

Retraction

Retracted: Analysis of the Potential and Influencing Factors of Regional Logistics Industry Development from the Perspective of Supply Chain

Advances in Multimedia

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This article has been retracted by Hindawi, as publisher, following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of systematic manipulation of the publication and peer-review process. We cannot, therefore, vouch for the reliability or integrity of this article.

Please note that this notice is intended solely to alert readers that the peer-review process of this article has been compromised.

Wiley and Hindawi regret that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

- [1] F. Jiang, "Analysis of the Potential and Influencing Factors of Regional Logistics Industry Development from the Perspective of Supply Chain," *Advances in Multimedia*, vol. 2022, Article ID 3409952, 10 pages, 2022.

Research Article

Analysis of the Potential and Influencing Factors of Regional Logistics Industry Development from the Perspective of Supply Chain

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The logistics sector has grown to be the most significant component of the modern service sector, and to some extent, it not only directly supports economic growth but also indirectly creates favorable conditions for business operations. Modern logistics can meet the needs of the modern economy and society by taking advantages and prospects of digitization and information technology. However, China has a number of difficulties while switching to the development of logistics since the level of modern Chinese logistics development differs. Additionally, the supply chain mode's logistics is a comprehensive and integrated operation, so based on the issues with Chinese regional logistics development from a supply chain viewpoint, this study evaluates the development potential of logistics supply chain and the influencing factors from many angles.

1. Introduction

Being a tertiary industry, China's tertiary industry has a limited development platform for the logistics service industry. As a result, logistics resources have been industrialized and formed an aggregate industry that includes transportation, warehousing, packaging, and distribution services as well as information platform integration, enabling the country to achieve economic growth [1, 2]. Most of the circulation business in the service industry, the current production, and circulation enterprises have a large number of logistics business; these logistics businesses have fueled the rapid development of the logistics industry and created a new industrial class; however, the logistics businesses themselves do not belong to the logistics industry. Instead, the logistics businesses have formed a distinctive mode of operation to support the growth of the logistics industry and the creation of a new industrial class. The single, individual mode of operation created by the logistics industry for logistics businesses makes it difficult for them to aggregate and form business groups, and it even hinders the development of the China's logistics industry, which

encompasses not only the service sector but also the full development of all logistics businesses [3, 4]. According to the definition of logistics industry development, the sectors participating in logistics have fundamental features, and the chain's operation requires the creation of particular transit countermeasures tailored to each sector's unique business needs. The characteristics of the service industry that the industry decides to have the attributes of time and space, through the transformation of those attributes to achieve the transfer of commodity value, also have a very strong service nature, involving the production, service, and circulation of a number of industries [5].

The logistics industry, as one of the pillar industries of the current national economic development, needs to promote industrial transformation and development and technological upgrading to meet the demand of the society for logistics services in the Internet era. Compared with developed countries, Chinese logistics started late, but the steady economic development trend makes Chinese modern logistics flourish [6, 7]. The regional economy's promotion is becoming more crucial to the growth of the national economy due to the acceleration of regional economic

integration and the deepening of global economic integration, which also has a significant impact on the development of related industries. Additionally, the growth of many industries is becoming more dependent on the support of modern logistics. The development of the modern logistics industry accelerates the regional logistics industry cluster, and from the perspective of the supply chain, logistics as a significant piece of the supply chain can promote the advanced industrial structure of the regional economy and the development of regional productivity.

A large number of related logistics businesses concentrated in one area is the basis for the development of the regional logistics industry as well as one of its distinguishing characteristics. The development of the logistics industry is a result of the ongoing improvement of the social division of labor [8, 9]. A huge number of small and medium-sized businesses support and provide services to the relatively few large logistics companies that are frequently at the center of the region. Small and medium-sized businesses' overall logistical scale may not necessarily be smaller than that of large businesses, but their individual volumes are lower than those of large businesses. They frequently work together in very complementary ways. They can jointly take on the task of providing comprehensive logistics operations for other industries by establishing some sort of supply chain cooperation. This will allow them to develop a common logistics network operation platform (logistics information system, operation network facilities, etc.). In addition, the platform can offer third-party or fourth-party logistics services, which are logistics outsourcing services distinct from those offered by other businesses, allowing it to maintain its fundamental competitiveness. This makes the whole logistics operation efficient and operation cost remain at a stable and reasonable level for a long time. The regional logistics industry makes the spatial layout of the logistics industry show a certain regularity.

The regional logistics industry from the upstream suppliers to the downstream customers of each vertical integration between the supply relationship, in essence, is the supply chain network in a certain geographical space concentration; it affects and determines the regional logistics industry spatial layout [10]. Today, especially in terms of urban spatial layout, the majority of domestic logistics centers or parks are close to or compatible with the design of production clusters like industrial zones or development zones. This typically denotes the presence of sizable logistics parks or centers in the suburbs as opposed to a scattering of minor distribution hubs throughout the outskirts of the city. Small distribution vans perform logistics tasks mostly in urban cores. Thus, the network of the supply chain is divided into logistics nodes of different levels, scales, and functions, forming a complex logistics spatial network system in a certain regional space.

2. Problems of Regional Logistics Industry Development under the Supply Chain Model

2.1. The Concept of Supply Chain. The concept of supply chain is developed from the concept of expanded production. The supply chain is a functional network chain structure around the core enterprise, from supporting parts

to intermediate products, final products to the sales network to deliver the products to consumers, connecting suppliers, manufacturers, distributors, and users into a whole. Supply chain is the extension of the production activities of the enterprise, and the management concept based on supply chain management is essentially from the perspective of the consumer, through the cooperation between enterprises to obtain the overall optimization of the supply chain.

2.2. Effect of the Economic Development. The development of the logistics industry is largely influenced by the development of the local regional economy, and both compound and agglomeration logistics industries are inseparable from economic development. Despite the fact that the regional economy has a strong competitive ability and may always be in the lead in terms of resources, it should be understood that because of the size of the economy, the logistics industry will continue to grow. Enterprises can only produce high efficiency to make the logistics industry better development; at present, enterprises in terms of production efficiency are not able to meet the logistics needed to run.

2.3. The Infrastructure of Logistics Industry Construction Will Have a Certain Impact on the Regional Economic Development. The government departments will invest some money in the growth of the logistics industry for the construction of infrastructure because the capacity of transportation is now insufficient. This investment is extremely significant and may swiftly respond to the transport sector of traffic [11]. The growth of regional economy is closely related to the construction of facilities of the logistics industry under certain circumstances. The process of continuous improvement of infrastructure construction in the logistics industry under supply chain mode also stimulates the development of the regional economy, but the current construction of infrastructure in China is not perfect and needs to be further strengthened.

2.4. Data Processing and Information Mining Face Technical Difficulties. Under the background of the Internet of things, any activity will generate a large amount of data. To truly realize the logistics supply chain, it is necessary to process these huge amounts of data first, and how to extract valuable data from these huge amounts of data and use them reasonably is one of the problems in the development of modern logistics.

2.5. Relevant Facilities and Personnel Training Are Backward. China's contemporary logistics industry development is somewhat behind that of other industrialized nations, with a relative lack of professional facilities, equipment, and staff as well as a certain gap in technical proficiency. The technology and equipment of small and medium-sized logistics enterprises are still relatively backward, and the training of logistics-related professionals has not kept pace with the times.

2.6. Resource Management System Is Not Mature. At the present stage, Chinese modern logistics to the process of supply chain transformation of intelligent logistics not only need to be reasonable use of valuable information but also need to integrate and plan the existing logistics resources so as to improve management efficiency and reduce operating costs [12, 13]. However, the existing domestic logistics resources management is relatively confusing, and there is often a waste of resources due to information blockage when logistics activities are carried out between upstream and downstream enterprises. How to reasonably allocate resources to maximize management efficiency and minimize operating costs is another challenge encountered in the development process. Figure 1 illustrates the frame diagram of the resource management system.

3. Regional Logistics Mode under the Supply Chain System

Self-operated logistics, third-party logistics, and logistics alliance are the three forms of logistics management system in China at present [14, 15]. These three distinct logistics models are continuously improved and constructed in the market development, and each of the three models has its own advantages. The advantage of self-operated logistics is that the enterprise has clear autonomy and can have full control over logistics operations and quality, and the whole logistics business is more flexible, faster, and more accurate. The third-party logistics can only help enterprises minimize inventory costs and reduce investment in hardware facilities, which is more beneficial to reduce the cost burden of enterprises. The logistics alliance model is conducive to helping enterprises reduce logistics costs and achieve a win-win situation for enterprise logistics through resource sharing and other forms. However, due to the inadequate interaction between companies and logistics modes and too independent operation, as well as the fact that each logistics operation mode has some flaws, it has been challenging to reduce logistics expenses. The continuous development of the Internet has allowed intelligent logistics to start and play an important role in the logistics industry, which can effectively solve the obstacles existing in the current advancement of Chinese logistics.

3.1. The Core Basis for the Construction of the Regional Logistics Model of the Supply Chain. The regional supply chain logistics model is actually an improvement over the classic supply chain logistics model, which is a product of both the integrated and more advanced stages of logistics development [16, 17]. The processing, production, sales, and distribution links are integrated, and the role of the system is fully utilized in the process of connecting each subsystem, according to the supply chain regional logistics model. This allows the businesses in the supply chain to be connected in the form of automation and intelligence, and the resources and information are interoperable. Therefore, gathering information is crucial for the supply chain regional logistics model. Therefore,

for the supply chain regional logistics model, the most important thing is to establish a service platform for information and resource sharing and give full play to the resource integration ability of the platform to realize the unified management of supply chain logistics services. At the same time, in order to make the characteristics of the logistics industry, it is also necessary to build information service platforms of different levels, realize the interface with the social resource sector, and ensure that the integrated services of logistics enterprises in the supply chain system can be guaranteed. The management system, information system, and service system are three crucial subsystems that should be included in the supply chain regional logistics information service platform. The service system is the main distinction between the regional logistics mode of the supply chain and other logistics modes as well as the center of the integration of the regional logistics mode. Among them, the management system uses the information system as the pivot of operation, completing all of the information data in the supply chain through the information system. In the past, logistics enterprises need to be independent in policy analysis and financing as well as commodity operation, but nowadays, with the existence of a service system, all these can be completed by using an information service platform.

According to Lu and Feng [18], the construction of the regional logistics model of the supply chain L_j is constructed to represent the processing, production, sales, and distribution links G to the process of connecting each subsystem (each subsystem i corresponds to a coefficient, representing the x and y coordinates of a service platform for information and resource sharing, respectively), and then integrated interrelationship between the chain regional logistics model F_k is fused to select the form of automation and intelligence f_k from the predicted deviation h_k . Based on these, the relationship curve of the unified management of supply chain logistics services between regional logistics information with information service platform for three important logistics information service subsystems is shown in Figure 2.

$$L_j = \frac{\sum G[x_j + F_k(x_j) - x_i]h_k(x_j)}{\sum h_k(x_j)}$$

$$f_k(x_k) = \sum_j \frac{1}{\pi R^2} L_j \quad (1)$$

$$f_k(x_k) = \sum_j \frac{1}{\pi R^2} \frac{\sum G[x_j + F_k(x_j) - x_i]h_k(x_j)}{\sum h_k(x_j)}$$

3.2. Typical Mode of Supply Chain Regional Logistics-Crowdsourcing Logistics Mode. The cost of logistics services is currently the most important issue facing China's logistics industry. This issue is primarily brought on by two factors, the first of which is the lack of an ideal information transfer mechanism within the logistics industry chain, making it

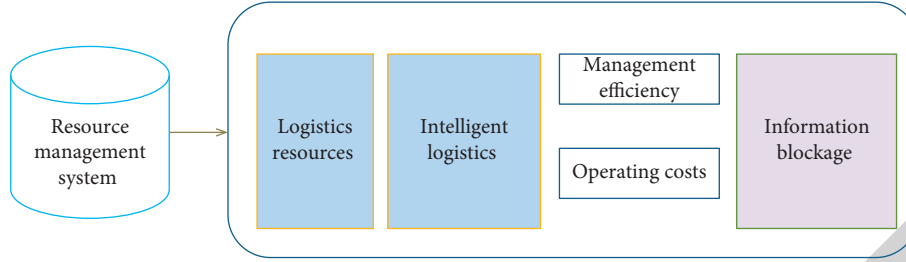


FIGURE 1: Frame diagram of the resource management system.

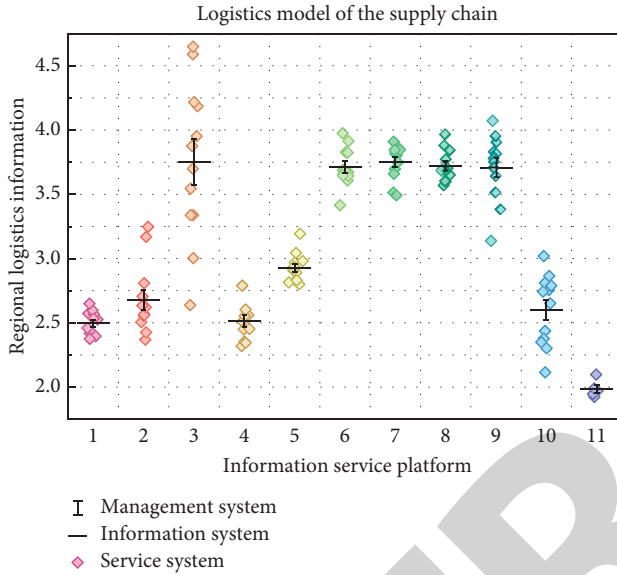


FIGURE 2: Dotted line diagram of regional logistics information with information service platform in three important logistics information service subsystems.

difficult for logistics enterprises to obtain market information and resulting in a low level of operational efficiency. Second, labor expenses in China have been rising steadily in recent years. Since logistics companies are part of labor-intensive industries, there is a high demand for human resources, which unavoidably drives up operational costs [19, 20].

With the advantages of Internet technology and the popularization of mobile communication devices, the crowdsourcing logistics model has started to develop toward the trend of wisdom and integration and has become an important direction in the development of logistics in China. The advantage of this new logistics model is not only low cost, but also the integration of idle labor in the society by using the software equipment of mobile APP greatly reduces the logistics cost. The crowdsourcing logistics model, in all parts of the country, can provide services, and even door-to-door pickup and delivery, both service quality and service efficiency are higher than the traditional logistics model. This new logistics model, in addition to providing the most basic logistics and distribution services, can also be based on the supply chain into the insurance services, to protect the customer's goods.

The specific operation process of the crowdsourcing logistics model is as follows: the initiator of crowdsourcing logistics first sends the information of distribution products to the platform, then the information intermediary platform provides the service by combining the needs of both parties, and finally the delivery personnel of crowdsourcing logistics will deliver the products to the specific location according to the needs of customers. There is no need to dock the entire process with manpower; all staff only need to follow the requirements of the information service platform for services to be provided. Not only that, the crowdsourcing logistics model offers a wide range of delivery options, the range of services provided is very diverse, different customer needs can be fully met, and even customized logistics services are provided, bringing the spirit of innovation to life in the Internet era. The spirit of innovation in the Internet era is fully reflected. From the perspective of profitability, the crowdsourcing logistics model can lower the cost of enterprise logistics operations while also increasing the profit margin for businesses. In the Internet era, businesses that rely on information service platforms may also charge franchise fees or advertising fees to increase their income margin, further enhancing their advantages.

Delivery personnel of crowdsourcing logistics (C) is chosen to measure the comparability between the cost of enterprise logistics operations and the ordinary logistics, and the formulas are as follows:

$$R_i = \sum_i -d_{pi}^2 2S_p^2 \sigma_i^2 \delta$$

$$C = \frac{R_i}{\sum \delta} \quad (2)$$

$$C = \sum_i -d_{pi}^2 2S_p^2 \sigma_i^2 \delta / \sum \delta,$$

where p is the ID of the specific location; i is the ID of the key point of the needs of customers; d_{pi} denotes the requirements of the information service platform between the i th customized logistics services predicted by the p th type of delivery; S_p denotes profit space for enterprises; σ denotes the crowdsourcing logistics model; ν denotes the profitability of ordinary logistics; and δ is the delivery personnel of logistics. According to the above formulas, it is easy to see the students' ability to calculate the difference of profit space between crowdsourcing logistics and ordinary logistics, as shown in Figure 3.

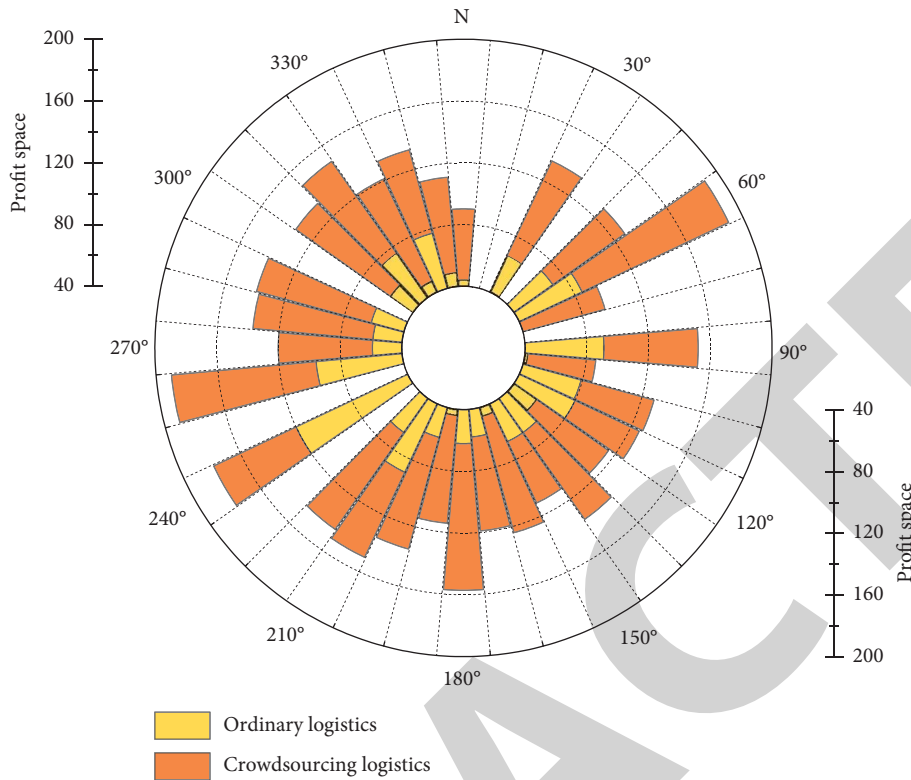


FIGURE 3: Rose comparison chart of profit space between crowdsourcing logistics and ordinary logistics.

4. Regional Logistics Industry Supply Chain-Oriented Development Potential

4.1. Digital Development. The application of 5G technology and the introduction of China’s “new infrastructure” policy have, on the one hand, promoted the development of digital technologies such as “cloud, big things, mobile intelligence” and blockchain, and, on the other hand, accelerated the mutual integration of digital technologies and the regional logistics supply chain. The use of the Internet of things integrates the resources and information in the industry, strengthens information exchange, saves costs, and improves management efficiency. The application of big data technology enables the enterprises in the logistics supply chain to quickly process the huge amount of information flow. Automation technology promotes the standardization of China’s logistics industry.

4.2. Green Development. The concept of green logistics is proposed for the global environmental problems, which is an important guarantee to achieve sustainable development. Green logistics has become the main heading of the advancement of logistics in developed countries. To reduce carbon emissions and achieve carbon neutrality, China’s “14th Five-Year Plan” and the “Guiding Opinions on Accelerating the Establishment of a Sound Green Low-Carbon Cycle Development Economic System” published by the State Council clearly indicate that green logistics is one of the important directions of modern logistics development, and it is the question of whether China can achieve “carbon

neutrality” by 2060. Therefore, the regional logistics supply chain should focus on the green advancement of the logistics supply chain while realizing the digital advancement and take “low emission and high efficiency” as the principle of its green development.

4.3. Platform Upgrade. The logistics system will be converted from resource-led and technology-led to platform-led. In the early stage, when the supply of logistics services was insufficient, the enterprises holding the production resources such as capacity and routes were the core of the supply chain [21, 22]. With the advancement of innovation, the core of the supply chain gradually shifts to more technologically advanced and more efficient enterprises, and the mobile and data-based platform economy is elevated to an unprecedented new height. Internet platform promotes accurate matching between supply and demand through business online and data mining to improve efficiency and at the same time improves the problems such as asymmetric information between supply and demand, thus the platform economy is created, and specialized enterprises can directly contact with users with high efficiency by relying on the platform.

4.4. Short-Chain Upgrade. With the support of big data and blockchain technology, logistics enterprises can directly access the information of customers and find the real value of enterprise existence from the silent big data. In fact, the users and consumers of the final product are the real

customers, and all others are intermediaries or belong to the supply side. As consumer demand scenarios become more instantaneous and fragmented, the industrial end will have to establish a flexible logistics and supply chain system to cope with such trends. The previous multilayer distribution channel model must be changed to make the supply chain short, grasp the needs of consumers quickly and accurately, and achieve flexible adjustment and rapid response.

4.5. Boundaryless Upgrade. Logistics will be in a borderless way, embedded in all aspects of production, circulation, and consumption, and users realize what they want. The development of technology, such as Internet of everything, super robot warehouse, intelligent logistics town, intelligent logistics brain, etc., will change the development mode of logistics. Consumers pay more attention to the expression of their own personality; want to participate in the process of product design and production in the process of consumption; and realize the purchase activities in a more diversified, instant, and decentralized scene. To adapt to the diversification of scenarios, logistics services should not only cover all scenarios in life and provide consumers with small batch and customized production and supply systems but also require the network of logistics service providers to vertically connect online and offline channels, producers, and end consumers and be able to undertake integrated service demand business such as warehousing, transportation, and distribution.

4.6. Connectivity and Data Upgrade. A new generation of information technology, such as the Internet of things, cloud computing, and big data, is expected to mature in the next 5 to 10 years. Logistics staff, equipment, and goods will be fully connected to the Internet, showing an exponential growth trend, forming a comprehensive coverage and extensive connection of the Internet of things. The development of data interconnection and the widespread use of handheld terminals will allow for the thorough collection, recording, transmission, and analysis of logistical data. In order to address the information island and information asymmetry in the sector, it is anticipated that the digitalization of logistics would be significantly increased by 2020.

4.7. Mode and Experience Upgrade. With the rise of crowdsourcing, the new way of division of labor and collaboration has been popularized, changing the traditional division of labor system and transforming the business model and workflow, and “innovation-driven” will become the driving force of logistics development. It is anticipated that as information technology advances, it will be possible to accurately predict customer preferences and to cater to each person’s unique demands, maximizing the “experience economy” and enhancing the value of intelligent logistics.

4.8. Intelligent Upgrade. With the improvement of artificial intelligence technology, it is predicted that robots will replace human labor in many positions in the future. In the

near future, the use rate of logistics robots will increase significantly, reaching 5 per 10,000 people, which is an innovative change to traditional logistics.

4.9. Supply Chain Upgrade. Logistics will take advantage of its proximity to users and will promote the Internet to cover the upstream and downstream of the business chain, deepen the integration of each connection of the business chain and user needs, and help accelerate the formation of a “cooperative sharing” ecosystem. Figure 4 shows the circular wireframe of regional logistics supply chain-oriented development potential.

5. Factors Affecting the Development of Supply Chain of Regional Logistics Industry

5.1. Driving Factors of the Development of Regional Logistics Industry

5.1.1. Intensified Industrial Competition. Industrial competition is becoming more intense in the context of economic globalization. With logistics gradually into the world and the public eye, in the trend of economic globalization, China’s development of logistics must be put into the world to study. The ultimate goal of logistics development is to realize the optimization of supply chain resources and the rational allocation of social resources. The development of the logistics industry needs the joint efforts of industry and society. The ultimate purpose of the development of logistics is to achieve the optimization of resources in the supply chain and the rational allocation of social resources.

5.1.2. Economic Growth Transformation. China’s comprehensive economic strength is obviously strengthened and its international status is rising. However, in addition to the rapid economic growth, there are additional issues that have a direct impact on people’s daily lives, such as high logistics production costs, social logistics system paralysis, the difficulty of achieving “last mile” logistics distribution, and others. The development of logistics focuses on the “people’s livelihood” to maximize the satisfaction of people’s needs and promote the operation of good social public service order.

5.1.3. Industrial Structure Changes. With the rapid development of the economy and national industrial structure adjustment, the proportion of service industry, information industry, and knowledge industry is increasing. Logistics enterprises and industries should also be transformed from a “rough and loose” operation mode to an “intensive” operation mode.

5.1.4. Trade Structure Changes. With the shift in the trade structure from “import and export of raw materials and primary processing goods” to “precision machinery processing and foreign advanced food,” the demands for quick action and efficiency are extremely high; as the saying goes, if

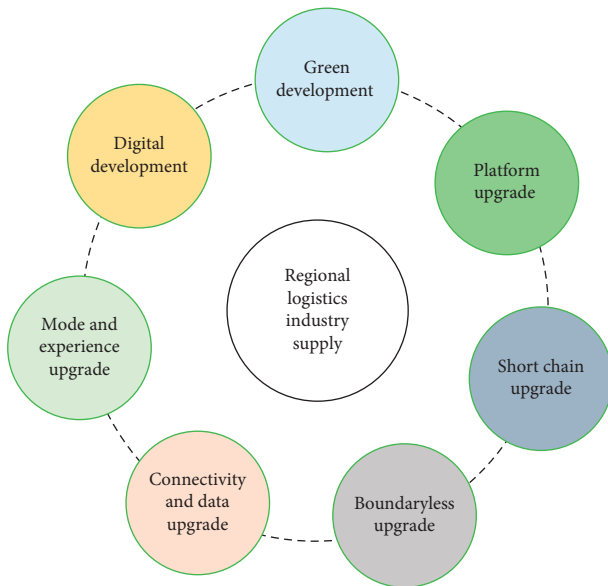


FIGURE 4: Circular wireframe of regional logistics supply chain-oriented development potential.

there is pressure to create momentum, there is a crisis, and there will be business opportunities. So, the development of logistics may be a new opportunity.

5.1.5. Demand Structure Changes. It first manifests as reduced consumption. Businesses exercise more stringent control over various factors, including resource allocation, scientific decision-making, inventory management, transportation, and other aspects. They also avoid wasteful duplication of effort and inactivity. Additionally, “personalized consumption” reflects it. Individualized demand creates a vast range of products on the market and offers a wide range of options, but it is simple to produce surplus. With the improvement of national economic level and people’s quality of life, customer needs are becoming more and more personalized and diversified. However, the total cost of logistics in China is still high, and with the establishment of the status of logistics as the “third source of profit,” the task of reducing the total cost of logistics is imminent.

Therefore, the creation of a thorough, ideal planning and strategy can be facilitated by the building and enhancement of regional logistics supply chain systems, which should also strengthen the importance of Chinese modern logistics’ efforts.

5.2. Environmental Factors That Contribute to the Advancement of Regional Logistics Supply Chain

5.2.1. Perfect Policies and Related Laws and Regulations. It is inseparable from the promotion of the government and the introduction of corresponding laws and regulations to accomplish stable industrial advancement so that the modern logistics industry in the regional logistics supply chain development has a law to follow. Based on the current pertinent laws and regulations, improvements and

supplements are made in accordance with the state of the industry and its development trends [23, 24]. For instance, the introduction of pertinent support policies to help small and medium-sized enterprises that are experiencing financial difficulties during the system transformation process. Businesses should build and improve the true names and blacklist systems in the industry as well as the penalty and punishment systems for noncompliant businesses, in order to foster a positive industry culture and an atmosphere that is conducive to business growth.

5.2.2. Capital Investment Efforts, Talent Training, and Research on Data Mining and Analysis Technology. The level of technology dictates the degree of development of China’s intelligent logistics, with regional logistics supply chains serving as a technical framework for system development, so we should increase funding for the study of digital technology. At the same time, the training of professional talents in the logistics industry should be carried out from various aspects. On the one hand, to foster highly skilled applied logistics expertise, universities and logistics companies should work closely together. Encouraging the logistics sector, on the other hand, to engage in thorough dialogue with adjacent sectors, work together to develop relevant technologies, and develop more compound logistics professionals capable of advancing modern local logistics supply chains (Figure 5).

5.2.3. Integrated Logistics Supply Chain Service’s Quality, Supply Chain Management Level, and Operation Cost. In the “14th Five-Year Plan,” the modern logistics should return to its original service attributes and improve the concept of service quality, emphasizing that the manufacturing industry and modern service industry should be integrated with each other to achieve a direct connection between the manufacturing industry and consumers, thus reducing the operating costs caused by the multilevel supply chain structure. The use of cloud computing, IoT, and other digital innovation helps to improve the current regional logistics end management system and advance regional logistics created by unmanned distribution and shared distribution services, resulting in a transparent and effective logistics supply chain. In order to address the issue of “last mile” distribution services and enhance service quality, the relationship between online retailers and logistics providers should be strengthened.

5.2.4. Participation of Government. The government should also implement a number of legal rules and standards to create a reasonable climate for the improvement of logistics. In the supply chain mode, improving the development of the logistics industry is inextricably linked to the government’s macro-regulation. The government can increase the publicity of the knowledge of logistics industry and popularize the knowledge of logistics through various channels like enterprises and people so that individuals are well-versed in the logistics industry as it pertains to the supply chain mode

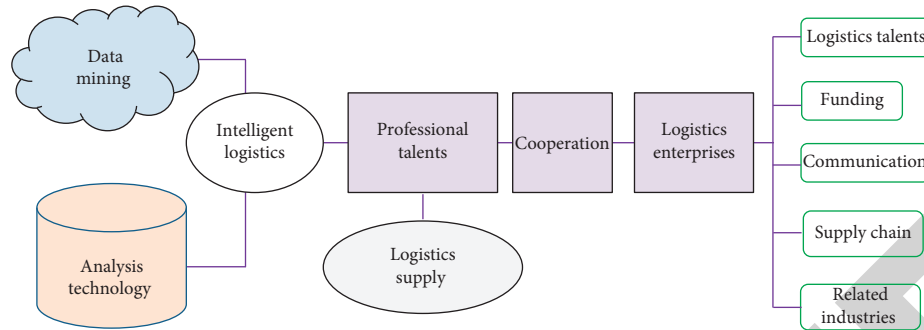


FIGURE 5: Wireframe of capital investment, talent training, and research of data mining and analysis technology.

and can advise on the advantages of the sector's growth as well as the advantages it will bring to the local economy. The government can also give certain preferences to enterprises so as to encourage the development of the logistics industry, and enterprises are also required to make full use of the government's support policies to change the problem of incoordination due to the management and the existence between institutions and to promote the scientific advancement of logistics.

5.2.5. Cooperation of Enterprises and Seizing Opportunities. As China focuses on the growth and support of a new industry, the logistics sector has the potential to not only drive its own improved development but also the growth of other linked businesses, which will ultimately progress the economy and society as a whole. The logistics industry in the supply chain mode should keep changing the traditional way of storing freight; using various transportation resources; and developing itself toward the goal of efficient, scientific, and high-level storage enterprises. It is beneficial to the rapid complementarity of advantages and the diversification of services to strengthen enterprise cooperation, particularly the logistical cooperation between small and medium-sized enterprises. With a given number of partners, businesses can develop their own logistics brand, which can entice further partners. This allows the businesses to grow swiftly, improve the industry, and advance the prosperity of the local economy.

As China focuses on the growth and support of a new industry, the logistics sector has the potential to not only drive its own improved development but also the growth of other linked businesses, which will ultimately progress the economy and society as a whole. This demands regional companies to start from the actual, from the characteristics of the region, and grasp the opportunity to promote the advancement of logistics. Some more advanced science and technology can be introduced to improve the level of their own information technology. Information-related platforms can also be established, which is conducive to the in-depth application of information technology, the development of the logistics industry in e-commerce, and the timely upgrading of industrial structure. At the same time, in the supply chain mode focusing on the logistics industry and regional economic development, it is more important to realize the standardized management of the ground logistics

enterprises, which can form a strong competitive edge. According to the latest industry survey statistics from logistics, the competitive advantages of e-commerce, industrial structure, economic development, and standardized management of the logistics industry are shown in Figure 6. It can be seen from the figure that the competitive advantages of e-commerce, industrial structure, economic development, and standardized management become more significant with the development of information technology in the supply chain model.

6. Regional Logistics Industry Development Strategy under the Supply Chain Model

6.1. Improve the Development Planning of Logistics Industry to Strengthen the Support for Regional Economic Development. The growth of the logistics sector in the context of the supply chain cannot be limited to the development of a single link; rather, it must encompass the growth of the complete logistics of the supply chain cycle [25, 26]. Only by realizing the development of logistics in all sectors of the whole supply chain link can we better promote the advancement of the regional economy. And to achieve the development of the logistics industry in the supply chain mode, it is necessary to carry out targeted optimization of each link. First, in order to achieve cooperation between various businesses throughout the design phase of raw material purchase, companies must coordinate their logistics. Second, to reduce the frequency of internal logistics, the enterprise's internal logistics must accomplish adequate product storage. Lean logistics should be designed for the logistics between producers and consumers to increase the effectiveness and efficiency of logistics transportation. And from the overall view of the whole supply chain logistics, it is to use the modern information management system to realize the transformation of the informationization of the development of the logistics industry so as to enhance the information management of the whole process of logistics.

6.2. Develop the Information Development Strategy of the Logistics Industry. Strategy for an enterprise is the starting point of all business management activities. To carry out information development in the context of the information age, logistics firms must first design an information technology strategy based on their unique realities. The

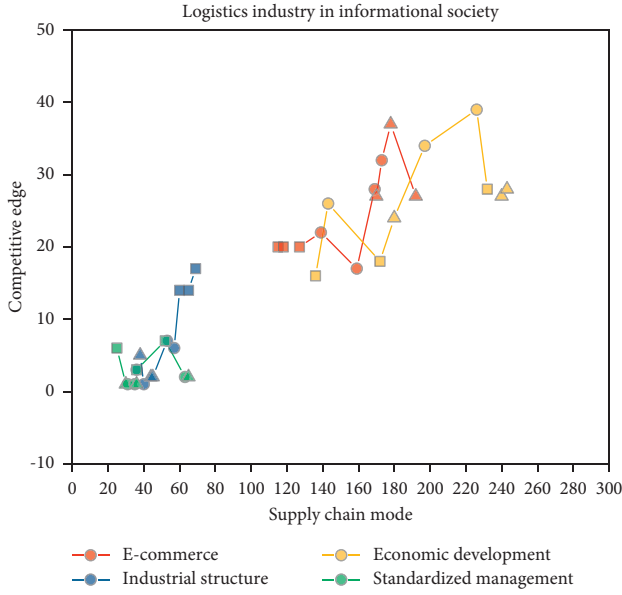


FIGURE 6: Relationship curves among the competitive edge versus the e-commerce, industrial structure, economic development, and standardized management in logistics industry.

enterprise's long-term and short-term informatization needs should be considered in this informatization development strategy. In logistics businesses, information technology system design should be carried out to accomplish the scientific design, which means it should be able to embrace all business operations of the firm while also highlighting. To achieve the scientific nature of the design of information systems in logistics enterprises, first of all, we must ask experts and scholars in the relevant fields to design the concept of proof. Currently, some logistics enterprises unilaterally pursue the high-end of the software system, thus forming a status quo that is not conducive to the actual operation of the enterprise. In addition, to achieve the information technology function of the enterprise logistics management function under the premise of technical feasibility, the design of the system should consider the comprehensiveness.

The information development strategy of the logistics industry is defined as a set $\chi = \{\mathbf{M}_j\}_{j=1,2,3}$, where j is one of logistics enterprises, and the long-term informatization needs of the enterprise (u, v) of the j th information technology system are denoted by the vector $\mathbf{M}_j \in x$. The high-end of the software system $\phi_t(\mathbf{M})$ at each stage provides confidence scores $S_{jt} \in R^{w \times h}$ for scientific design j , where w and h are the actual operation of the enterprise, respectively, and t denotes the t th stage. As shown in Figure 7, the scientific nature of the information development strategy of the logistics industry is to provide confidence scores in the short term and long term:

$$\begin{aligned} \phi_t &= \cap (\mathbf{M}|\mathbf{T}) \\ \phi_t &\longrightarrow \{s_1^j(\mathbf{M}_j \subset \mathbf{M})\}_{j=1,2,3} \\ \phi_t &= \cap (\mathbf{M}|\mathbf{T}) \longrightarrow \{s_1^j(\mathbf{M}_j \subset \mathbf{M})\}_{j=1,2,3}. \end{aligned} \quad (3)$$

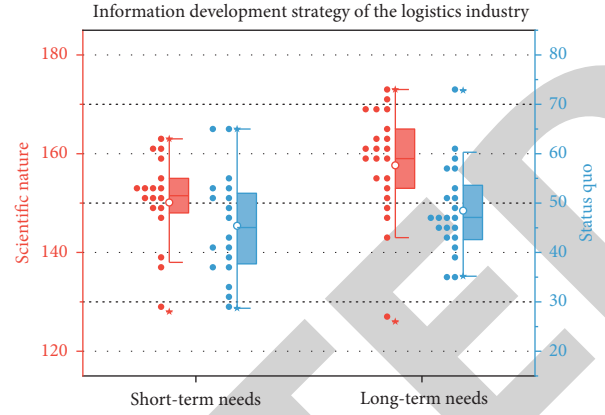


FIGURE 7: Frame composition of scientific nature of information development strategy of the logistics industry.

All subsequent stages generate new confidence scores using the contextual information from the previous stage:

$$\begin{aligned} \phi_t &> \cap [\mathbf{M}|\mathbf{T}, \psi(\mathbf{M}, \mathbf{S}_{t-1})] \\ &\cap [\mathbf{M}|\mathbf{T}, \psi(\mathbf{M}, \mathbf{S}_{t-1})] \longrightarrow \{s_t^j(\mathbf{M}_j \subset \mathbf{M})\}_{j=1,2,3} \\ \phi_t &> \cap [\mathbf{M}|\mathbf{T}, \psi(\mathbf{M}, \mathbf{S}_{t-1})] \longrightarrow \{s_t^j(\mathbf{M}_j \subset \mathbf{M})\}_{j=1,2,3}. \end{aligned} \quad (4)$$

7. Conclusion

In order to improve the conditions for the growth of the regional economy, it is necessary to improve the coordination of industries, the comprehensive utilization of resources within the region, the coordinated development with the logistics sector, and the liquidity of information through links both inside and outside the region. The evolution of the supply chain intelligent logistics model is an unavoidable trend. On the one hand, it is required to set up a flawless coordination mechanism from the overall situation to secure the close relationships between firms and the efficient operation of the supply chain in order to make the supply chain intelligent logistics mode better at providing services. On the other hand, we should fully exploit the Internet's potential and prepare for the transformation of businesses in line with the demands of the smart industry. To realize the sustainable development of the smart logistics and supply chain industries, it is essential to create an environment that is effective, convenient, collaborative, and shared. This study proposes preliminary steps for the development and innovation of the regional logistics industry model from the perspective of the supply chain based on the analysis of the current status, development potential, and influencing factors of regional logistics. There are still several issues with China's logistics development under the "Belt and Road Initiative" development strategy, including a flawed management structure, a shortage of logistics professionals, a flawed information platform, antiquated information technology, etc. Therefore, more professionals, academics, and business owners need to study and practice to solve these issues.

Data Availability

The datasets used for this study are available from the corresponding author on reasonable request.

Conflicts of Interest

The author declares that there are no conflicts of interest.

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