the prosperity of rural economic industries.

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