

# *Difficulties and Countermeasures of Realizing Rural Revitalization under the Background of Digital Economy*

Xiaoli Zhang, Shiyi Zhou, Yan Xu

*Department of Accounting, Harbin Finance University, Harbin, Heilongjiang, China*

**Keywords:** Digital economy; rural revitalization; digital divide

**Abstract:** Rural revitalization strategy is one of the most important national strategies at present. In particular, the economic growth of densely populated cities is slow. The sparsely populated villages that occupy most of Chinese territory have gradually entered the economic stage and become the engine of economic and social development in the New Era. However, some problems have emerged in the development process of rural revitalization under the background of the digital economy, such as urban and rural digital divide, low added value of agricultural products, large transportation resistance, high cost and imperfect digital rural governance system. Thus, exploring the road of organically integrated development of digital economy and rural revitalization as well as putting forward correct advice provide reference for promoting the healthy development of rural revitalization, promoting rural revitalization to open up an innovative situation, and making new breakthroughs.

## 1. Introduction

As the digital economy gains recognition among the masses, rural revitalization has been keeping up with the times by constantly updating its methods. However, there have been few detailed reports on how to penetrate the entire process of agricultural product sales and develop in multiple areas. This paper aims to use blockchain technology and digitization to visualize the entire supply chain, and to explore the value of rural areas from various perspectives. By promoting rural business development and improving living standards, this study will provide a theoretical basis for the scientific implementation of rural revitalization.

## 2. Development Status and Trends of Digital Countryside in China

### 2.1 The Drive of Inclusive Development of Digital Economy

Equal opportunities are an important characteristic of the current era, and equal opportunities for digital economic development in rural areas require support from two aspects: first, ensuring equal development environments, and secondly, leveraging the long-term and sustainable advantages of digital inclusion<sup>[1]</sup>. This advantage was first recognized in the financial sector, and with the help of national policies, it has gradually been implemented in the financial and economic sectors of rural areas. Based on long-term rural practices, we have gained the following experience: the inclusive

development of the digital economy is the direction of urban-rural development, and the achievements of reform and development require the inclusive development of the digital economy to maintain<sup>[2]</sup>. Additionally, the imbalance and insufficient development have led to the emergence of a dual urban-rural structure, where farmers as a major economic entity have not received the same reform achievements as urban residents. The inclusive characteristics of digital economic development can effectively address this issue, ensuring fairness and reasonableness in sharing the fruits of development with farmers.

## **2.2. Data Sharing and the Boosting of Digital Technology**

As the backbone of the digital economy, data's sharing nature allows people all over the world to access the knowledge they need, slowly closing the education gap between urban and rural areas and providing ample talent for rural development. The digital technologies developed to spread this data not only optimize production factors, reshape production relationships, and transform urban-rural spaces, but also unlock the full potential of rural human resources, increase the value of rural human capital, and create opportunities for rural talent to return. This technology is a powerful engine for innovation, leading to rapid advancements in production methods<sup>[3]</sup>. Although high-income individuals benefit most when innovation is sluggish, rest assured that as innovation continues to strengthen, the benefits will expand, and rural residents will gradually rise to become top beneficiaries, narrowing the gap with their high-income counterparts.

## **2.3. Promoting Policies that Give Priority to Agriculture and Rural Areas**

In 2021, the per capita disposable income of urban residents was 49,283 yuan, with nominal growth of 3.9% and real growth of 1.9%. The per capita disposable income of rural residents was 20,133 yuan, with nominal growth of 6.3% and real growth of 4.2%. The nominal and real growth rates of rural residents' per capita disposable income were 2.4 and 2.3 percentage points higher than those of urban residents, respectively. The income ratio between urban and rural residents decreased from 2.50 in the previous year to 2.45. At the same time, the e-commerce industry in urban areas has entered a phase of intense competition, and the market space for expansion is gradually shrinking. Against the backdrop of the narrowing income gap between urban and rural areas and the increasingly important rural market, China issued the "Number One Document" in 2017, which included the development of rural e-commerce for the first time in its planning. In 2019, the "Digital Rural Strategy" was proposed, which further promoted the "Internet + Agriculture" model, expanded the demonstration application of agricultural Internet of Things, and relied on "Internet +" to promote the flow of public service industries to rural areas. Under the direction of the rural strategy proposed in 2020, the country has further implemented the strategy, and in 2021, it continues to develop, making the future of digital rural areas gradually clear<sup>[4-7]</sup>, as shown in Figure 1.

## **2.4. Diversified Business Modes and Business Scope of E-Commerce Market**

Thanks to the booming digital economy and the emergence of new technologies such as big data, live streaming, and cloud computing, rural areas are transforming from a single offline business model to a diverse online and offline integration. And with the precision of the digital economy, rural industries are being supervised more carefully than ever before. Plus, the government is able to better penetrate rural areas through well-connected networks, leading to a shift from a singular to a diverse approach to rural development. All of this is paving the way for the transformation of traditional rural areas into digitally-enabled countryside.

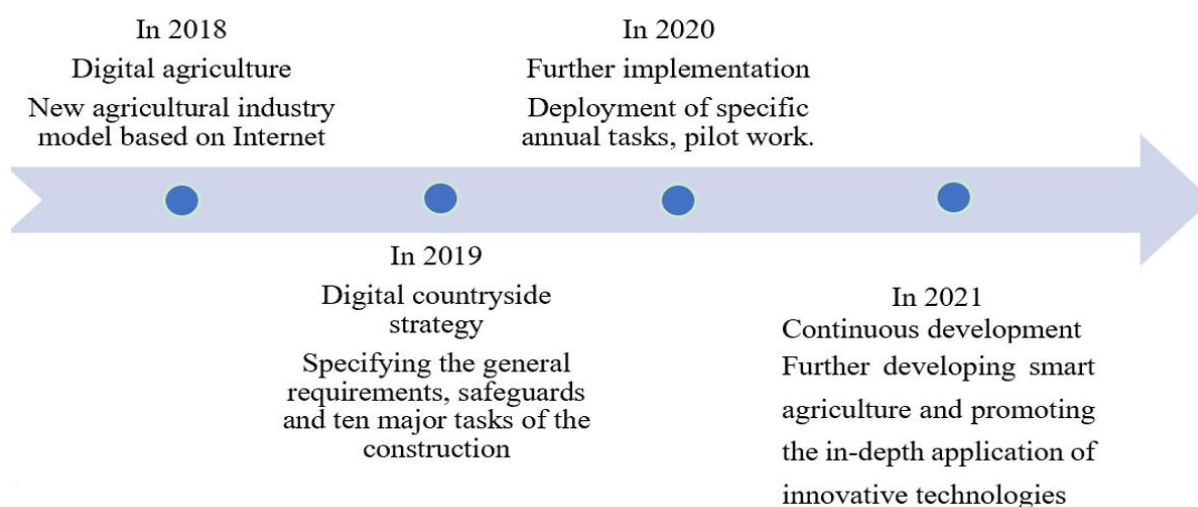


Figure 1: Development history of digital countryside construction

### 3. Difficulties in the Revitalization and Development of Digital Countryside in China

#### 3.1. The Weak Rural Digital Infrastructure as a Whole

Due to their remote geographical location, lack of information, and poor transportation infrastructure, rural areas face obstacles in the establishment of digital infrastructure, such as high transportation costs. In addition to insufficient critical infrastructure like networks, big data, 5G, and “new base stations”, the application platforms for digital economy in rural areas are also limited and of low quality<sup>[8]</sup>. Moreover, rural development plans have not taken into account the integration requirements of the digital economy, and various infrastructure projects often face various obstacles, exacerbating the urban-rural digital divide. Furthermore, there is a shortage of high-end digital economy talents in rural areas.

#### 3.2. Insufficient Recognition of the Digital Economy at the Subject Level

Although Internet thinking and awareness of the digital economy are widely recognized in today’s society, for villagers who only operate within a single village or town, the Internet is not as important and therefore lacks broad recognition. Rural businesses, which should be at the forefront of adapting to these new trends, are also hesitant to fully embrace the digital economy due to concerns about high costs. Some businesses may lack the confidence to consider how to integrate the digital economy with their agricultural products, especially if their own businesses are struggling.

#### 3.3. Lack of Standardized Market Behaviors and Data Standards Mechanisms

In today’s digital economy, data is an essential production element. However, there is a lack of standardized protocols and clear standards for the level of data openness and output. This results in many gray areas that are not regulated, causing some companies to illegally steal and monopolize data to gain a competitive advantage in the market, which not only affects the stability and order of the market but also deters some rural enterprises from embracing the digital economy<sup>[9]</sup>. Additionally, individual farmers who sell agricultural products are scattered, and there is no unified organization to bring them together. As a result, efforts are fragmented and it is difficult to harness the full potential of the market.

### **3.4. Insufficient Mechanisms to Drive Agricultural Product Sales**

Currently, one of the major challenges facing rural e-commerce is the insufficient driving force for the sale of agricultural products, which often results in unsold or wasted products. On the one hand, the online sales channels for agricultural products are limited, which fails to stimulate the consumers' interest in purchasing. On the other hand, consumers may not perceive high value in agricultural products due to their low additional value<sup>[10]</sup>. Moreover, for producers, the logistics costs for agricultural products are often equivalent to the production costs, leaving them with no profit margins, which in turn reduces their production.

### **3.5. Inadequate Digital Rural Governance System**

In order to truly achieve rural revitalization, improvements in the quality of life are also necessary in addition to economic considerations. In traditional rural areas, many young talents are leaving due to the lack of scientific governance and guidance, while the elderly who stay behind are struggling to make ends meet. Some don't even have a complete identity, and some have passed away without anyone noticing. How to improve the standard of living has become a major issue.

## **4. Countermeasures and Suggestions for Promoting the Revitalization and Development of Digital Countryside**

### **4.1. Strengthening Legal Constraints and Government Supervision**

A clear and strict legal and data standard system is necessary in the face of the many blind spots that still exist in the data output end and the chaotic market order, which is the guarantee of the system in the practical process. Of course, the success of any goal cannot escape the guidance of the correct direction. The government, standing at a high level, should do a good job in top-level planning, propose key planning strategies, and provide a good environment for the development of digital countryside. In addition, for the data infrastructure that plays a key role, we should strengthen the coverage of data centers and allow social capital to enter.

### **4.2. Using the “Blockchain” Thinking Skillfully to Simplify the Complex**

Given the importance of high transportation costs and the preservation of agricultural products, we should clearly understand the efficiency of converting one point into multiple points. Therefore, it is necessary to strengthen the construction of the rural supply chain, and in the final stage of the supply, to mobilize various forces widely. For the government, it can take the lead in encouraging rural logistics companies, post offices, supply and marketing cooperatives, agricultural enterprises, and farmers to strengthen information communication and contact. At the county level, a logistics resource scheduling system can be established to integrate distribution resources and implement a collective logistics distribution system to villages and households. On the other hand, we can establish a commodity traceability system, presenting the entire process of products from the soil to the dining table in a clear and transparent way to consumers.

### **4.3. Establishing an Effective Purchasing Mechanism for Agricultural Products**

As the key driver of rural development, buying agricultural products is the most widespread and convenient approach. However, at present, low added value has created a bottleneck in the sales of agricultural products. Therefore, we need to give them additional value or increase the psychological

value that consumers obtain from them. For instance, we can organize free picking activities to attract customers, and we can also sell agricultural products through live streaming to maximize the advantage of high traffic. Farmers can benefit from greater profits than the purchase price, and city dwellers can use the prices in supermarkets or other places as anchors or references to enhance the anchoring effect, thereby increasing sales. We can also leverage the power of internet celebrities to promote these products and increase their visibility and sales. We should establish platforms to support farmers and consolidate the achievements of poverty alleviation. Regarding the dilemma of agricultural product costs being nearly the same as their prices, the government can intervene and stimulate people's purchasing power by issuing shopping vouchers with government funds.

#### **4.4. Improving the Cultivation and Introduction Mechanism of High-End Talents in the Field of Digital Countryside**

As the saying goes, “talent is the key to productivity”, and this holds true for rural revitalization. Therefore, we must adopt policies that facilitate collaboration between industry, academia, and research, and continuously attract high-end talent from outside. Once we've brought in these talents, we must take steps to keep them and offer them favorable policies. Additionally, we should tap into the potential of all high-end talents, including university students. For example, we could provide online tutoring to guide them on agricultural costs, which helps students gain practical experience while enabling farmers to conduct agricultural activities scientifically, avoid common mistakes, increase efficiency, and drive agricultural development.

#### **4.5. Branding Rural Revitalization with Cultural Elements**

Digital technology should be organically integrated with industry to maintain its vitality and encourage continuous innovation. In recent years, the application of digital technology in agricultural production, regulation, and sales of agricultural products has become increasingly widespread, becoming an effective means of stimulating the organic integration of cutting-edge technology and rural agriculture. At the same time, it is also an important initiative to excavate rural regional characteristics, promote the integration of multiple industries, and innovate digital cultural heritage transmission methods. Therefore, we should actively explore the local cultural heritage or scenic resources in rural areas in various practices, such as establishing digital cultural museums, adopting individualized customization of agricultural products, and using platforms such as Tik Tok and short videos to showcase the local cultural features through live streaming. For example, we can livestream ethnic festivals in Duerbote Mongolian Autonomous County and Manchu Autonomous County in Daqing, or launch online live streaming during the cherry blossom season in Wuhan, allowing people to enjoy a virtual tour.

### **5. Conclusions**

Given the widespread penetration of the digital economy and the guidance of the rural revitalization policy, this paper proposes improvement suggestions for the agricultural supply chain by utilizing the bottom-line logic of “adding value, reducing loss, improving efficiency, and regulating the market”. Additionally, it explores the economic growth potential of rural culture and provides another important lever for revitalization.

Despite having a theoretical foundation, this study still has limitations, such as how to bridge the gap between theoretical knowledge and practical issues, how to empower rural revitalization, and how to effectively delineate the responsibilities of the government and rural areas. Only when mutual respect is established can the quality of rural revitalization be comprehensively improved.

In reality, the situation in Chinese rural areas is even more complex. Each village has its unique characteristics and challenges, which requires tailored and localized approaches for rural revitalization. Therefore, it is crucial to conduct in-depth research and exploration of a specific village to develop a customized revitalization plan that maximizes its advantages. In the future, this will become an important research direction to promote the further development of rural revitalization in China. Therefore, the author will further deepen the research and exploration of a specific village, draw lessons from successful experiences, and hope to promote the further development of rural revitalization in China.

## Acknowledgments

Supported by the Key Project of Harbin Finance University: Research on the Dual-chain of Blockchain and Supply Chain Management to Assist the Financing and Risk Alert Mechanism of Small and Medium-sized Enterprises in Heilongjiang Province.

## References

- [1] Wei Bingqing, Qu Ang, Li Aifang, Chen Xiaofeng. *Research on construction methods of digital village*. *Hubei Agricultural Sciences*, 2022, 61(14):183-187. DOI:10.14088/j.cnki.issn0439-8114. 2022.14.033.
- [2] He Leihua, Wang Feng, Wang Changming. *How does the digital economy drive rural revitalization in China? Inquiry into Economic Issues*, 2022(04):1-18.
- [3] Xue Nan, Han Tianming, Zhu Chuanyan. *Digital Economy Empowers Rural Agriculture Revitalization: Construction and Implementation Mechanism of Agricultural Platform Ecosystem*. *Southwest Finance*, 2022(03):58-67.
- [4] Wu Di. *Difficulties and countermeasures of rural e-commerce development under the background of digital economy*. *Journal of Commercial Economics*, 2022(05):101-104.
- [5] Chen Guojun, Wang Guoen. *Perspective on the "Flow Space" of Hema Village: Reconstruction of Agricultural and Rural Modernization Development Driven by Digital Agriculture Economy*. *Agricultural economic problems*, 1-20[2023-02-02]. DOI:10.13246/j.cnki.iae. 20220218.002.
- [6] Xiang Chao. *Research on the realization path of digital development of rural economy*. *Frontiers*, 2021(23):135-137. DOI:10.16619/j.cnki.rmltxsqy. 2021.23.016.
- [7] Wang Tingyong, Yang Li, Guo Jiangyun. *Problems related to digital rural construction and countermeasures*. *Southwest Finance*, 2021(12):43-55.
- [8] Lu Minfeng, Xu Yangyang. *Research on digital technology to help rural revitalization strategy under the background of low-carbon economy*. *Southwest Finance*, 2021(07):3-13.
- [9] Yang Jianghua, Wang Yujie. *Digital rural construction and the logic of generating new demographic dividend in rural areas*. *The Journal of Humanities*, 2022 (04): 81-89. DOI: 10.15895/j.cnki.rwzz. 2022.04.013.
- [10] Yang Jianghua, Liu Yahui. *Research on the Path Mechanism of Digital Rural Construction to Activate Rural Industry Revitalization*. *Fujian Tribune (The Humanities & Social Sciences)*, 2022(02):190-200.