

# Analysis on the Countermeasures of Constructing E-commerce Model of Farmers ' Professional Cooperatives under the Background of Rural Revitalization

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**Abstract**— With the popularization and evolution of technologies such as the Internet and big data, rural areas have gradually integrated into the digital economic system, and e-commerce has become a continuous focus to promote the overall revitalization of rural areas. As a key link in the circulation chain of agricultural products industry, farmers ' professional cooperatives are facing the challenges brought by their own resource endowment and e-commerce talent reserve in the process of improving farmers ' income and promoting rural economic development by e-commerce mode. It is necessary to build an e-commerce model suitable for the development stage of the cooperative itself and a powerful talent think tank to carry out the e-commerce model, so as to promote the high-quality development of farmers ' professional cooperatives with the help of the rural e-commerce.

**Keywords**— Farmers' Professional Cooperatives, E-commerce, Rural E-commerce, Countermeasure.

## I. INTRODUCTION

Chinese-style agricultural and rural modernization is an important field and key link to realize Chinese-style modernization. As one of the important organizational forms of farmers ' cooperative economy, farmers ' professional cooperatives are an important focus to promote the scale of agricultural production and operation, promote the completion of agricultural development environment, promote the digitization of agricultural products circulation, and help agriculture realize modernization. With the advent of the era of digital economy, e-commerce has gradually become an important way of rural revitalization. In 2023, the No.1 Central Document clearly stated that ' cultivating new industries and new formats in rural areas ' and ' encouraging the development of e-commerce direct mining and customized production of agricultural products '. In February 2023, the Central Committee of the Communist Party of China along with the State Council released the "Overall Layout Plan for Digital China Construction" to offer policy direction for the advancement of e-commerce for agricultural products in China. Then, in 2024, the No.1 Central Document proposed for the first time ' the implementation of high-quality development projects for rural e-commerce ' and ' the development of rural local specialty network sales '. With the vigorous promotion of the Party Central Committee and governments at all levels, the rural e-commerce system has been generally improved and optimized. Many farmers ' professional cooperatives have also begun to actively build e-commerce models in order to improve the efficiency of rural economic development and increase the income level of farmers. How to make full use of the advantages of " Internet + " and play its own leading role in the construction of agricultural products brand and deal with the challenges in the process of building e-commerce model is an important issue

to be studied in promoting the overall revitalization of rural areas.

## II. THE VALUE SIGNIFICANCE OF CONSTRUCTING E-COMMERCE MODE BY FARMERS ' PROFESSIONAL COOPERATIVES UNDER THE BACKGROUND OF RURAL REVITALIZATION

### 2.1 The connotation and characteristics of farmers ' professional cooperatives and rural e-commerce

Farmers ' professional cooperatives are a new type of agricultural management organization based on the basic management system of rural areas in China, taking into account the advantages of ' unification ' and the scale benefits brought by land transfer. As a kind of mutual economic organization jointly established by farmers, it not only has the political attributes of providing farmers with funds, information resources and comprehensive, comprehensive and professional prenatal, intrapartum and postpartum services, but also has the economic functions of helping single farmers resist market risks, effectively improving farmers ' farming income, realizing the benign interaction between agriculture and market, and promoting the modernization of rural economy. Since the country carried out the clean-up and rectification of ' shell cooperatives ' in 2019, the internal organizational structure of China 's farmers ' professional cooperatives has been more perfect, the standardization of operation and management has been more clear, and the supervision and support from the outside have been continuously strengthened. By the end of 2022, the number of surviving farmers ' professional cooperatives in China reached 2.2496 million, an increase of 14,400 from the end of 2021, an increase of 0.65 %, and nearly half of the farmers were driven by radiation.

Rural e-commerce is the abbreviation of rural e-commerce. Different from urban e-commerce, rural e-commerce refers to the use of advanced information technology

and Internet platforms to promote the exchange and sales of goods and services in rural areas through online transactions, logistics and distribution. As early as 2005, the Central Document No.1 proposed to 'encourage the development of new formats such as e-commerce'. In 2016, the No.1 document of the Central Committee for the first time put forward the development strategy of 'Internet + industrial chain', pointing out that agricultural modernization should be led by science and technology. After the implementation of the rural revitalization strategy, the country's construction plan for rural e-commerce has gradually risen to platform construction. From advocating 'carrying out comprehensive demonstration of e-commerce in rural areas' to proposing 'Internet + agricultural products going out of villages and into cities, to putting forward standardized requirements for live broadcast of agricultural and sideline products and promoting the integrated development of rural passenger, goods and mail, the conditions for the high-quality, standardized and steady development of rural e-commerce are increasingly perfect. In the first half of 2022, the national rural network retail sales reached 975.93 billion yuan, an increase of 2.5 % year-on-year. Among them, the rural physical commodity network retail sales reached 890.44 billion yuan, an increase of 3.6 % year-on-year. In 2023, the rural network retail sales reached CNY 2.49 trillion, and the per capita disposable income of rural residents reached CNY 21691, with a year-on-year growth of 7.6 %. It can be seen that rural e-commerce, as an important form of integrating digital economy into rural China, is rapidly changing the rural landscape under the vigorous promotion of governments at all levels in China.

## *2.2 The significance of farmers' professional cooperatives to build e-commerce model*

Digital technology and e-commerce are penetrating into various fields at an unprecedented speed. The e-commerce model of farmers' professional cooperatives is a business model supported by information technology, with farmers' professional cooperatives as the main body of operation, and with the help of e-commerce platform to carry out online transactions, logistics distribution, financial services and other services of agricultural products. Promoting the construction of e-commerce model of farmers' professional cooperatives is of great significance to realize the transformation of agricultural product sales from traditional single model to offline and online marketing model.

### *2.2.1 Responding to Farmers' demands and Making up For Farmers' weakness*

Farmers are the largest vulnerable group in the process of promoting Chinese modernization. For themselves, the 'weakness' of farmers is mainly manifested in low income and lack of financial capital; low culture, lack of knowledge capital; low amount of information, lack of resource costs. Therefore, farmers are a group that lacks market ability and risk-taking ability. In the environment where the agricultural product market tends to be e-commerce, farmers have limitations in the understanding and application of e-commerce due to their own 'weakness'. They do not know how to choose and choose which appropriate way and platform to promote goods. Individual

farmers often have poor results in e-commerce activities. At the same time, the core of rural e-commerce is the sales and promotion of agricultural products. It is often difficult for individual rural e-commerce to solve the problems involved in product marketing, direct supply of origin, quality assurance and logistics distribution. Farmers' professional cooperatives are a very strong subject, with stronger market negotiation ability and development ability, and play a good role as a bridge between joint farmers and e-commerce market. Cooperatives gather scattered farmers to form economies of scale and resource integration. The cooperatives negotiate with the operation platform on behalf of farmers, which can reduce the uncertainty of individual farmers' transactions. It can not only preserve the value of agricultural products and expand the space for farmers' income improvement, but also constitute a self-protection mechanism for the interests of individual farmers by safeguarding their own rights and interests, so as to ensure that farmers benefit relatively stable. In addition, cooperatives bring farmers into the e-commerce market in an organized manner, use themselves as a medium of communication, expand farmers' knowledge reserves in e-commerce, expand farmers' understanding of e-commerce, and enable farmers to gradually adapt to the e-commerce market environment in the process of participating in cooperatives, and realize the positive interaction between agriculture and the market.

### *2.2.2 Broaden the Sales Channels of agricultural products and promote the brand building of agricultural products.*

Brand is an important driving force to enhance the level of product sales, and it is also an important part of the long-term development of products. The brand building of agricultural products and the online sales of agricultural products are the solutions to the problems of high-quality agricultural products that cannot be sold at a good price, and the two complement each other. China has attached importance to the brand building of agricultural products for many years. As early as 2004, in the No.1 Central Document, the state began to make scale deployments for the branding of regional agricultural products. After the rural revitalization strategy was put forward, the state further promoted the quality of agriculture and advocated 'one village, one product'. 'Wine fragrance is also afraid of deep alleys.' On the premise of following the quality-oriented principle, the Ministry of Agriculture and Rural Affairs has put forward specific policies for brand strengthening farmers, including improving brand marketing capabilities. It is an important way to improve the brand marketing ability of agricultural products by constructing the e-commerce model of farmers' professional cooperatives and bringing regional characteristic agricultural products into the public view through digital information technology. First, it helps to expand the brand's popularity and influence. The e-commerce platform facilitates the marketing of agricultural products and improves brand awareness through online advertising and social media promotion. At the same time, the establishment of modern sales methods such as Tmall, Jingdong and other outlets and live delivery can break the single offline sales of agricultural products, thus broadening the sales channels of agricultural products and expanding the market share of agricultural products. The second is to help establish a good brand

reputation. The media of the Internet facilitates the communication between producers and consumers. Cooperatives can interact with consumers, which can not only improve consumers' consumption experience by responding to customer feedback, but also help farmers adjust production plans and product characteristics through feedback. Third, enrich the self-development of cooperatives. After the cooperative has a certain e-commerce foundation, it can cooperate with other cooperatives in depth, innovate models, and develop together.

### III. ANALYSIS OF THE EXISTING MAIN MODES OF FARMERS' PROFESSIONAL COOPERATIVES TO CARRY OUT E-COMMERCE

Based on the improvement and optimization of rural e-commerce system in various regions in recent years, many farmers' professional cooperatives have begun to use e-commerce means to connect with the market and have made great progress. It not only broadens the sales channels, better serves the members of cooperatives, but also fully meets the needs of consumers. At present, four effective models have been explored in the practice of building e-commerce models.

#### 3.1 Supply and demand information release mode

That is, 'cooperative + third-party information intermediary platform'. This model is that the cooperative, as the provider of agricultural products, registers an account on the existing third-party information intermediary platform and publishes agricultural product information, and the supply and demand side can contact the provider through telephone or message according to the released information, and finally reach a product transaction. The third-party information intermediary platform is a platform built and operated by a third-party enterprise to accelerate the matching of buyers and sellers by docking cooperatives and potential customers in the form of rolling information on the supply and demand of agricultural products, and to complete the online trading of agricultural products. In general, the platform only provides the functions of agricultural product information release and message consultation, and does not provide the functions of online transaction and online consultation. For cooperatives, the advantage of this model is that the cost is very low, and the third-party information intermediary platform only charges a certain platform top-up fee or long-term news release fee for the cooperative. The disadvantage is that in this marketing promotion model, the product can not see the characteristics, it is difficult to attract people's attention, just a sales platform. This model has low requirements on the qualifications, product types, product quantity and technical level of cooperatives, and is more suitable for cooperatives in the early stage of development. At present, the more popular supply and demand information platforms include China Agricultural Product Information Network, National Agricultural Product Business Information Public Service Platform and so on.

#### 3.2 Self-managed online store model

That is, 'cooperative + e-commerce platform'. This model refers to the cooperative through the self-built marketing team,

in the third party electronic trading platform independent registration, self operation cooperative outlets, through online orders, online payment, mailing products in the form of online sales of agricultural products. The third-party electronic trading platform can gather many suppliers and their product information in e-commerce activities, and provide consumers with important references such as supplier reputation, supplier product quality certification, and user feedback. At the same time, through the data analysis of the platform, it provides suppliers with consumer demand and consumer preferences, thereby simplifying the information collection process of both parties and saving transaction costs. Opening online stores on platforms such as Jingdong, Taobao, and Pinduoduo is this model. For cooperatives, the advantage of this model is that management is an internal management team of cooperatives, and the management cost is relatively low. The disadvantage is the high dependence on technical personnel. Cooperatives not only need to carry out product packaging, publicity, sales and logistics distribution on their own, but also need to beautify and edit online stores. Therefore, when the team lacks professional network marketing talents, the sales of agricultural products are often inadequate. In addition, in this model, the third-party electronic trading platform makes profits by charging advertising fees, publicity fees and so on. If cooperatives want to promote their products well, they not only need a lot of capital investment, but also need to often participate in various promotional activities and publicity activities. This model has relatively high requirements for the qualifications, talents, technical level and other aspects of cooperatives.

#### 3.3 principal-agent mode

That is, 'cooperative + operator + e-commerce platform'. This model is to establish a principal-agent relationship between the cooperative and the external professional e-commerce marketing team. The cooperative only needs to be responsible for the production of products and offline delivery, and the operation of the outlets is responsible for professional managers. The e-commerce sales team draws a share from the annual e-commerce sales of the cooperative, and the ownership of the online store belongs to the cooperative. For cooperatives, the advantage of this model is that the marketing ability of professional operators is usually much stronger than the network sales team formed by the cooperatives themselves, which can solve the dilemma of cooperatives' 'not to sell' and improve the sales of agricultural products. At the same time, this interest linkage mechanism can enable the professional marketing team to obtain more products divided into active sales cooperatives. The disadvantage is that since professional service providers are usually independent entities in the city or in the field, the uncertainty of negotiation costs and running-in costs is high.

#### 3.4 Entrusted sales model

That is, 'cooperatives indirectly participate in e-commerce'. This model is that cooperatives sell agricultural products directly to third-party electronic trading platforms, which sell agricultural products at their own prices. Cooperatives only serve as providers of agricultural products and do not directly participate in e-commerce operations. The third-party



electronic trading platform undertakes the main links of agricultural e-commerce such as the acquisition, scheduling, publicity and sales of agricultural products. For cooperatives, the essence of this model is very similar to the sale of agricultural products to agricultural product distributors in the traditional agricultural product supply chain. The difference is that the entrusted sales model relies on the e-commerce platform to skip other complicated links in the supply chain to reach agricultural product consumers. The advantage of this model is that cooperatives are not directly involved in e-commerce, and the risk and cost of operating e-commerce are low; at the same time, this model can also provide cooperatives with relatively stable sales channels, improve production standards driven by third-party electronic trading platforms, improve the social popularity of cooperatives, cultivate the e-commerce awareness of cooperative members, and lay a foundation for cooperatives to turn to independent development of e-commerce. The disadvantage is that the profit space of the cooperative is small. This model has specific requirements for the product quality, type and quantity of cooperatives. It has high thresholds and many conditions. It is more suitable for some cooperatives that have developed to a certain level. The product quality is good, and the product scale is considerable. It wants to open up online market channels but members lack e-commerce knowledge and independent management ability and energy. Taobao, Jingdong Mall, Shunfeng Preferred and other large third-party online trading platform websites all provide entrusted sales model.

#### IV. ANALYSIS ON THE COUNTERMEASURES OF CONSTRUCTING E-COMMERCE MODEL OF FARMERS' PROFESSIONAL COOPERATIVES UNDER THE BACKGROUND OF RURAL REVITALIZATION

##### 4.1 The influencing factors of farmers' professional cooperatives to build e-commerce model

Farmers' professional cooperatives are one of the important business entities to increase farmers' income under the new normal, and bear the production and sales functions of agricultural products. At present, farmers' professional cooperatives have been flourishing in production technology, but in the construction of e-commerce model to promote the marketing of agricultural products is still affected by the following factors.

One is the factor resource endowment of cooperatives. The factor resource endowment includes the capital accumulation, resource conditions, product market demand and so on. Capital accumulation is closely related to the competitiveness of cooperatives and the speed of e-commerce business development. Resource conditions include the scale and technical level of cooperatives, product types and quality, logistics and distribution capabilities, etc.; market demand includes consumer demand for agricultural products, competitors, market size and potential. Cooperatives need a lot of capital investment to build e-commerce models. Therefore, the difference in factor resource endowments determines the difference in the e-commerce models that cooperatives can choose.

The second is the e-commerce talent reserve of cooperatives. E-commerce talents include both talents with e-commerce business awareness and talents with e-commerce business marketing capabilities. In the process of operation and management of e-commerce platform, e-commerce talents are indispensable. At present, rural areas are facing the contradiction between the vigorous development of e-commerce industry and the serious shortage of e-commerce talents. This contradiction is reflected in farmers' professional cooperatives, which are divided into two situations. First, some cooperative-related managers are affected by factors such as their own cultural literacy and lack marketing awareness. Although they have carried out e-commerce business, they do not know how to effectively market, resulting in the waste of cooperative e-commerce business and missing further development opportunities. Second, some cooperative e-commerce businesses are mainly operated by young farmers in the village. Due to insufficient knowledge and lack of experience, various problems encountered in the operation of e-commerce platforms cannot be solved in time.

##### 4.2 Countermeasures for farmers' professional cooperatives to construct e-commerce mode under the background of rural revitalization

###### 4.2.1 Build an e-commerce model suitable for its own development stage

From the above analysis of the existing models, it can be seen that the various models of farmers' professional cooperatives to carry out e-commerce at this stage have advantages and disadvantages. In other words, the e-commerce model is not the best, only the most appropriate. The development of farmers' professional cooperatives needs to go through a certain process. The characteristics, scale, resource level and capital strength of cooperatives at different growth stages are different, and the e-commerce channels and models adapted are also different. In different environments, cooperatives should choose the most suitable mode according to their own product quantity and type, operation scale, capital conditions, development situation, entry threshold and construction cost of each e-commerce mode, so as to effectively promote their own development. In the development of e-commerce, cooperatives with lack of professional talents and insufficient capital accumulation generally only apply the direct e-commerce model of sales channels. For example, a cooperative with less initial capital can focus on the development of supply and demand information release mode and commissioned sales mode. With the characteristics of the third-party platform, it can bring certain e-commerce business to the cooperative. After slowly developing and growing, the next mode is selected according to the business type. Cooperatives with certain capital accumulation have the ability to choose complex and more profitable e-commerce models, such as self-operated online store models.

###### 4.2.2 Build a strong talent think tank for e-commerce business

E-commerce talents are an important guarantee for farmers' professional cooperatives to build e-commerce models and achieve high-quality development. On the one hand, we should pay attention to the cultivation of talents within cooperatives,

improve the Internet literacy of leaders, and update the new concept of members on e-commerce business. The local government can learn from the experience of rural e-commerce talent training in Shandong, Jiangsu and other provinces, and lead the establishment of e-commerce talent incubation bases with well-known e-commerce enterprises such as Taobao, Jingdong and Pinduoduo, so as to provide training opportunities for rural entrepreneurs, rural college students, or other young farmers with certain academic qualifications. Use the e-commerce talent incubation base to train e-commerce talents in batches in a short time to help the development of cooperatives. In addition, the cooperative itself can hire experts in e-commerce to train and guide members. In terms of training methods, we should abandon the formalism of preaching and carry out diversified activities to improve the enthusiasm and participation of members in learning ; in terms of training content, in addition to teaching basic e-commerce operations, it is also necessary to cultivate the ability of members to communicate with customers, use online learning, and search and identify information. On the other hand, the implementation of talent introduction strategy. Under the premise of improving rural infrastructure construction, cooperatives can attract high-quality technical talents to participate in the construction of cooperatives by optimizing the working environment, improving salary and welfare benefits, and establishing a performance subsidy system. They can also recruit e-commerce talents from e-commerce majors in colleges and universities, e-commerce enterprises and various training institutions, carry out special management and operation of e-commerce business of cooperatives, and take certain measures to dispel the concerns of technical talents, so that talents can take root in rural areas and serve rural areas.

#### V. COMPLIMENTARY CLOSE

The rural revitalization strategy provides policy support for the development of farmers ' professional cooperatives and creates a good development environment. At the same time, it also puts forward new requirements for the development of farmers ' professional cooperatives guided by agricultural modernization. Under the background of the rapid development of agricultural e-commerce, farmers ' professional cooperatives, as one of the main organizational forms for farmers to connect with the market, need to adapt to the development of the

Internet era, with the help of e-commerce channels and means, shorten the distance between farmers and the market, broaden the sales channels of agricultural products, and promote the increase of farmers ' income, so as to realize the modernization of agriculture and provide a steady stream of economic support and intellectual support for the implementation of the rural revitalization strategy.

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