

# Research on Rural E-commerce Logistics System from the Perspective of Regional Economic Differences

Pengchu Lin

Department of Business Management, School of Internet Economics and Business, Fujian University of Technology, Fuzhou, 350014, China

**Keywords:** Regional economic differences; Rural e-commerce; Logistics system

**Abstract:** The development level of EC(Electronic Commerce) and logistics industry in a region is directly related to the regional economic level. The regions with higher economic level often have better EC development and perfect logistics system construction, and vice versa. China is a developing country, and there are great differences in regional economic levels among the eastern, northeastern, central and western regions, as well as between regional core cities and marginal cities. The development of rural EC and rural logistics has brought new ideas to solve the imbalance of regional development and revitalize the rural economy. In order to solve the problem of unbalanced regional economic development in rural cities, a series of policies and measures such as "precise poverty alleviation" and "rural revitalization" have been implemented. The construction of rural EC logistics system is an important measure to solve the problem of regional economic development differences and promote rural economic development. The development of agricultural modernization can promote rural infrastructure and information construction, and provide strong support for rural EC logistics operation.

## 1. Introduction

In China's economic development, the logistics industry is an extremely important component and an important reference for measuring the level of modernization development of a country or region. The rapid development of EC has played an irreplaceable role in regional economic development, and it is positively proportional to the level of regional economic development. The two promote and influence each other. The level of EC and logistics industry development in a region is directly related to the regional economic level. Regions with higher economic levels often have better EC development and complete logistics system construction, and vice versa. China is a developing country[1]. There are great differences in regional economic levels between the eastern, northeastern, central and western regions, as well as between regional core cities and Edge city [2]. Moreover, there are significant economic disparities between rural and urban areas in China, and there has always been a problem of weak infrastructure construction. In recent years, with the improvement of the economic level in rural areas, rural EC has become an important blue ocean in the sinking market, and the demand for rural logistics has continued to increase. The introduction of EC to the countryside can accelerate the speed of agricultural products entering the circulation network. However, logistics distribution, as one of the two wings of EC development, has become a weakness and bottleneck in this emerging industry, restricting the healthy development of rural EC [3-4]. Although the logistics industry is in a stage of sustained development, its development is not balanced. Urban logistics and rural logistics are significantly more prosperous, and there is a phenomenon of one-way output in rural logistics. The development of rural EC and rural logistics has brought new ideas to address regional development imbalances and revitalize the rural economy. Due to the dispersed, seasonal, and diverse nature of agricultural product production, as well as the transportation characteristics of high loss and difficulty in preservation of fresh agricultural products, higher requirements are placed on processing, packaging, and transportation, making rural logistics face more risks and difficulties. In order to solve the problem of unbalanced regional economic development in rural and urban areas, a series of policies and measures such as "Targeted Poverty Alleviation" and "rural revitalization" were implemented [5]. Developing rural EC logistics

can promote economic development in rural areas, and the construction of rural EC logistics system is an important measure to solve the problem of regional economic development differences and promote rural economic development. The development of agricultural modernization can promote the construction of rural infrastructure and information technology, providing strong support for the operation of rural EC logistics.

## 2. Development Status of Rural E-commerce Logistics

With the continuous development of rural EC, the demand for online shopping of rural residents is increasing, and the demand for rural logistics is increasing. Because rural EC has promoted the effective economic development, the purchasing power of rural residents has also been effectively improved. The development of EC has far exceeded people's imagination, and the gap between online shopping and offline shopping has been quickly equalized [6]. Since 2018, China has been the largest online trading market in the world. According to the data of China Internet Network Information Center, as of June 2022, China's Internet penetration rate reached 82%, the number of netizens reached 1.44 billion, and the number of people who participated in online shopping exceeded 900 million. Table 1 shows the scale of netizens and online shopping users in China.

Table 1 Scale of Internet users and online shopping users in China

Year	2018	2019	2020	2021	2022
Network user scale	8.25	9.01	10.23	11.25	12.49
Online shopping user scale	6.58	7.11	8.56	10.15	11.47

Under the current slowdown in China's EC growth rate, rural EC has already become the focus of competition among major EC giants. With the decrease of EC market increment, the pattern of three parts of Taobao, JD and Pinduoduo has been formed. Pinduoduo itself started from the sinking market. At present, Pinduoduo has not built its own logistics system. Taobao has a "Cainiao" logistics platform and a large number of shares in "four connections and one arrival". JD has always insisted on investing huge resources to build its own logistics system, all of which are to better seize market share [7].

The construction of logistics system can provide a platform for the sales of rural network products, expand product sales, and major EC platforms also pay attention to the development of rural EC. Among them, Taobao's "Cainiao Logistics System" and JD's "JD Logistics" are gradually covering rural areas. Therefore, in the process of strengthening the development of rural commerce, relevant personnel should actively study the characteristics of rural population living and information construction, construct scientific and reasonable physical transportation methods, and promote the stable and balanced development of rural EC logistics[8].

## 3. Problems in the Construction of Rural E-commerce Logistics System

### 3.1. Logistics informatization problem

With the improvement of economic level and scientific and technological progress, many industries have entered the ranks of informationization and automation. For the underdeveloped central and western regions, labor-intensive industries still dominate, and manufacturers are more accustomed to replacing new technologies and equipment with cheap labor [9]. The informatization level of logistics is the key to measure the development level of EC. Under the background of informatization and automation, information technology and intelligent equipment are applied to the information management of logistics, and users can find logistics information, track logistics trends and estimate the delivery time of products anytime and anywhere on the EC platform [10]. In rural areas, the logistics industry employees are mainly cheap labor. Some logistics companies are even unwilling to accept these delivery services. Rural logistics connects crop production with the market,

and then realizes the industrialization and modernization of agricultural production in China. The development of logistics industry promotes and drives the construction of agricultural production and operation service system, and accelerates the development of agricultural regionalization and specialization. In addition, many rural economic cooperation organizations in China are small in scale and weak in strength, so they can't undertake the heavy responsibility in the process of "bringing in and sending out" rural EC logistics.

### **3.2. Infrastructure issues**

The transportation in economically developed areas is convenient, and product transfer is fast. Multiple modes of transportation can be used, such as land, water, railway, and air. The transportation network system in rural areas is poor, and the product transportation roads are mostly dirt and gravel roads. Even many rural areas are not connected to railways, resulting in slow transportation efficiency and high safety hazards. The GDP of China's most economically developed eastern region has reached the level of moderately developed countries, and the economy of the central and western regions is still at the entry level of developing countries, not to mention the rural areas in the Underdevelopment of the central and western regions[11]. The backwardness of infrastructure is mainly manifested in poor transportation conditions, underdeveloped rural transportation networks, and many remote areas even have only dirt roads, with most areas without access to railways. Secondly, the storage facilities are outdated. Considering economic benefits, storage centers are often built in cities and surrounding areas to facilitate logistics transportation in cities with higher demand, which increases the transportation time for rural logistics. Finally, cold chain logistics are lagging behind, and fresh agricultural products require high storage conditions. In order to preserve quality, cold chain transportation is necessary. However, rural areas lack complete cold chain facilities, and due to the dispersed population in rural areas, distribution costs are due to the long distance. The logistics and warehousing facilities in urban areas are located in areas such as city centers and transportation hubs, while in rural areas, the construction conditions of warehousing centers are poor, resulting in difficulties in product operation and longer logistics transportation times.

## **4. Development Measures of Rural E-commerce Logistics System Construction**

### **4.1. Strengthen the construction of rural e-commerce logistics infrastructure**

Government departments should play a leading role in guiding major EC giants to expand their business in rural areas or cooperate with enterprises in rural areas, optimize and integrate urban and rural infrastructure resources, and strengthen the application of information technology. The central government has a clear plan for optimizing the logistics supply chain and building a smooth long-term layout of agricultural products logistics network. Specifically, the local government's construction of rural EC logistics infrastructure is mainly improved from three aspects, as shown in Figure 1.

The government should strengthen the high-level design of rural logistics information and build a rural EC information platform with authority, coverage and timeliness. Including the establishment of rural products and logistics market monitoring and information publishing and sharing platform, and constantly promote the process of mobile information platform. The government should provide necessary financial support and policy encouragement for the development, set up special funds in line with the actual industrial development, provide convenience for it in taxation and quality inspection, lower the threshold, formulate incentives and encouragement policies to promote the development of regional economy of EC logistics, and give preferential treatment in land acquisition and accreditation.

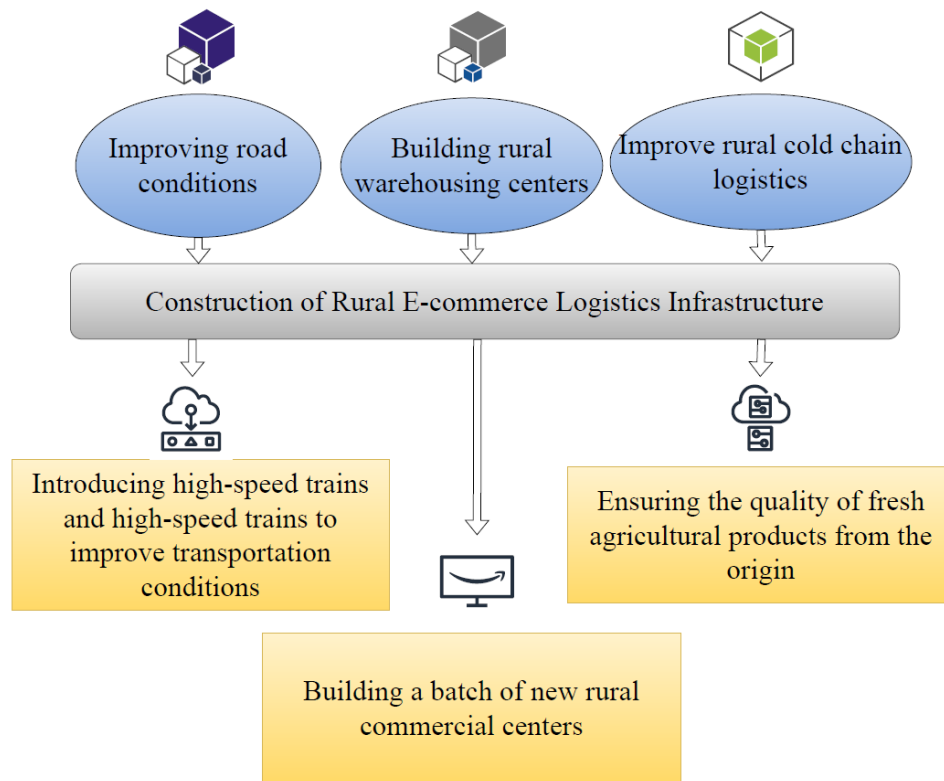


Figure 1 Construction of rural EC logistics infrastructure

#### 4.2. Improving the Informatization Level of Rural E-commerce Logistics

To comprehensively promote informatization construction, the government needs to take the lead in establishing and improving the rural EC logistics informatization platform, creating a public information platform that integrates data exchange, information release, and other functions, and striving to achieve the collection, release, and transmission of agricultural product EC information. Activate secure online payments and continuously improve local online payment platforms. Online payment platforms should be combined with commercial banks and financial institutions as much as possible, promote multiple payment methods, and achieve a combination of online and telephone payments. The dispersed and temporary characteristics of rural EC logistics are very prominent. Without information technology support, it is difficult to achieve a logistics distribution model with the same journey, same vehicle, and different service objects. On the one hand, the government needs to strengthen the top-level design of rural logistics informatization and build a rural EC logistics informatization platform with strong authority, wide coverage, and timeliness. Continuously strengthen the supervision and management of rural logistics markets, continuously increase the security and reliability of online education, improve the trust of online transactions in the hearts of residents, and promote the growth of logistics demand. At the same time, the government should use funds to support the construction of rural wholesale markets, optimize rural logistics routes, increase rural residents' access to information, reduce inefficient waste caused by information asymmetry, and create an efficient and interconnected rural logistics system from start to finish.

#### 4.3. Promote rural e-commerce logistics

Rural EC has the characteristics of large distribution space and lack of regularity, which will increase unnecessary costs in the process of logistics and transportation. It is necessary to strengthen the innovation of rural logistics transportation and establish a standardized and perfect rural logistics system. Promoting rural EC mainly includes two aspects. On the one hand, it helps farmers to use the Internet to sell agricultural products and broaden sales channels. On the other hand, it is to promote the penetration of EC into rural areas, support EC giants to "go to the countryside", develop rural markets and liberate rural consumption power. To ensure that there are

laws to follow in the development of EC logistics, the laws must be followed, the law enforcement must be strict, and the local order should be standardized. The specific measures include: First, to ensure the safety of EC logistics transactions, the relevant government departments should establish regulations to ensure the standardization of online transaction contracts and ensure the validity, legality and confidentiality of contract data. In the surrounding counties and towns, the recognition and popularity are high, and they are familiar with the local traffic conditions. Secondly, these enterprises are also easy to innovate their business models according to the characteristics of various places, introduce advanced logistics concepts, and realize standardized management of enterprises.

## 5. Conclusions

The development of rural economy and logistics level is closely related. Promoting the application of modern logistics methods in rural areas is a necessary path in line with the development of rural economy. How to utilize modern modes and models to build rural logistics systems and improve logistics efficiency is an extremely important research topic. The construction of the rural EC logistics system is a systematic project that involves many links, which requires joint efforts from all parties to fill in the gaps. China is a developing country with unbalanced economic development. Developing rural EC logistics is an effective way to promote rural economic development and achieve Common prosperity. Government departments, rural residents and major manufacturers should actively participate in it. In traditional rural logistics, logistics outlets are mostly set up at nodes such as supermarkets and post offices, where farmers pick up goods or use rural passenger buses for delivery. This distribution method is not only inefficient, but also unreasonable in resource allocation. The government provides financial services for rural project construction, develops the rural economy, realizes modern agricultural construction, establishes a large-scale production model, and avoids the consumption of logistics resources by retail product network sales. At present, there are problems in the construction of the EC logistics system in rural areas, such as outdated infrastructure, insufficient talent, and low level of informatization. The government should further play its leading role in providing funding, talent, and technical support for the construction of the EC logistics system in rural areas.

## References

- [1] Juyin Z, Jia Li. Research of Rural E-commerce Logistics Modes in Anhui Province Based on Poverty Alleviation Perspective[J]. *Logistics Engineering and Management*, 2022, 16(4):25-51.
- [2] You Jing Chen Haonan. A Study on Establishing a Cross-border E-commerce Logistics System for Agricultural Products in Sichuan Province in the Context of the Belt and Road Initiative[J]. *Contemporary Social Sciences (English)*, 2021, 6(5):13-28.
- [3] Shuo L. On Promoting the Construction of Logistics Network System of Rural E-commerce[J]. *Journal of Heze University*, 2021, 35(14):19-41.
- [4] Ning Z. Construction of Service Capacity System of Rural E-commerce Logistics Enterprises[J]. *Agricultural Engineering*, 2022, 36(12):41-50.
- [5] Guiyuan Huang, Cho Sam-Hyum. Research on Quality Evaluation of Rural E-commerce Logistics Service[J]. Francis Academic Press, 2019, 25(4):36-46.
- [6] Enjuan Z. Research on the Development Path of Rural E-commerce Logistics from the Perspective of Supply Chain Management[J]. *Special Zone Economy*, 2019, 33(16):35-40.
- [7] Jianping Z. Developing Rural E-commerce Logistics Promoting Rural Revitalization Strategy[J]. *Logistics Sci-Tech*, 2019, 19(5):10-19.
- [8] Jing Ye, Ling Xue, Qi Hong, et al. Research on the Problems of Huangshan's Rural E-commerce Logistics under the Background of Internet Plus Economy [J]. *Logistics Engineering and*

Management, 2021, 36(14):19-35.

[9] Jing L. Analysis of the Development of E-commerce Logistics in Rural Areas—Take the Town of Should Be Held as an Example[J].Logistics Engineering and Management, 2022, 44(20):31-42.

[10] Xu Z, Yangyan S, Xiaoqiao Li. Research on the Pattern and Risk Evaluation System of "E-commerce Platform + Rural Logistics Finance"[J].Science & Technology and Economy, 2019, 20(11):19-32.

[11] Wang N. Analysis on Regional Development Model of Rural E-commerce [J].Asian Agricultural Research, 2019, 11(7):3-11.