

# Research on the Path of Digital Rural Construction Boosting Rural Revitalization

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**Abstract.** This article delves into the significant role of digital rural construction in the path of rural revitalization. Through analyzing the practical applications of digital rural construction, the article elaborates on the specific applications of intelligent agricultural equipment, precision agriculture, agricultural big data, and other technologies in improving agricultural production efficiency, expanding agricultural product markets, and strengthening rural governance and social services. This study further proposes strategies and suggestions such as strengthening top-level design, increasing capital investment, cultivating and introducing talents, and innovating institutional mechanisms to promote the comprehensive advancement of digital rural construction and inject new vitality into rural revitalization.

**Keywords:** Digital Rural Areas; Rural Revitalization; Intelligent Agriculture; Precision Agriculture; Agricultural Big Data.

## 1. Introduction

With the rapid development of information technology, the construction of digital countryside has become a new driving force for promoting rural revitalization. This study aims to explore how digital countryside can assist rural revitalization and reveal its specific paths and mechanisms. The application of digital technology can not only improve agricultural production efficiency but also expand agricultural product markets and strengthen rural governance, which is of great significance to rural revitalization. Through in-depth research, we hope to provide scientific evidence for relevant policy-making and practical operations and promote the modernization process of agriculture and rural areas. This study not only has theoretical value but also has urgent practical significance for the implementation of the rural revitalization strategy.

## 2. Practical Exploration of Digital Countryside Construction

Many regions at home and abroad have achieved remarkable results in digital countryside construction. For example, some European countries have achieved fine management of farmland through precision agricultural technology, greatly improving agricultural production efficiency. In China, the "Thousand Village Demonstration, Ten Thousand Village Renovation" project in Zhejiang is a typical case of digital countryside construction. It has improved the rural living environment and raised the level of rural governance through information technology.

The application of digital technology in the agricultural and rural areas is also becoming increasingly widespread. Intelligent agricultural equipment such as drones and intelligent irrigation systems are gradually being promoted, achieving automation and precision in agricultural production. At the same time, the application of agricultural big data is also becoming increasingly popular, providing scientific evidence for agricultural production decision-making. In addition, the construction of e-commerce platforms has opened new channels for the sale of agricultural products, promoting the branding and online marketing of agricultural products.

However, digital countryside construction also faces many challenges and opportunities. On the one hand, the infrastructure construction in rural areas is relatively lagging, affecting the promotion and application of digital technology. On the other hand, farmers' information literacy needs to be improved so that they can better utilize digital technology to serve agricultural production and life.



Nevertheless, with the strong support and investment of the country for digital countryside construction, as well as the high attention of society to agricultural and rural modernization, digital countryside construction still faces tremendous development opportunities.

### 3. Analysis of the Path of Digital Rural Construction Boosting Rural Revitalization

#### 3.1. Improving Agricultural Production Efficiency

The application of intelligent agricultural equipment has significantly improved agricultural production efficiency. For example, smart irrigation systems can accurately control the amount of irrigation based on soil moisture and crop needs, reducing water waste. According to statistics, the utilization rate of water resources in farmland using smart irrigation systems has increased by 20%. The implementation of precision agriculture uses technologies such as positioning and sensors to carry out fine management of farmland. Data shows that farmland adopting precision agriculture has increased production by 15%, while reducing the use of fertilizers and pesticides, and reducing environmental pollution. The application of agricultural big data provides decision support for agricultural production. By analyzing historical and real-time data, farmers can predict the possibility of pest and disease occurrences, take preventive measures in advance, and reduce losses. According to surveys, the incidence of pests and diseases in farmland using agricultural big data has decreased by 10%.

#### 3.2. Expanding Agricultural Product Markets and Sales Channels

The construction of e-commerce platforms has opened new sales channels for agricultural products. Through online sales, agricultural products can reach a wider consumer group. Data shows that the proportion of agricultural products sold through e-commerce platforms has reached 30%. The branding and online marketing of agricultural products have enhanced their popularity and added value. Through online marketing, specialty agricultural products have gained more recognition and love from consumers. According to statistics, the sales of branded agricultural products have increased by 20%. The optimization of the agricultural product supply chain has reduced circulation links and costs, improving the market competitiveness of agricultural products. The optimized supply chain has shortened the time from the producer to the dining table by 30%, ensuring the freshness and quality of agricultural products.

The following is a table of relevant data:

**Table 1.** Application Effect of Intelligent Agricultural Equipment

Technology application	Effect improvement	Data statistics
Intelligent irrigation system	The utilization rate of water resources has increased by 20%	Field survey data
Precision agriculture technology	The output has increased by 15%, while the use of fertilizers and pesticides has decreased.	Comparative data from experimental fields
Agricultural Big Data Analysis	Reduce the occurrence rate of pests and diseases by 10%	Historical data and real-time data analysis

Through the analysis of these data and examples, it is clear to see the important role and specific paths of digital rural construction in supporting rural revitalization. These paths not only improve the efficiency of agricultural production, but also expand the markets and sales channels for agricultural products, strengthen rural governance and social services, and lay a solid foundation for the comprehensive revitalization of rural areas.

**Table 2.** Agricultural Product Market Expansion and Sales Channel Effectiveness

Expansion methods	Performance enhancement	Data statistics
Electronic Commerce Platform	The proportion of online sales of agricultural products accounts for 30%	Sales data of e-commerce platform
Branding of agricultural products	Sales of branded agricultural products increased by 20%	Market research data
Supply Chain Optimization	The circulation time of agricultural products has been shortened by 30%	Comparison of logistics data

#### **4. Strategies and Suggestions for Digital Village Construction**

##### **4.1. Strengthen Top-level Design and Formulate Long-Term Plans**

The construction of digital villages is a systematic project involving agricultural production, rural governance, social services, and other fields. Therefore, it is necessary to carry out top-level design from the national level and formulate a comprehensive, coordinated, and sustainable long-term development plan. This plan should clarify the goals, key tasks, and implementation paths of digital village construction to ensure the orderly progress of various tasks. At the same time, the plan should also focus on connecting with national major strategies such as rural revitalization and agricultural and rural modernization to form a policy synergy.

##### **4.2. Increase Capital Investment and Improve Infrastructure**

The construction of digital villages requires a large amount of capital investment for information infrastructure construction, technology research and development, promotion, talent training, and other aspects. Therefore, the government should increase fiscal support, guide the investment of social capital, and form a diversified investment structure. At the same time, it is necessary to optimize the mechanism of fund allocation and utilization to ensure the efficiency and effectiveness of fund use. In terms of infrastructure construction, it is necessary to focus on strengthening the construction of key facilities such as rural information communication networks and data centers to improve the level of informatization in rural areas.

##### **4.3. Cultivating and Introducing Talents to Enhance Farmers' Information Literacy**

Talent is a core element in the construction of digital villages. On the one hand, it is necessary to strengthen the cultivation of local talents and improve farmers' ability to apply information technology and innovate and start businesses through vocational education, skill training, and other channels. On the other hand, it is essential to actively introduce external talents, especially those with rich experience and professional skills in information technology, to provide intellectual support for the construction of digital villages. At the same time, various forms of popular science activities should be carried out to enhance farmers' information literacy and enable them to better adapt to the requirements of the digital era.

##### **4.4. Innovating Institutional Mechanisms to Stimulate Market Vitality**

The deepening of digital village construction requires innovative institutional mechanisms as a guarantee. It is necessary to deepen reforms in the agricultural and rural areas, break down departmental barriers, and form a joint force. At the same time, it is important to establish and improve market-oriented operational mechanisms, encourage enterprises to participate in digital village construction, and give full play to the decisive role of the market in resource allocation. Additionally,

it is crucial to improve incentive mechanisms and policy support systems to stimulate the innovative vitality and creative potential of various entities.

## 5. Conclusion

With the rapid development of information technology, digital village construction has become an important force driving rural revitalization. This study proposes a series of practical strategies and suggestions through a thorough analysis of the supporting path of digital village construction. In the future, we look forward to seeing more innovative digital technologies bear fruit in the vast rural areas, promoting the modernization of agriculture and rural areas, and realizing the grand blueprint for comprehensive rural revitalization.

## Acknowledgments

Research on the Path of Digital Rural Construction in Jilin Province to Boost Rural Revitalization, Scientific Research Project of Jilin Provincial Department of Education, Project Number: JJKH20241649SK.

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