

Research on the realization mechanism of rural e-commerce driving rural revitalization from the perspective of digital economy

Qi Jiang, Dan Fang*

Changzhou Institute of Technology

ABSTRACT

In the current wave of digital sweeping the world, the digital economy is booming, like a strong east wind, which has created a very favorable environment for the rise of rural e-commerce, making it a key force in the implementation of rural revitalization strategy. Relying on digital technology, innovative business models and the effective integration of various resources, rural e-commerce plays a core driving role in promoting the modernization of rural industries, optimizing the efficiency of resource allocation, improving the level of social governance and promoting the prosperity of rural culture. This study on the cornerstone, deeply analyze the rural electricity drive rural revitalization of the internal logic and mechanism of action, combined with the rich variety of practical cases and accurate detailed statistical data, a comprehensive review in rural electricity development process of difficulties and challenges, and put forward targeted and operational strategy, to rural revitalization strategy further promote provide solid theoretical support and practical guidance, help the revitalization of rural comprehensive and sustainable development.

KEYWORDS

digital economy; rural e-commerce; rural revitalization; and implementation mechanism

1 Introduction

As the core strategic deployment to solve the problems of "agriculture, rural areas and farmers" in the new era, rural revitalization is of irreplaceable significance to the realization of agricultural and rural modernization, the construction of balanced development pattern between urban and rural areas and the harmony and stability of the whole society. The rapid rise of digital economy, with its unique technological advantages and innovative development model, has opened up new paths and opportunities for rural revitalization.

According to the authoritative data of Chinas Digital Economy Development Report (2023), the scale of Chinas digital economy has exceeded 50.2 trillion yuan, accounting for 41.6% of GDP, highlighting its key position in the national economy. Among them, rural e-commerce, as the forefront of the deep integration of digital economy and agriculture and rural areas, has achieved remarkable results in promoting the circulation of agricultural products, stimulating rural employment, and narrowing the gap between urban and rural areas.

For example, in 2022, the online retail sales in rural areas reached 2.17 trillion yuan, up 3.6% year on year, and the online retail sales of agricultural products reached 531.3 billion yuan, up 9.2% year on year. In this context, in-depth exploration of the realization mechanism of rural e-commerce

driving rural revitalization has extremely important value and far-reaching influence on both enriching the theoretical system of rural revitalization and guiding the practical development of rural e-commerce.

2 The theoretical cornerstone of digital economy and rural e-commerce

2.1 The connotation of the digital economy

Digital economy is a new economic form that takes digital knowledge and information as the core production factor, takes modern information network as the key carrier, deeply integrates the real economy and realizes efficient and innovative development. Its core technology cluster including the Internet, big data, artificial intelligence, cloud computing, etc., these technologies blend, together, give digital economy efficient operation, deep penetration and widely connection features, reshape the economic organization and operation logic, promote the global economy into the digital transformation of the fast lane.

2.2 The development status of rural e-commerce

Scale continuous expansion: Statistics from the Ministry of Commerce show that in 2022, the number of Internet users in rural areas climbed to 319 million, accounting for 30.2% of the total number of Internet users in China. The huge group of rural Internet users constitutes a solid user base for the development of rural e-commerce. At the same time, the countrys rural e-commerce retail sales have maintained a rapid growth trend of more than 10% per year, becoming an important engine for the growth of the digital economy. This growth trend not only reflects the huge potential of the rural e-commerce market, but also shows its increasingly prominent position in the development of rural economy.

Diversified model innovation: rural e-commerce has gradually expanded from the early Taobao village model, and now it presents a diversified development pattern. The "live broadcast with goods" mode of Pinduoduo, TikTok, Kuaishou and other platforms has emerged. Through the vivid display and real-time interaction of anchors, the characteristics and advantages of agricultural products are directly presented to consumers, which greatly promotes the sales of agricultural products. For example, in 2022, the market size of live streaming e-commerce will reach 1.2 trillion yuan, among which the sales of live streaming of rural agricultural products will account for more than 15%. In addition, new formats such as community group buying and origin direct are also booming. By integrating community demand, the community group buying realizes centralized procurement and distribution, improves the distribution efficiency, reduces the intermediate links, ensures the freshness and quality of agricultural products, and further enhances the shopping experience of consumers.

2.3 The internal connection between rural e-commerce and rural revitalization

As the key link between the integrated development of digital economy and agriculture and rural areas, rural e-commerce optimizes the supply and demand relationship of agricultural products, agricultural products can accurately meet the market demand, reduce the risk of unsalable, so as to enhance the added value of agriculture and increase farmers income. At the same time, with the help of the big data resources accumulated by the e-commerce platform, the government can accurately grasp the needs of rural development, formulate more scientific and reasonable assistance policies, and promote the modernization process of rural social governance. In addition,

the development of rural e-commerce also provides a new platform and channel for rural cultural communication, promotes the inheritance and innovation of rural culture, and provides strong impetus and support for rural revitalization in multiple dimensions such as industry, governance and culture.

3 The realization mechanism of rural e-commerce driving rural revitalization

3.1 The driving force of industrial upgrading

Agricultural products upward development of industrial chain: The rural e-commerce platform has built a direct bridge for agricultural products from the field to the table, realizing the efficient connection between supply and demand. In 2022, the upward transaction volume of agricultural products realized through e-commerce platforms will reach 531.3 billion yuan, becoming an important driving force for rural economic growth. Take Kiwi fruit in Meixian County, Shaanxi Province as an example, its sales through the e-commerce platform exceeded 600 million yuan, this success has driven more than 50% of the farmers in the county to participate in the planting and sales industry chain of kiwi fruit. From planting link variety improvement, scientific planting technology promotion, to pick after the sorting, packaging, warehousing, to sales link brand marketing, logistics distribution, electric business platform intervention makes the whole industry chain got the comprehensive optimization and development, not only improve the added value of agricultural products, also created a lot of employment opportunities, promote the diversified development of rural industry.

Accelerated process of agricultural branding: e-commerce provides a broad stage for the brand construction of local characteristic agricultural products. For example, Zhejiang Anji White Tea, through the publicity and promotion of e-commerce platforms, its unique quality and cultural connotation have been widely spread, and its brand awareness and reputation have been continuously improved, thus realizing the product premium. Data show that in 2022, the total value of regional public brands in agricultural products in China exceeded 1.3 trillion yuan, and the proportion of e-commerce sales continued to rise. In the process of brand construction, the e-commerce platform analyzes consumer demand and preferences through big data, helps agricultural products accurately locate the market, integrates online and offline resources, and carries out comprehensive brand marketing activities, including brand story telling, cultural festival promotion, etc., to make agricultural products brands more attractive and competitive.

Diversified economic vitality: the development of rural e-commerce is like a stone thrown into the calm lake, causing ripples, driving the rise of a series of supporting services such as logistics, warehousing, packaging and finance. Take JDs investment in poverty-stricken counties as an example. Its logistics sites not only improve the local logistics and distribution conditions, but also directly drive the creation of more than 30 0,000 jobs, creating diversified sources of income for rural areas. Logistics distribution perfect the agricultural products can more quickly to all parts of the country, the construction of storage facilities to ensure the storage and preservation of agricultural products, the rise of the packaging industry promoted the added value of agricultural products and image, financial services for rural electricity enterprises and farmers provide financial support and risk protection, these supporting services and rural electricity mutual promotion, coordinated development, jointly build the new pattern of rural diversified economic development.

3.2 Optimizer of resource allocation

Improvement of circulation efficiency of agricultural products: With the help of innovative modes

of "C2B" customized production and pre-sale, rural e-commerce has realized the accurate matching of supply and demand of agricultural products and effectively reduced the waste of inventory. According to Pinduoduo's statistics, its "buy more vegetables" model has reduced the circulation cost of agricultural products by 15% -25%. In the "C2B" mode, consumers place orders first, and farmers produce according to the order demand, thus avoiding the backlog of agricultural products caused by blind production. The pre-sale mode locks in consumer demand in advance, which provides a basis for farmers to arrange production plans, and also sets aside time for the quality control and freshness guarantee of agricultural products. In addition, by integrating logistics resources and optimizing the distribution route, the e-commerce platform realizes the rapid transportation and efficient distribution of agricultural products, and further improves the circulation efficiency of agricultural products.

The supply and demand chain between urban and rural areas is shortened: the two-way circulation mode of industrial products to the countryside and the upward of agricultural products has broken the barrier of supply and demand between urban and rural areas and made the allocation of urban and rural resources more efficient. On the one hand, rural residents can easily buy all kinds of industrial products from the cities through the e-commerce platform, which meets their diversified consumer needs and improves their quality of life. For example, rural consumers can easily buy brand home appliances, fashion clothing, digital products, etc. On the other hand, urban residents can also directly buy fresh and green agricultural products through the e-commerce platform, and enjoy the gifts of rural nature. This two-way circulation mode promotes the commodity exchange and resource sharing between urban and rural areas, strengthens the economic connection and interaction between urban and rural areas, and promotes the process of urban-rural integrated development.

3.3 New impetus to social governance

Promotion of digital governance: rural e-commerce platforms have accumulated massive data resources in the process of operation, which is like a treasure house of information, providing strong support for the government to accurately understand the needs of rural development and formulate scientific and reasonable assistance policies. For example, Alibaba's "Village Broadcast Plan" can accurately grasp the dynamic tracking and data analysis of rural e-commerce operators, including their business conditions, difficulties and challenges, as well as the real-time consumption trend and industrial development trend in rural areas. Based on these data, the government can carry out targeted policy measures such as e-commerce training, infrastructure construction, and financial support, optimize the allocation of policy resources, improve the accuracy and effectiveness of policy implementation, so as to promote the healthy and orderly development of rural e-commerce, and realize the digital transformation of rural social governance.

The degree of farmers organization jumps: Rural e-commerce takes cooperatives or associations as the organization carrier to effectively integrate the dispersed farmer resources, which greatly improves the bargaining power and market discourse power of farmers in the industrial chain. Take Rongjiang County, Guizhou Province as an example, relying on e-commerce cooperatives, farmers are organized to unify the operation of the production, processing and sales of agricultural products. In the production process, uniformly purchase production materials to reduce costs; in the processing process, establish unified quality standards to improve product quality; and integrate marketing channels to build regional brands. Through this organized way, farmers are no longer isolated individuals, but form an organic whole, which can better deal with market risks and challenges and protect their own interests. In 2022, the income of local farmers will increase by more than 40 percent, fully demonstrating the important role of farmer organization in driving rural

revitalization through rural e-commerce.

3.4 New engines for cultural revitalization

Rural culture communication: As a powerful tool for cultural communication in the new era, e-commerce live broadcasting platform not only sells agricultural products, but also pushes rural culture to a broader stage. For example, Dai handicrafts in Yunnan have achieved an average monthly sales volume of more than 5 million yuan through TikTok live streaming. During the live broadcast, the anchor not only showed the exquisite handicrafts, but also introduced the traditional production process, cultural background and folk customs of the Dai nationality in detail, so that the audience could have a deep understanding of the Dai culture while buying the products. This organic combination of culture and products not only improves the cultural connotation and added value of agricultural products, but also promotes the spread and inheritance of rural culture, enhances the influence and attraction of rural culture, and stimulates peoples interest and love for rural culture.

Attracting returning home entrepreneurs: With the vigorous development of rural e-commerce, its huge business opportunities and development potential have attracted a large number of migrant workers to return home to start their own businesses. Data show that in 2022, the number of people returning to China has exceeded 12 million, of which more than 60% choose e-commerce related industries. These returning entrepreneurs have brought back advanced technology, management experience and market concepts, injecting fresh blood into rural revitalization. Their entrepreneurial practice in the field of rural e-commerce has not only created more employment opportunities, promoted the local farmers to increase their income and become rich, but also promoted the renewal and reform of rural ideas, and promoted the innovative development and civilized progress of rural society. For example, some home business personnel using the Internet thinking, build rural tourism electric business platform, the rural natural scenery, folk culture and tourism services, attracted a large number of tourists to sightseeing, driving the development of the local catering, accommodation and other related industries, realize the integration of the 123 industry development, for rural cultural revitalization and economic development has opened up a new path.

4 The dilemma facing the development of rural e-commerce

4.1 Infrastructure construction lags behind

By 2022, about 8% of the countrys rural areas have not achieved stable broadband coverage, which seriously restricts the speed of network access and information transmission efficiency of rural e-commerce. In terms of logistics distribution, in rural areas, especially in remote mountainous areas, logistics stations are sparsely distributed, distribution lines are long and road conditions are complex, which leads to low efficiency of logistics distribution. The upstream of agricultural products and industrial products to the countryside are faced with the problems of long transportation time and high cost. For example, due to the poor logistics, some featured agricultural products in mountainous areas cannot be delivered to consumers during the best preservation period, which affects the product quality and sales price, but also increases the purchase cost of consumers, and weakens the market competitiveness of rural e-commerce.

4.2 Lack of professional talents

Rural e-commerce operation involves data analysis, brand marketing, network technology and other professional fields, which requires professionals with comprehensive quality. However, due to the relative lack of educational resources, limited development opportunities and other factors in rural areas, the e-commerce talent reserve is seriously insufficient. On the one hand, it is difficult for rural areas to attract the inflow of excellent external e-commerce talents. On the other hand, the local e-commerce talents are also facing the dilemma of retention. As a result, rural e-commerce enterprises lack professional support in product planning, marketing, customer service and other aspects, which is difficult to meet the market demand and hindering the in-depth development and innovative upgrading of rural e-commerce industry.

4.3 Insufficient brand competitiveness of agricultural products

Most agricultural products have many shortcomings in brand building, lack of clear brand positioning, unique brand image and attractive brand story. In the market, the homogenization of agricultural products is serious, and consumers are difficult to distinguish different origin and different quality of agricultural products, resulting in low brand awareness and insufficient market competitiveness. For example, fruits in many regions are only sold in the name of varieties, failing to explore their unique regional culture, planting history and other brand elements, unable to form a deep impression in the hearts of consumers, it is difficult to achieve brand premium, limiting the increase of added value and agricultural products market expansion.

5 Countermeasures and suggestions to promote rural e-commerce to drive rural revitalization

5.1 Strengthening the construction of digital infrastructure

We will increase investment in key infrastructure such as 5G networks and cold-chain logistics in rural areas. In terms of 5G network construction, the government should introduce relevant policies to encourage telecom operators to speed up the construction of base stations in rural areas, improve network coverage and signal quality, and provide a high-speed and stable network environment for rural e-commerce. For the construction of cold chain logistics, financial support should be increased to build a number of reasonable layout, complete functions of cold chain logistics storage centers and distribution stations, equipped with advanced refrigerated preservation equipment, to ensure that the quality of agricultural products in the transportation and storage process will not be affected. At the same time, priority should be given to the construction of rural e-commerce service sites in remote areas, integrating network services, logistics distribution, product display and other functions, to provide one-stop services for rural e-commerce enterprises and farmers, reduce operating costs and improve operational efficiency.

5.2 Establish a professional talent training system

Through industry-university-research cooperation, strengthen the cooperation and exchanges between universities, scientific research institutions and rural e-commerce enterprises. According to the development needs of rural e-commerce, colleges and universities can offer relevant professional courses and training programs, and cultivate talents with professional knowledge and skills in e-commerce operation, data analysis, marketing and promotion. Scientific research institutions can provide technical support and innovative research for the development of rural e-

commerce, and promote the application and promotion of e-commerce technology in rural areas. In addition, local governments should formulate and implement active personnel training plans, and provide systematic and comprehensive training services for rural e-commerce practitioners by combining online and offline training methods. At the same time, preferential policies have been introduced to encourage young people to return to their hometowns to start businesses, and provide them with preferential measures such as entrepreneurship subsidies, site support and financial loans, so as to attract more talents to participate in the rural e-commerce business, and inject a steady stream of talent power into the development of rural e-commerce.

5.3 Build regional agricultural products brands

The government should actively cooperate with e-commerce platforms to tap into local characteristic agricultural products resources and build regional agricultural products brands. First of all, in-depth market research and analysis of agricultural products, combined with the local regional culture, natural environment, planting and breeding traditions and other factors, to determine the brand positioning and core value of agricultural products. For example, taking the organic tea in a mountainous area as an example, it can be positioned as "derived from the deep mountains, natural and pure, healthy tea", highlighting its origin advantages and quality characteristics. Secondly, the whole chain quality control system from production to sales should be established, and strict agricultural production standards, quality testing standards and packaging specifications should be formulated to ensure the quality stability, safety and reliability of agricultural products. Finally, comprehensive brand-oriented marketing activities will be carried out through e-commerce platforms, including brand publicity and promotion, product story telling, online and offline interactive experience, so as to improve brand awareness and reputation, enhance the market competitiveness of agricultural products, realize brand premium, and promote the increase of farmers income.

5.4 Deepening the construction of the rural e-commerce ecosystem

Promote the in-depth cooperation between e-commerce platforms and cooperatives, financial institutions and other parties, and build a sound rural e-commerce ecosystem. E-commerce platforms should strengthen cooperation with cooperatives, establish stable supply channels for agricultural products, organize farmers to carry out standardized production and large-scale operation through cooperatives, and improve the supply quality and quantity of agricultural products. At the same time, it cooperates with financial institutions to innovate financial service products and provide diversified financial support for rural e-commerce enterprises and farmers, such as small loans, supply chain finance, etc., to solve the problem of their capital turnover difficulties. In addition, the benefit distribution mechanism should be improved to ensure that farmers can fairly share the development dividends of e-commerce in the e-commerce industry chain. For example, according to the quantity and quality of agricultural products and the degree of participation in e-commerce operation, profits should be reasonably distributed to stimulate the enthusiasm and initiative of farmers to participate in rural e-commerce, and promote the healthy and sustainable development of the rural e-commerce ecosystem.

6 Conclusion

In the era of digital economy, rural e-commerce, with its unique advantages and innovative mode, plays an irreplaceable role in promoting rural industrial upgrading, optimizing resource

allocation, helping social governance and promoting cultural revitalization, opening up a new road for rural revitalization. However, in the process of development, rural e-commerce still faces many challenges, such as lagging infrastructure construction, lack of professional talents and lack of brand competitiveness of agricultural products, which restricts its further development and growth. In the future, need the government, enterprises, society and other parties together, by strengthening digital infrastructure construction, establish professional talent cultivation system, build regional agricultural brand and deepen the rural electricity ecological system construction and a series of measures, to create a good environment for rural electricity development, promote rural electricity to achieve sustainable development, for the rural revitalization of strong momentum, let the country under the guidance of the digital economy with new vigor and vitality.

Funding

The project is funded by the Changzhou Institute of Technology's online and offline first-class course construction project "Introduction to E-commerce" (Number: 30120324011); and the Changzhou Institute of Technology's university-level teaching reform research project "Research on the Construction of a New Digital Business Practical Teaching System Integrating Knowledge and Action" (Number: jgkt2021-13).

About the Author

Qi Jiang, Changzhou, Jiangsu, Undergraduate student, majoring in E-commerce, Changzhou Institute of Technology, Research Focus: Dedicated to in-depth exploration and research in the domain of E-commerce theory and practice, with an emphasis on analyzing and solving key issues and challenges therein;

Dan Fang, for the corresponding author, Changzhou, Jiangsu, Education: Master of Management Science and Engineering in Southeast University, Current: Director of the Department of E-commerce, School of Economics and Management in Changzhou Institute of Technology, Research Focus: Supply Chain Coordination and Service Innovation under E-Commerce Environment.

References

- [1] Ministry of Commerce: "China's Rural E-commerce Development Report 2022".
- [2] National Bureau of Statistics: "China's Digital Economy Development Report (2023)".
- [3] Alibaba Research Institute: "White Paper on Rural E-commerce Supporting Rural Revitalization".
- [4] Wang Shuhua: "Research on the Integration Path of Digital Economy and Rural Revitalization", "China Rural Economy", Issue 4, 2023.