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SUPPLY CHAIN INTERNAL RISK RECOGNITION OF CROSS-REGIONAL EXPANSION OF CHAIN RETAIL ENTERPRISES-BASED ON IMPROVED SCOR MODEL

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ABSTRACT

With the development of economic globalization, more and more internationally renowned chain retail enterprises are flooding into the Chinese retail market, which leads to the fierce competition of chain retail products. In order to gain market space in the fierce competition, Chinese chain retail enterprises usually adopt the form of cross-regional expansion. However, the cross-regional expansion of chain retail enterprises involves scattered entities and long chains, which brings supply chain risks to enterprises. For the sake of systematically identify the internal risks in the supply chain caused by the cross-regional expansion of chain retail enterprises, the improved SCOR model is adopted to identify the risks.

KEYWORDS: Improved SCOR model; Chain retail enterprise; Cross regional expansion; Supply chain internal risk recognition

INTRODUCTION

Kmart, the originator of modern supermarket retail enterprises, began to attack everywhere and expand aggressively due to its outstanding sales record. As a result, a large amount of capital was occupied, which led to the failure of Kmart to fulfill the contract and settle the payment for goods to suppliers. Make its largest and most crucial food supplier suspend the supply of kmart and finally went into decline. With the dynamic competition pattern of the retail industry, the chain retail industry presents the characteristics of trans-regional, multi-format and multi-subject, which makes the rationalization of the supply chain structure and the tacit cooperation degree of the nodal enterprises of the chain retail industry particularly vital compared with other industries. In the process of cross-regional expansion of chain retail enterprises, enterprises are faced with logistics and distribution risks brought by enlarged business space, supply chain interruption caused by shortage of goods, information distortion risks

caused by the expansion of information transmission space, and operational risks brought by the lengthening of management chain, etc., forcing enterprises to suffer huge value losses.

Risk identification is an essential part of enterprise risk management. However, the existing risk identification of chain retail enterprises mostly focuses on financial risk or logistics mode, procurement management, shortage stock, return management and other internal links of the enterprise, while there are few studies on the internal risk system identification of chain retail enterprises' trans-regional expansion of supply chain. Therefore, in order to play a role in scale economy of chain retail enterprises, obtain a place in the new retail field and improve the competitive benefits brought by product supply chain to chain retail industry. It is an urgent problem to study how to accurately identify the internal risks of chain retail enterprises' trans-regional expansion in China.

LITERATURE REVIEW

Chain retail enterprises expanded across regions

Chain retail enterprises refer to sale same fresh, non-fresh products and department stores, which are composed of multiple branches with the unified decoration, and adopt the unified management of the headquarters, unified procurement, distribution and service. Huilin (2020) points that chain retail enterprises actually use the form of "chain" to combine multiple branches into a whole retail enterprise and achieve scale effect through standardized technology and store expansion. In this paper, the cross-regional expansion of chain retail enterprises is that the business scope of chain retail enterprises is limited to the expansion from the original region to new regions, excluding the process of new product operation and development, which is a process of regional expansion. Dan (2017) says when chain retail enterprises expand across regions, they usually ignore their image promotion, characteristic operation, supply chain logistics, and it is difficult to take full advantages of the economies of scale of chain businesses. The cross-regional expansion of chain retail enterprises seldom takes into account the purchasing power of local consumers and the random location of stores, etc. Jiong (2020) expresses that store are scattered and not concentrated, which make the supply chain of chain retail enterprises more vulnerable.

Chain retail enterprises supply chain

Traditional supply chain regards supply chain as an internal process of an enterprise, aiming to maximize its own interests, ignoring other members of the enterprise and the relationship between them, and only limiting itself to the allocation and utilization of the enterprise's own resources. A famous Chinese scholar holds that the supply chain is centered on the core enterprise, which controls the in-formation flow, logistics and capital flow in the chain, starting from the procurement of raw materials and finally delivering products to consumers by the sales network, so as to organically combine sup-pliers, manufacturers, distributors and customers into a chain structure. So, supply chain is an information chain, capital chain, logistics chain and value chain that connects suppliers, manufacturers, distributors and consumers (Hui et al., 2020). Taitian et al.(2015) regard that chain retail enterprises as the core enterprises of the supply chain, and through the cooperation between

suppliers and third-party logistics enterprises, form a chain centered on consumer demand, integrate information flow, logistics and capital flow in the supply chain to realize product distribution and sales. Ji (2016) de-fines the supply chain of chain retail enterprises from the perspective of home furnishing industry, and thinks that the supply chain of chain retail enterprises consist of home furnishing manufacturers, chain retail enterprises and consumers of home furnishing products, and specific activities include product procurement, transportation, packaging and storage.

Based on the research results of scholars, this paper holds that the chain retail enterprise supply chain is a top-down supply and demand network made up of product suppliers, chain retail enterprises, logistics distribution centers and consumers. Due to the retail chains store has the characteristics of dispersion, regional, chain retail enterprise supply chain is more complicated than the traditional supply chain. At the same time, there are a wide variety of goods in the retail industry, and consumers have high requirements for the display of goods, making the supply chain of chain retail enterprises have ability of inventory management, display management and rapid response to market demand. Therefore, on the basis of traditional supply chain, this paper extends the supply chain of chain retail enterprises to after-sale service. The supply chain of chain retail enterprises is shown in Figure 1.

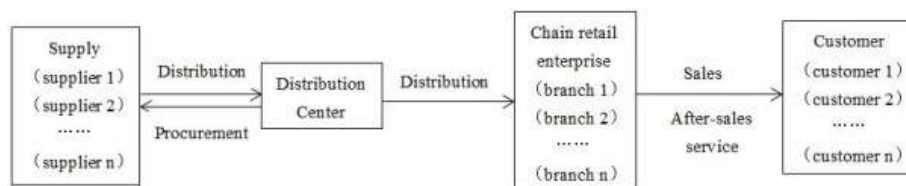


Figure 1 The supply chain of chain retail enterprises

Chain retail enterprise supply chain risk

Supply chain risk is a hot topic in the field of supply chain, but scholars have not formed a unified view. Hua and Xiaoye (2020) think that supply chain risk is a negative consequence of uncertainty. Xiaolong (2020) points that supply chain risk mainly includes two aspects: On one hand, supply chain risk comes from the external environment and the awful factors of each subject in the supply chain. On the other hand, the possibility and influence of supply chain deviation from the expected goal. Changbin et al. (2009) divide supply chain risk from another Angle: environmental risk outside supply chain; Supply risk and demand risk outside the enterprise and inside the supply chain; Endogenous risks of enterprises. In this paper, supply chain risk is a variety of uncertainties that may have adverse effects or value loss on each subject of the supply chain. It exists in each link of the supply chain and can only minimize the probability of risk occurrence. But it cannot be completely eliminated.

On the basis of the study of supply chain risk, chain retail enterprise supply chain risk is objective and universal. Scholars elaborate the supply chain risk of chain retail enterprises according to the different links of supply chain. Starting from the logistics link in the supply chain of chain retail enterprises,

Ruijun (2019) holds that China's chain retail enterprises lack Internet thinking, are unwilling to share resources with external enterprises, and face Logistics information asymmetry risk. Chunyan (2018) explains that chain retail enterprises randomly expand the number of stores, but ignore their logistics distribution ability and management level, resulting in the supply chain of chain retail enterprises facing the risk of out of stock caused by delayed logistics distribution.

Based on the research viewpoints of various scholars, chain retail enterprise supply chain risk has five links: supply link, procurement link, distribution link, sales link and after-sales service in this paper. The specific performance is that the plan faces the risk of inaccurate demand data; the procurement process is faced with risks such as price fluctuation and unqualified product quality; the sales link faces the operation risk brought by the cultural difference; distribution links face information technology risks; after-sales link is faced with customers return goods, low after-sales service level risk. Supply chain risk of chain retail enterprises is shown in Figure 2.

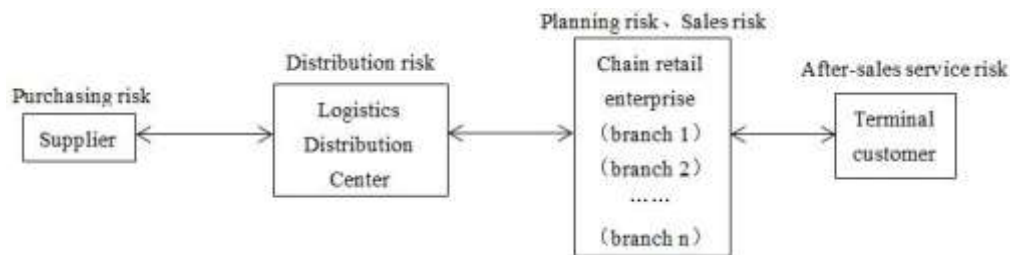


Figure 2 Supply chain risk of chain retail enterprises

METHODS

SCOR model concept

SCOR model, referred to as supply Chain Operation Reference Model, is published by The American Supply Chain Association in 1996 and is the world's first standard supply chain process reference model. The SCOR model is a multi-functional model structure that integrates business process re-engineering, operational performance, best practices, and people skills. Analyze the current state of the enterprise through business process reengineering, compare it with the benchmark of the peer enterprise, find out its own gap and quantify these gaps as specific indicators, so as to clarify the general direction of the enterprise's subsequent operation, help the enterprise diagnose and optimize the supply chain process and achieve the best operation of the supply chain.

SCOR model can be divided into three layers: basic process layer, configuration layer and process element layer. The basic process layer defines the scope and content of the SCOR model, including product planning, procurement, production, distribution, and return. The standard process elements of the configuration layer include 19 elements. Distribution enterprises can design their own supply chain according to order driven or forecast driven. The process element layer is a further decomposition of the configuration layer.

SCOR model improvements

The main body of SCOR model includes all users involved in the process from order formation to product delivery, including suppliers in the supply link, chain retail enterprises in the operation link and end customers. The business content of SCOR model is mainly five processes of planning, procurement, production, distribution and return, excluding sales and after-sales service links in the supply chain of retail chain enterprises. For the sake of making full use of SCOR model to identify the internal risks of chain retail enterprises' supply chain, this paper corresponds the links involved in chain retail enterprises' supply chain with the process of SCOR model, and supplements its content.

The specific content of SCOR model improvement: on the one hand, the first layer of SCOR model is revised. The original SCOR model of planning, procurement, production, distribution and return modifies into five business processes of planning, procurement, distribution, sales and after-sales service. Change the return process of the original model to after-sales service. After-sales service refers to customers returning defective products to branch stores, chain retail enterprises returning defective products and surplus products to suppliers, and maintenance of customer relations. Since chain retail enterprises directly purchase finished products from upstream suppliers and do not involve the production of products, the production link is changed to the sales link. On the other hand, each level in the SCOR model is a specific decomposition of the content of the previous level. After the improved SCOR model, the content of the configuration layer and the process element layer is refined according to the planning, procurement, distribution, sales and after-sales service of the first layer. The out-put information of the process element layer changes with the input information, but the input information, process element and output information remain unchanged. Therefore, the improved SCOR model retains the process element layer. The process structure of the improved SCOR model is shown in Figure 3.

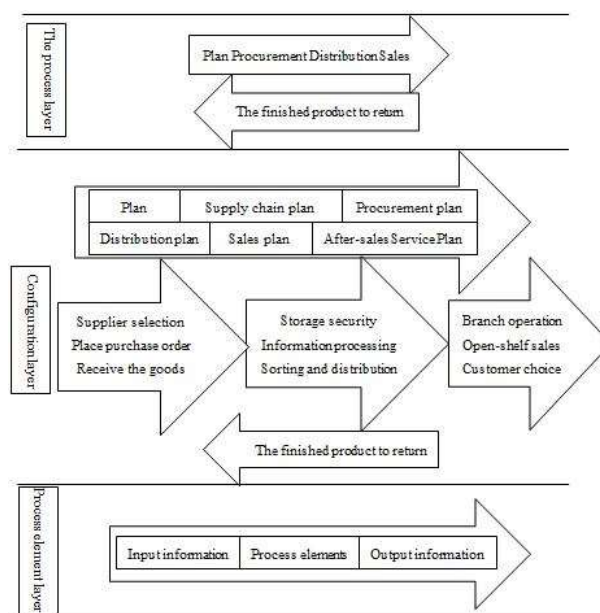


Figure 3 The process structure of the improved SCOR model

Improve the SCOR model process

Planning process

Planning is the basis for the effective implementation of subsequent processes. The main content of the planning process in SCOR model is that core enterprises make inventory plans, distribution plans and production plans according to historical sales data, forecast demand and production capacity. The research object of this paper is chain retail enterprises, and its planning process is mainly chain retail enterprises according to the distribution center inventory quantity and branch order demand, develop resource allocation plan to meet the needs of each subject in the supply chain. In order to ensure timely supply of products and high-quality service, the plan specifically includes the formulation of supply chain plan, procurement plan, distribution plan, sales plan and after-sales service plan, excluding the production plan of the original planning process.

Procurement process

SCOR model procurement process is to obtain raw materials, semi-finished products and finished products from suppliers according to production plan and demand, so as to ensure the subsequent production and operation of enterprises. The improved SCOR model procurement process is a series of process operations carried out by chain retail enterprises to purchase finished products from upstream suppliers after balancing customer order demand information with existing inventory, determining procurement cycle, type, price and quantity. Procurement includes the selection of suppliers; Place purchase orders; Receiving products; Acceptance of goods; Put in storage; Settlement with suppliers and other activities.

The distribution processes

The distribution process in SCOR model is that the upstream supplier distributes raw materials or semi-finished products to the enterprise. For chain retail enterprises, amounts of third-party logistics enterprises that can meet their logistics and distribution needs are limited. Regardless of the scale of Chinese chain retail enterprises, most of them adopt self-established logistics and distribution centers (Yongquan & Lieying, 2018). In this paper, the supply chain distribution process of chain retail enterprises mainly considers the self-built logistics distribution center. Since chain retail enterprises don't involve raw materials, the revised distribution process is divided into two parts. One is that suppliers send finished products to the distribution center of chain retail enterprises according to the order requirements, and the distribution center checks the product quantity and quality after receiving the commodities. The other part is the distribution center of chain retail enterprises to distribute goods to each store according to the order demand of branch stores.

Sales process

Chain retail enterprises are the final step in selling products to customers, without involving production. In this paper, the production process in SCOR model is modified to a sales process. Sales process is the process that chain retail enterprises provide products and after-sales service to customers through online or offline ways. In the sales link of chain retail enterprises, it is common for customers to leave empty-handed without buying desired products because of the shortage of goods on the shelves. Understanding customer preferences and timely delivery is essential. However, most chain retail enterprises in China don't realize that the competition of retail industry is the competition of customer resources.

After-sales service process

In the original SCOR model, the return process is that the customer returns defective products to the enterprise and the enterprise returns raw materials and semi-finished products to the supplier. After-sale service is a significant part of chain retail enterprise supply chain. The after-sale service process of chain retail enterprises not only includes the return process of the original model, but also includes service. The revised after-sales service process includes customer purchase defective goods return, supplier recovery of unsold products and defective goods of chain retail enterprises, chain retail enterprises processing of customer returned orders and important customer relationship maintenance services.

RESULT AND DISCUSSION

Planning process Risk

The planning of Chain retail enterprise is a fundamental process, the purpose is to serve the procurement, distribution, sales, after-sales service process. By clarifying the order demand of each branch and the inventory of distribution center, balance the demand and supply of each branch of chain re-tail enterprises to ensure the effective operation of chain retail enterprises. The risk of planning process is identified based on the improved SCOR model.

Risk of inaccurate demand data

Market demand is not invariable. Emergency orders and additional orders often occur in each branch of chain retail enterprises, which disrupts the supply chain plan and increases the operating costs of stakeholders. Retail chains across regions grow, branches in different regions, customers demanding for different goods and services, consumer preferences, consumption habits and income differences, which cause order accuracy to reduce, supplier can't provide in time the customer demand for products and influence the realization of the expected sales target in the process of planning.

Supply chain strategic objectives conflict risk

Since the chain retail enterprise is in the core position in its supply chain, other stakeholders should make strategic plans around the core enterprise. In order to reduce inventory management costs, chain retail enterprises require suppliers to send products to the distribution center according to the delivery

date. However, only when the distribution center shares order information with suppliers in real time, can suppliers make reasonable operation plans and ensure timely supply. Conflict of strategic goals may bring supply chain risks. Figure 4 planning process risk identification.

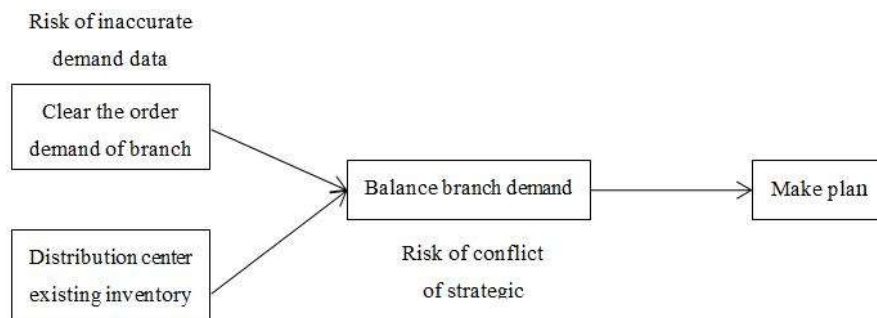


Figure 4 planning process risk identification

Procurement process risk

Supplier management is the core of procurement process. Problems in the procurement link of chain retail enterprises will affect the shelves and sales of products in each branch, thus affecting corporate performance. This paper analyzes the possible risks based on the procurement process in the configuration layer of SCOR model.

Risk of improper supplier selection

Before purchasing products, enterprises need to collect information about suppliers, understand their basic information, and judge whether all aspects meet enterprise standards. However, there are few and difficult channels for enterprises to obtain data related to suppliers, and the opacity of information leads to improper supplier selection and supply chain risks.

Quality risk of procurement contract

Choose the right supplier, issue the purchase order, both sides should not only clear in the contract price, quality, delivery time and also make clear the processing means of regulation product quality problems and be liable for breach of contract. In the actual contract execution process, there are still some problems such as unclear terms and unclear division of rights and responsibilities, which may cause losses to the interests of enterprises.

Risk of purchase price fluctuation

Purchase price is the key factor of cost control in chain retail enterprises. The purchase price will fluctuate with the changes of market supply and demand, government policies and regulations, shortage of human resources and other factors. Due to the small profit margin of the retail industry, its competition mainly depends on geographical location, product price and service, and the unstable

purchase price affects the product pricing of enterprises, making the supply chain of chain retail enterprises in a disadvantaged position in the industry.

Supplier delay risk

After the completion of product procurement, the supplier's improper choice of transportation mode, deliberate delay of delivery, or lack of production capacity to report, etc., lead to the enterprise unable to receive the goods within the time specified in the contract, affecting product sales. Supply chain operation is the continuous process, any problems in the middle may interrupt the supply chain and bring economic losses to chain retail enterprises. The procurement process risk identification is shown in Figure 5.



Figure 5 The procurement process risk identification

Distribution process risk

Distribution runs through the supply chain of chain retail enterprises. Efficient logistics distribution is the basic condition of retail chain operation. The order information of each branch of chain retail enterprise is concentrated in the distribution center. The distribution center sends the products to the stores timely and accurately according to the order requirements of each branch through storage, storage, sorting and distribution. The possible risks identified in the distribution process based on the improved SCOR model are as follows:

Inventory risk

According to data, the out-of-stock rate of branch stores of chain retail enterprises in China is about 10% (Shunping, 2017). In order to avoid the situation that the market demand is greater than the supply of branch stores, distribution centers of chain retail enterprises usually issue higher demand orders to suppliers based on the order demand of branch stores, resulting in bullwhip effect and serious overstocking of product inventory. The inventory quantity of distribution center should change according to the enterprise scale and sales quantity, so as to avoid the risk of shortage caused by insufficient inventory quantity and the risk of high inventory cost caused by excessive inventory quantity.

Risk of distribution loss

Chain retail enterprises distribute goods to branch stores, especially fresh food, which is prone to rot and perishability, and have high requirements on distribution temperature and humidity. If the facilities and equipment in the distribution center fail to meet the standard of distribution conditions, and the

staff makes mistakes in the process of sorting and tallying, goods may be damaged and products cannot be put on shelves in time. For products with high sales and purchase frequency, timely replenishment should be carried out to avoid consumers unable to buy the products they want and a large number of products they do not want to buy, which will affect the sales of enterprises.

Information technology risk

Information can be shared in the supply chain of chain retail enterprises in real time to ensure timely supply of market demand. Information technology risk exists in every link of the supply chain, and every subject in the supply chain is the creator and user of information. The sharing of product quality information of suppliers, ordering information of distribution center, sales information of each branch and regular maintenance of information system can effectively avoid the risk of inventory backlog, delivery delay and information data theft caused by information asymmetry and information technology security, resulting in unnecessary loss and waste of resources. Risk identification of distribution process is shown in Figure 6.

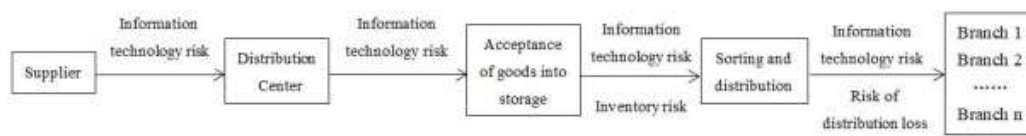


Figure 6 Risk identification of distribution process

Sales process Risk

Sale is the fundamental link in the supply chain of chain retail enterprises. In the process of sales, chain retail enterprises are faced with the challenges of product homogeneity competition, retail market being gradually dispersed by online shopping, consumer demand fluctuations and foreign well-known chain enterprises entering the domestic market, which make the operation risks of chain retail enterprises gradually prominent. As chain retail enterprises expand across regions, each branch is located in different regional cultures and customs, and consumers' demand preferences and consumption patterns are different. In recent years, the country has attached increasing importance to the eco-logical environment and issued corresponding policies to eliminate the production enterprises that seriously pollute the environment, which has increased the operating costs of chain retail enterprises. The risk based on the improved SCOR model: the business risk caused by cultural difference and government intervention.

In addition, the management space of the headquarters of chain retail enterprises is large, and the lack of contact between the branch managers and the headquarters is easy to breed the inaction of the branch managers and employees, resulting in the backlog of products on the shelf, the store employees' work is loose, the service attitude is poor and other risks. The risk based on the improved SCOR model: human resource risk caused by employee inaction. Figure 7 risk identification of sales process.



Figure 7 Risk identification of sales process

Risk of after-sales service process

Credit risk

After-sales service quality is an important factor to maintain customer relationship. Product quality and safety, employee error and delayed after-sales treatment will bring negative emotions to customers, resulting in customer return disputes, affecting customer loyalty and corporate reputation. Chain retail enterprises shall, according to the reasons for customers' complaints, take appropriate measures to deal with them, collect customers' problems, pay regular visits to old customers and improve the quality of after-sale services.

Risk of improper handling of return of goods

Product return includes customers returning products to stores and distribution centers of chain retail enterprises due to quality problems or damaged packaging to the supplier. When the branch stores return products with quality problems and surplus products, the chain retail enterprises and suppliers do not deal with the return in a timely manner and the principle of return is not clear, which is easy to lead to no one to bear the transportation costs and waste of surplus products resources, which is not conducive to the cooperation between the two parties. Risk identification of after-sales service process is shown in Figure 8.

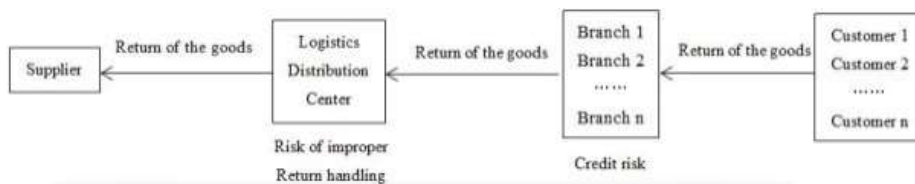


Figure 8 Risk identification of after-sales service process

CONCLUSION

Supply chain risk identification is the basis for enterprises to implement supply chain risk management. The accurate identification of supply chain risk can clarify the source of risk, prevent risk and reduce the probability of risk occurrence. Therefore, the purpose of this paper is to identify the internal risks of cross-regional expansion of chain retail enterprises in the supply chain. Using the improved SCOR model, analyzes the possible risk factors in each process of chain retail enterprises' cross-regional expansion from five aspects: planning, procurement, distribution, sales and after-sales service. Improved SCOR model, considering the cross-regional expansion of chain retail enterprise to bring economic supply chain risk caused by cultural differences and government policy, and reverse logistics

products and intangible services flow risk of after-sales service, make the retail chains in the process of practical operation, facing the future uncertainty there is a clear understanding. At the same time, it can also improve the risk management awareness of the cross-regional expansion of chain retail enterprises and reduce unnecessary losses. It is expected to provide some reference value for the development of chain retail enterprises in China under the current tide of e-commerce.

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