

# Research on the Development Path of Rural E-Commerce Under the Background of Digital Economy Development

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**Abstract:** At present, China's digital economy is in a period of vigorous development, which is gradually reshaping the global economic structure. As an important carrier for the in-depth integration of digital technology and agriculture-rural areas, rural e-commerce has gradually become a crucial path to promote rural revitalization and narrow the urban-rural gap. In view of this, this paper analyzes the development background of the digital economy, systematically explores the multi-dimensional value of rural e-commerce, deeply analyzes the existing problems such as talent shortage and logistics bottlenecks, and then puts forward targeted development paths from the perspectives of talent cultivation, infrastructure improvement and brand building. It aims to boost the high-quality development of rural e-commerce and further advance the modernization of agriculture and rural areas.

**Keywords:** Digital economy; Rural areas; E-commerce; Development path

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## 1. Value of rural e-commerce development in the background of the digital economy

### 1.1. Helping expand farmers' income-increasing channels and stimulate rural innovation and entrepreneurship

The digital economy can effectively break the time and space constraints of traditional agriculture and rural areas. Combined with rural e-commerce, it enables farmers to directly connect agricultural products to the national and even global markets through smartphones, computers, and other terminals at lower costs and thresholds without relying on physical stores, greatly reducing entrepreneurship and transaction costs<sup>[1]</sup>. According to the data from the Ministry of Commerce, China's rural online retail sales reached 2.5 trillion yuan in 2023, a year-on-year increase of 12.9%, and the online retail sales of agricultural products reached 587.03 billion yuan, up 12.5% year-on-year, which invisibly drove more than 10 million rural households to engage in e-commerce operations. Meanwhile, e-commerce operations, live-streaming marketing, and other positions have been further developed. These positions not only absorb rural surplus labor but also greatly

optimize the rural employment structure and attract more young adults to return home for entrepreneurship, injecting new vitality into rural development to a certain extent.

### **1.2. Helping optimize agricultural resource allocation and improve agricultural production efficiency**

Under the background of digital economy, the development of rural e-commerce has gradually built a bridge for direct connection between farmers and the market. Farmers can use big data, Internet of Things and other technologies to obtain real-time information on market demand, price trends and consumer preferences, effectively achieving the goal of “production based on sales and precise planting” and avoiding blind production, which is of great significance to improving the utilization efficiency of rural resources<sup>[2]</sup>. At present, the efficiency of land transfer in counties connected to e-commerce platforms in China has been greatly improved, and the idle rate of agricultural machinery has also decreased significantly, indicating that the allocation efficiency of agricultural resources has been optimized and improved. In addition, e-commerce platforms can more efficiently promote the coordinated development of all links in the agricultural industrial chain, facilitating the digital reform of agricultural materials supply, production and planting. In the long run, farmers can further reduce intermediate circulation links through e-commerce platforms, thus greatly cutting production and transaction costs and gradually promoting the transformation of agriculture from the traditional “extensive management” to a “refined and intensive” model<sup>[3]</sup>.

### **1.3. Helping improve the modern rural circulation system and promote the dual upgrade of urban and rural consumption**

Rural e-commerce is an important path to building a modern rural circulation system. It can effectively promote the construction of a three-level e-commerce service system at the county, township and village levels, further optimize the rural logistics and distribution system, and gradually open up the two-way channel of agricultural products going to cities and industrial products going to the countryside. Agricultural products can quickly enter the urban consumer market through e-commerce platforms, effectively solving the problem of “difficulty in selling agricultural products” and improving the commercialization rate of agricultural products. In addition, high-quality and low-cost industrial consumer goods can reach the rural market through e-commerce, effectively meeting farmers’ demand for high-quality life and helping unlock rural consumption potential<sup>[4]</sup>. The 2026 No.1 Central Document clearly proposes to further promote the sinking and empowerment of e-commerce platforms and continuously upgrade the quality of rural digital consumption, indicating that rural digital consumption has gradually become an important growth point driving domestic demand.

## **2. Problems faced by rural e-commerce development under the background of the digital economy**

### **2.1. Shortage of professional talents and urgent need to improve digital literacy**

Talents are the foundation of rural e-commerce development, but at present, many rural e-commerce enterprises face difficulties in attracting and retaining talent. A large number of young and middle-aged rural laborers continue to outflow, and the remaining laborers generally have low education levels and a weak ability to apply digital technology, making it difficult for them to be competent for professional positions such

as e-commerce operation and data analysis. In addition, many high-quality e-commerce talents are unwilling to return to rural areas due to low salaries and inadequate living facilities, which is also an important factor causing the talent gap<sup>[5]</sup>. The existing rural e-commerce training also has many shortcomings. Most training institutions focus on basic operations and lack systematic training in high-end skills such as live-streaming marketing and brand operation. Such training content is easily disconnected from the actual demand of rural e-commerce, making it difficult to cultivate more compound e-commerce talents.

## **2.2. Backward logistics infrastructure and high circulation costs**

Rural logistics is the capillary of e-commerce development, but the current rural logistics system still has obvious deficiencies. The coverage of logistics outlets in many rural areas is insufficient, the “last mile” delivery cost of express delivery in some remote villages is high, and the overall delivery efficiency is low. Even the delivery cost in some remote areas is 120% higher than that in urban areas, which will greatly affect the further development of rural e-commerce. In addition, the cold-chain logistics system in many rural areas is imperfect. The coverage rate of cold-chain facilities in major agricultural producing areas is less than 40%, and the logistics loss rate of some fresh agricultural products is as high as 30%, far exceeding the level of developed countries, which will greatly squeeze the profit margin of rural e-commerce and is not conducive to the follow-up work<sup>[6]</sup>. Moreover, the digital level of logistics in most rural areas is low; the application of intelligent warehousing, IoT tracking, and other technologies is insufficient; and the overall efficiency of logistics operations is low, making it difficult to meet the timeliness and freshness requirements of agricultural products.

## **2.3. Severe product homogenization and weak brand competitiveness**

Generally speaking, most rural e-commerce products are primary agricultural products with a low proportion of deep-processed products and low overall added value. Meanwhile, many rural e-commerce products have serious homogenization problems. Many farmers lack brand awareness, which leads them to blindly follow the trend of planting hot-selling categories, resulting in oversupply of similar products and falling into a vicious circle of “price wars”<sup>[7]</sup>. At the same time, rural areas lack sufficient e-commerce brand building, and the phenomenon of “emphasizing production over branding” is common. Some high-quality agricultural products have problems such as simple packaging and a lack of characteristics, making it difficult to form differentiated recognition. Although some regions have begun to try to build regional public brands, the lack of unified planning and promotion leads to weak brand influence and low consumer trust in such brands<sup>[8]</sup>.

# **3. High-quality development paths of rural e-commerce under the background of digital economy**

## **3.1. Construct a diversified talent cultivation system and strengthen talent support**

In the practice of high-quality development of rural e-commerce in the background of the digital economy, we should try to build a more diversified talent training system to ensure talent support and provide sufficient talent for the development of various follow-up work. To this end, rural areas can carry out hierarchical and classified training according to local conditions and formulate differentiated training programs for different groups. For example, for potential groups such as returning youth and veterans, we can focus on systematic training in e-commerce operations and data analysis<sup>[9]</sup>. For traditional farmers, we can focus on training basic

skills such as mobile payment and online store registration. In addition, rural areas need to further improve their talent introduction and incentive mechanisms and introduce more preferential policies to attract better college graduates majoring in e-commerce and technicians from e-commerce enterprises to return home for entrepreneurship. Moreover, we can try to establish a more perfect rural e-commerce talent evaluation system, incorporating sales volume and store operation effects into evaluation indicators, so as to give priority to professional title evaluation for outstanding talents<sup>[10]</sup>. Combined with local educational resources, we can try to further deepen school-enterprise cooperation, actively promote cooperation between agricultural colleges, vocational colleges, and local governments, and e-commerce enterprises. Schools can offer majors related to rural e-commerce to customize and cultivate compound talents.

### **3.2. Improve digital infrastructure and consolidate the development foundation**

To ensure the high-quality development of rural e-commerce in the background of the digital economy, we should further improve the construction level of rural network infrastructure. The government should continue to increase financial investment, actively promote the extension of 5G and gigabit optical fiber networks to rural areas, achieve targeted coverage in remote villages and major agricultural producing areas, greatly expand the breadth and depth of network coverage, and ensure network stability, so as to lay a solid foundation for the operation of subsequent e-commerce platforms<sup>[11]</sup>. Meanwhile, we should try to establish a more sound rural logistics system, actively promote the construction of logistics nodes such as county hubs, township transfer stations and village-level stations. Rural areas can also try to cooperate with postal services, supply and marketing cooperatives and other entities to share logistics resources better. For fruit and vegetable producing areas, we should increase investment in cold-chain logistics facilities, and try to build fresh-keeping warehouses and intelligent sorting centers in major agricultural producing areas, which can greatly reduce the logistics loss rate of agricultural products.

### **3.3. Promote brand building and enhance product diversity**

In the process of high-quality development of rural e-commerce in the background of the digital economy, we should do a good job in brand cultivation and promotion. Combined with the characteristic resources of different counties, we should build a three-level brand system of “regional public brand + enterprise brand + product brand”, and carry out landmark cultivation for geographical indication products, green organic agricultural products and so on. The government can take the lead in integrating regional resources, unify brand logos and quality standards as much as possible, which can greatly improve brand recognition<sup>[12]</sup>. E-commerce platforms can provide brand merchants with certain traffic support, search optimization, and other support to help brands quickly open up the market. In addition, we need to promote the deep processing and standardization of agricultural products, guide enterprises, cooperatives and other entities to extend their industrial chains, so as to better complete the primary and intensive processing of agricultural products and further enhance product added value. Moreover, we need to try to innovate marketing models, rationally use short videos, live streaming and other channels for marketing activities, and gradually build a full-link marketing system of “content drainage – live-streaming conversion – private domain repurchase”. Combined with the characteristics of different villages, we can try to dig into rural culture, folk stories and integrate them into our own brands, so as to spread brand cultural value better and improve consumer recognition.

### 3.4. Improve the supervision mechanism and standardize the industrial development ecology

In the practice of high-quality development of rural e-commerce in the background of the digital economy, we should ensure the improvement of the supervision system. Local governments should further improve the supervision system of rural e-commerce in accordance with the *E-Commerce Law*, *Cybersecurity Law*, and other laws, clarify the rights and obligations of platforms, merchants, and farmers, so as to effectively avoid various subsequent legal problems. In addition, we need to actively implement the standardized management of market entity registration, strengthen the qualification review of individual online stores, and ensure the traceability and supervision of store qualifications as much as possible<sup>[13]</sup>. Combined with the actual situation of different rural areas, we can try to establish a cross-departmental collaborative governance mechanism. Localities can set up a rural e-commerce coordination group to coordinate commerce, agriculture and other departments, so as to gradually form a regulatory force. Moreover, we need to further implement the main responsibility of platforms. Each e-commerce platform should further strengthen merchant access review, and more strictly verify the qualifications of merchants selling geographical indication products and fresh products. E-commerce platforms can also establish a dynamic scoring mechanism, restrict the store exposure of violating merchants, remove relevant products, and permanently ban those with serious violations<sup>[14]</sup>.

### 3.5. Strengthen policy support and optimize the development environment

To further improve the level of rural e-commerce in the background of the digital economy, the government should increase financial support. Local governments with conditions can set up a special fund for rural e-commerce development, focusing on supporting cold-chain logistics and brand building. In addition, for outstanding rural e-commerce enterprises, we can provide certain tax reductions and loan interest subsidies, and further simplify the loan approval process, which can effectively help rural e-commerce enterprises solve the problems of difficult and expensive financing<sup>[15]</sup>. Moreover, we can try to include the construction of pre-cooling, storage and fresh-keeping facilities in producing areas into the scope of agricultural-related subsidies, which can greatly reduce the construction cost of rural e-commerce. To ensure the long-term development of rural e-commerce, we can promote the construction of regional collaboration and establish a pairing assistance mechanism for rural e-commerce between developed eastern regions and underdeveloped central and western regions, so as to better realize “sharing of e-commerce resources and exchange of talents”. To ensure the development level of rural e-commerce, we should build a more complete supporting service, upgrade and transform county-level e-commerce public service centers. The government can provide e-commerce training and brand cultivation services for rural e-commerce entrepreneurs, and upgrade e-commerce service stations into supply chain transfer warehouses and live-streaming e-commerce venues, which can provide sufficient support for the development of local rural e-commerce.

## Disclosure statement

The author declares no conflict of interest.

## References

- [1] Ren M, Zhang Y, Wang X, 2025, Research on the Impact of Digital Economy on Rural Residents' Consumption—

An Empirical Study Based on 30 Provincial Panel Data. *Southern Rural*, 41(5): 12–19.

- [2] Cao Y, Guo F, Xiong Y, et al., 2025, Rural E-Commerce Empowering Rural Revitalization—On the Digital Divide Within Rural Areas. *Economic Science*, (5): 185–205.
- [3] Shen Q, Li J, 2026, Research on the Influence Mechanism and Path of Digital Economy on County Industrial Revitalization—Based on the Comprehensive Demonstration County Project of E-Commerce Into Rural Areas. *Chinese Journal of Agricultural Resources and Regional Planning*, 1–16.
- [4] Mou Y, Xu S, 2025, Research on the Path of Digital Economy Boosting Rural E-Commerce Development. *Modern Business*, (12): 77–80.
- [5] Yin Z, Leng L, Wu Z, 2025, Digital Economy and Rural Household Financial Vulnerability—A Quasi-Natural Experiment Study Based on the Comprehensive Demonstration Policy of E-Commerce Into Rural Areas. *Studies of International Finance*, (6): 21–31.
- [6] Lv J, 2025, Research on the Impact of Digital Technology on Farmers’ Production Decisions and Economic Welfare, thesis, Henan Agricultural University.
- [7] Sun W, 2025, Research on the Action Mechanism and Guidance Policy of Blockchain Empowering E-Commerce to Assist Agriculture, thesis, Nanjing Forestry University.
- [8] Wei Y, 2025, Research on Digital Rural Construction Promoting Urban-Rural Integrated Development, thesis, Party School of the Central Committee of the Communist Party of China (National Academy of Governance).
- [9] Xu Y, 2025, Research on the Effect of Xinjiang Rural E-Commerce Empowering Rural Industrial Revitalization Under the Background of Digital Economy, thesis, Tarim University.
- [10] Wei X, 2025, Research on the Impact of Digital Economy Development on Rural Residents’ Service Consumption, thesis, Inner Mongolia University of Finance and Economics.
- [11] Li F, 2025, Research on the Impact of Digital Economy on Urban-Rural Income Gap in China, thesis, Harbin University of Commerce.
- [12] Liu J, 2025, Research on the Impact of Digital Economy on China’s Agricultural Economic Resilience, thesis, Harbin University of Commerce.
- [13] Zhang T, 2025, Research on the Impact of Digital Economy on Farmers’ Income, thesis, Wuhan Polytechnic University.
- [14] Liu H, Zhang Y, 2025, How Does the Digital Economy Alleviate Health Inequality Among Rural Residents—Taking E-Commerce as an Example. *Journal of Southwest University (Natural Science Edition)*, 47(5): 16–27.
- [15] Zhang H, 2025, Development Path of Jilin Agricultural Products E-Commerce Industry in the Digital Economy Era. *Shanxi Agricultural Economy*, (9): 169–171.

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