The Development of Rural E-commerce under Digital Economy

Shunge Zhang

School of Economics, Minzu University of China, Beijing 100081, China
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Abstract: With the social development of our country, great changes have taken place in the economic situation. Especially in the context of the current digital economy, the traditional industries have gradually been replaced by the digital industry. The prospects for the development of the field of e-commerce is also a great prospect. In the market economy environment, e-commerce is one of the important business models, which has a great impact on the consumer market and consumption habits. This paper fully analyzes the impact of digital economy on the development of rural e-commerce, and discusses the effective strategies for the development of rural e-commerce in the era of digital economy, in order to provide new ideas for the development of rural e-commerce.

***Keywords*:** digital economy, rural e-commerce, to promote, tactics

1. Introduction

Following the agricultural and industrial economy, China has entered the era of digital economy with data resources as the element, relying on modern information network and information technology, and driving by the digital transformation of all elements. Compared with the traditional economic form, the digital economic form pays more attention to the unity of fairness and efficiency. According to the "China Online Retail Market Development Report", the rural online retail sales in 2023 will reach 2.49 trillion yuan, an increase of 12.9% over the previous year, of which the online retail sales of agricultural products will reach 587.03 billion yuan, an increase of 12.5%. It can be seen that rural e-commerce has become a new bright spot for farmers to increase their income and rural economic prosperity.

2. The role of digital economy in promoting the development of rural e-commerce

2.1 Is conducive to optimizing the supply of rural e-commerce products

The digital economy can promote the combination of new production factors such as data, technology and management with traditional production factors such as land and labor, provide a platform for the flow and exchange of various resource factors, and activate the agricultural added value. Through the use of digital information technology, various industries in rural areas can be connected to each other, a diversified industrial structure can be built, and the local factor resource supply capacity can make a huge breakthrough, and rural cross-domain circulation can be realized.

2.2 Is conducive to the rapid matching of rural e-commerce transaction entities

The supply and demand information of rural electricity suppliers and the market can be accurately connected through the online purchase and sales platform, so that electricity suppliers can fully understand the market supply and demand and price of products. Digital technology has changed the information transmission channels of agricultural products circulation, and it can realize instant information transmission and online storage across time and space with the help of network facilities, organically integrate local resources, and match agricultural products and local markets with zero barriers, without any additional costs. Moreover, with the help of these online purchasing and marketing platforms, the product manufacturers favored by consumers are more easily known by potential cooperative merchants on the platform, and rapidly expand upstream and downstream product services at low cost.

2.3 Is conducive to expanding the scale of rural e-commerce transactions

Based on the convenience of information transmission, in the era of digital economy, the transaction cost of rural e-commerce can be effectively controlled, and the information asymmetry problem common in the original market economy can also be significantly alleviated. With the increasing coverage of information advantages, the transaction scale of rural e-commerce is also expanding. Taobao, Jingdong, Pin-duo and other e-commerce platforms can connect farmers, wholesalers and dealers, streamline the slow circulation link [1], so that market information can be quickly conveyed to each node, and avoid the problems of difficult information acquisition, slow transmission and high cost in traditional circulation.

2.4 Is conducive to promoting the increase of rural e-commerce consumer demand

Under the digital economy, the popularity of various e-commerce platforms has made consumer demand more and more diversified. During this period, those niche needs were collected by the platform and fed back to merchants, becoming an important basis for new product development. It can be seen that the digital economy can expand the consumer market and trigger new consumption hotspots. At the same time, digital technology can also provide residents with online consumer credit, ease the liquidity constraints of consumers, so that residents through the network platform triggered by consumer demand is increasing.

3. Discussion on the development strategy of rural e-commerce under the digital economy

3.1 Expand e-commerce business entities

Rural e-commerce can cooperate with well-known e-commerce enterprises to empower rural revitalization. The government should increase the funding tilt for rural e-commerce through large-scale policy guidance to provide them with more adequate financial security. We should actively promote the e-commerce transformation of traditional enterprises, and help them improve their research and development and innovation ability of agricultural products by guiding and cultivating them. Actively build a cross-regional resource platform, provide information sharing for rural e-commerce markets in different regions, integrate superior resources, and stimulate the vitality of agricultural product sales.

3.2 Create a featured electronic commodity brand

Rural e-commerce should focus on local characteristics, build different types of brands, and increase the value of agricultural products through scientific and technological empowerment. In order to achieve high-end and quality operation of products, product quality should be strictly controlled, rural product production and processing links should be standardized, and brand effect should be highlighted. In brand management, rural e-commerce should make full use of local characteristic resources, display the green and pollution-free agricultural products, develop high-quality agricultural and sideline products, and vigorously promote the construction of agricultural ecological system. Promote agricultural products through channels such as Tiktok, Kuaishou and wechat videos, and achieve "zero-distance" contact between agricultural products and potential consumers with the mode of "live + e-commerce" [2].

3.3 Strengthen rural infrastructure construction

Rural areas should give full play to the leading role of the government, encourage rural enterprises to widely participate in the local information infrastructure, and realize the popularization of network facilities in rural households. The government should make overall planning for rural e-commerce, integrate rural information resources, and formulate long-term development strategies; Comprehensively promote the construction of rural informatization, promulgate relevant legal provisions and industry standards, and carry out unified scheduling and management of rural information; Flexible use of targeted and differentiated development strategies, combined with the local rural economic level and characteristics of agricultural products, to build distinctive information infrastructure.

3.4 Promote the transformation and upgrading of agricultural enterprises

With the integration of blockchain and rural e-commerce, it is imperative to transform and upgrade the information technology of agriculture-related enterprises. However, due to the lag of rural economic development, in addition to core and leading enterprises, other ordinary agricultural enterprises still have the problem of low informatization degree. This requires that the agriculture with the ability of transformation and upgrading should be transformed and upgraded as soon as possible to improve the independence and controllability of enterprises. Agricultural enterprises that do not have the ability of transformation and upgrading should actively cooperate with enterprises that have the corresponding ability to improve their information construction with the help of each other's business and technology sharing, and finally realize their own transformation and upgrading [3].

4. Integrated analysis model of theory and demonstration

When building an economic model for the development of rural e-commerce in the digital economy, it is first necessary to define the key players of the model and how they interact. Key players in the model include farmers/farm households, rural e-commerce platforms, consumers, and governments. In addition, the model should cover important market mechanisms such as information flows, capital flows, and logistics, as well as take into account the impact of government policies on

the market. Therefore, the demand equation, supply equation and market equilibrium equation models can be obtained respectively.

The demand equation to satisfy the model is:

$$D = D(P, Y, T, \theta) \tag{1}$$

Where (D) is the demand, representing the amount of agricultural products that consumers want to buy. (P) is the price, that is, the selling price of the agricultural product. (Y) is the income, i.e. the income level of the consumer. (T) is a preference or taste that represents a consumer's preference regarding agricultural products. (θ) is an influential factor in the digital economy, including the ease with which consumers can obtain product information through e-commerce platforms, and the acceptance of digital services by consumers.

The supply equation satisfying this model is:

$$S = S(P, W, T, \theta, \gamma) \tag{2}$$

Where (S) is the quantity supplied and represents the amount of produce the farmer wants to sell. (P) Also referred to as prices, referring to the selling prices of agricultural products. (W) is the weather or other natural conditions that affect the conditions and yields of agricultural production. (T) "Technology" refers to the level of technology applied to agricultural production. (θ) is the impact of digitalization on productivity, including the use of digital tools and platforms to improve management and distribution efficiency. (γ) is the impact of government policies on supply, including support for rural e-commerce, investment in infrastructure, etc.

Market equilibrium is obtained under the condition of equal supply and demand:

$$D(P, Y, T, \theta) = S(P, W, T, \theta, \gamma) \tag{3}$$

This equilibrium will determine the market price and volume.

By solving these equations, it is possible to predict the changes in supply and demand of agricultural products brought about by specific policy or technological changes, as well as the changes in price and quantity. In addition, the model can help policymakers develop more targeted strategies by simulating the market's response to changes in different parameters.

5. Conclusion

In short, under the digital economy, rural e-commerce has ushered in a huge development opportunity. Rural areas should give full play to the advantages of high-quality agricultural products by expanding e-commerce business entities, creating characteristic e-commerce brands, strengthening rural infrastructure construction, and promoting the transformation and upgrading of agricultural enterprises, so as to achieve the sustainable and healthy development of local rural e-commerce, improve the precision and efficiency of e-commerce to help agriculture, and jointly promote the progress of rural economy.

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Author Bio

Shunge Zhang (2007.7-), female, Hui nationality, Jinzhou, Liaoning Province, Undergraduate, research direction: Economics.