

## The Choice of Rural E-commerce Terminal Logistics Distribution Mode based on Cost Analysis

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**Keywords:** rural e-commerce; terminal distribution; cost analysis.

**Abstract:** Rural e-commerce should use network resources to serve rural construction and development. It is an important platform connecting county, town and agriculture. Rural e-commerce needs and brings information and mobile construction to “Taobao Village”. The representative e-commerce platform is booming. Many e-commerce platforms such as Taobao, Jingdong, Suning and Jieduoo compete for the rural market. Rural e-commerce has become an important way to increase farmers' income, improve rural industries and raise farmers' consumption levels. This paper mainly analyzes the distribution mode of rural e-commerce, and analyzes the cost of rural e-commerce terminal distribution. With the increase of quantity, the cost of self-built logistics of e-commerce is decreasing, while other logistics costs are rising, but whether it is electricity Commercial enterprises self-built logistics centers or third parties to undertake terminal distribution tasks, can not be separated from the support of policies, the quality of rural personnel. Therefore, measures were proposed to encourage e-commerce enterprises to go to the countryside, establish experience centers, establish uplink channels, develop third-party logistics, strengthen infrastructure construction, increase training, and improve the level of rural electric merchants.

### 1. Introduction

Rural e-commerce should use network resources to serve rural construction and development. It is an important platform connecting county, town and agriculture. Rural e-commerce needs and brings information and mobile construction. It is represented by “Taobao Village”. The e-commerce platform has flourished, and many e-commerce platforms such as Taobao, Jingdong, Suning and Jianduo have competed for the rural market. Rural e-commerce has become an important way to increase farmers' income, improve rural industries and raise farmers' consumption levels. In recent years, rural e-commerce has achieved vigorous development. In 2018, the national rural network retail sales reached 1.37 trillion yuan, an increase of 30.4%; the agricultural product online retail sales reached 230.5 billion yuan, an increase of 33.8%, and the rural Internet penetration rate was 38.4%, the ratio of administrative village to fiber is 96%, and the proportion of broadband in poor villages exceeds 94%. The development of rural e-commerce is also inseparable from the development of logistics and distribution. The two merges with each other and gradually form an industrial cluster and promote each other. By the end of 2018, the national direct mailing rate exceeded 98.9%, and 323 express logistics parks were built. Express township network coverage the rate reached 92.4%; in the whole year, the rural areas received a total of 12 billion pieces of express shipments, supporting industrial products to the countryside and agricultural products to enter the city more than 700 billion yuan. The village-level e-commerce service station covers most cities in the country, and the e-commerce service system is constantly improving. Rural e-commerce has promoted the development of rural areas to a high-quality development stage to a certain extent.

## **2. Status of China's Rural E-commerce Logistics Distribution System**

### **2.1 Analysis of Rural E-commerce Logistics Distribution Mode**

In the development of rural e-commerce, the consumption level of rural areas has reached a certain scale, especially in the eastern region. However, the current rural e-commerce logistics distribution mainly uses well-known e-commerce enterprises to self-operate logistics distribution, third-party distribution (establishing self-reporting cabinets) or two. The company conducts integration and joint distribution.

#### **(1) Self-operated distribution system of well-known e-commerce enterprises**

In order to maintain customer loyalty, e-commerce companies establish a distribution system through the enterprise's own links, so that the company's products can be sent to consumers, and rural products can be upgraded to the platform to realize the sales of rural self-operated products. More typical is Jingdong Logistics, Jingdong Logistics System establishes county distribution system, forms a distribution mechanism from county to town to village, establishes Jingdong self-operated store, and displays products on Jingdong platform to rural consumers to achieve sales. These well-known e-commerce companies have a strong logistics system and financial strength to build a relatively complete distribution system. This kind of distribution mode can achieve effective management, information communication is also convenient, can meet customer needs well, and customer experience is better. Satisfaction is relatively high, and two-way intercommunication is achieved, but there are also high costs, and distribution benefits are difficult to guarantee, especially in rural areas that are more dispersed.

#### **(2) Third party delivery**

Third-party distribution, also known as the third-party logistics distribution model, refers to the logistics operation mode of logistics services by the suppliers of logistics services and third parties other than the demand side. A third party refers to an external service provider that provides some or all of the logistics functions of both parties to the logistics transaction, and is a form of logistics specialization. The company does not own any of its own logistics entities, and the goods are purchased, stored and distributed to third parties. This type of distribution mode e-commerce companies do not need to establish their own logistics system, the terminal distribution to third-party professional logistics companies to carry out, on the one hand, can reduce their own logistics services, but also can play the professional management level of logistics companies, but Because it is not directly communicating with customers, it is unable to control logistics distribution management. At present, in the rural areas of China, where the e-commerce business is relatively developed, the express delivery logistics companies directly enter, and some regions carry out delivery services through the China Post network. At the same time, services are provided in some areas through the establishment of self-reporting cabinets.

#### **(3) Common delivery method**

There are multiple e-commerce companies sharing a third-party logistics service company or terminal point, so that everyone can share the cost, thereby reducing costs and costs. Third-party logistics companies have also realized the distribution from scattered to common distribution, reducing their logistics costs and daily expenses, increasing the attractiveness of participation and reducing risks, and achieving economies of scale. However, in this kind of distribution, e-commerce companies cannot achieve limited perception or control in customer experience and distribution control, thereby reducing customer service quality.

### **2.2 Analysis of the “Last Mile” Terminal Distribution Mode of Rural E-commerce**

Rural e-commerce logistics distribution mainly adopts three forms: self-operated logistics distribution, third-party logistics distribution and common distribution. However, no matter what kind of distribution mode is adopted, the “last mile” terminal distribution mainly adopts self-raising mode and door-to-door martial art. Delivery mode, and the combination of the two. Specifically, it is mainly carried out in the following ways:

(1) Self-built experience center for e-commerce companies. The center mainly sells e-commerce companies' own products, and provides on-site experience and services, mainly in the form of chain stores or experience stores. In the distribution, large or large products provide door-to-door service, and small items are carried out by self-lifting.

(2) Establish logistics points by third-party logistics companies. Third-party logistics companies such as Shentong, Zhongtong, Huitong and Yunda establish a courier site according to the amount of rural business, using a combination of self-lifting and door-to-door distribution, but the overall self-raising.

(3) Postal cooperation mode. There are 57,136 postal service bureaus in the country, including 41,196 in the rural bureaus, and 34,044 bureaus providing postal full-featured services. The number of postal mailboxes in the country has reached 225,846, the number of postal newspapers and magazines has reached 49,053, and the number of philatelic products has reached 20,224. The number of postal bookings reached 29.29 million. Due to its wide network coverage, China Post has corresponding postal points in rural areas, mainly using door-to-door delivery methods. However, China Post has problems such as high cost and long cycle.

(4) Cooperate with local stores. The e-commerce enterprise self-built logistics center has a high cost. By setting the logistics point in the existing local stores, it does not need manpower expenditure, and the local stores carry out the distribution, and the self-raising method is mainly carried out.

### **3. Analysis of Rural E-commerce Terminal Distribution Problem based on Cost**

The establishment of rural e-commerce distribution needs to consider the cost and benefit of the terminal. From the current four types of terminal cooperation, whether it is self-reporting or door-to-door distribution, as e-commerce companies and logistics companies choose what way to carry out It should be combined with local distribution and other accounting for analysis and analysis.

#### **3.1 Cost Analysis**

(1) E-commerce enterprise self-built experience center. The establishment of such terminal distribution points mainly comes from the fixed cost  $C_z$  and the labor cost  $CR$  of the rent of the experience center and the vehicle. The total cost we use is represented by  $CS$ .

$CS = C_z + CR$ , where the labor cost  $CR = CJ$  (basic salary) +  $C_2$  (the commission), the commission is based on the delivery order amount.

Therefore,  $CS=C_z+CJ+K*Q$ , where  $K$  is the commission amount and  $Q$  is the delivery quantity.

(2) Postal cooperation mode or local store cooperation or establishment of logistics points by third-party logistics companies. The cost of these three terminal distribution methods is mainly derived from the single-volume ratio for e-commerce companies or logistics companies. Postal cooperation mode, local store cooperation and third-party logistics points have different commission rates due to different distribution requirements and channels. Generally, the proportion of postal cooperation is higher than other cooperation methods.

$CL=KL*QL$ , where  $CL$  is the total cost,  $KL$  is the commission amount or ratio, and  $QL$  is the delivery amount.

Comparing the two types of e-commerce enterprise self-built experience centers and logistics points established by third-party logistics companies, the sales product categories, customer choices and experiences, staff salaries and commissions are different. In particular, the choice of the address of the self-built experience center of the e-commerce enterprise needs to be comprehensively considered in terms of distribution, customer concentration, and convenient transportation. The cost is generally higher than the cost of the logistics company's self-built logistics point.

#### **3.2 Case Analysis**

The above analysis of the cost of the four modes, combined with the rural real distribution costs, we now assume that in a rural area to establish an experience center rent of 2,000 yuan, the basic

salary of employees is 2,500 yuan. The weight is below 20KG and the self-lifting method is adopted. The experience center is 1 yuan per order. The proportion of postal cooperation mode is 5 yuan per order, the local shop cooperation mode is 2 yuan per order, and the logistics point is 3 yuan per order. From the above data, we can draw the corresponding graph. Specifically, as shown in Figure 1. As can be seen from the figure, in the case of low order quantity, it is necessary to select third-party logistics, postal cooperation and other cooperation according to the local logistics situation, but as the order quantity increases, the cost of the experience center is for the e-commerce enterprise. It is lower than other terminal delivery methods.

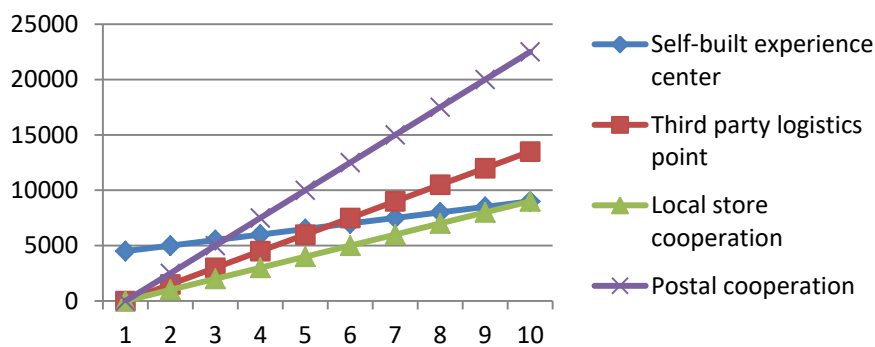


Figure 1. Four terminal distribution method cost charts

### 3.3 Improve Rural E-commerce Terminal Distribution Measures

(1) Encourage well-known e-commerce companies to establish experience centers in villages and towns. The government needs to propose certain policy measures to guide e-commerce enterprises to establish an infrastructure for the downstream distribution of agricultural products, and provide financial and technical support and assistance to e-commerce enterprises, carry out various exchanges and exchange experiences, and carry out rural e-commerce. Personnel training, providing personnel quality, encourage farmers to participate in logistics work; e-commerce enterprises should also actively explore the potential of the rural market and establish customer-satisfied sales terminals. Actively develop the agricultural product logistics industry, reduce distribution costs, and establish an experience center that meets the needs of the rural market.

(2) Strengthen the construction of infrastructure and improve the quality and quantity of rural online procurement. First of all, the concept of e-commerce, mobile payment, etc. should be introduced to all corners of the rural areas, so that farmers can buy high quality and low-price products, continue to promote the construction of rural roads and other infrastructure, improve distribution efficiency, and solve logistics and transportation problems.

(3) Focus on the development of third-party logistics. The construction of third-party logistics provides an important channel for e-commerce enterprises to avoid risks, and promotes the effective allocation of resources, and realizes the expansion of third-party logistics from point to point, thus promoting the development of e-commerce. At this stage, we can use all available policies and measures to provide coverage for rural customers and improve customer experience.

(4) Intensify training and improve the level of rural electric merchants. The most important development of rural e-commerce is talents. The number of talents and the level of understanding are the key factors for the development of rural e-commerce. In this respect, it is necessary to integrate the forces of the government, enterprises, social organizations, etc., and use the online and offline platforms to cultivate A group of comprehensive talents who understand e-commerce and understand the characteristics and market of agricultural products can realize the comprehensive improvement of farmers' skills and business capabilities, attract back to carry out innovation and entrepreneurship activities, enhance farmers' sense of acquisition and increase farmers' income.

## 4. Summary

The development of rural e-commerce is of great significance to the state, society and even e-commerce enterprises. Rural e-commerce has changed the concept of farmers, changed the formation of rural production organizations, promoted the export and entry of rural products, and formed the "Taobao Village". The development of the rural industrial cluster represented by the whole has greatly improved the income of farmers and the products brought by e-commerce. Rural e-commerce has become an important way for the high-quality development of rural areas and the realization of a well-off society. This paper mainly analyzes the distribution mode of rural e-commerce, and analyzes the cost of rural e-commerce terminal distribution. With the increase of quantity, the cost of self-built logistics of e-commerce is decreasing, while other logistics costs are rising, but whether it is electricity Commercial enterprises self-built logistics centers or third parties to undertake terminal distribution tasks, cannot be separated from the support of policies, the quality of rural personnel. Therefore, measures were proposed to encourage e-commerce enterprises to go to the countryside, establish experience centers, establish uplink channels, develop third-party logistics, strengthen infrastructure construction, increase training, and improve the level of rural electric merchants.

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### **References**

- [1] Yu Jingjing. Analysis and Suggestions on Rural Logistics Development under E-commerce Environment [J]. Heilongjiang Agricultural Science, 2019 (08): 145-147.
- [2] Zhao Ying. Research on Profit Maximization Plan of Rural E-commerce Logistics Distribution [J]. Business Economics Research, 2019(14): 94-97.
- [3] Li Huawei. Research on System Dynamics of Rural E-commerce Industry Cluster Development [D]. Hebei University of Economics and Business, 2019.
- [4] Yang Na. Common Distribution Mode and Decision Path of Rural E-commerce Terminal Logistics[J]. Journal of Wuhan Commercial College,2019,33(01):37-41.
- [5] Xing Yaohua. Some Thoughts on the Opportunities and Challenges of Rural E-commerce Development[J]. Journal of Qiqihar Teachers College,2018(06):68-69.