

Rural E-Commerce Development Paths to Boost Agricultural Product Sales Under Rural Revitalization

Jinping Yang

College of Economics and Management, Suzhou Polytechnic Institute of Agriculture, Suzhou, Jiangsu, China

Abstract: With the advancement of the rural revitalization strategy, rural e-commerce has gradually become an important way to promote the sales of agricultural products and increase farmers' income. However, in the process of development, rural e-commerce still faces a series of problems, such as underdeveloped infrastructure, limited e-commerce awareness among farmers, and inadequate product quality control and branding. In response to these problems, this paper proposes three solutions: First, improve infrastructure construction. Promote Internet coverage and the optimization of the logistics system through the cooperation between the government and enterprises. Second, strengthen e-commerce training for farmers to enhance their digital literacy and enthusiasm for e-commerce participation. Third, improve the quality traceability system for agricultural products, innovate brand building, and build exclusive e-commerce platforms for agricultural products. These strategies will help promote the sustainable development of rural e-commerce and further contribute to rural revitalization.

Keywords: Rural Revitalization; Rural E-commerce; Agricultural Product Sales

Rural revitalization is an important strategy put forward by China in the new era, aiming to achieve the comprehensive development and progress of the rural economy, society, culture, and ecology. The core objective is to enhance rural economic development level, enhance the living quality of farmers, protect and inherit rural culture, and promote the sustainable development of the rural ecological environment, ultimately achieving the goal of urban-rural integration. Rural revitalization not only focuses on the improvement of

agricultural production but also encompasses the construction of rural infrastructure, the upgrading of social services, and the overall improvement of farmers' living standards. The goal is to narrow the urban-rural gap and promote social fairness and harmony.

1. Relevant Concepts of Rural E-Commerce Development Boosting Agricultural Product Sales

1.1 Connotation of Rural Revitalization

The core goal of rural revitalization is to achieve comprehensive and coordinated development in various aspects such as economic development, rural construction, cultural prosperity, ecological protection, and social harmony. The implementation paths include policy support, industrial assistance, talent introduction, scientific and technological innovation, and urban-rural interaction. By optimizing the allocation of land resources, promoting the adjustment of the agricultural industrial structure, and enhancing farmers' education and skill levels, accelerating the modernization of agriculture and rural development, and the sustainable development of the rural economy is realized.

1.2 Definition and Development of Rural E-Commerce

Rural e-commerce refers to a new business model that realizes the sales of agricultural products and related services through the Internet platform. The concept originated from the popularization of Internet technology and the development needs of the rural economy. Rural e-commerce includes not only the online sales of agricultural products but also multiple fields such as the online procurement of agricultural production materials, agricultural information services, and rural financial services. With the gradual improvement of Internet infrastructure, rural e-commerce has

gradually become an important means to promote rural economic growth and facilitate the circulation of agricultural products.

Rural e-commerce emerged at the end of the 20th century. After years of development, it has gradually formed various forms of e-commerce platforms and service systems. From the simple online trading of agricultural products at the beginning to the branded and professional e-commerce platforms today, the development of rural e-commerce has undergone continuous innovation and iteration. In recent years, with the popularization of smartphones and the improvement of the logistics system, rural e-commerce has entered a stage of rapid development. Major e-commerce platforms have successively launched customized services for the rural market, and the integration of online and offline agricultural production and agricultural product sales has been gradually deepened, promoting the transformation of the rural economic structure.

1.3 Current Situation and Challenges of Agricultural Product Sales Paths

The traditional sales paths of agricultural products mainly rely on traditional channels such as farmers' markets, wholesale markets, and local fairs. Through these channels, farmers sell agricultural products to middlemen, who then distribute them to retail markets in major cities. In this process, most of the farmers' income is exploited by middlemen, and farmers often do not receive a reasonable price return. Coupled with information asymmetry, it is difficult for farmers to accurately grasp changes in market demand, resulting in large price fluctuations of agricultural products, and in some cases, even unsalable situations.

The sales paths of agricultural products are also affected by factors such as changes in market demand and product seasonality. Although rural e-commerce can improve the market circulation efficiency of agricultural products, due to the particularity of agricultural products, it is difficult to completely solve the problems of price fluctuations and unsalable products in the short term. The market demand for agricultural products is changeable. Without an effective market forecasting and control mechanism, farmers often face the risks of overstocking of products or a sharp

decline in market prices.

2. Analysis of Problems Faced by Rural E-Commerce in Boosting Agricultural Product Sales

2.1 Main Problems in the Development of Rural E-Commerce

2.1.1 Inadequate infrastructure

The primary problem in the development of rural e-commerce is the weak infrastructure. Although with the support of national policies in recent years, the network coverage in rural areas has increased to some extent, compared with cities, the infrastructure in rural areas, such as communication facilities, network broadband, and logistics distribution, is still far from perfect. The penetration rate of the Internet is relatively low in many remote rural areas, and the network speed is also slow, which directly affects the user experience of rural e-commerce platforms. Take some mountainous or remote rural villages as an example. Although some areas are covered by e-commerce platforms and logistics systems, due to inconvenient road traffic, the logistics cost is high and the transportation time is long. As a result, the quality of many agricultural products has been greatly reduced when they reach consumers, and they may even face the situation of unsalable products.

2.1.2 Insufficient e-commerce awareness among farmers

At present, most farmers in China are still accustomed to the traditional business model. They lack a basic understanding of e-commerce, have no idea how to sell agricultural products through e-commerce platforms, and are unaware of the broader market that e-commerce channels can bring. Due to a lack of sufficient e-commerce training and experience, some farmers are unfamiliar with the operation of e-commerce platforms. They don't know how to take high-quality product photos, write copy that attracts consumers, and even lack knowledge of how to communicate with customers and handle after-sales service. Even if some farmers try to sell through e-commerce platforms, due to a lack of effective marketing and management experience, it is difficult to form stable sales channels and customer groups, making it difficult to sustain e-commerce sales. For instance, some farmers still rely on traditional

sales channels such as farmers' markets, wholesale markets, and local fairs, and have insufficient awareness of the advantages of e-commerce, such as efficient circulation and market expansion.

2.1.3 Weak product quality and brand building

The quality of agricultural products has long been one of the bottlenecks restricting the development of rural e-commerce. Since the production methods in many rural areas are still relatively traditional, mostly family - based farming, there is no unified planting standard and process, nor product quality control and certification. Therefore, due to the lack of modern production technology and quality control systems, the quality of some agricultural products is unstable. In some places, farmers have an inadequate understanding of product quality standards, and the lack of an effective quality inspection and supervision mechanism allows some products to fail to meet market quality requirements, and even unqualified products may enter the market.

Most farmers lack brand awareness. Many agricultural products are only sold as "local specialties" without effective brand building. Even if the agricultural products in some places have some influence in the market, due to the lack of a sustainable brand - building strategy, it is often difficult to form long - term market competitiveness. On e-commerce platforms, consumers' choices of agricultural products not only depend on price but also place more emphasis on brand and reputation. If farmers do not make sufficient efforts in product packaging, quality assurance, and brand marketing, their products are often difficult to gain the long - term trust of consumers, and e-commerce sales will be restricted.

2.2 Dilemmas of Rural E-Commerce in Agricultural Product Sales

2.2.1 Asymmetry of agricultural product information

Most rural areas lack accurate analysis of market demand. Farmers can only produce based on experience or traditional sales methods, and it is difficult for them to predict which agricultural products have more potential in the market and which may face unsalable situations. On the other hand, due to the long supply chain of rural e-commerce

platforms, information is prone to distortion during the transmission process, resulting in information asymmetry between supply and demand. Farmers cannot timely understand the actual market demand for a certain type of agricultural product, and e-commerce platform merchants cannot accurately grasp the production situation of farmers, thus affecting product sales and supply chain management. This information asymmetry leads to a disconnect between production and sales, causing great uncertainty and risks in the actual operation of rural e-commerce. Take some highly seasonal agricultural products as an example. Often, due to a lack of advance understanding of market demand, a large number of agricultural products face a sharp decline in price when they are launched on the market in a concentrated manner.

2.2.2 Mismatch between market demand and supply

The issue of matching between market demand and supply in rural e-commerce is also a key factor restricting its development. The production of agricultural products is seasonal, while market demand is changeable, especially for some local characteristic agricultural products with large demand fluctuations. Take some fruits and vegetables as an example. When the market volume is too large, the price often drops significantly; when the market demand increases sharply, the supply often cannot keep up in time, resulting in a sharp rise in the market price of agricultural products, and farmers cannot obtain a relatively stable income.

More importantly, some farmers lack sufficient ability to predict the actual market demand, often resulting in situations of "over - production" or "under - production". Although e-commerce platforms provide a relatively broad market, due to the lack of reasonable allocation on the supply side, there is often a large gap between demand and supply. Since the production cycle of agricultural products is relatively long, once there is a mismatch between supply and demand, it often takes a long time to adjust the production cycle, which leads to large fluctuations in the sales of agricultural products on e-commerce platforms and makes it difficult to ensure stable supply.

3. Countermeasures and Suggestions for Rural E-Commerce Development to Boost

Agricultural Product Sales

3.1 Improve the Infrastructure Construction of Rural E-Commerce

3.1.1 Promote infrastructure construction through government-enterprise cooperation

The government can introduce relevant policies, provide tax relief, financial subsidies and other support to rural e-commerce platforms and logistics enterprises, and encourage enterprises to increase investment in rural infrastructure construction. The government not only needs to provide financial support for rural areas but also should promote policy - level guidance and formulate a reasonable rural e-commerce development plan to ensure that infrastructure construction matches the development needs of rural e-commerce. At the same time, as the direct executor of infrastructure construction, enterprises should increase their layout in the rural market, especially in the construction of Internet services and logistics distribution systems. For remote areas, enterprises can adopt appropriate technical means and innovative models according to local characteristics, such as developing low - cost and easy - to - operate wireless network coverage and promoting emerging technologies such as drone delivery, gradually improving the service capabilities of rural e-commerce. Taking logistics as an example, enterprises can cooperate with local governments to build centralized distribution centers, village - level logistics service stations, etc., to achieve seamless connection of agricultural products from the production place to the consumption place, shorten the logistics distribution time, and reduce the distribution cost. Through such government-enterprise cooperation, more solid infrastructure support can be provided for rural e-commerce.

3.1.2 Increase Internet coverage and popularity
The popularity of the Internet directly affects the development speed and quality of rural e-commerce. At present, although the network connection in many rural areas has been gradually improved, the Internet coverage is still relatively low in some remote villages. To achieve the widespread development of rural e-commerce, it is necessary to start from increasing the popularity of the Internet, especially in remote and poor villages, by strengthening the construction of basic

networks and improving the coverage and quality of the Internet. The government can cooperate with communication enterprises to promote broadband coverage in rural areas and improve network quality. At the same time, satellite Internet and other technical means can be used to achieve network coverage in deeply impoverished areas.

3.1.3 Optimize the logistics distribution system and reduce distribution costs

Currently, the logistics system in rural areas generally has problems such as high distribution costs and low distribution efficiency. To optimize the logistics system of rural e-commerce, it is necessary to reduce distribution costs, improve distribution efficiency, ensure that agricultural products are delivered to consumers in the shortest time, and maintain their best quality.

It is necessary to strengthen the construction of logistics infrastructure, build more warehousing and transfer facilities, and promote the efficiency of agricultural product circulation. In view of the particularity of agricultural products, a more flexible and intelligent distribution system should be established, using cold chain logistics and customized distribution services to ensure that agricultural products can be effectively protected during transportation and avoid resource waste caused by damage and decay during transportation. Secondly, the level of distribution management can be improved through logistics informatization means. For example, using big data, Internet of Things technology, etc., to track the whole process of logistics transportation and monitor the transportation status in real - time, so as to make timely adjustments and avoid problems in transportation.

3.2 Strengthen E-Commerce Training for Farmers and Raise Their Awareness

3.2.1 Conduct e-commerce skills training and improve farmers' digital literacy

The content of rural e-commerce training should not only include basic e-commerce platform operation skills, such as how to upload products, manage orders, and conduct payment and settlement, but also marketing skills such as how to price products, increase product exposure, and do a good job in after - sales service. Governments at all levels can cooperate with e-commerce platforms to

regularly hold e-commerce training courses and skill - improvement activities, and invite e-commerce experts and successful farmer e-commerce representatives to share their experiences. Through the combination of online and offline methods, farmers' digital literacy can be improved, their e-commerce operation capabilities can be cultivated, and their confidence in starting a business through e-commerce platforms can be enhanced. At the same time, e-commerce platforms can also develop e-commerce tools and learning resources suitable for farmers according to the actual needs of rural e-commerce, helping them gradually adapt to the processes and rules of e-commerce sales.

3.2.2 Stimulate farmers' enthusiasm and creativity in participating in e-commerce

In order to stimulate farmers' enthusiasm, the government and e-commerce platforms can introduce a series of support policies, such as providing financial subsidies and reducing the use fees of e-commerce platforms. The government can also organize farmers to participate in e-commerce competitions, entrepreneurship competitions and other activities, providing them with a platform to show themselves and exchange experiences, and enhancing their confidence in e-commerce entrepreneurship. Many farmers understand the characteristics of their land and agricultural products and can develop personalized agricultural products and services according to market demand. For example, farmers in some places attract consumers' attention to local characteristic products through live - streaming with goods and short - video promotion. These innovative models have greatly improved the market competitiveness of products.

3.2.3 Promote the interaction and cooperation between e-commerce platforms and farmers

The interaction and cooperation between e-commerce platforms and farmers are crucial for the improvement of agricultural product sales. At present, although many e-commerce platforms provide sales channels, they often lack continuous support for farmers, resulting in unstable development of farmer e-commerce. In order to strengthen the cooperation between platforms and farmers, platforms can help farmers solve practical problems in sales by providing personalized services. For example, platforms can provide value - added services such as market trend analysis reports, price

forecasts, and product packaging design for farmers, helping them improve product competitiveness and market adaptability.

3.3 Establish and Improve the Quality Monitoring System for Agricultural Products, and Support and Encourage the Brand Building of Agricultural Products

3.3.1 Establish and improve the quality monitoring system for agricultural products

The quality of agricultural products is one of the key factors in improving the market competitiveness of agricultural products. Therefore, the government should increase investment and establish a full - chain traceable quality monitoring system. Modern information technologies such as blockchain and two - dimensional codes can be used to give each piece of agricultural product an "ID card" that consumers can query and verify from the field to the table, allowing them to understand product - related information such as the source, production date, and quality inspection report, so that consumers can buy and eat with confidence.

3.3.2 Support and encourage the brand building of agricultural products

Building agricultural product brands can not only increase the added value of products but also is a powerful weapon to break the homogeneous competition of agricultural products. Therefore, innovation in agricultural products should be supported and encouraged. Products should be designed with personalized features from multiple perspectives, registered as trademarks, and agricultural product brands should be created and built. At the same time, some methods can be adopted for brand publicity and promotion, such as publicity through various media channels and online and offline promotion through agricultural product expositions. In addition, effective brand protection measures should also be taken to prevent counterfeit and shoddy products from damaging the brand image.

4. Conclusion

In the context of rural revitalization, rural e-commerce helps to boost the sales of agricultural products, taps the market potential for rural areas and farmers, increases farmers' income, and vigorously promotes the economic development of rural areas. It is an important force for China to achieve the goal

of rural revitalization. Certainly, the vigorous development of rural e-commerce cannot rely solely on the efforts of individual enterprises or departments. Instead, it requires collaborative efforts among governments, enterprises, and communities to overcome the current difficulties and truly achieve sustainable development.

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