

Research on the Integrated Development of Urban and Rural Commerce and Logistics in Hebei Province

He Xiangshuo^{1,a,*}, Bojin Gu^{2,b}

¹*Institutes of Economics and Administration, North China Electric Power University, No. 619, Yonghuabei Street, Lianchi District, Baoding, Hebei, 071003, China*

²*Leicester International College, Dalian University of Technology, Panjin, Liaoning, 124221, China*

^a52651721@ncepu.edu.cn, ^b1813917850@qq.com

**Corresponding author*

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Abstract: With the improvement of China's economic level, urban logistics has achieved rapid development, making China the largest area in terms of urban logistics scale. At the same time, the level of rural economy and consumption is also gradually improving, and the development of technology has a profound impact on the rural economy. The continuous growth of e-commerce has made the rural economy increasingly demanding logistics. Developing rural e-commerce by improving rural logistics, thereby promoting rural economic development. Rural logistics distribution is a key link in effectively ensuring the smooth entry of products into the sales market. However, at present, there is a trend of gradually widening disparities in the development of urban and rural commercial logistics, which affects the integration of urban and rural development. This article first analyzes the current situation of urban and rural logistics development, and then takes Hebei Province as an example to analyze the current situation and existing problems of rural logistics distribution. Finally, the design and implementation of rural logistics distribution models are carried out, optimization suggestions are proposed, and design and implementation are carried out.

1. Introduction

The integration of urban and rural commercial logistics refers to the integration of urban and rural commercial logistics, achieving unified management and coordination of logistics between urban and rural areas, improving logistics efficiency and reducing logistics costs.

With the continuous acceleration of urbanization, the urban population continues to increase, the urban scope continues to expand, and commercial exchanges between urban and rural areas are becoming more frequent, resulting in an increasing demand for logistics. Meanwhile, with the rapid development of rural e-commerce, more and more agricultural products are being sold through e-commerce platforms, which has increased the demand for rural logistics. At the same time, the integration of urban and rural logistics is also needed to improve logistics efficiency and reduce logistics costs. However, due to the certain gap between urban and rural areas, including

infrastructure construction, information technology level, logistics distribution, and other aspects. This has brought certain challenges to the integration of urban and rural logistics.

Through the integrated development of urban and rural commerce, the first step is to achieve unified management and coordination of logistics between urban and rural areas, avoid repeated waste of logistics resources, and improve logistics efficiency; Secondly, the integration of urban and rural commercial logistics can reduce logistics costs and improve the competitiveness of enterprises. Through unified management and coordination, logistics links and transportation costs can be reduced, logistics efficiency can be improved, and thus logistics costs for enterprises can be reduced. Finally, the integration of urban and rural commerce and logistics can promote the development of urban and rural economy. By integrating urban and rural logistics resources, optimal allocation and sharing of resources can be achieved, promoting the interaction and integration of urban and rural economies.

2. Current research status at home and abroad

As a hot topic of "logistics integration", a total of 1629 relevant studies were searched on CNKI, including 1197 academic journals, 306 Thesis, 42 conferences, 58 newspapers, and 10 achievements, covering logistics models, supply chain logistics integration, cloud logistics, logistics system planning, logistics costs, and regional logistics. When searching for "urban-rural commercial logistics integration". There are a total of 10 studies, accounting for only 0.61% of the research on "logistics integration", while there are 8 journals, accounting for only 0.49%. It can be seen that there is a serious lack of research based on the integration of urban and rural commercial logistics.

Zhao Dongqiang (2020): Currently, there is a significant gap in logistics between urban and rural areas in China. With the help of internet technology, it is beneficial to eliminate information barriers between urban and rural areas, promote the sharing of logistics resources and complementary advantages between urban and rural areas, break the "dual" structure between urban and rural areas, achieve the integration of urban and rural logistics, and drive the integrated development of urban and rural economy. This study is based on the perspective of the Internet, providing a brief overview of the driving forces, practical content, and construction principles for the construction of an integrated urban-rural logistics model. It analyzes the main obstacles to the construction of an integrated urban-rural logistics model, and proposes specific suggestions for building an integrated urban-rural logistics model, including improving rural internet infrastructure, optimizing urban-rural logistics policies, cultivating rural logistics entities, innovating logistics service models, and emphasizing logistics informatization construction. ^[1] Ji Lianggang and Wang Jiahao (2020) believe that the integration of urban and rural commercial circulation is an important way to solve the "three rural" problems. Based on the data measurement and analysis of urban and rural business flow, logistics, information flow and capital flow from 2007 to 2016, the study found that the structural characteristics of urban and rural Dual-sector model in the field of commercial circulation in China are obvious, especially there is a large gap in the construction of urban and rural logistics and capital flow. To crack the Dual-sector model structure of urban and rural commerce and trade circulation, it is necessary to establish an integrated system of urban and rural commerce and trade circulation, and use the new thinking and technology of "Internet plus" to integrate and improve the efficiency of urban and rural commerce, logistics, information flow and capital flow, so as to promote the coordinated development of urban and rural commerce and trade circulation integration. ^[2] Yang Shoude and Zhang Tianyi (2020) believed that promoting the construction of modern circulation system is a strong support for building a Dual circulation. Therefore, it is necessary to optimize the circulation of urban and rural commercial trade, providing

a solid foundation for the construction of China's modern circulation system. But nowadays, there are serious issues of disharmony in the process of integrating urban and rural commerce in many regions of China. This study starts from the impact of digital economy on urban and rural commercial circulation, deeply analyzes the problems existing in the development of urban and rural commerce and trade in China, uses digital technologies such as Big data and blockchain to optimize urban and rural commercial flow, logistics, information flow and capital flow, and proposes its development path, so as to accelerate the integration process of urban and rural commerce and trade circulation. ^[3]

Fang Z, Xiong Z (2023) first introduced intelligent blockchain technology and the concept of integrated agricultural product logistics, and then constructed a sustainable model of integrated agricultural product logistics. The paper provides an overall description of the model and conducts comparative experiments on its effectiveness. This article found that the agricultural product logistics industry based on intelligent blockchain technology can achieve at least 40% additional revenue. After verification, the limitations of intelligent blockchain technology were also identified and corresponding suggestions were provided. At the end of the study, it is proposed that blockchain technology can realize Information visualization and traceability of the whole life cycle of products, effectively solve some new problems in the structural reform of the agricultural supply side, and has broad application prospects. ^[4] Hamid J, H M E, Antony P (2022) conducted a quantitative survey and drew inspiration from a sample of 261 retailers in Sweden. The study found that logistics flexibility plays a mediating role in the delay performance relationship. In addition, this study also supports the direct impact of delay on logistics flexibility, as well as the subsequent impact of logistics flexibility on retail enterprise performance. This study found conditional support for the moderating effect of logistics integration and demand uncertainty. The results indicate that for moderate levels of uncertainty, the positive relationship between delay and logistics flexibility, as well as between logistics flexibility and enterprise performance, has been strengthened. From a practical perspective, the research findings emphasize that in situations of high or low demand uncertainty, implementing delays may not always be beneficial for achieving logistics flexibility and thus achieving better performance. Furthermore, if retailers prioritize logistics integration, they should not always expect the flexibility benefits brought by delays to lead to better performance returns. ^[5]

3. The Current Situation and Problems of Integration of Urban and Rural Commercial Logistics

3.1 Insufficient logistics related infrastructure

China is a developing country with a particularly late introduction of logistics and a lack of logistics talents, resulting in slow development and low level of logistics industry in China. Especially in the period of continuous development and growth of technological level, it highlights the backwardness and slow development of China's logistics industry. The main reason is that China's logistics related infrastructure is not perfect enough. In addition, the modern logistics management concept combined with e-commerce lacks supporting modern logistics infrastructure. For example, the aviation network with high support for supply chain management has high costs in logistics distribution. At the same time, in the era of rapid development of e-commerce, the logistics industry also needs to make corresponding changes and development to adapt to the development of the information age. The construction of corresponding information logistics platforms in the e-commerce environment also restricts the development of e-commerce logistics distribution in China. Taking Qinghe County and Linxi County in Xingtai City, Hebei Province as examples, the road mileage of the two counties is shown in Table 1 and Table 2:

Table 1: Classified Statistics of Highway Administrative Levels in Qinghe County and Linxi County (Unit: km)

Road level	Total mileage
national highway	121.7
Provincial Highway	110.3
County Road	59.6
Township Road	414.6
Dedicated highways	24.6
Village Road	1291

Table 2: Classified Statistics of Technical Grades of Roads in Qinghe County and Linxi County (Unit: km)

technical level	Total mileage
Expressway	37.1
First-class highway	70.75
Second-class highway	261
Third-class highway	83.2
Fourth-class highway	1569.8

According to the above figure, the proportion of rural roads of Class III or above in the two counties is only 22.4%, and the paving rate of cement and asphalt pavement is 92.5%. Urban and rural roads are of low grade, with fast damage and narrow pavement, resulting in poor traffic capacity. However, the road surface of rural external roads is mostly less than 4 meters, which is not suitable for the passage of wider freight vehicles, let alone two-way traffic and passing vehicles.

3.2 Low level of electronic logistics management

In rural areas, due to information asymmetry, on the one hand, logistics enterprises find it difficult to grasp comprehensive logistics information and make reasonable scheduling and arrangement of logistics resources, resulting in low logistics efficiency. For example, logistics companies in rural areas may not be able to timely understand the logistics needs of urban areas, nor can they timely transfer logistics resources from rural areas to the demand side in urban areas. On the other hand, the level of logistics informatization is relatively low, and there is a lack of effective logistics information management systems and related technical means. For example, logistics companies in rural areas may not be able to record and manage logistics information electronically, and still use manual methods to input and organize logistics information. This not only increases workload and error rate, but also reduces the accuracy and timeliness of logistics information. Meanwhile, in rural areas, the application of electronic technology is relatively limited, lacking the introduction and application of advanced technologies. For example, logistics companies in rural areas may not be able to use electronic tags, RFID and other technologies for cargo tracking and identification, nor can they use automated equipment for loading, unloading, and handling. This not only increases labor and time costs, but also reduces the efficiency and accuracy of logistics operations.

3.3 Incomplete laws related to the integration of urban and rural logistics

In the process of urban-rural logistics integration, multiple fields and aspects are first involved, such as logistics management, transportation, commercial circulation, etc. However, due to the lack of relevant laws and regulations, it is impossible to comprehensively and systematically regulate

and manage the integration of urban and rural logistics, resulting in some logistics activities not being effectively constrained and regulated. Secondly, it involves multiple departments and institutions, such as logistics management, transportation, commercial circulation, and other departments. However, due to the lack of coordination in relevant laws and regulations, it is impossible to achieve collaborative management and cooperation among various departments, resulting in legal gaps and blind spots in urban-rural logistics integration. Finally, in the process of urban-rural logistics integration, complex legal issues and interest relationships are involved, such as logistics responsibility, intellectual property protection, consumer rights, etc. However, due to the weak operability of relevant laws and regulations, these issues cannot be effectively resolved and dealt with, resulting in legal risks and uncertainties in the integration of urban and rural logistics.

3.4 Rural consumption environment is relatively backward

In rural areas, logistics infrastructure is relatively backward, such as roads, bridges, transportation equipment, etc. This leads to inadequate logistics and distribution networks in rural areas, which cannot achieve fast, efficient, and safe logistics and distribution services, affecting the shopping experience and satisfaction of rural consumers. On the one hand, in rural areas, due to differences in living standards and cultural backgrounds, consumers' consumption habits and concepts differ from those in cities. Rural consumers may pay more attention to price and practicality, with relatively low awareness and requirements for brand and quality, which affects their demand and requirements for logistics services and limits the ability of logistics enterprises to provide high-quality logistics services; On the other hand, in rural areas, the level of informatization is relatively low, and there is a lack of effective information platforms and channels, which makes it difficult for rural consumers to obtain product information and compare prices, as well as to meet the demand for online shopping. This not only affects the consumption experience of rural consumers, but also limits the ability of logistics enterprises to conduct online business.

4. Measures to solve the problem of urban-rural logistics integration

4.1 Vigorously Developing Rural Transportation Construction

Hebei Province can first establish logistics distribution centers in rural areas, improve the efficiency and quality of rural logistics distribution by introducing modern logistics technology and equipment, and thus promote the development of rural transportation construction. For example, in rural logistics distribution centers, intelligent sorting systems and automated loading and unloading equipment are equipped to achieve fast and accurate logistics distribution and improve logistics service levels. Secondly, the convenience and efficiency of rural transportation can be improved by optimizing the rural logistics network. For example, reasonable layout of rural logistics nodes and transportation routes, construction of a comprehensive rural logistics network system, achieving smooth logistics between urban and rural areas and within rural areas, thereby promoting the development of rural transportation construction. Finally, Hebei Province can strengthen rural traffic safety management and improve the safety performance and reliability of rural traffic. For example, strengthening the promotion and education of rural traffic safety, improving the traffic safety awareness and knowledge level of rural residents; Strengthen the maintenance and management of rural roads to ensure safe passage conditions; We will strengthen traffic law enforcement, crack down on Moving violation, and ensure the safety and stability of rural traffic.

4.2 Strengthen the quality education of farmers and strengthen the promotion of relevant policies

Utilize various forms such as radio, television, and newspapers to increase publicity on politics and laws. Clarify the rights of farmers and ensure their rights. Secondly, increase the promotion of rural e-commerce to enable farmers to understand and understand information technology, which will be more conducive to establishing physical e-commerce delivery. On this basis, farmers will confidently manage their own industries and invest their energy in the production and operation of agricultural products.

4.3 Improving Relevant Laws on the Integration of Urban and Rural Logistics

Hebei Province can formulate local regulations and policies to clarify the management structure, responsibilities, operational standards, and other aspects of urban-rural logistics integration, providing legal protection for the smooth promotion of urban-rural logistics integration. For example, the "Regulations on Promoting the Development of Urban Rural Logistics Integration in Hebei Province" can be formulated to clarify the management responsibilities and authorities of relevant departments, regulate the qualifications and operational standards of logistics enterprises, and provide legal support for the healthy development of urban rural logistics integration. Hebei Province can strengthen the industry self-discipline of urban-rural logistics integration, guide logistics enterprises to consciously comply with laws and regulations, and improve the overall quality and service level of the industry. For example, logistics industry associations can be established to strengthen communication and coordination within the industry, develop industry self-discipline standards, and improve the self-management and self-restraint capabilities of logistics enterprises.

5. Conclusion

In short, to improve the development of urban-rural logistics integration in Hebei Province, it is necessary to vigorously develop rural transportation construction, strengthen farmers' quality education, strengthen relevant policy propaganda, and improve the relevant laws of urban-rural logistics integration, in order to form a comprehensive and systematic system to promote the development of urban-rural commerce and logistics integration, and provide strong guarantees for the development of urban-rural commerce and logistics integration.

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