

Original Paper

Study on the Development of Rural E-commerce Logistics “Last Kilometer” Awareness Based on the Background of Rural Revitalization

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Abstract

Under the background of rural revitalization, the living standard of farmers in China has been improving, and rural e-commerce is developing rapidly. However, due to the existence of many problems in rural e-commerce logistics, the development of rural e-commerce has been hindered, especially the “last kilometer” of the distribution link, which is a great limitation to the e-commerce industry, logistics industry and farmers themselves. Therefore, this paper provides a full understanding of the rural e-commerce logistics “last kilometer”, and puts forward relevant suggestions on the existing problems.

Keywords

Rural e-commerce logistics, Last mile, Logistics

1. Introduction

As China’s Internet technology and economic environment continues to grow and develop rapidly, a number of new network e-commerce enterprises have begun to emerge and develop rapidly to support China’s entire modern network of mobile application information technology industry and mobile Internet platform based on the core operation of the business content. At the same time, the gradual development of rural revitalization strategic planning program, making the country’s towns and villages residents almost all join the ranks of online shopping courier services e-commerce, e-commerce services in rural areas, the average daily volume of parcels sent courier pieces is increasing. But the degree of construction of rural express delivery service is far behind the construction of towns, especially in some hilly mountain villages, mountainous cities and remote

western areas of the country. Visible at this stage of rural community e-commerce network construction and improve the rural e-commerce courier circulation market environment between the coordination of the relationship between there are still some difficult coefficients of the institutional dilemma, mainly manifested in the community e-commerce network of the “last kilometer” courier logistics and distribution centers in the field of services in the development of the problem. How to further effectively solve the current bottlenecks in the field of rural logistics in China in the construction of the “last kilometer” is to promote the further development of rural e-commerce is the key to promote the sale of agricultural products, strengthen the urban-rural trade exchanges, and realize the revitalization of the rural industry is of great significance.

2. Literature Review

2.1 Study on Rural E-commerce Development Issues

Yang Jianqiang et al. Scholars’ empirical research results show that the poor transportation security conditions of logistics enterprises limit the efficiency of agricultural products circulation, the low degree of computer informatization construction, and the lack of information security management lead to the low security index of rural e-commerce and the low level of rural e-commerce development. In turn, the development process of rural e-commerce is slow. Zhu Pinwen study that the bottlenecks restricting the development of rural e-commerce are still mainly manifested in the shortage of high-quality talents needed for rural e-commerce, the existing logistics system is insufficient to support rural e-commerce, the degree of branding of agricultural products is low, and agricultural products are backward in standardization, and so on. Li Bo study points out that there are some problems in the development of rural e-commerce in China, mainly including information technology, talent, capital, logistics and other aspects, these short board factors constrain the development of rural e-commerce, and need to be effectively solved.

2.2 Study on the Development Model of Rural E-commerce

Yu Shuang study shows that in order to further promote the integration and coordinated development of rural e-commerce and traditional industries, it is necessary to adopt the main mode of organic combination of online and offline in the actual development of rural e-commerce, so as to promote the sustainable development of rural e-commerce. Liu Jingxian et al. study two typical rural e-commerce demonstration counties under the perspective of co-construction and co-rule, and conclude that under the participation of the government and associations, farmers can participate in the market competition through cooperatives, and provide the development mode of rural socialized services. Wang Xue study concludes that the “Internet + rural e-commerce” model has become a new engine for rural economic growth, and with the help of the Internet, farmers can effectively link the supply of agricultural products with market demand, vigorously develop organic agriculture, rural tourism and other specialty industries, and allow more people to learn about and pass on the excellent traditional rural culture through the Internet platform.. Chen Yu In the context of the sharing economy, the sharing economy

concept is used to optimize the rural e-commerce development model, rationally utilize rural resources, and allow every villager to participate in the transaction of products and services to maximize their value and effectively promote the revitalization of rural industries.

2.3 Study on Countermeasures for the Development of Rural E-commerce

Du Jimeng et al. Scholars suggest combining self-supplied express delivery with third-party express delivery, and at the same time realizing channel sinking in order to increase the width and depth of network coverage. Shi Dehua suggests using emerging technologies such as cloud computing and Internet of Things to build a cloud distribution technology and service platform, improve logistics management functions, enrich modern e-commerce logistics and distribution methods, and promote the innovation of China's logistics industry and the sustainable and healthy development of the e-commerce industry. Wu Feng proposes that China's rural areas should be based on the development of rural e-commerce, combined with the development characteristics of the existing rural trade system, and from the perspective of rural management and development, to create a new B2F model, which is a new model of e-commerce of chain enterprises for farmers.

2.4 Study on the "Last Kilometer" of Rural E-commerce Logistics

Yang Juping Scholar e-commerce logistics in the "last kilometer" as the only direct contact with the end-user stage, there are high distribution costs, low quality of service and other issues, is an important factor affecting the development of e-commerce. Lun Zhaoliang research shows that the main body of e-commerce logistics in rural areas is generally small, the lack of logistics information trading platform, the market-oriented business mechanism is not perfect, and the logistics and distribution of agricultural products is subject to the constraints of the seasonal and fresh characteristics, so that the logistics and distribution has become the biggest bottleneck restricting the development of rural e-commerce. Wang Yuanbo and other scholars build an express information service platform through Internet technology, integrating county and township logistics network resources at one end, and integrating express carrier manpower transportation resources at the other end, realizing two-way transportation between residents, especially e-commerce villagers, and the logistics network, and providing value-added services. Ren Xiaoxiu study proposes that in the "last kilometer" distribution can develop drone distribution mode, give full play to the advantages of drone aerial straight-line distribution, accurate positioning, avoid traffic congestion, etc., the choice of drone distribution is undoubtedly an important way to save costs in the rural e-commerce logistics "last kilometer". The choice of drone distribution is undoubtedly an important way to save costs in the "last kilometer" of rural e-commerce logistics.

Through analyzing the existing literature, this paper finds that there are problems such as imperfect infrastructure construction, low penetration rate of information technology, and low cultural level of farmers in rural areas, which makes it difficult to promote the experience of some of the rural e-commerce demonstrations in China, and there is no way to ensure that the results of the research are universally applicable. The development of the "last kilometer" is a prominent point in the field of e-commerce, so the study of the "last kilometer" is of considerable research significance, and can

further plan the infrastructure involved in the development of the “last kilometer”. The study of the “last kilometer” is therefore of considerable importance in order to further plan for the improvement of the infrastructure, the training of professionals and the support of government policies involved in the development of the “last kilometer”, and to enhance the feasibility and efficiency of the development.

3. E-commerce Logistics “Last Kilometer” Related Concepts

3.1 Rural Logistics

Rural logistics refers to the logistics activities carried out in rural areas, which covers a series of logistics links related to agriculture, such as agricultural production, procurement of agricultural products, transportation, storage, distribution, etc., and specifically includes two parts: rural consumer goods logistics and agricultural production logistics.

3.2 Rural E-commerce Logistics

Rural e-commerce logistics refers to be able to simultaneously meet the local rural residents to complete the purchase of a variety of rural production, living supplies and service products online as well as online provision of processing of agricultural products, online logistics sales of related products and information and other related production and economic activities and services in the field of the need to be able to complete the provision of all types of related commodities for the complete distribution of the set of product packaging, processing, transportation, loading and unloading, warehousing, Distribution, automatic collection and processing of logistics information and transmission services, etc. of the basic functional elements of the logistics product industry.

3.3 The “Last Kilometer” of Rural E-commerce Logistics

The “last kilometer” refers to the final stage of distribution from the warehouse or logistics distribution center to the doorsteps of rural residents. It is the last link in the whole logistics process and the most direct contact with customers. It is characterized by short distance, complex distribution, time window and high service quality.

4. E-commerce Logistics “Last Kilometer” Development Status Quo

In the e-commerce market rapid downturn in the development of the market trend, the construction of perfect and optimize the existing rural e-commerce logistics platform has increasingly become the key to competition. Docking, interaction and information conversion using different kinds of network resources are inseparable from the development of a more adaptive and efficient distribution channel network model. In optimizing rural e-commerce logistics, the major e-commerce groups and international logistics giants have been deployed according to the country’s major strategic points to accelerate the development of logistics differentiation and construction of strategic planning, to achieve a certain degree of strength in the development of strategic results. Although e-commerce logistics giants have long been clearly put forward the development of the vast rural areas as a strategic high ground for e-commerce, but also due to the rural urban and rural e-commerce development is extremely

unbalanced, such as the impact of external macro factors and the development of e-commerce industry foundation is relatively insufficient lagging behind the impact of internal micro factors, making China's current rural e-commerce logistics construction still need to face a lot of problems. According to the Ministry of Commerce 2022 Rural New Electric Business Research Institute released information on the data "China's rural e-commerce logistics development report", there are specific problems will be mainly manifested including the following aspects: rural e-commerce logistics scale is relatively small, scattered, seasonal is relatively strong, hindering the formation of developed rural areas of the advantages of logistics economies of scale; agricultural products, logistics service costs are too high, intermediate farmers consumption Proportion of large, hindering the formation of urban beautiful agricultural landscape industrial zone scale construction scale; logistics and distribution cold chain system and the extreme lack of resources to protect the ability to directly hinder the impact of the urban rural market consumption supply structure of the strategic transformation; standardization management is too low, the implementation process is not too strict, hindering the integration of the traditional rural old and new consumption momentum between the conversion; urban multiplication and the lack of differentiation of the brand also The lack of differentiation between urban multipliers and brands has also hindered the further development of China's rural specialty brand economy.

5. E-commerce Logistics "Last Kilometer" Facing Problems

5.1 Weak Infrastructure

E-commerce industry development is the development of a basic foundation conditions is the development of transportation and logistics, but due to the current stage of most of China's rural population distribution structure shows the characteristics of the "sparsely populated" structure, villages and other towns and cities between the establishment of the public transportation network infrastructure is very backward, simply can not meet the needs of our It is simply unable to meet our rapidly growing logistics needs. And in some of the country's backward rural areas, the terrain is treacherous, the main rural roads are still dirt roads, dirt roads, mountain roads, and even cableways. Therefore, even large logistics companies aiming at the future development of rural e-commerce blue ocean market, but do not dare to blindly invest in manpower and resources to the rural market precision distribution system. E-commerce logistics industry should also place special emphasis on the development of a comprehensive construction of the basic network information environment, due to the majority of rural network infrastructure communication hardware equipment level of long-term lag, so that the rural network communication technology, tariff levels, network speed, security performance and information security capacity conditions to ensure that many aspects of the ability to lag far behind the town, it is difficult to truly adapt to the stage of China's e-commerce logistics market, the stage of high-speed healthy development of the The actual requirements. Therefore, transportation, network technology and rural network equipment conditions and other aspects of the infrastructure is still not perfect, but also gradually become the current impediment to the national rural logistics network, "the

last kilometer” of the high-speed development process of an important influence factors.

5.2 Inefficient Distribution

E-commerce enterprises in rural distribution efficiency is low in three main aspects of the problem: First, the distribution place site selection difficulties. The geography of rural areas is complex and diverse, including mountainous areas, villages, waters, etc., and the road conditions are not perfect, so transportation safety and distribution are difficult. Secondly, the distribution of villages in rural areas is more dispersed, residents are far away from each other, the distribution network is not perfect, and it is often necessary to carry out distribution in each village one by one. Second, the low quality of distribution personnel. Some logistics enterprises on the distribution of personnel training is not perfect, may only focus on operational skills and ignore the service consciousness, communication skills and other aspects of training, resulting in a lack of professionalism in the process of distribution personnel in the service. Third, the distribution time flexibility is poor. The degree of informatization in rural areas is relatively low, and the order information is not transmitted timely and accurately, which causes problems for logistics and distribution.

5.3 Lack of Applied Talents in E-commerce and Logistics

The problem of talent has always been a fundamental issue that has long constrained the survival and development of the majority of rural e-commerce and agricultural logistics enterprises. Can be more skilled and comfortable learning to apply a variety of e-commerce methods and a variety of logistics professional operations and skills of researchers are generally less willing to go down to the grass-roots level of the countryside, which inadvertently may be exacerbated by the grass-roots rural e-commerce sector and large-scale logistics enterprises in the general lack of professional talents and other issues. Due to China's e-commerce logistics training institutions system is not so perfect, the lack of a special organization system of logistics personnel long-term systematic training and assessment and specialized training, resulting in a lack of rural e-commerce logistics field of practical application of skilled personnel.

5.4 Security Risks in the Rural E-commerce and Logistics Industry

First of all, due to the current development of e-commerce and domestic logistics industry market high speed and strong development, e-commerce franchising and online logistics companies in an endless stream of rural e-commerce logistics companies and the quality of employees are uneven. Secondly, the rural e-commerce logistics industry to join the industry threshold is very low, it is not easy to pay attention to strengthening the quality of the network franchisee throughout the industry's monitoring. And sales network information system is not so perfect, customers are often difficult to accurately track the entire e-commerce sales operation process. Once the parcel accidentally lost, the customer may not be able to immediately find the real reason for the loss of the parcel, there is a great risk of security operations.

6. E-commerce Logistics “Last Mile” Optimization Proposals

6.1 Accelerating Rural Logistics Infrastructure Development

By accelerating the construction of rural logistics infrastructure, it is possible to raise the level of rural logistics services, promote rural economic development, improve the living conditions of farmers and facilitate the implementation of the rural revitalization strategy. First, investment in road construction in rural areas has been increased, including the construction, reconstruction and expansion of rural highways and country roads, as well as ensuring that roads are smooth. At the same time, encourage the use of new materials and technologies to improve the quality and durability of roads; second, in order to improve the reserve capacity and sorting capacity of rural logistics, build rural distribution centers, warehouses and logistics parks to provide more effective support for logistics and distribution; lastly, promote multi-party cooperation among the government, logistics enterprises, e-commerce platforms, farmers’ cooperatives and other parties to invest in the construction of rural logistics infrastructures, and give relevant policy support and preferential policies to encourage all parties to actively participate. However, it should also be noted that the specific conditions of different regions may differ, so it is necessary to combine the actual situation and needs of the local community when the actual landing, and develop appropriate programs and measures.

6.2 Establishment of a “Rural Cooperative Site” Model

The “rural cooperative site” model is a model for providing convenient services to rural residents through the establishment of cooperative sites in rural areas. First of all, a suitable geographical location is chosen, taking into account factors such as the gathering area of rural residents, transportation accessibility and coverage, etc., in order to determine the location of the “rural cooperative site”. Cooperative sites are set up on the selected sites to provide rural residents with a number of services, such as courier collection, centralized sales of commodities and information inquiry. Secondly, it cooperates with logistics companies, e-commerce platforms, farmers’ cooperatives and other partners to jointly promote the development of the “rural cooperative site” model. All parties agree on the details of cooperation and division of responsibilities by contract. Lastly, through publicity campaigns and community advertisements, rural residents have been introduced to the benefits and services of the “rural cooperative site” model, so as to attract more rural residents to use and recognize the model.

6.3 Improve the Treatment of Distribution Workers to Attract and Train Good Distribution Workers

In order to make the rural e-commerce logistics industry “last kilometer” distribution can be sustainable development, need to do the following measures to ensure the effectiveness and sustainability. First, improve the salary level of distribution staff to ensure that their labor income reaches a reasonable level. They can be incentivized and rewarded according to their work performance and performance, and given certain commission and bonus. Secondly, provide distribution workers with comprehensive welfare benefits, including social insurance, medical insurance, housing provident fund, etc., as well as welfare systems such as paid vacation and annual health checkups. Thirdly, develop a comprehensive

promotion channel and career planning to encourage them to have a long-term career development prospect in the logistics industry. As well as establishing communication channels between distribution staff and management to understand their needs and problems in a timely manner, and to respond and solve them in a timely manner, so as to enhance employees' sense of belonging and satisfaction.

6.4 Improve Distribution Services and Increase Regulation

First of all, formulate unified distribution service quality standards, clarify the indicators and requirements to ensure that the distributors provide high-quality services in accordance with the standards, and formulate corresponding rules and regulations to clarify the responsibilities and obligations of the distribution service, and strengthen the penalty for violations to protect the legitimate rights and interests of users. Secondly, choose some intelligent systems for distribution management. For example, vehicle refinement management software, GPS monitoring, temperature monitoring, oil monitoring system, OMS, IOTMS, goods in transit electronic seal security management system, etc., are commonly used in logistics and distribution management software, to ensure that real-time monitoring of commodity logistics information, to ensure that customers can receive goods on time.

7. Conclusion

China is a vast country with abundant products, especially in many rural areas, where there are green and non-polluting agricultural products, but the market is limited to local agricultural products. E-commerce opens up new markets, diversifies the rural industrial structure and promotes the development of rural economy. The development of rural e-commerce requires not only logistics talents but also inventory management talents. These tasks are performed by a large number of rural residents. Therefore, the development of rural e-commerce can create more income-generating channels for rural residents, attract young and middle-aged migrant workers to return to their hometowns to build their hometowns, bring innovative ideas and marketing models to rural areas, and realize the common prosperity of their hometowns. The development of rural e-commerce logistics can also shorten the distance between urban and rural areas, make the decision-making of urban residents more diversified, and allow rural residents to understand and enjoy the modern products of the city, so as to realize a win-win situation.

References

- Chen, Y. (2019). Optimizing rural e-commerce development mode by applying the concept of sharing economy. *People's Forum*, 2019(23), 88-89.
- Du, J. M., Wang, Y. L., & Gao, L. (2016). Exploration of B2C e-commerce logistics management mode based on "the last kilometer"--Taking Jingdong Mall as an example. *Business and Economic Research*, 2016(20), 95-97.
- Len, Z. L., & Guo, Q. F. (2017). Research on the development mode of agricultural e-commerce logistics. *World Agriculture*, 2017(8), 106-110.

- Li, B. (2018). Discussion on the role mechanism of e-commerce to the countryside on China's rural economic development. *Business and Economic Research*, 2018(22), 121-123.
- Liu, J. X., & Shen, W. X. (2018). Research on rural e-commerce development model under the perspective of common construction and governance. *People's Forum-Academic Frontier*, 2018(19), 100-103.
- Ren, X. X. (2019). Application research on rural "last kilometer" drone delivery. *Mall modernization*, 2019(9), 32-33.
- Shi, D. H. (2016). Research on the development of e-commerce logistics based on cloud distribution model. *Business and Economic Research*, 2016(17), 85-87.
- Wang, X. (2019). Path of Internet + new rural e-commerce development mode under the construction of beautiful countryside. *Agricultural economy*, 2019(8), 141-142.
- Wang, Y. B., & Zhou, S. J. (2018). Research on rural logistics "last kilometer" internet information service platform. *Modern Electronic Technology*, 2018(22), 34-37+41.
- Wu, F. (2017). Research on the construction of commerce circulation system based on the background of rural modernization construction. *Reform and strategy*, 2017(1), 57-60.
- Yang, J. P., Yang, C. C., & Yao, X. X. (2014). Research on "last kilometer" in e-commerce logistics. *Business Economy and Management*, 2014(4), 16-22+32.
- Yang, J. Q., Zhou, T., & Li, Q. Z. (2011). An empirical study on the role of e-commerce on economic growth. *World Economic Research*, 2011(10), 40-43+88.
- Yu, S. (2017). Discussion on the integration and development of "rural e-commerce" and traditional industries. *Commercial Economy Research*, 2017(5), 61-63.
- Zhu, P. W. (2016). Rural e-commerce development dilemma and countermeasures analysis. *Business and Economic Research*, 2016(10), 68-69.