

# Impact Factors of Rural E-commerce Products Diversification

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## Abstract

The injection of E-commerce expands the sales channels of agricultural products and provides more possibilities for the diversification of rural products. However, the product homogenization brought by the high concentration of production and the possible vicious internal competition are not conducive to the diversified development of rural products. Therefore, by analyzing the development report of China Taobao Village, select the diversification of electricity model village, construct the index system, discuss the development degree of rural product diversification under the influence of E-commerce, and find out the solution path to solve product homogenization.

## Keywords

Rural E-commerce; Product Diversification; Influencing Factors; Solution Path.

## 1. Introduction

In recent years, China's E-commerce industry development strong momentum, governments at all levels of rural electricity support, make a batch of E-commerce demonstration villages, rural areas for rural mode of production, commercial activities and consumption change is reversed, and broaden the channels, attract enterprise investment, increase entrepreneurial employment opportunities and eliminate rural hollowing out. The integration of E-commerce and rural areas has expanded the market and sales channels of agricultural products, extended the original industrial chain for more rural products, enhanced the added value of agricultural products, and enriched the diversification of products in rural areas. However, the broad market also shows the problem of vicious competition between competing products, and the phenomenon of product homogenization, which makes some enterprises difficult survive in the fierce market competition and hinders the sustainable development of rural E-commerce.

To promote the development of the rural E-commerce industry can not only win the battle against poverty and solve prominent problems in agriculture, rural areas and farmers, but also be an economically-efficient and eco-friendly new type of agricultural modernization with Chinese characteristics. The development of the new business form of "Internet + rural industry" is of great practical significance for inheriting and carrying forward the cultural value of local industries, promoting the modernization, transformation and upgrading of rural industries and the integration of the tertiary industries. Therefore, how to clear the "thorns" hindering the development of rural E-commerce to realize sustainable economic development is particularly important.

## 2. Theoretical Basis of Rural E-commerce and Product Diversity

### 2.1. Overview of Rural E-commerce

Rural E-commerce is through systematic management, market-oriented activities and commercial alliance between regions and industries, digital and rural economy, promote the rapid flow of E-commerce logistics, information flow, capital flow and trade flow, reduce the rural trade costs, expand the rural sales market, give farmers more opportunities to create new profits.

## 2.2. Overview of Rural E-commerce Demonstration Villages

### 2.2.1. Definition of the Village E-commerce Model Village

Rural E-commerce demonstration village (referred to as "E-commerce village") is an administrative village selected to further enhance the demonstration and driving effect and promote the sustainable development of rural E-commerce in the local area. Jiangsu Province took the lead in the creation of E-commerce villages and the development of rural E-commerce, with rich experience and remarkable results. Therefore, this paper selects Jiangsu E-commerce demonstration villages as the research objects. The rural E-commerce demonstration villages mentioned below all refer to the E-commerce demonstration villages in Jiangsu Province.

The rural E-commerce demonstration villages created in Jiangsu Province usually have the following characteristics:

- (1) The number of peasant households participating in E-commerce is more than 30% of the total number of peasant households in administrative villages; or the concentration of E-commerce is relatively high, not exceeding 5 large E-commerce households to generate 40% of the relevant E-commerce sales;
- (2) The commodities traded in E-commerce are mainly locally produced agricultural products or derivatives thereof. Among them, the annual trading volume of agricultural products E-commerce transactions is at least RMB 10 million; the annual trading volume of processing products and E-commerce transactions is at least RMB 50 million;
- (3) The local government organs have a clear support policy, the village committee has a special person responsible for E-commerce related work, and have detailed and specific measures to promote E-commerce;
- (4) It has obvious industrial characteristics and plays a strong demonstration and driving role, including using E-commerce to promote the development of local industries, increase the employment and income of rural residents, encouraging college students to return to their hometowns to start their own businesses, improve the level of logistics development, and improve the level of express delivery suppliers.

### 2.2.2. Development Mode of E-commerce Demonstration Village

After the field research on the "China Rural E-commerce Development Report" released by Ali Research Institute and the rural E-commerce demonstration village in Jiangsu Province, the operation mode of the rural E-commerce demonstration village can be classified as the following types.

#### (1) spontaneous mode

Farmers spontaneously use Taobao and other market-oriented E-commerce trading platforms to directly connect with the market, often also known as the "sand collection mode". The core element of this model is the "Farmers + Internet + E-commerce Platform". In the process of visiting E-commerce demonstration village in Jiangsu province, more than half of the village is given priority to with spontaneous mode of operating E-commerce, collected more typical "electricity village" have: xuzhou suining sand town sand village, xuzhou suining sand town dongfeng village, xuzhou copper mountain ma po town before eight village and nantong sea an east town ambition village, etc.

#### (2) Government guidance model

The model is from top to down, guided by the government organization, to formulate and introduce a series of E-commerce poverty alleviation or E-commerce work measures to enrich the people, encourage the combination of agriculture, agricultural products and E-commerce, guide farmers to learn and use E-commerce, promote targeted poverty alleviation of E-commerce, promote employment and enrich the people. Typical cases of this model are: Crystal Village, Jingqiao Town, Lishui District, Nanjing City, Chenjia Village, Gaozuo Town, Jianhu

County, Yancheng City, Xinjie Village, Xinjie Town, Dongtai City, Yancheng City, and Qinjiasha Village, Zhewang Town, Ganyu District, Lianyungang City.

### (3) resource-based industry model

Relying on the rich local advantageous resources, farmers can expand the original sales channels through the E-commerce platform. Typical cases of this model are: Longqiuzhuang Village, Longqiu Town, Gaoyou City, Yangzhou City, Yanshan Village, Yangcheng Lake Town, Xiangcheng District, Suzhou City, Qingshui Village, Yangcheng Lake Ecological Leisure Tourism Resort, Suzhou, and Luxiang Village, Yangcheng Lake Town, Xiangcheng District, Suzhou.

### (4) "One village, one product, one store" mode

The government supports a characteristic industry in each village, builds an online mall around the industry, and guides the development of local industries and product sales with E-commerce, and stimulates the vitality of innovation and entrepreneurship. Typical cases of this model include: Crystal Village, Jingqiao Town, Lishui District, Nanjing City, Xinjie Village, Xinjie Town, Dongtai City, Yancheng City, Gaoqiao Village, Gaoqiao Town, Dantu District, Zhenjiang City, Hexin Village, Majia Town, Yizheng City, Yangzhou City, and Da'an Village, Baimi Town, Jiangyan District, Taizhou City.

### (5) industrial cluster model

Although the area does not have the basis of rich resources in other villages, it can build industrial clusters with a certain scale and influence with the opportunity of E-commerce to form a spatial layout of industrial agglomeration. Typical cases of this model are: Yidong Village, Dongwang Town, Guanyun County, Lianyungang, Qidu Village, WudTown, Peixian County, Xuzhou City, Volkswagen Village, Gengche Town, Sucheng District, Suqian City, and Qian Village, ZhuZe Town, Liyang City, Changzhou City.

### (6) self-production and self-marketing mode

Network business in their own purchase, organization of production, their own sales in the E-commerce platform. Typical cases of this model are: Shashi Town, Suining County, Xuzhou City, Qintong Address Village, Qintong Town, Jiangyan District, Taizhou City, and Zhangnian Village, Huangtang Town, Danyang City, Zhenjiang City.

### (7) self-production and order receiving mode

Network merchants lack the basis of self-production, and sign orders contracts with farmers, farmers do not directly participate in the sales link mode. Typical cases of this model include: Qidu Village, WudTown, Peixian County, Xuzhou City, Shipai Village, Baima Town, Lishui District, Nanjing, Qianshan Village, Yangcheng Lake Town, Xiangcheng District, Suzhou, etc.

### (8) Mutual benefit and symbiosis type

Centering on the characteristic industries of the demonstration village, the upstream and downstream businesses serving the industry are derived, and different links in the industrial chain cooperate with each other and develop together. Network merchants lack the basis of self-production, and sign orders contracts with farmers, farmers do not directly participate in the sales link mode. Typical cases of this model are: Crystal Village, Jingqiao Town, Lishui District, Nanjing, ambition Village, Chengdong Town, Hai'an City, etc.

## 2.2.3. A New Form of the E-commerce Industry under the Influence of the 2020q 1 Epidemic

Affected by the COVID-19 epidemic, many agricultural products are not sell, and many farmers face the dilemma of reduced income or even loss and bankruptcy. During this period, some new methods and new forms have emerged in the rural E-commerce industry:

### (1) County county magistrate live with goods

All kinds of short video platforms have invited leading cadres from poor villages and counties to broadcast live with goods. They "endorse" characteristic agricultural products in their

hometown and live live with major food celebrities. This new model of carrying goods is both refreshing, and also establishes a high degree of consumer trust in products.

#### (2) stays home and buying food

Many E-commerce platforms and logistics companies create green channels to help farmers solve sales problems, open the "big channel" of agricultural products into the city, help "vegetable baskets" successfully reach the hands of residents, and stabilize production and supply. For example, Pinduoduo has opened the "Fruit and Vegetable Express", connecting 16 hospitals in 7 cities in Hubei Province, distributed more than 100 tons of fruits and vegetables in Wuhan, and allocated a special subsidy of 1 billion yuan to reward enterprises that provide material security to areas with serious epidemics. Alibaba also establishes a green supply chain to help farmers start special distribution lines for agricultural products, while consumers can order online through E-commerce platforms. This zero-contact trading method, to help farmers find through sales, can also give full play to the advantages of E-commerce "online up and down order, convenient distribution".

#### (3) Time-limited promotion activities

In view of the problem of unsalable agricultural products, some local governments and local E-commerce public service centers combined with the actual situation, launched special poverty alleviation activities such as "house" limited time kill and limited time kill, increase the special publicity of the platform and promote the effective connection of the market demand of unsalable agricultural products.

### 2.3. Overview of Product Diversity

#### 2.3.1. Definition of Product Diversity

According to the definition of Bilal scholars on product diversity, product diversity can be analyzed from product types and product quality two dimensions, they think that the improvement of existing products can be called "quality improvement", when improving existing products cannot meet the market needs and develop new products, this situation can be called "type increase". This claim has been recognized by most scholars.

#### 2.3.2. Reasons for Product Diversification

However, the agricultural and sideline products and handicraft products produced in rural areas have certain seasonal, dispersion and uncertainty. With the introduction of E-commerce into the countryside, the production, circulation and sales of products have undergone profound changes, expanding the sales channels of agricultural products and providing more possibilities for the diversification of rural products. However, the production of highly concentrated product homogenization, possible internal vicious competition, also exposed some product homogenization and quality problems, make it difficult to sustainable development in the fierce market competition, has a negative impact on the development of rural E-commerce, which is also the prominent problem restricting the in-depth development of rural E-commerce. Solving this problem not only enables more farmers to increase their incomes and start businesses and find jobs, but also provides a practical way for strengthening the prominent shortcomings in agriculture, rural areas and farmers.

#### 2.3.3. Specific Factors for Product Diversification in the Sub-business Background

At present, scholars have found many influence factors affecting the development of rural E-commerce, such as products, logistics, policies, talents, capital, infrastructure and spatial location, from different perspectives, and the influence degree of these factors will change. This paper mainly aims to improve the diversity of rural E-commerce products, find ways to solve the problem of product homogenization, and takes the change of product type and quality as the measure of product diversity improvement degree. Therefore, according to the China E-commerce development report and the experience of existing scholars, select rural network

sales product supply chain, rural electricity resources support and regulatory environment, electricity, government support six dimensions of 13 subdivision indicators, using factor analysis of various factors to improve the ability of product diversification, in order to promote the high quality development of rural E-commerce.

### **3. Construction of the Index System of E-commerce**

#### **3.1. Principles of Selection of Product Diversification**

In order to make the obtained data more suitable for the actual situation, the principles of scientific, systematic and quantifiable nature should be followed when constructing the degree of product diversification and improvement.

##### **3.1.1. Principles of Learning**

The evaluation index system of the diversification of products must follow the economic rules, based on scientific methods and tools, and clear conclusions can be drawn through observation, testing and evaluation. The index system is relatively objective, in order to truly reflect the development state of the system studied, and to measure the diversification of products in all aspects.

##### **3.1.2. Systematic Principle**

The factors affecting the improvement of product diversification are independent and complementary to each other. They jointly form an organic whole to promote product diversified development under the E-commerce environment. They must be regarded as a whole, systematically analyzed, and finally achieve the overall optimization of product type and quality.

##### **3.1.3. Quantifiable Principles**

The authenticity and reliability of data are prerequisite and important guarantees for analysis and require a large amount of statistics. The selected indicators shall have quantitative characteristics. On the premise that the index highly reflects the evaluation object, the index data can be obtained directly or indirectly to ensure the execution of the evaluation. At the same time, the source of the data must be authoritative to ensure the correct assessment of the research subjects.

#### **3.2. Establishment of Index System of Product Diversification Degree**

The evaluation index variables selected in this paper are listed in the following table:

(1) Rural E-commerce system: the development level of local E-commerce is an important factor affecting the improvement of product diversification. E-commerce has broadened the sales channels of rural products, and the ability to obtain market information through new channels of E-commerce provides more possibilities to improve the diversity of products. The development level of E-commerce can be measured by the number of electricity bases, leading E-commerce bases and the operation of E-commerce public service centers.

(2) Rural product brand building: The dissemination of brand culture can improve brand awareness and enhance people's familiarity with the brand. Good brand image can bring a strong competitive advantage to the merchants. In order to retain customers and enhance their customer loyalty, merchants with a long-term vision will make more efforts on their products, and pay attention to the improvement of product quality and the research and development of new products to promote product diversification.

**Table 1.** Evaluation of evaluation variables and indicators

Rural E-commerce product diversity factors	The corresponding indicator name	Index dicindication
Rural E-commerce system	Number of E-commerce bases and leading E-commerce companies	X1
	Operation status of the E-commerce public service center	X2
Rural product supply chain	Rural product brand construction	X3
	Deep processing degree of products	X4
	Mechanized degree of product production	X5
Regulatory environment	Product quality traceability system	X6
	Product quality and safety certification	X7
Rural logistics system	The distribution of E-commerce logistics outlets	X8
	Cold-chain storage capacity and transportation capacity	X9
E-commerce main subject	Consumer needs and feedback	X10
	E-commerce operation ability of merchants	X11
Government support for efforts	Policy support situation	X12
	Financial subsidies and financial efforts	X13

(3)Deep processing degree of products: the previous agricultural products were mainly sold in the original form, and the economic benefits were relatively low. Cultivate deep processing industry chain of agricultural products, can not only add new functions, new features for the original products, effectively enhance the added value of products, but also will create a complete sense of new products, meet people's demand for agricultural products, and then optimize the industrial layout, boost the agricultural products from beginning to deep, from the high quality development of thick to fine.

(4)Mechanized operation degree of product production: improving the level of product mechanization operation can promote the product quality. Advanced machinery and equipment can meet the higher requirements for product precision, promote the automation and intelligent production mode in a large range, and take the road of a virtuous cycle of development.

(5) supervision environment: establish and improve the product quality traceability and quality and safety certification system, strengthen the strict control of product quality, can promote the quality inspection and management of enterprises and merchants to a certain extent, and is conducive to the standardization of rural E-commerce products.

(6) Rural logistics system: The construction of E-commerce infrastructure such as logistics will also increase more possibilities to product diversity. The expansion of logistics cover surface can save more transportation costs for merchants and increase the investment in product quality and type. The rise of cold chain logistics is to make up for the logistics shortcomings for the storage and transportation of fruits and vegetables, so that the agricultural products are always in a low temperature environment before being delivered to consumers, and ensure the quality of the agricultural products sold on the E-commerce platform.

(7) E-commerce subjects: consumers and online shop merchants are the participating subjects of E-commerce. In order to make consumers satisfied with the products or services of the business, they must understand the specific needs of consumers and the evaluation after the



use, and then make corresponding adjustments to their own products or services. Nowadays, consumers are more and more pursuit of personalized development, in the face of online and offline multiple choices, they are not limited to a single product style. In order to establish a good customer relationship with loyal customers and potential customers, merchants constantly increase the proportion of investment in innovation elements, actively mobilize human, financial and material resources related to innovation, and accelerate the speed of research and development and listing of new products. The improvement of the E-commerce operation ability of E-commerce will enable merchants to retain the hearts of customers through commodity display and promotion activities, create more competitive new products, and improve the diversification of product types.

(8) Government support: the government's support for the direction of "Internet + agriculture" in terms of financial subsidies and policies will provide favorable conditions for more small and micro businesses, help businesses solve financing difficulties, which can stimulate their entrepreneurial enthusiasm, promote the spatial agglomeration of E-commerce industry and develop into diversified development.

#### 4. Conclusion

Based on the field research of Jiangsu Province, this paper constructs the model of product diversification in rural E-commerce environment. Leading electricity, electricity base, electric commerce association and rural electricity public service center in the process of rural E-commerce development to provide such as logistics warehousing, capital, equipment, talent training, design and development, project support, marketing, experience communication services, the "electricity village" product diversification plays the role of resource support.

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