

A Study on the Mechanism of Enhancing the Value Creation Capability of Rural E-Commerce Industrial Clusters*

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Abstract—This article explores the mechanism for enhancing the value creation capability of rural e-commerce industrial clusters. E-commerce industrial clusters have brought new factor combinations, supply networks, market information and service systems to the development of farmers' online businesses. This article builds a theoretical framework for the value creation of e-commerce industrial clusters, and explores the mechanism for improving the value creation capability of rural e-commerce industrial clusters from the aspects of factor adjustment, industrial chain integration, brand innovation, spillover benefits, and service systems.

Keywords: *rural e-commerce, industrial clusters, value creation*

I. INTRODUCTION

With the development of mobile Internet, cloud computing, big data, Internet of Things and other information technologies in rural areas, technology has greatly promoted the occurrence of global interactions. The online population, ecology of industrial and market conditions of e-commerce have changed significantly. The rapid rise of farmers' online businesses from scratch, from little to more, "Taobao Village" has become a new model of rural economic development in the Internet era. In these areas, there are a number of farmers' online merchants with specific interconnections and cultural and organizational similarities. Due to geographical proximity, industry-centered, competitive and cooperative relations based, and market-oriented farmers' online merchants will be transferred. Internal independent and independent online vendors, based on social relations, division of labor and cooperation, economic transactions and specific local environmental foundations, gathered in a certain geographical area and industry field. A new business ecological complex system has been formed, with online

merchants as the main body, and coexisting with multiple species, including manufacturing, raw material processing, spare parts sales, and logistics and express delivery, which is the phenomenon of "E-commerce Industry Clusters". They coordinate with each other to complete the process of production and sales in a special way. This is just like the group behavior of biological organisms in nature. Although each individual in the group is very simple, the clusters of these simple individuals show far beyond the individual's ability to create value.

In the e-commerce cluster, there are many "populations" and "individuals" and their relationships. Such as Farmers' online businesses, e-commerce associations and various service providers. Farmers' online businesses themselves belong to small and micro enterprises in townships and villages. They have the characteristics of "multiple, small, scattered, and weak", just like every tiny biological individual in nature. They are significantly different from urban individual online businesses in terms of funds, resources, and technology. However, as the number of farmers' online merchants continues to increase and develops in an aggregate manner, group intelligence will "emerge" and can create value far beyond the reach of individuals. This is just like the gregarious colonies such as ant colonies, bee colonies, bird colonies, and fish colonies in the natural world. Although the individuals are very simple, they can work together to enable the colony perform complex behaviors, such as building beautiful nests and concentrating food. Moreover, tasks done by group cooperation are often more robust, flexible, and economically advantageous. E-commerce clusters are conducive to the aggregation, optimization, and utilization of information, as well as the spread, utilization, and collaborative innovation of knowledge spillovers, and thus enhance the value creation capabilities of e-commerce clusters.

II. THEORETICAL FRAMEWORK

The improvement of the value creation ability of the rural e-commerce industry cluster is a kind of innovation ability and competitiveness improvement aimed at increasing the

*Fund Project: Project conducted by Yunnan Agricultural University's social science middle-aged and young people project "Research on the Cooperation and Collaborative Innovation Model of Rural E-commerce Virtual Industrial Clusters in Yunnan Province" (Project No.: 2017SK04).

added value of agricultural products, increasing the competitiveness of the cluster, and maintaining the continuous growth of industrial benefits. Through the development of e-commerce, the elements that were originally far away from space can be "virtually aggregated", thereby introducing relevant production factors and production conditions into the production system. The new production factors and conditions are integrated and optimized with the original production factors and conditions to realize the "intelligent emergence" of the cluster, thereby enhancing the innovation ability and value creation ability [1].

This article will explore the improvement of the value creation ability of rural e-commerce clusters from the two dimensions of production and sales. As the scale of the cluster expands, the number of suppliers increase, and competition also increases, thereby promoting production bases (sources) to provide better and safer agricultural products, thereby continuously improving the standards and added value of agricultural products. A virtuous circle has formed between production bases, suppliers, scientific research institutions, cooperatives, and processing enterprises, and the efficiency of the entire production process has been improved, moving from the low value-added part of the value chain to the high value-added part. For example, the introduction of more effective agricultural products or a significant improvement in product quality, and some high-quality agricultural products gradually follow the "high-end line", which has spawned more agricultural

product processing enterprises, constantly innovating categories of product, and achieving lower input costs or higher output benefits. From the perspective of sales, the value of information service quality has increased due to the aggregation and sharing of information within the cluster. Based on the e-commerce platform, various marketing models are continuously innovated, such as market development, packaging innovation, brand innovation, and after-sales service, which can create more profits and value. The analysis and use of big data is conducive to the segmentation of customer groups. Precision marketing and personalized customization can effectively promote sales and profit growth. Due to the integration of materials and other factors, the resources such as warehouse, storage, cold chain, and transportation can be fully integrated and utilized, thereby maximizing transportation value and minimizing logistics time, further reducing logistics costs and improving logistics service quality.

E-commerce clusters promote the aggregation of information in the industrial chain, which can better integrate agricultural product production resources, and provide agricultural product quality and added value. Relying on the exertion of the information aggregation effect of the industrial chain, to achieve accurate and efficient information services, and continuously innovate marketing models, it can meet the diverse and personalized needs of consumers in the network platform, improve the efficiency of information management of the entire industrial chain, and thereby gain value creation promotion.

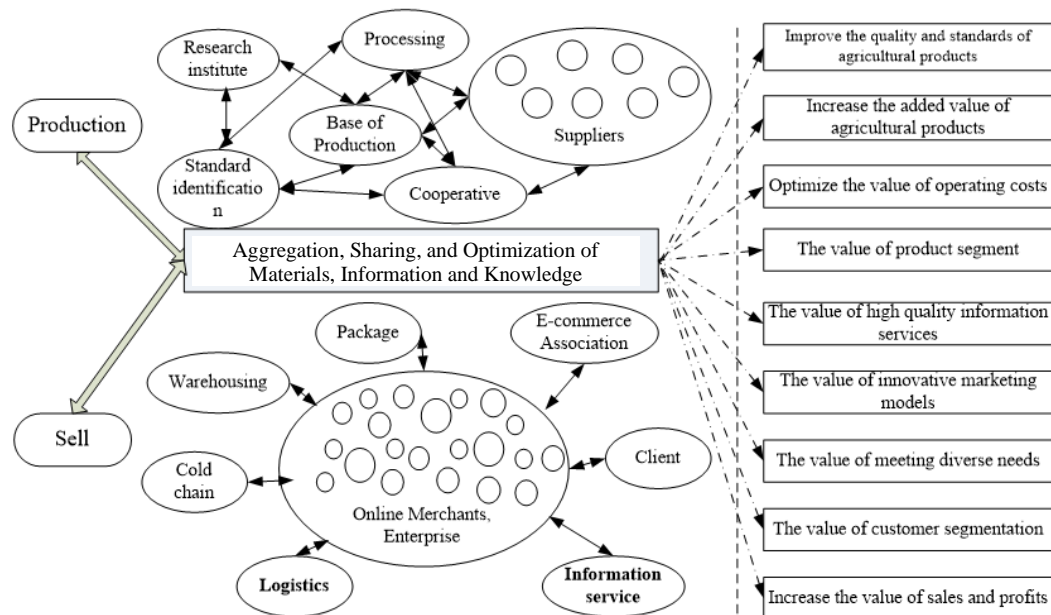


Fig. 1. Theoretical framework of value creation capabilities of rural e-commerce clusters.

III. ANALYSIS ON THE MECHANISM OF ENHANCING THE VALUE CREATION CAPABILITY OF RURAL E-COMMERCE INDUSTRIAL CLUSTERS

A. Factor adjustment promotes value creation

With the support of e-commerce, resources such as production bases, houses, and warehouses are fully utilized and integrated to maximize material savings. The reconfiguration and use of land and space resources in the cluster has substantially increased the input and output of the cluster's internal operations. In addition, farmers, suppliers, entrepreneurs and other factors continue to improve their overall quality in the process of knowledge spillover within the cluster, so that the quality of farmers' labor factors and entrepreneurs can be improved. All of these have a very important role in promoting new product, function upgrades, and value creation in rural e-commerce clusters.

B. E-commerce industry clusters promote industrial chain integration

The e-commerce cluster enables the original "small, scattered, and weak" online merchants and small farmers to be integrated into a "big network". With the support of e-commerce, the functions of the original industrial chain nodes have been partially replaced, integrated and expanded. Flow of information, logistics and capital can operate at high speed. Information integration can effectively give play to the overall utility of the industrial chain and value chain information resources in big data, and transform scattered and messy information resources into efficient values. The clusters enable continuous professional division of production and marketing. Suppliers are more focused on product updates, new product research and development, and portfolio innovation. Online merchants focus on operating online stores and customer service. Each node in the industry chain can provide more refined and specialized services to accelerate the improvement of the overall value creation capabilities of the clusters. At the same time, help and attract poor households to participate in various links in the industrial chain, provide various types of employment opportunities, and allow poor farmers to fully enjoy the premium benefits of e-commerce, thereby achieving poverty reduction and poverty alleviation effects.

C. Rural e-commerce industry clusters promote brand innovation

Rural e-commerce industrial clusters have a good industrial foundation. Under the support of e-commerce, the products sold online not only expand the sales scope, but also get consumers' attention and recognition more easily. At the same time, under the premise of ensuring product quality, improve the price competitive advantage and profit margin, continue to stimulate the brand awareness and innovative spirit of online merchants, expand brand influence, and build local premium products into "local business cards." Brand effectiveness can promote the sales of local premium products, thereby increasing product value and sales profits.

D. Spillover benefits of industrial clusters promote value enhancement

The topic of spillovers and innovation in technological clusters has been studied in the literature using two different approaches. The first approach focused on innovative performance of clusters and the role spillovers play in this relationship. The second approach focused on capturing the effects of spillovers that can take place between geographically or technologically close firms and uses innovation outputs to proxy this phenomenon. The second approach that focuses on measuring the effects of knowledge spillovers was led by Jaffe in (1986), who used a "knowledge production function" to demonstrate that clustering does affect innovation [2]. The acquaintance mechanism in rural society in China has accelerated the knowledge spillover of the cluster. When a farmer's online business obtains benefits, the knowledge spillover makes the e-commerce knowledge quickly overflow and spread. Farmers have made changes to obtain benefits through mutual transmission, mutual help, and mutual cooperation, thus creating a harmonious environment for innovation.

E. Gradually improving service system provides guarantee for value creation

Within the cluster, e-commerce companies, logistics companies, and many online stores are the mainstays, which promote and expand the industries of breeding, marketing, packaging, testing, transportation, and distribution and gradually achieve industry segmentation. At the same time, a service system consisting of public bodies, financial institutions, education and training, express delivery companies and consulting services is gradually formed to provide online businesses with professional service, such as financial support, incubation training, online store decoration, trademark design, photography art, warehousing and logistics. A sound service system is conducive to the sustainable development of e-commerce and plays an important role in the creation of cluster value.

IV. CONCLUSION

Compared with traditional geographically centralized industrial clusters, e-commerce industrial clusters use modern communication equipment and network media technologies to utilize and give full play to the comparative advantages of multiple parties, regardless of geographical restrictions, and realize information sharing and transmission based on network platforms. A virtuous circle cluster can save and optimize resources to the greatest extent through information aggregation and knowledge overflow, and can create greater value under the same resource conditions. In addition, clusters help to friction and collide with the spark of group wisdom, generate more innovative ideas and achieve creation and promotion. There are also competitions and risks when cooperating within the cluster. Therefore, to create an environment conducive to the sustainable development of the e-commerce industry cluster, the government should provide efficient public services in response to the common needs of online merchants.

Scientific research institutions should actively play their role in the innovation and development of industrial clusters, and help clusters to avoid risks and enhance the ability of cluster value creation as much as possible.

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