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A Study on the High-Quality Development Paths of the Modern Logistics Industry in Chongqing under the Background of Reducing Overall Social Logistics Costs

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Abstract: Against the background of reducing overall social logistics costs, the optimization of modern logistics has become an important approach to improving regional economic efficiency and supply chain resilience. Taking Chongqing Municipality as the research object, this paper analyzes the development foundation, main deficiencies, and optimization paths of its modern logistics industry based on policy documents, statistical materials, and relevant literature. The study finds that Chongqing has formed a solid foundation for inland logistics hub construction by relying on the New International Land-Sea Trade Corridor, the Yangtze River Golden Waterway, the China-Europe Railway Express, and the Chengdu–Chongqing Economic Circle. Its logistics demand, transportation scale, port functions, and corridor organization capacity have continued to improve. However, under the requirement of reducing overall social logistics costs, Chongqing still faces problems such as insufficient connectivity between integrated transportation networks and logistics hubs, inadequate multimodal transport organization, limited intensification and specialization of logistics enterprises, insufficient logistics digitalization and information sharing, and shortcomings in urban–rural distribution and cold chain logistics. Therefore, Chongqing should improve the integrated "corridor–hub–park–terminal" logistics network, enhance multimodal transport organization, promote the platform-based and specialized development of logistics enterprises, strengthen digital coordination, and address weaknesses in terminal distribution and cold chain services, so as to reduce transportation, warehousing, inventory, management, and transaction costs.

Keywords: Chongqing Municipality; Modern Logistics Industry; Reducing Overall Social Logistics Costs; Multimodal Transport; Cost Reduction and Efficiency Improvement.

1. Introduction

Logistics connects production at one end and consumption at the other, and is an important support for the operation of the real economy. In recent years, the scale of social logistics in China has continued to expand, but logistics costs remain an important factor affecting the operational efficiency of industrial and supply chains. According to relevant data from the China Federation of Logistics and Purchasing, in 2025, China's total social logistics value reached 368.2 trillion yuan, total social logistics costs reached 19.5 trillion yuan, and the ratio of total social logistics costs to GDP fell to 13.9% [1]. Although this ratio continued to decline, there is still room for further improvement in logistics cost reduction and efficiency improvement compared with the requirements of building a modern industrial system, enhancing the competitiveness of the real economy, and strengthening the resilience of industrial and supply chains. Therefore, relevant policy arrangements proposed that, by 2027, the ratio of total social logistics costs to gross domestic product should strive to fall to around 13.5% [2]. It should be noted that reducing overall social logistics costs is not equivalent to simply lowering transportation prices. Instead, it aims to improve the overall operational efficiency of the logistics system through the optimization of transportation structure, the improvement of logistics organization methods, the enhancement of hub networks, information sharing, standardization construction, and supply chain coordination.

From the regional perspective, Chongqing is an important central city in western China and also a key node in the construction of the New International Land-Sea Trade Corridor, the Yangtze River Economic Belt, and the Chengdu–Chongqing Economic Circle. In 2025, Chongqing's gross regional product reached 3,375.793 billion yuan, and its three-industry structure was 6.3:34.9:58.8. The combined share of the secondary and tertiary industries exceeded 90%, and the development of the manufacturing industry, commercial circulation industry, and modern service industry provided strong industrial demand support for the modern logistics industry [3]. At the same time, the functions of the New International Land-Sea Trade Corridor continued to improve. It had reached 584 ports in 127 countries and regions, and Chongqing's annual container volume transported through the New International Land-Sea Trade Corridor increased by 30%, while cargo value increased by 25% [3]. Relying on integrated transportation foundations such as railway, highway, waterway, and aviation, as well as important platforms such as Guoyuan Port, Chongqing International Logistics Hub Park, and Jiangbei International Airport, Chongqing has the locational conditions for developing an inland modern logistics hub. The 14th Five-Year Plan for the Development of the Modern Logistics Industry in Chongqing proposes improving the coordinated development level of ports and corridors, further advancing the pilot program for the "single document" system in international multimodal transport, and realizing "corridors driving logistics, logistics driving trade, and trade driving industries" [4]. Therefore, under the policy background of reducing overall social logistics costs, studying the development deficiencies and optimization paths of the modern logistics industry in Chongqing can not only help identify practical problems in the construction of local logistics systems, but also provide management implications for logistics cost reduction and efficiency improvement in mountainous cities and inland open cities.

Existing studies have mainly focused on logistics cost governance, the construction of a modern logistics system, multimodal transport connectivity, the evaluation of logistics efficiency, and regional corridor economy. He argues that reducing overall social logistics costs should be considered in an integrated way within the construction of industrial and supply chains and the modern logistics system [5]. Wang and Duan discuss the mechanisms through which digitalization, platform-based development, and organizational innovation reduce logistics costs from the perspective of new quality productive forces [6]. Liu and Lan further analyze the realization paths of cost reduction and efficiency improvement in the logistics industry from the perspectives of industrial integration and new quality productive forces [7]. Zhang et al. point out that the improvement of multimodal transport efficiency depends on coordination among multiple aspects, including basic networks, transportation organization, data and information, standards and norms, and hub layout [8]. Zhan et al. explain the important influence of corridor construction on regional connections from the perspective of economic links among node cities along the New International Land-Sea Trade Corridor [9]. Overall, existing studies provide a sound theoretical and policy foundation for this paper, but there is still room for further supplementation in the comprehensive discussion of the shortcomings of Chongqing's modern logistics system, the formation mechanism of logistics costs, and local optimization paths.

Based on this, this paper takes the modern logistics industry in Chongqing as the research object. Under the background of the national effort to reduce overall social logistics costs and Chongqing's construction of an inland open logistics hub, this paper comprehensively uses policy documents, statistical data, and relevant literature materials. It first sorts out the development foundation of the modern logistics industry in Chongqing, then analyzes its deficiencies in integrated transportation connectivity, multimodal transport organization, the intensification of logistics enterprises, digital sharing, urban–rural distribution, and cold chain logistics. It further summarizes the main reasons for insufficient cost reduction and efficiency improvement, and finally proposes optimization paths, including improving the integrated "corridor–hub–park–terminal" logistics network, enhancing multimodal transport organization capacity, promoting the platform-based development of logistics enterprises, strengthening logistics digital coordination, and addressing shortcomings in terminal services, in order to provide a reference for the high-quality

development of the modern logistics industry in Chongqing.

2. Policy Background and Theoretical Basis for Reducing Overall Social Logistics Costs

2.1 Policy Logic of Reducing Overall Social Logistics Costs

Reducing overall social logistics costs is an important policy orientation in the current construction of the modern logistics system. Its core is not to simply lower transportation prices or compress the profits of logistics enterprises, but to reduce the comprehensive logistics costs in the operation of the real economy by optimizing resource allocation, improving organizational methods, and enhancing system coordination efficiency. According to the policy interpretation of the 14th Five-Year Plan for Modern Logistics Development, modern logistics integrates service functions such as transportation, warehousing, distribution, delivery, and information, and plays an important supporting role in extending the industrial chain, enhancing the value chain, and building the supply chain [10]. This indicates that logistics costs are not only reflected in transportation expenses, but also include various costs such as warehousing and storage, loading, unloading, and handling, inventory occupation, information search, order processing, document circulation, and management coordination. Therefore, reducing logistics costs should start from the overall efficiency of the logistics system, rather than being simply understood as lowering the freight rate of a single link.

From the perspective of policy logic, the Action Plan for Effectively Reducing Overall Social Logistics Costs understands logistics cost reduction within the framework of improving economic operational efficiency, smoothing the circulation of the national economy, and strengthening the resilience of industrial and supply chains. It emphasizes improving the allocation efficiency of social logistics resources and the level of logistics organization through structural adjustment and reform promotion [2]. It can thus be seen that logistics cost reduction and efficiency improvement are first structural cost reduction, namely promoting the use of low-cost and large-capacity modes such as railway and waterway for bulk goods and medium- and long-distance transportation, optimizing the transportation structure among highway, railway, waterway, and aviation, and reducing the unit transportation costs and energy consumption costs caused by excessive reliance on a single highway transportation mode. Secondly, it is organizational cost reduction, namely improving vehicle loading rates, reducing empty-load rates, and reducing repeated delivery and inefficient transfer through methods such as multimodal transport, joint delivery, unified warehousing and distribution, warehousing-distribution integration, and drop-and-pull transport. Thirdly, it is coordinated cost reduction, namely promoting the deep integration of logistics with manufacturing, commerce, agriculture, and cross-border trade, so that procurement, production, warehousing, sales, delivery, reverse recycling, and other links can form a smoother supply chain organization and reduce inventory backlog, waiting time, and demand mismatch.

In the field of transportation and logistics, policies further emphasize the reform of the integrated transportation system, the “single document” and “single container” systems for multimodal transport, dedicated railway lines entering port areas, parks, and factory areas, rail-water intermodal transport of port containers, and the circular sharing of domestic trade containers [11]. These requirements show that cost reduction in modern logistics is not only an internal management issue of a single enterprise, but also involves systematic connectivity among corridors, hubs, parks, enterprises, platforms, and regulatory departments. For commercial logistics and urban–rural distribution, improving the levels of networking, coordination, standardization, and digitalization helps improve the efficiency of commodity circulation and reduce the costs of terminal delivery, inventory turnover, and fulfillment services. Therefore, the essence of reducing overall social logistics costs is to promote the simultaneous decline of transportation costs, warehousing costs, inventory costs, management costs, and transaction costs through the construction of the modern logistics system.

2.2 Theoretical Basis for Cost Reduction and Efficiency Improvement in Modern Logistics

From the perspective of logistics management, cost reduction and efficiency improvement in modern logistics can be explained through transaction cost theory, economies of scale theory, supply chain coordination theory, and

network economy theory. Transaction cost theory holds that market transactions involve not only the payment of prices for goods or services, but also costs such as information search, negotiation and contracting, performance supervision, and dispute resolution [12,13]. In logistics activities, shippers searching for carriers, logistics enterprises matching cargo sources, cross-departmental document processing, and the lack of information connectivity among different transportation modes all increase transaction costs. Therefore, building public logistics information platforms, promoting electronic documents, advancing the open interconnection of logistics data, and enhancing supply chain visibility can reduce information asymmetry and improve the matching efficiency of logistics resources.

Economies of scale theory emphasizes that when logistics demand can be organized in a concentrated manner, unit logistics costs will decline with the increase in transportation batches, warehousing scale, and network density. Multimodal transport, integrated trunk-branch warehousing and distribution, joint delivery, unified warehousing and distribution, and the circular sharing of standardized pallets are essentially all ways to form scale effects by integrating dispersed demand. For a regional logistics system, national logistics hubs, logistics parks, backbone cold chain bases, and urban distribution centers can gather cargo sources, facilities, and service capacities, improve the scale level of trunk transportation and the network coverage of terminal delivery, and thereby reduce facility idleness, empty vehicle running, and repeated construction.

Supply chain coordination theory emphasizes that logistics should not be regarded as isolated transportation and warehousing activities, but should be embedded in the whole process of procurement, production, sales, and after-sales service. Strengthening information sharing and process coordination between logistics enterprises and manufacturing and commercial enterprises can improve order response speed, shorten inventory turnover cycles, and reduce inventory costs and time costs caused by mismatches between supply and demand. Especially in fields such as automobiles, electronics, equipment manufacturing, agricultural product cold chains, and cross-border e-commerce, supply chain coordination capacity directly affects enterprises' production rhythm, market response efficiency, and customer fulfillment level.

Network economy theory explains that the value of a logistics network depends on the connection efficiency among nodes, corridors, and services. The construction of a single logistics park or a single transportation route does not necessarily bring low costs. The key lies in whether efficient division of labor can be formed among hubs, whether railway, highway, waterway, and aviation can be smoothly converted, and whether urban distribution and rural logistics terminals can be effectively connected. Research on multimodal transport also shows that basic networks, transport vehicles, hub connectivity, standards and rules, and information systems jointly affect intermodal transport efficiency [8]. It can thus be seen that the theoretical basis for cost reduction and efficiency improvement in modern logistics is not complex. Its core lies in reducing transaction frictions, expanding organizational scale, strengthening supply chain coordination, and improving network connection efficiency, thereby realizing the decline of the overall costs of the logistics system.

3. Development Status of the Modern Logistics Industry in Chongqing Municipality

3.1 Locational and Corridor Foundation

Chongqing is located in western China and the upper reaches of the Yangtze River, and is an important node connecting the New International Land-Sea Trade Corridor, the Yangtze River Economic Belt, and the Chengdu–Chongqing Economic Circle. Compared with coastal port cities, Chongqing does not have a direct coastal advantage, but its integrated transportation location has obvious characteristics as an "inland hub": to the east, it can rely on the Yangtze River Golden Waterway to connect with the middle and lower reaches of the Yangtze River and coastal ports; to the south, it can use the New International Land-Sea Trade Corridor to connect with Beibu Gulf and the ASEAN market; and to the west and north, it can connect with Europe, Central Asia, and other domestic regions through the China-Europe Railway Express and railway trunk lines. The 14th Five-Year Plan for the Development of the Modern Logistics Industry in Chongqing positions Chongqing as an important logistics hub city serving the construction of the Belt and Road Initiative, the Yangtze River Economic

Belt, the New International Land-Sea Trade Corridor, and the Chengdu–Chongqing Economic Circle [4]. From the perspective of logistics management, this multi-directional corridor pattern provides basic conditions for Chongqing to develop multimodal transport, international logistics, regional distribution, and supply chain organization.

At the same time, the continuous expansion of the New International Land-Sea Trade Corridor has further strengthened Chongqing's corridor organization function. In 2025, the New International Land-Sea Trade Corridor had reached 584 ports in 127 countries and regions worldwide, and Chongqing's annual container volume transported through the New International Land-Sea Trade Corridor increased by 30%, while cargo value increased by 25% [3]. This shows that Chongqing's locational advantage is no longer only a geographical advantage, but is gradually being transformed into logistics organization capacity connecting western China, the ASEAN market, the Yangtze River Economic Belt, and the unified national market. For reducing overall social logistics costs, multi-directional corridors can provide enterprises with more choices of transportation modes and routes, helping optimize the transportation structure, shorten transfer time, and strengthen supply chain resilience.

3.2 Logistics Infrastructure and Hub Construction

In recent years, Chongqing's logistics infrastructure system has been continuously improved, forming a hub network supported by ports, railway stations, aviation ports, logistics parks, and urban distribution nodes. According to the 14th Five-Year Plan for the Development of the Modern Logistics Industry in Chongqing, Chongqing's port-type and land-port-type national logistics hubs have been included in the national construction list; key port areas such as Guoyuan Port, Jiangjin Luohuang Port, Wanzhou Xintian Port, and Fuling Longtou Port have basically been completed; and Chongqing International Logistics Hub Park and Xiushan Modern Logistics Park have been included as national demonstration logistics parks [4]. These platforms provide important support for Chongqing to carry out rail-water intermodal transport, road-rail intermodal transport, river-sea intermodal transport, land-sea intermodal transport, and regional distribution and delivery.

In terms of transportation infrastructure, in 2025, the total mileage of expressways opened to traffic in Chongqing reached 4,764 kilometers, the density of the highway network reached 228 kilometers per 100 square kilometers, and the operating mileage of railways reached 3,130 kilometers [3]. In terms of logistics nodes, relying on Guoyuan Port, Luohuang Port, the railway container center station, Jiangbei International Airport, and other nodes, Chongqing has gradually formed a logistics network connecting waterway, railway, highway, and aviation modes. Overall, Chongqing's logistics infrastructure is no longer limited to the construction of single transportation nodes, but is gradually developing toward an integrated, composite, and networked hub system. Table 1 summarizes the main statistical indicators related to the development foundation of Chongqing's modern logistics industry, including economic scale, freight transport, port throughput, express delivery, and transportation infrastructure.

Table 1. Indicators Related to the Development Foundation of the Modern Logistics Industry in Chongqing Municipality

Indicator	Value	Year
Gross regional product	3,375.793 billion yuan	2025
Three-industry structure	6.3:34.9:58.8	2025
Added value of transportation, warehousing, and postal services	141.766 billion yuan	2025
Total freight volume	1.421 billion tons	2025
Freight turnover	394.305 billion ton-kilometers	2025
Railway freight volume	22.6434 million tons	2025
Highway freight volume	1,197.7772 million tons	2025
Waterway freight volume	200.5692 million tons	2025
Air freight volume	224,700 tons	2025
Inland port cargo throughput	245.1632 million tons	2025
Airport cargo throughput	549,400 tons	2025
International standard container throughput	2.2503 million TEUs	2025

Indicator	Value	Year
Express delivery volume	2.460 billion pieces	2025
Postal industry business revenue	25.908 billion yuan	2025
Total mileage of expressways opened to traffic	4,764 kilometers	2025
Operating mileage of railways	3,130 kilometers	2025

Data source: Compiled according to the Statistical Communiqué of Chongqing Municipality on National Economic and Social Development in 2025.

3.3 Logistics Demand and Industrial Support

The development of the modern logistics industry in Chongqing has strong industrial demand support. In 2025, Chongqing's gross regional product reached 3,375.793 billion yuan, and the combined share of the secondary and tertiary industries exceeded 90%. Among them, the manufacturing industry, wholesale and retail industry, and transportation, warehousing, and postal services were all closely related to logistics activities [3]. From the perspective of industrial structure, Chongqing's automobile, electronics, equipment manufacturing, materials, and consumer goods industries have strong demand for the flow of goods. At the same time, wholesale and retail, cross-border trade, e-commerce, and urban consumption also put forward continuous demand for warehousing, delivery, express delivery, and supply chain services.

From the perspective of transportation scale, in 2025, Chongqing's total freight volume reached 1.421 billion tons, and freight turnover reached 394.305 billion ton-kilometers, indicating that Chongqing not only has large-scale local freight demand, but also undertakes certain regional transfer and corridor transportation functions [3]. From the perspective of transportation structure, highway freight volume was 1,197.7772 million tons, significantly higher than railway, waterway, and air freight volumes, indicating that highway transportation is still the main mode for cargo collection and distribution as well as short- and medium-distance delivery in Chongqing. Waterway freight turnover reached 244.315 billion ton-kilometers, occupying an important position in freight turnover, which reflects the fundamental role of the Yangtze River Golden Waterway in medium- and long-distance transportation and bulk goods transportation in Chongqing [3]. This transportation structure not only reflects the spatial pattern of Chongqing as a mountainous city and the characteristics of its industrial distribution, but also shows that Chongqing still needs to further optimize transportation organization methods through rail-water intermodal transport, road-rail intermodal transport, and land-sea intermodal transport in the future.

From the perspective of consumer logistics, in 2025, Chongqing's express delivery volume reached 2.460 billion pieces, and the business revenue of the postal industry reached 25.908 billion yuan [3]. The growth of express delivery volume shows that e-commerce consumption, urban distribution, and terminal fulfillment demand continued to be released, and it also put forward higher requirements for warehousing-distribution coordination, joint delivery, front warehouse layout, and terminal outlet organization. For reducing overall social logistics costs, the expansion of logistics demand does not necessarily lead to cost reduction. The key lies in whether vehicle loading rates, warehouse turnover rates, and terminal delivery efficiency can be improved through large-scale organization, standardized operations, and digital coordination.

3.4 Foundation for Logistics Digitalization and Organized Development

The modern logistics industry in Chongqing is not only supported by infrastructure and transportation scale, but has also begun to form a certain foundation in corridor operation, document circulation, and digital coordination. The construction of the New International Land-Sea Trade Corridor has promoted Chongqing's transformation from a traditional inland transportation node into a corridor operation organization center. In 2025, the reach of the New International Land-Sea Trade Corridor continued to expand, and both the container volume and cargo value transported through the New International Land-Sea Trade Corridor in Chongqing maintained growth [3]. At the same time, Chongqing continued to promote the coordinated linkage of the New International Land-Sea Trade Corridor with the China-Europe Railway Express and the Yangtze River Golden Waterway, and supported the application of multimodal transport documents and the digital construction of corridors [14].

These explorations are conducive to reducing the costs of document processing, information search, customs clearance connectivity, and multimodal transport organization.

From the perspective of logistics organization methods, the modern logistics industry in Chongqing is extending from traditional transportation and warehousing services toward corridor operation, hub collection and distribution, supply chain coordination, and platform-based services. Application scenarios such as the "single document" system for multimodal transport, digital bills of lading, the international trade "single window," and smart rail-sea intermodal transport help promote the coordination of waybill, manifest, container source, vehicle, warehousing, customs clearance, and settlement information, and reduce the costs incurred by enterprises in repeatedly submitting materials, repeatedly verifying information, and repeatedly communicating and coordinating among different transportation modes, different platforms, and different departments. For inland open cities such as Chongqing, the stronger the digitalization and organizational capacity, the easier it is for corridor advantages to be transformed into stable logistics service capacity and cost advantages.

Overall, the modern logistics industry in Chongqing already has a relatively good development foundation: locational corridors are connected in multiple directions, the national logistics hub system is gradually being improved, industrial and consumer demand continues to be released, and digital and organizational innovation is continuously advancing. However, from the perspective of reducing overall social logistics costs, Chongqing still needs to further improve corridor connectivity efficiency, hub coordination capacity, multimodal transport organization level, the degree of intensification of logistics enterprises, and the service capacity of urban–rural distribution and cold chain logistics. This also constitutes an important basis for the following analysis of the development deficiencies of the modern logistics industry in Chongqing.

4. Main Deficiencies in the Development of the Modern Logistics Industry in Chongqing Municipality

4.1 Connectivity between the Integrated Transportation Network and Logistics Hubs Still Needs to Be Improved

Chongqing has formed an integrated transportation foundation in which railway, highway, waterway, aviation, and other modes coexist, and has enhanced its inland opening-up capacity by relying on corridors such as the New International Land-Sea Trade Corridor, the Yangtze River Golden Waterway, and the China-Europe Railway Express. In 2025, Chongqing's total freight volume reached 1.421 billion tons, freight turnover reached 394.305 billion ton-kilometers, inland port cargo throughput reached 245.1632 million tons, and international standard container throughput reached 2.2503 million TEUs [3]. These data show that Chongqing has a large scale of logistics demand, and that its port and container transportation capacity has continued to strengthen. However, from the perspective of reducing overall social logistics costs, Chongqing's modern logistics system still has the problems of "strong corridors but weak connectivity" and "multiple hubs but insufficient coordination." The 14th Five-Year Plan for the Development of the Modern Logistics Industry in Chongqing points out that Chongqing still lacks direct high-capacity corridors toward some key urban agglomerations, some corridors have the problem of being "connected but not smooth," the hub collection and distribution system is incomplete, and the accessibility of the micro-circulation network is insufficient [4].

The practical manifestation of this deficiency is that some logistics parks, railway stations, ports and terminals, industrial parks, and urban distribution nodes have not yet fully formed efficient connectivity. Goods are prone to multiple transfers, waiting, and repeated loading and unloading among trunk transportation, branch collection and distribution, and terminal delivery. In particular, Chongqing has obvious characteristics as a mountainous city. The central urban area, the Three Gorges Reservoir area in northeastern Chongqing, and the Wuling Mountain area in southeastern Chongqing differ greatly in road conditions, industrial density, and delivery radius, and the transportation organization efficiency between some districts and counties and core hubs remains uneven. Insufficient connectivity between the integrated transportation network and logistics hubs will directly increase short-haul transfer costs, loading and unloading costs, and waiting time costs. It will also reduce vehicle turnover

efficiency and warehousing turnover efficiency, making it difficult for Chongqing's corridor advantages to be fully transformed into stable systematic cost reduction capacity.

4.2 Multimodal Transport Organization Efficiency and Transportation Structure Optimization Are Insufficient

Multimodal transport is an important means for Chongqing to reduce logistics costs. At the national level, it has already been proposed to accelerate the improvement of the multimodal transport system, promote the "single document" and "single container" systems, and strengthen facility connectivity, information sharing, standard coordination, and mutual recognition of security inspections [11]. Chongqing's relevant policies supporting the high-quality development of the New International Land-Sea Trade Corridor also propose promoting the coordinated linkage of the New International Land-Sea Trade Corridor with the China-Europe Railway Express and the Yangtze River Golden Waterway, supporting enterprises in issuing multimodal transport documents, and encouraging the use of multimodal transport documents for financing [14]. This shows that Chongqing's multimodal transport has entered a stage of policy-focused promotion, but it also reflects that its organizational system still has room for further improvement.

From the perspective of actual operation, highway transportation still undertakes a large amount of short- and medium-distance collection and distribution tasks in Chongqing's freight structure. In 2025, Chongqing's highway freight volume was 1,197.7772 million tons, significantly higher than railway freight volume of 22.6434 million tons, waterway freight volume of 200.5692 million tons, and air freight volume of 224,700 tons [3]. Highway transportation is highly flexible and suitable for short-distance collection and distribution as well as terminal delivery. However, if bulk goods, foreign trade containers, and manufacturing supply chain goods still rely excessively on highway short-haul transfer and temporary vehicle dispatching, the problem of "declining trunk-line costs but rising costs at both ends" may occur. For Chongqing, whether low-cost transportation modes such as railway and waterway can form stable linkage with parks, ports, and warehousing nodes directly affects the cost reduction effect of multimodal transport.

The deficiencies in multimodal transport are reflected not only in the proportion of transportation modes, but also in insufficient organizational connectivity among facilities, documents, container sources, information, and settlement links. Zhang et al. point out that the key to the high-quality development of multimodal transport lies in coordinated connectivity among basic networks, transport vehicles, data and information, transportation organization, standards and norms, and hub layout [8]. For Chongqing, if rail-water intermodal transport, road-rail intermodal transport, river-sea intermodal transport, and land-sea intermodal transport lack unified documents, stable schedules, shared information, and standardized loading units, this will increase the costs of cargo transshipment, document review, vehicle waiting, and exception handling, thereby weakening the overall efficiency of corridor-type logistics hubs.

4.3 The Scale, Intensity, and Specialization of Logistics Enterprises Need to Be Improved

Cost reduction in modern logistics is not only about lowering the price of a single transportation link. More importantly, it is about reducing full-chain costs through large-scale organization, specialized services, and supply chain coordination. The Action Plan for Effectively Reducing Overall Social Logistics Costs proposes cultivating a group of modern logistics enterprises with international competitiveness and supporting small and medium-sized logistics enterprises in forming distinctive competitive advantages in fields such as multimodal transport, smart logistics, cold chain logistics, and finished vehicle logistics [2]. However, judging from Chongqing's actual situation, except for some hub-based, platform-based, and corridor operation enterprises, ordinary logistics enterprises still have problems such as small scale, homogeneous services, insufficient bargaining power, and weak comprehensive supply chain service capacity.

This deficiency is mainly reflected in the following aspects: some enterprises still focus on single services such as traditional transportation, warehousing, loading and unloading, and freight forwarding, and lack comprehensive solutions for manufacturing, commercial circulation, cross-border e-commerce, and cold chain food. Some small and medium-sized logistics

enterprises have insufficient investment in information systems and find it difficult to realize integrated management of orders, warehousing, transportation, settlement, and customer service. Logistics enterprises lack stable cooperation mechanisms, which can easily lead to repeated cargo solicitation, low-price competition, empty vehicle running, and insufficient warehouse utilization. Existing studies point out that digitalization, platform-based development, and organizational innovation are important mechanisms for promoting logistics cost reduction, and industrial integration and supply chain coordination are also important paths for cost reduction and efficiency improvement in the logistics industry [6,7]. For Chongqing, insufficient scale and specialization of logistics enterprises will raise transaction costs, management costs, and inventory coordination costs, and will also affect the supply chain response efficiency of key industries such as automobiles, electronics, equipment manufacturing, and agricultural products.

4.4 Logistics Digitalization, Information Sharing, and Standardization Remain Insufficient

Logistics digitalization is an important support for reducing overall social logistics costs. Its role is not only to build platforms, but also to reduce information search costs and organizational costs through data sharing, order coordination, route optimization, warehousing-distribution linkage, and document electronization. The Action Plan for Effectively Reducing Overall Social Logistics Costs clearly proposes promoting the open interconnection of logistics data, facilitating the coordination of logistics flow, capital flow, and information flow, and improving the allocation efficiency of logistics resources [2]. Chongqing's policies supporting the high-quality development of the New International Land-Sea Trade Corridor also propose promoting the construction of major applications such as the "Digital New International Land-Sea Trade Corridor" and "smart Yangtze River logistics," realizing online and offline coordination and linkage of logistics resources, and promoting the iterative upgrading of Chongqing's international trade "single window" [14]. This shows that digitalization has become an important policy tool for logistics cost reduction and efficiency improvement in Chongqing.

However, there may still be a gap between the construction of digital platforms and the actual application on the enterprise side. Some logistics enterprises, parks, warehouses, transport vehicles, and shippers have inconsistent data interfaces, and order information, vehicle information, warehousing information, customs clearance information, and settlement information are difficult to share completely in real time, resulting in logistics organization still relying on manual communication and dispersed dispatching. Insufficient standardization will also affect the connectivity efficiency of pallets, containers, documents, charging rules, and information coding, and increase the costs of cargo transshipment, information entry, document review, and exception handling. Especially in cross-regional, cross-mode, and cross-departmental coordination scenarios, if data standards are not unified, repeated entry, repeated verification, and information lag can easily occur, thereby prolonging customs clearance, dispatching, and delivery time. Insufficient logistics digitalization and standardization will ultimately be reflected in rising time costs, transaction costs, and management costs, affecting Chongqing's service capacity in building an inland international logistics hub.

4.5 There Are Shortcomings in Urban–Rural Distribution, Cold Chain Logistics, and the Terminal Service System

The modern logistics industry in Chongqing should not only serve international corridors and manufacturing supply chains, but also support urban–rural consumption, the upward flow of agricultural products, and the construction of the county-level commercial system. The Action Plan for Cost Reduction, Quality Improvement, and Efficiency Enhancement in Transportation and Logistics proposes smoothing the terminal circulation network of urban–rural logistics, developing joint delivery and warehousing-distribution integration, promoting "express delivery into factories" and "express delivery into villages," accelerating the integration of rural passenger, freight, and postal services, and improving cold chain logistics facilities at places of origin [11]. For Chongqing, the central urban area, the Three Gorges Reservoir area in northeastern Chongqing, and the Wuling Mountain area in southeastern

Chongqing differ greatly in terrain conditions, population density, industrial structure, and consumption scale, and terminal logistics services face obvious regional differences.

In practice, the core area of the main city has dense delivery demand, but problems such as traffic congestion, insufficient parking and loading/unloading space, and restrictions on delivery vehicle access affect urban distribution efficiency. In some outer suburban districts and counties and mountainous towns, order density is relatively low, and express delivery, commercial distribution, and the upward flow of agricultural products are prone to problems such as "insufficient order volume, dispersed routes, and empty return trips." In 2025, Chongqing's express delivery volume reached 2.460 billion pieces, and postal industry delivery business volume reached 2.756 billion pieces [3], indicating that urban–rural consumer logistics and terminal fulfillment demand continued to grow. If terminal joint delivery, the county-township-village three-level logistics network, and the integration of rural passenger, freight, and postal services are insufficient, single-parcel delivery costs and terminal fulfillment costs will rise.

In terms of cold chain logistics, Chongqing has demand for food, agricultural products, fresh food consumption, and imported commodity distribution, but its capacity in pre-cooling at places of origin, refrigerated warehousing, cold chain trunk-branch connectivity, and terminal temperature-controlled delivery still needs to be further improved. The 14th Five-Year Plan for the Development of the Modern Logistics Industry in Chongqing also regards cold chain logistics, regional distribution and delivery logistics, and urban–rural distribution as important development directions [4]. If the urban–rural distribution and cold chain systems are incomplete, this will directly lead to repeated delivery, low vehicle loading rates, increased agricultural product loss rates, slower inventory turnover, and higher terminal fulfillment costs. Although such problems are not as explicit as trunk-line transportation costs, they have a continuous impact on commercial circulation costs, livelihood consumption costs, and agricultural product supply chain costs.

Overall, the modern logistics industry in Chongqing has a relatively good foundation in terms of location, corridors, and hubs. However, under the requirements of reducing overall social logistics costs, it still faces problems such as insufficient connectivity between corridors and hubs, insufficient multimodal transport organization efficiency, a low level of intensive development among logistics enterprises, insufficiently deep application of digitalization and standardization, and relatively obvious shortcomings in urban–rural terminal services and cold chain logistics. These deficiencies are not problems of single facility construction, but comprehensive manifestations of insufficient coordination among logistics networks, transportation organization, market entities, information platforms, and terminal services. In the following section, these problems should be further analyzed from the perspective of the cost formation mechanism.

5. Cause Analysis of Insufficient Cost Reduction and Efficiency Improvement in the Modern Logistics Industry in Chongqing Municipality

5.1 Insufficient Connectivity between Logistics Corridor Construction and Industrial Spatial Layout

The insufficient cost reduction and efficiency improvement of the modern logistics industry in Chongqing is first related to the insufficiently close connectivity between logistics corridor construction and industrial spatial layout. Chongqing has open corridors such as the New International Land-Sea Trade Corridor, the Yangtze River Golden Waterway, and the China-Europe Railway Express, and also has a foundation of port-type, land-port-type, airport-type, production-service-type, and commercial-service-type logistics hubs. However, for corridor advantages to be truly transformed into reductions in enterprise logistics costs, they must form stable matching with manufacturing parks, commercial markets, agricultural product producing areas, and consumption nodes. If industrial agglomeration areas are not efficiently connected with railway stations, ports and terminals, and logistics parks, goods will still need to rely on highway short-haul transfer, multiple transfers, and temporary dispatching. As a result, the effect of reduced trunk-line transportation costs may be offset by collection and distribution costs at both ends.

From the perspective of the cost formation mechanism, insufficient spatial connectivity can

easily lengthen the actual transportation distance, increase the number of loading, unloading, and transshipment operations, and extend waiting time. It can also reduce vehicle turnover rates and warehouse turnover rates. In particular, Chongqing has obvious characteristics as a mountainous city, and there are significant differences among the central urban area, the Three Gorges Reservoir area in northeastern Chongqing, and the Wuling Mountain area in southeastern Chongqing in terms of terrain conditions, road accessibility, industrial density, and order scale. If the layout of logistics facilities does not match industrial logistics demand, problems such as idle capacity in some hubs, insufficient cargo sources on some routes, and excessively long delivery radii in some areas are likely to occur, ultimately leading to rising transportation costs, time costs, and facility use costs. Therefore, the key to logistics cost reduction in Chongqing lies not only in building more corridors and nodes, but also in improving the spatial matching degree among corridors, parks, industries, and terminals.

5.2 Cross-Mode, Cross-Departmental, and Cross-Regional Coordination Mechanisms Remain Incomplete

Chongqing's logistics system involves multiple entities, including railway, highway, waterway, aviation, ports, customs, parks, and platform enterprises. Multimodal transport itself has the characteristics of systematic coordination. Only when different transportation modes are connected in terms of facilities, documents, standards, dispatching, and information systems can transfer, transshipment, and organizational friction be reduced. At present, although Chongqing continues to promote the coordinated linkage of the New International Land-Sea Trade Corridor with the Yangtze River Golden Waterway and the China-Europe Railway Express, and is also promoting the "single document" system for rail-sea intermodal transport, digital bills of lading, and smart rail-sea intermodal transport, cross-mode, cross-departmental, and cross-regional coordination remain important factors affecting logistics efficiency in actual operation.

The deeper reason is that different transportation modes and management departments have long formed relatively independent business rules, charging methods, operating processes, and information systems. When goods enter railway stations from highway short-haul transfer and are then transferred through ports or customs areas, if document standards, loading and unloading plans, vehicle dispatching, container source management, and customs clearance information cannot be synchronized, problems such as repeated entry, repeated verification, waiting for loading and unloading, and poor connectivity will arise. For enterprises, these problems may not directly appear as an increase in the freight rate of a single link, but they will increase in-transit time, inventory occupation, exception handling, and communication and coordination costs. In other words, the key to cost reduction through multimodal transport is not simply "having several transportation modes," but whether a stable, predictable, and low-friction whole-process transportation organization can be formed.

In addition, the modern logistics industry in Chongqing also undertakes multiple functions, including serving the Chengdu–Chongqing Economic Circle, the New International Land-Sea Trade Corridor, and the Yangtze River Economic Belt, and logistics activities have obvious cross-regional characteristics. If Chongqing and surrounding regions have insufficient coordination in train schedules, port operations, customs clearance rules, charging standards, information platforms, and emergency support, the efficiency of cross-regional logistics connectivity will easily decline. For shippers, uncertainty in logistics timeliness will force them to increase safety inventory and prepare goods in advance, thereby raising inventory capital occupation and supply chain management costs.

5.3 Insufficient Digital Transformation Capacity and Resource Integration Capacity of Small and Medium-Sized Logistics Enterprises

Logistics enterprises are the direct organizers of the operation of the modern logistics system. The insufficient cost reduction and efficiency improvement of Chongqing's logistics industry are also related to the insufficient digital investment capacity, network integration capacity, and supply chain service capacity of some small and medium-sized logistics enterprises. Some enterprises still mainly engage in single businesses such as traditional transportation, warehousing, loading and unloading, and freight forwarding. Their

comprehensive service capacity for manufacturing supply chains, commercial circulation, cross-border logistics, and cold chain logistics remains weak, making it difficult for them to provide integrated solutions such as warehousing-distribution integration, inventory management, route optimization, order coordination, and reverse logistics.

From the perspective of the cost formation mechanism, insufficient digital capacity among small and medium-sized logistics enterprises will make it difficult to efficiently match cargo sources, vehicle sources, warehouse sources, and order information, thereby leading to problems such as empty vehicle running, waiting for goods, repeated cargo solicitation, and low-price competition. When enterprises lack stable cooperation networks, dispersed transport capacity cannot form large-scale dispatching, and warehousing resources are also difficult to share and utilize. This can easily result in low vehicle loading rates, insufficient warehouse utilization, and repeated delivery routes. At the same time, if logistics enterprises and shippers lack system interfaces and data-sharing mechanisms, changes in orders, inventory status, and delivery progress cannot be fed back in a timely manner, which will affect supply chain response efficiency and increase safety inventory and inventory capital occupation.

In addition, small and medium-sized logistics enterprises often face constraints such as high input costs, insufficient professional talent, weak system compatibility, and inconsistent data standards during digital transformation. Even if the government and platform enterprises have built logistics information platforms, if enterprises lack access capacity and application capacity on the user side, these platforms will find it difficult to fully play their roles in order matching, route optimization, visual tracking, and financial services. It can thus be seen that insufficient digital transformation capacity of logistics enterprises will make it difficult for information flow, logistics flow, and capital flow in Chongqing's modern logistics system to form efficient coordination, thereby affecting the overall cost reduction effect.

5.4 Dispersed Logistics Demand and Insufficient Standardization Constrain the Formation of Economies of Scale

An important prerequisite for reducing logistics costs is the formation of economies of scale and network economy, but some logistics demand in Chongqing still shows the characteristics of dispersion. Order density is relatively high in the central urban area, while it is relatively low in outer suburban districts and counties, mountainous towns, and some agricultural product producing areas. Logistics demand in different fields such as manufacturing, commerce, agricultural product circulation, cross-border e-commerce, and cold chain logistics also differs greatly in terms of timeliness, temperature control, packaging, batch size, and delivery frequency. Without organizational foundations such as joint delivery, unified warehousing and distribution, standardized pallets, circular sharing of turnover boxes, and unified information coding, dispersed demand will be difficult to integrate effectively.

Insufficient standardization will directly affect the formation of economies of scale. On the one hand, inconsistent packaging, pallets, turnover boxes, containers, documents, and information coding will increase the costs of transshipment, sorting, inventory checking, loading and unloading, and system entry. On the other hand, inconsistent service standards and data standards among enterprises will also reduce the feasibility of coordinated delivery and shared warehousing. For urban–rural distribution and cold chain logistics, dispersed demand and insufficient standardization will also cause difficulties in route organization, more empty return trips, unstable utilization rates of cold chain facilities, and high terminal fulfillment costs.

Judging from Chongqing's actual situation, there are large differences in logistics demand among the core area of the main city, district and county urban areas, mountainous towns, and agricultural product producing areas. Relying solely on enterprises' spontaneous delivery is difficult to form stable scale. If there is a lack of a county-township-village three-level logistics network, joint delivery mechanisms, and standardized operating systems, terminal logistics will easily encounter the problem of "relatively high trunk-line efficiency but relatively high terminal costs." It can thus be seen that insufficient logistics cost reduction and efficiency improvement in Chongqing do not simply stem from an insufficient number of infrastructure facilities, but are closely related to demand organization methods, standardization levels, and network coordination capacity. Only by integrating dispersed demand into stable

cargo sources, dispersed facilities into shared networks, and dispersed information into unified data can economies of scale and systematic cost reduction effects be better formed.

6. Optimization Paths for the Modern Logistics Industry in Chongqing under the Background of Reducing Overall Social Logistics Costs

6.1 Improving the Integrated "Corridor–Hub–Park–Terminal" Logistics Network

Cost reduction and efficiency improvement in the modern logistics industry in Chongqing should first shift from single corridor construction to the overall coordination of the logistics network. Relying on the New International Land-Sea Trade Corridor, the Yangtze River Golden Waterway, the China-Europe Railway Express, and the Chengdu–Chongqing Economic Circle, Chongqing should further clarify the functional division among port-type, land-port-type, airport-type, production-service-type, and commercial-service-type logistics hubs, and promote an integrated layout of national logistics hubs, industrial parks, specialized markets, district and county distribution centers, and terminal outlets. For industrial agglomeration areas such as automobiles, electronics, equipment manufacturing, and agricultural product processing, Chongqing should focus on improving dedicated railway lines, highway connecting roads, port collection and distribution roads, and urban distribution nodes, so as to reduce repeated short-haul transfers of goods among parks, ports, stations, and warehouses.

In specific implementation, Chongqing can focus on key nodes such as Guoyuan Port, Luohuang Port, Chongqing International Logistics Hub Park, and Jiangbei International Airport, strengthen the connectivity among trunk transportation, regional distribution, and terminal delivery, and promote the simultaneous optimization of logistics facility layout and industrial spatial layout. For areas such as northeastern Chongqing and southeastern Chongqing that are relatively far from the core hubs in the central urban area, district and county logistics nodes and trunk-branch connecting routes should be improved to avoid the excessive concentration of all cargo flows toward a few central urban hubs. Through the linkage of "corridor–hub–park–terminal," the actual transportation distance can be shortened, transfer, loading and unloading, and waiting time can be reduced, vehicle turnover rates and facility utilization rates can be improved, and comprehensive logistics costs can thereby be lowered.

6.2 Enhancing Multimodal Transport Organization Capacity and Optimizing the Transportation Structure

Chongqing has a foundation for connecting multiple modes, including railway, highway, waterway, and aviation, but the key to cost reduction through multimodal transport lies in transportation organization rather than merely the number of transportation modes. Around nodes such as Guoyuan Port, Luohuang Port, the railway container center station, and Jiangbei International Airport, Chongqing should steadily operate rail-water intermodal transport, road-rail intermodal transport, river-sea intermodal transport, and land-sea intermodal transport products, and promote the coordinated operation of the New International Land-Sea Trade Corridor with the Yangtze River Golden Waterway and the China-Europe Railway Express. For goods suitable for containerization, large batches, and medium- and long-distance transportation, the proportion carried by railway and waterway should be increased, dependence on a single highway transportation mode should be reduced, and an organizational model of "railway and waterway undertaking main trunk transportation, and highway efficiently collecting and distributing goods at both ends" should gradually be formed.

At the same time, Chongqing should continue to promote the "single document" system, the "single container" system, and standardized multimodal transport documents, promote the coordination of waybill, manifest, container source, vehicle, customs clearance, insurance, and settlement information, and realize one-time entrustment, one-time settlement, one-time insurance, and whole-process tracking. For enterprises, this can reduce the costs of repeatedly processing documents, repeatedly verifying information, and communicating and coordinating with multiple parties among different transportation modes. For logistics organization, it helps reduce repeated loading and unloading, empty container allocation, transfer waiting, and exception handling time.

By enhancing multimodal transport organization capacity, Chongqing can better transform its corridor advantages into stable, predictable, and low-friction logistics service capacity.

6.3 Promoting the Intensive, Platform-Based, and Specialized Development of Logistics Enterprises

In response to the problems of small scale, homogeneous services, and insufficient resource integration capacity among small and medium-sized logistics enterprises, Chongqing should promote the transformation of logistics enterprises from traditional transportation and warehousing services to comprehensive supply chain services. On the one hand, Chongqing can support leading logistics enterprises, corridor operation platforms, and logistics park platforms in integrating vehicle sources, cargo sources, warehouse sources, container sources, orders, finance, and insurance services, so as to form comprehensive logistics service capacity for manufacturing, commerce, cross-border trade, and agricultural product circulation. On the other hand, small and medium-sized logistics enterprises should be encouraged to develop specialized services in segmented fields such as cold chain logistics, urban distribution, cross-border e-commerce logistics, automobile parts logistics, pharmaceutical logistics, and emergency logistics, so as to avoid low-level price competition.

The key to the platform-based and specialized development of logistics enterprises lies in improving resource matching efficiency and supply chain service capacity. Platform-based enterprises can reduce empty vehicle running and repeated cargo solicitation by centrally matching cargo sources and transport capacity. Specialized enterprises can improve service efficiency in warehousing, delivery, packaging, temperature control, customs declaration, settlement, and other links through their service capacity in specific fields. For Chongqing's automobile, electronics, equipment manufacturing, and other industries, if logistics enterprises can provide services such as warehousing-distribution integration, inventory management, just-in-time delivery, reverse logistics, and supply chain visibility, they can help shippers reduce safety inventory and inventory capital occupation and improve supply chain response speed. Therefore, the transformation of logistics enterprises not only helps reduce their own operating costs, but also lowers the coordination costs of the upstream and downstream links of industrial chains.

6.4 Strengthening the Construction of Logistics Digital Platforms and Data Sharing

Logistics digitalization should serve actual cost reduction, rather than remain at the level of platform construction itself. Relying on foundations such as the Digital New International Land-Sea Trade Corridor, the international trade "single window," smart rail-sea intermodal transport, and smart Yangtze River logistics, Chongqing can promote data interconnection among railway, highway, waterway, aviation, ports, customs, parks, and enterprises. The focus should be on connecting order, waybill, manifest, warehousing, vehicle, container source, customs clearance, settlement, and financial data, advancing the standardization of logistics data interfaces, coding rules, and electronic documents, and reducing repeated entry and repeated verification by enterprises among different systems.

For corridor-type logistics businesses, Chongqing should strengthen whole-process cargo status visibility, exception warnings, route optimization, space matching, and electronic document applications, so as to improve the efficiency of cross-regional and cross-mode logistics organization. For urban distribution businesses, data platforms should be used to improve vehicle dispatching, joint delivery, front warehouse replenishment, and terminal outlet coordination. Digital platforms can also connect with financial institutions, insurance institutions, and regulatory departments to provide data support for multimodal transport document financing, cargo tracking, credit evaluation, and risk control. Through data sharing and business coordination, information search costs, transaction costs, and exception handling costs can be reduced, waiting time can be shortened, and the accuracy of transportation planning and inventory arrangements can be improved.

6.5 Addressing Shortcomings in Urban–Rural Distribution, Cold Chain Logistics, and Commercial Logistics

The central urban area of Chongqing, the Three Gorges Reservoir area in northeastern Chongqing, and the Wuling Mountain area in southeastern Chongqing differ significantly in terrain conditions, population density, and

industrial structure, so urban–rural distribution and cold chain logistics cannot adopt a single model. The core area of the main city should develop joint delivery, nighttime delivery, new energy urban delivery vehicles, and front warehouses, optimize warehousing-distribution coordination among supermarkets, communities, e-commerce platforms, and express delivery outlets, and relieve pressure from congestion, loading and unloading, and terminal fulfillment. For business districts, communities, and specialized markets with concentrated delivery demand, Chongqing can explore unified delivery time periods, shared loading and unloading points, and joint delivery routes, so as to reduce congestion and inefficiency caused by repeated deliveries into the city by multiple enterprises.

Outer suburban districts and counties and mountainous towns should promote the construction of a county-township-village three-level logistics network, the integration of rural passenger, freight, and postal services, and village-level comprehensive service stations. Through joint delivery, fixed-time and fixed-route shuttle services, return cargo organization, and the collection of upward-flow agricultural products, the empty-load rate and single-parcel delivery costs in low-density areas can be reduced. In terms of cold chain logistics, Chongqing should improve the system of pre-cooling at places of origin, refrigerated warehousing, cold chain trunk lines, urban cold chain delivery, and terminal temperature-controlled delivery around agricultural product producing areas, wholesale markets, supermarket platforms, catering consumption nodes, and imported fresh food distribution demand. Addressing these shortcomings can reduce agricultural product losses, reduce repeated delivery, improve return vehicle utilization rates and inventory turnover efficiency, and thereby reduce the costs of commercial circulation, livelihood consumption, and agricultural product supply chains.

6.6 Improving Logistics Standardization, Talent Training, and Policy Coordination Mechanisms

Cost reduction and efficiency improvement in the modern logistics industry in Chongqing also require support from standards, talent, and policy coordination. In terms of standardization, Chongqing should promote standardized pallets, turnover boxes, containers, electronic waybills, logistics coding, and data interfaces, and improve connectivity efficiency among different enterprises, different transportation modes, and different platforms. Especially in scenarios such as multimodal transport, cold chain logistics, urban distribution, and cross-border logistics, Chongqing should promote the unification of loading units, document formats, information coding, charging rules, and service standards, so as to reduce repeated operations in transshipment, sorting, entry, verification, and settlement.

In terms of talent, Chongqing should cultivate interdisciplinary talent who understand not only logistics operations, but also digital platforms, supply chain management, multimodal transport rules, and international trade processes, in line with the needs of Chongqing's manufacturing industry, cross-border trade, cold chain logistics, and smart logistics. In terms of policy coordination, Chongqing should strengthen linkage among departments such as development and reform, transportation, commerce, port logistics, postal administration, customs, and market regulation, so as to avoid repeated construction of logistics parks, fragmentation of information platforms, inconsistent standards and rules, and fragmented policy implementation. For multimodal transport, joint delivery, cold chain logistics, smart logistics, and supply chain service projects that conform to Chongqing's industrial direction and cost reduction goals, the integrated effect of policies can be improved through pilot demonstrations, data openness, financial support, land-use guarantees, and other measures. Through unified standards, talent support, and policy coordination, institutional transaction costs can be reduced, and the stability and predictability of logistics system operation can be improved.

Overall, the optimization paths for the modern logistics industry in Chongqing should not remain at the level of increasing the supply of logistics facilities, but should place greater emphasis on system coordination and the improvement of organizational efficiency. Only by effectively connecting corridor advantages, hub functions, industrial demand, enterprise capabilities, digital platforms, and terminal networks can Chongqing truly reduce comprehensive logistics costs such as transportation, warehousing, inventory, information, and management costs, and promote the development of its modern logistics

industry from corridor-oriented development toward supply-chain-organization-oriented, hub-coordination-oriented, and digital-service-oriented development.

7. Conclusion

Against the background that reducing overall social logistics costs has become an important task in the construction of the modern logistics system, the modern logistics industry in Chongqing has a relatively good development foundation. In 2025, Chongqing's total freight volume reached 1.421 billion tons, freight turnover reached 394.305 billion ton-kilometers, and inland port cargo throughput and international standard container throughput reached 245.1632 million tons and 2.2503 million TEUs, respectively, indicating that Chongqing's scale of logistics demand and hub carrying capacity continued to strengthen. Relying on the construction of the New International Land-Sea Trade Corridor, the Yangtze River Golden Waterway, the China-Europe Railway Express, and the Chengdu–Chongqing Economic Circle, Chongqing has formed a relatively complete integrated transportation and logistics hub system, providing practical support for the construction of an inland open modern logistics hub.

However, from the perspective of the requirements for reducing overall social logistics costs, the modern logistics industry in Chongqing still has several shortcomings. These are mainly reflected in the fact that the connectivity between the integrated transportation network and logistics hubs still needs to be improved, the efficiency of multimodal transport organization and transportation structure optimization remains insufficient, the level of large-scale, intensive, and specialized development of logistics enterprises needs to be enhanced, the degree of logistics digitalization, information sharing, and standardization is still insufficient, and weak links remain in urban–rural distribution, cold chain logistics, and the terminal service system. These problems will increase the comprehensive costs of the logistics system through short-haul transfer, loading, unloading, and transshipment, waiting time, information search, inventory occupation, repeated delivery, and other ways, affecting the transformation of corridor advantages into cost-reduction advantages.

Therefore, the optimization focus of the modern logistics industry in Chongqing should not remain on the expansion of single infrastructure, but should shift toward system coordination and the improvement of organizational efficiency. In the future, Chongqing should focus on the construction of an integrated "corridor–hub–park–terminal" network, enhance multimodal transport and supply chain coordination capacity, promote the platform-based and specialized development of logistics enterprises, strengthen logistics digital platforms and data sharing, address shortcomings in urban–rural distribution and cold chain logistics, and improve standardization, talent training, and policy coordination mechanisms. Through these paths, Chongqing can further reduce comprehensive logistics costs such as transportation, warehousing, inventory, management, and transaction costs, and enhance the supporting capacity of the modern logistics industry for regional industrial development and inland opening-up.

This paper mainly conducts analysis based on policy documents, statistical materials, and publicly available literature. Due to the limited availability of public data, the measurement of indicators such as micro-level enterprise logistics costs, vehicle empty-load rates, warehousing utilization rates, and cold chain loss rates in Chongqing remains insufficient. Future research may combine enterprise research, questionnaire surveys, logistics cost accounting, or typical logistics park cases to further improve the pertinence and empirical support of the study.

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