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Research Article

Green Supply Chain Management Model of e-Commerce Enterprises Based on SCOR Model

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With the rapid development of e-commerce technology, e-commerce enterprises, especially B2C enterprises, have sprung up. This competition based on e-commerce technology has changed the traditional supply chain model and improved the operation efficiency of the supply chain. However, with the use of e-commerce technology, the supply and demand relationship between e-commerce enterprises has become extremely complicated. The original risk management system in the past has long been unable to adapt to the development needs of e-commerce enterprises in the new era. In view of this, it has far-reaching practical significance to actively carry out research on supply chain risk management for e-commerce enterprises, especially for B2C enterprises. In this research, on the premise of some previous theoretical and practical results, a B2C enterprise supply chain risk identification model is established by means of the research on SCOR, namely, the supply chain operation mode, combined with the characteristics of the B2C enterprise supply chain. The comprehensive evaluation method is used to evaluate the supply chain risk. Finally, an empirical study is carried out with *J* Company, which represents the B2C enterprise, as an example, which proves the applicability and reliability of this model. The results of this study have a certain reference value for the identification and control of B2C enterprise supply chain risks and also an inspiration for future research.

1. Introduction

According to the "data on the size of China's online shopping market in 2014" released by the China report office, the total transaction size of China's online shopping market in 2014 exceeded 2.8 trillion yuan, an increase of 48.7% over last year, but still at a relatively large level of increase. Among them, China's B2C trading volume ranks first in the world, with a total value of nearly 1.3 trillion, accounting for 46.1% of the total turnover of China's online shopping market, an increase of nearly 6 percentage points over 40.8% in the same period of 2013. In addition, in terms of market growth rate, China's B2C trading volume has also grown by leaps and bounds. In 2014, the transaction volume of B2C online shopping in China increased by about 70% year on year. For a period of time, the fundamental force for the growth of China's online shopping industry still comes from the B2C industry [1]. According to the prediction of relevant experts, by the end of 2015, the number of B2C transactions in China's online shopping market will fully exceed that of C2C market. It can be seen from Figure 1 that the number of B2C online purchases is increasing every year [2].

In addition, with the macroeconomic downturn, more companies and individuals overcome difficulties by building low-cost and easy to manage e-commerce networks; more traditional manufacturers have begun to realize the convenience provided by e-commerce. Therefore, while building their own network enterprises, they have also begun to improve their traditional marketing methods. For example, Haier and Hisense have gradually formed their own online shopping malls on the Internet, and channel merchants such as Suning and Gome have also gradually established their own online stores. Wal Mart, Carrefour, and other offline chain stores have entered the B2C field. From the perspective of the future development trend of China's B2C market, with the development of time, the public's online shopping awareness is becoming more mature and the online

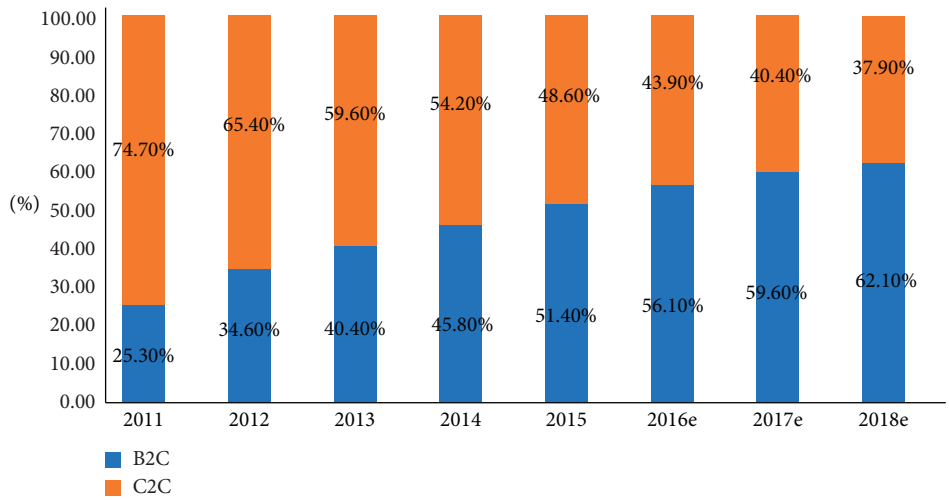

Figure 1: 2011–2018 China online shopping market transaction scale structure.

shopping behavior will become more rational [3]. The requirements for product quality will further promote the rapid growth of B2C field [4].

The occurrence of supply chain risks has become a bottleneck for the development of B2C enterprises.

The extensive management mode of the enterprise has already become a factor bottleneck that inhibits the rapid growth of B2C company. Many B2C companies do not put the advantages of suppliers in the first place, and there is also a lack of specialized personnel responsible for the management of suppliers. According to the description made by the chief executive of Vanke in an interview, there was originally a person in Vanke who was responsible for the suppliers, and the clothing was packaged for the manufacturer. However, he realized that this was a wrong choice, so he quickly recruited 100 people. Many people are in charge of the whole supply chain and go deep into each link of the supply chain. However, the massive shortage of goods and commodities in the "double 11" war every year is actually due to the lack of comprehensive management mechanism within e-commerce enterprises and the lack of effective integration of multiple functions in the supply chain [5]. In 2014, shortly after Jumei Youpin was listed, it was exposed that it sold fake news, causing its stock price to plummet. Threats from suppliers have caused the company's market value to shrink by about 60% compared with the initial listing. In addition, according to the information statistics of the State Administration for Industry and Commerce of China, more than ten batches of commodities sold on six professional e-commerce websites, such as Jumei high-quality products, Taobao and happy bee, have quality problems on the double 11 [6]. There is no doubt that due to the emergence of supply chain crisis, the reputation and capital supply chain of B2C companies have been damaged. In this case, which enterprise gives priority to supply chain risk management, because it will take the lead in the future market development. The suppliers of B2C enterprises are different from traditional suppliers. Although the use of chain management has greatly improved the response rate of the node members of suppliers to the market development, at the same time, with the wide application of computer technology and network information technology, the stability of the network and the transformation of the old and new supply chain models are also facing corresponding risks. Under these circumstances, it is particularly important to determine the supplier risk of B2C company and how to evaluate the risk level of suppliers [7].

2. State of the Art

2.1. Research on the SCOR Model. Ebrahimi et al. all briefly expounded the mode of the Scientific Committee on ocean research, and proposed that the Scientific Committee on ocean research mode be the main strategic method for enterprise management. The wide application of the Scientific Committee on ocean research mode greatly reduced the difficulty and complexity of enterprise management [8]. The SCOR model mentioned in this article can be divided into three layers. The first layer is the highest layer, which is the processing process class. The second layer is the process class of the configuration layer. The third layer is the process element layer, which is the lowest level of all SCOR models. Therefore, the SCOR model has laid a foundation for the development of the enterprise, and the SCOR model will also affect the future development of the company, so as to meet the future development needs of the enterprise.

Kim et al. discussed the relationship between the five stages of SCOR model and supply chain performance. He also pointed out that the five basic links of SCOR mode include planning, supply, manufacturing, distribution, and return, and all of these will change the enterprise performance. Among them, planning and manufacturing will change more internal performance data (reliability, responsiveness, and flexibility) of the enterprise facing users, while manufacturing will affect more internal supply chain indicators (costs and assets) [9].

In this chapter, the author of Persson F. SCOR template analyzes the supply chain of two different enterprises through the SCOR template. The results show that in the previous version, the analysis of SCOR model is only applied

to one company, but with the further update of SCOR model version, more and more companies have applied it to the supply chain. Finally, the paper concludes that SCOR model is a general model and can measure the supply chain of almost all companies [10].

2.2. Research on the Source of Supply Chain Risk. Zanon et al. defined the concept of supply chain risk. Supply chain risk is caused by risk factors, and it affects the efficiency of the supply chain, causing losses to enterprises. They believe that the supply chain risk exists in any manufacturing industry [11].

Sergeev and Solodovnikov believed that the important factors affecting enterprise supply chain risk are logistics risk, capital flow risk, and information flow risk, in which logistics risk can be divided into manufacturing risk, procurement risk, and distribution risk [12]. Flow risk can be further divided into exchange rate risk, price and cost risk, financial strength risk, and financial processing risk of supply chain members; information flow risk includes information accuracy risk and information system security risk.

Llivsaca et al. considered that, in addition to the external environment and supply factors that would cause supply chain risks of enterprises, they also considered process planning risks, monitoring risks, and strategic risks and believed that consumer behavior would also cause supply chain risks affecting the enterprise [13].

3. Methodology

3.1. Analysis of Supply Chain Risk Sources

3.1.1. Bullwhip Effect. The "bullwhip effect," also known as demand release effect, refers to the description of the image phenomenon caused by the distortion of a large number of demand signals transmitted by suppliers by Professor Li, a well-known supply chain management expert and scholar [14]. The basic idea of the "bullwhip effect" means that enterprises in the supply chain must give priority to the production demand of other enterprises in the upstream and downstream of the supply chain when formulating their own product policies and relevant measures. Once the product data submitted by upstream and downstream companies are inaccurate or biased, the impact will be gradually transmitted through suppliers and gradually expanded with the growth of upstream and downstream enterprises [15]. When the data is transferred to the enterprise in the most supply chain, it will receive the error between the product data at the end of the supply chain and the user's data.

3.1.2. Information Asymmetry between the Two Parties to the Transaction. The so-called information asymmetry has two meanings: first, the buyer and the seller must know the necessary information of the other company before signing the contract. Secondly, both parties of the transaction understand the data familiarity of the other party, and the party with less information can understand the impact probability of some data, so as to predict the formation of the trend through the known data [16].

It is because all trading parties are faced with this information asymmetry, which will inevitably lead to dishonest behavior towards the participants in all aspects of the enterprise, and they will also inevitably demand to maximize their own profits, thus threatening the overall profits of the whole enterprise. Therefore, under the condition of e-commerce, for all the participants in the middle and lower reaches of the enterprise, even for the traditional industry, it is difficult to form long-term cooperation because the buyer and the seller have never known each other, and the sense of trust is greatly reduced. In addition, under the e-commerce platform, the efficiency of commodity collection and comparison of all parties will be greatly reduced. People can find the products they want from multiple platforms. Therefore, for B2C enterprises, this will increase their interest in commodities. The credit and loyalty of customers, thus generating the income of enterprises [17].

3.1.3. Antinomy Effect. Contradiction, abbreviated as trade-off, refers to the profit and loss contradiction of certain significance among various factors in a system. Changes in various capacity factors will inevitably lead to changes in other factors, that is, it is said that improving the benefits of one factor will inevitably lose the benefits of other factors, and this problem has always existed [18]. Therefore, in the field of packaging materials, it is assumed that all cost elements are kept constant. If the money spent on packaging materials is relatively small, these funds will be converted into income, which can also increase the final income to a certain extent. However, while simplifying the packaging materials, it will inevitably affect the protection effect of the company's goods during the flow process, so that the quality of the flowing goods can not be improved, and even lead to the loss of goods, resulting in the decline of the company's income. For each link of the supplier's operation, no matter manufacturing, production, or distribution, there will be contradictory effects. Therefore, the company needs to find a good combination of the two main functional elements, as shown in Figure 2; otherwise, the supplier's operating costs will be increased and the costs will reduce corporate profits.

3.2. Analysis of Existing B2C e-Commerce Models. The focus of this paper is to study the supply chain risk of B2C enterprises; however, there are many B2C models. Next, this paper will analyze the B2C model in detail and the supply chain situation under each model [19].

3.2.1. Comprehensive B2C. Comprehensive B2C e-commerce companies are represented by JD.com, Dangdang, and Amazon. The transaction process of such companies is shown in Figure 3.

From Figure 3, we can find that in the integrated B2C enterprises, various brand enterprises are in the upstream of the supply chain, while the integrated B2C enterprises are in the middle of the supply chain and the enterprises are in the

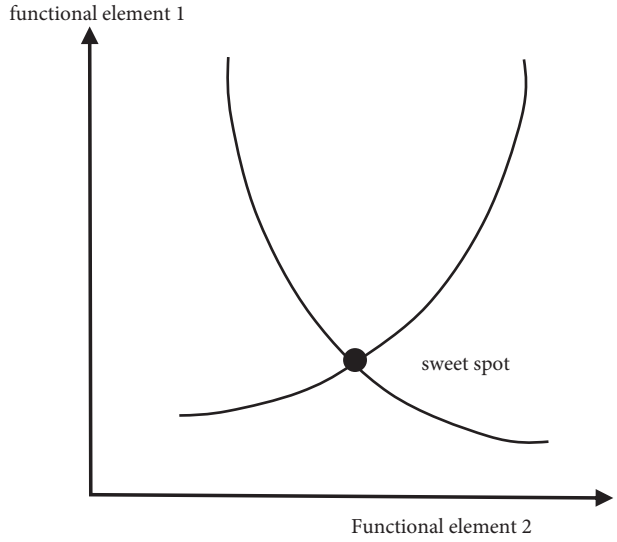

Figure 2: Antinomy effect.

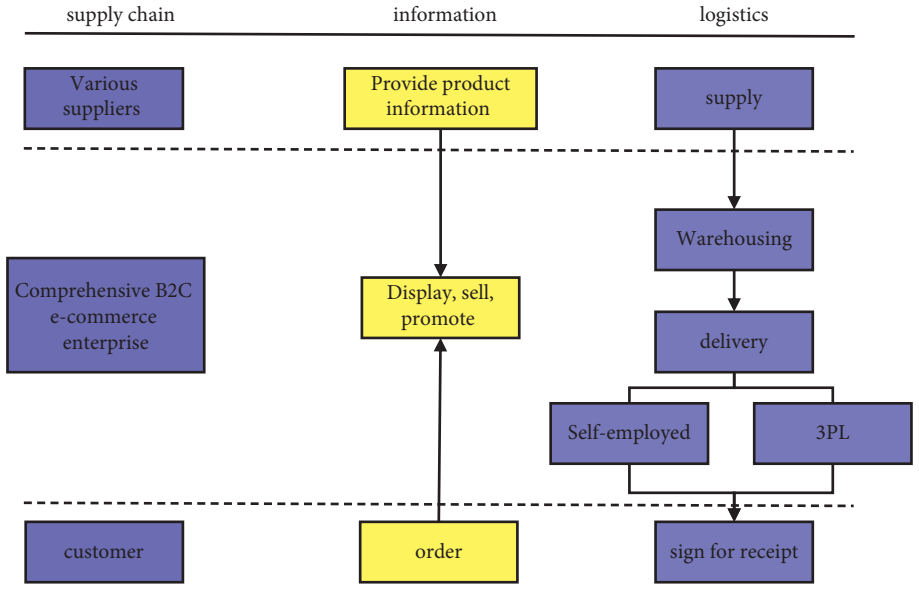

Figure 3: The transaction flowchart of a comprehensive e-commerce enterprise.

downstream of the supply chain. Brand providers mainly supply commodities to integrated B2C enterprises, while B2C enterprises mainly provide services, marketing and publicity on online marketing websites. All B2C companies introduced in this article are comprehensive B2C e-commerce companies

3.2.2. Platform-Based B2C e-Commerce Enterprises. Platform: the online marketing platform provided by enterprises in B2C enterprises. Class consumers can provide a variety of products.

Platform-type B2C e-commerce enterprises are upstream of the supply chain, merchants are in the middle of the supply chain, and customers are downstream of the supply chain. When customers buy items from the merchant's store, the merchant can sort and package the goods stored in the self-operated warehouse or the warehouse of the third-party logistics company and finally deliver them through the third-party logistics company.

3.2.3. Branded B2C e-Commerce Enterprises. Branded B2C e-commerce enterprises refer to independent brand e-commerce platforms represented by Mecoxlane, Vanke Eslite, and so on. They have their own exclusive brands.

As shown in Figure 4, they are located at the most upstream of the supply chain, and they are also located at the

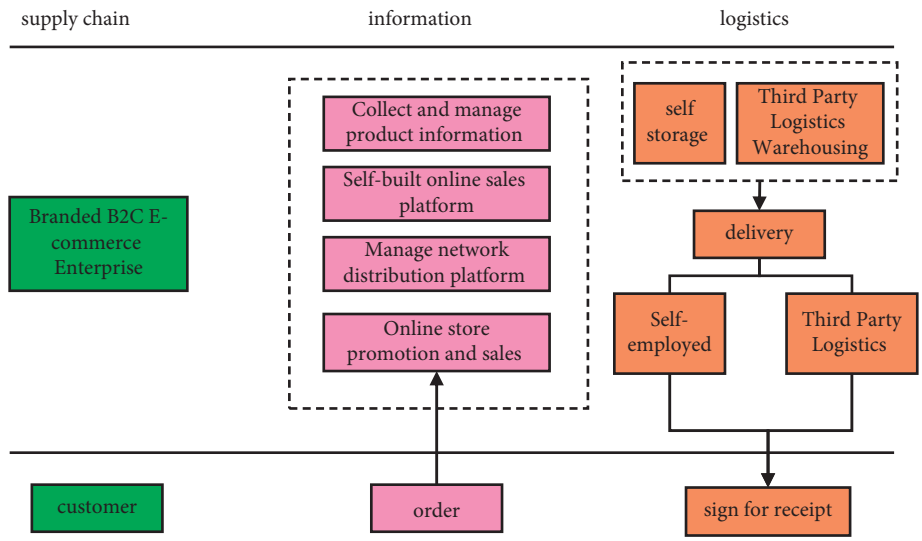

Figure 4: Transaction flowchart of branded B2C e-commerce enterprises.

downstream of the whole supply chain. In addition to selling goods on its own e-commerce platform to realize product marketing, it will also establish exclusive stores on tmall and other e-commerce platforms.

3.2.4. Chain B2C e-Commerce Enterprises. Chain B2C e-commerce companies refer to e-commerce companies gradually transformed from traditional chain companies represented by Suning and Gome. The company has its own physical stores in China and around the world, and uses its own commercial network to sell goods.

Suppliers are upstream of the supply chain, while the self-owned business platforms of brick-and-mortar stores and chain B2C companies are located in the middle of the supply chain. Consumers can go to brick-and-mortar stores or to the self-owned business websites of chain B2C e-commerce platforms for shopping. Physical stores and self-owned business platforms are responsible for the promotion and sales of products.

3.3. Rough Set Theory

Definition l. $U\neq$ is a finite set of elements, $U = \{X1, X2, \ldots, Xn\}$, called the universe of discourse; R is the binary equivalence relation on U; UIR represents the set of all categories formed by R on U (also called equivalence class set). Then, any subset contained in U is a concept or knowledge; $K = (U, R)$ is a knowledge base.

Definition 2. If PcR and P≠, then nP (the intersection of all equivalence relations in P) is also an equivalence relation, called the indistinguishable relation on P, denoted as ind(P).

Shi Xiao Ui/ind(P) represents the knowledge related to the equivalence relation family P, which is called the basic knowledge of P about U in K. for the knowledge base $K = (U, K)$, U is a nonempty finite universe, and R is an equivalence relation on U. When xU is called,

$$R_{-}(X) = \cup\left\{Y \in \frac{U}{R} \mid Y \subseteq X\right\},$$
$$R^{-}(X) = \cup\left\{Y \in \frac{U}{R} \mid Y \cap X \neq \Phi\right\}, \tag{1}$$

are the R lower approximation set of X and the R upper approximation set of X, respectively.

Given the value of information system, Zhang Jinlong (2002) defined the information content of knowledge P as

$$I(P) = \sum_{i=1}^{n} \frac{|X_i|}{|U|}\left(1 - \frac{|X_i|}{|U|}\right) = 1 - \frac{1}{|U|^2}\sum_{i=1}^{n} |X_i|^2. \tag{2}$$

Definition 3. Given an information system $s = (U, A, v, F)$, the importance of attribute $a \in$ A in A is defined as

$$k(a) = k_{\phi}(a) = I(A) - I(\{a\}). \tag{3}$$

Using the attribute importance formula, it is possible to examine the change of the amount of information after removing an attribute by removing an attribute and then judge the importance of the attribute in the information system. If the change in the amount of information is large after removing this attribute, it means that the attribute is more important.

3.4. Construction of the Risk Fuzzy Comprehensive Assessment Model. By determining the degree of membership of each risk index to each evaluation level.

$$\Gamma_1 = \left(\phi_{ijk}\right)_{m\times p} = \begin{bmatrix} \phi_{i11} & \phi_{i12} & \cdots & \phi_{t1p} \\ \phi_{i21} & \phi_{i22} & \cdots & \phi_{i2p} \\ \vdots & \vdots & \cdots & \vdots \\ \phi_{im1} & \phi_{tm2} & \cdots & \phi_{1mp} \end{bmatrix}. \tag{4}$$

In the formula, $i = 1, 2, \ldots, n$ represents the degree of membership of the index v to the k-level comment II.

$$\phi_{ijk} = \frac{t_k}{\sum_{k=1}^{m} t_k}. \tag{5}$$

For the evaluation index system composed of multilevel (Level 2 and above) comprehensive evaluation index system, fuzzy comprehensive evaluation will be implemented one by one. Specifically, for the evaluation of an indicator system consisting of secondary indicators: On the basis of risk fuzzy comprehensive evaluation and index weight calculation, fuzzy operation is performed on the evaluation matrix of the second-level index, and the membership vector of the first-level evaluation index to the comment set is obtained: By calculating the membership vector of the first-level evaluation index, the fuzzy comprehensive evaluation is obtained.

$$\Gamma = \begin{bmatrix} \Gamma_1 \\ \Gamma_2 \\ \vdots \\ \Gamma_n \end{bmatrix} = \begin{bmatrix} \phi_{11} & \phi_{12} & \cdots & \phi_{1m} \\ \phi_{21} & \phi_{22} & \cdots & \phi_{2m} \\ \vdots & \vdots & \cdots & \vdots \\ \phi_{n1} & \phi_{n2} & \cdots & \phi_{nm} \end{bmatrix}. \tag{6}$$

3.5. Constructing a Judgment Matrix for Pairwise Comparison. A comparative comprehensive evaluation matrix (as shown in Table 1)can be established on the basis of constructing the first level indicator system and the second level indicator system. Dominant significance here, the secondary index has a special significance for its corresponding primary index [20]. Therefore, for the second level indicators, different weights can be assigned to these indicators according to their importance through the comparison of two pairs or two allocation of secondary indicators. The comparative importance of each factor is determined, and the evaluation results are filled in the matrix to establish a judgment matrix for positive comparison. Assuming that matrix A is used as a proportional judgment matrix, in matrix A, *aij* represents the importance of *Xi* in relation to *Xj*, and the following matrix will be obtained:

$$A = \begin{bmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \cdots & \cdots & \cdots & \cdots \\ a_{n1} & a_{n2} & \cdots & a_{nn} \end{bmatrix} = A(aij). \tag{7}$$

In this paper, the importance of *aij* relative to *a* in the matrix is assigned by the 1–9 scale method. The specific method is shown in Table 2.

In general, after the objective value of common interests is determined in the judgment matrix, it is inevitable to mix in the subjective judgment of experts. Therefore, it is necessary to determine the judgment matrix of pairwise comparison to improve the accuracy of index determination. By adjusting the subjective judgment of whether the conformity check is met.The formula used for the test is

$$CI = \frac{\lambda_{\max} - m}{m - 1}, \tag{8}$$

where *CI* is called the consistency index, *max* is the largest eigenvalue of matrix A, and *m* is the order of the matrix. After the matrix is tested, the consistency needs to be corrected. The measurement standard of the consistency index is represented by CR, and the formula used is

$$\mathrm{CR} = \frac{\mathrm{CI}}{\mathrm{RI}}. \tag{9}$$

Among them, RI refers to the random consistency test index, which is a fixed value. The commonly used random consistency test index values are shown in Table 3. The CR value that meets the consistency judgment standard must be less than or equal to 0.10 before it can be used to calculate each indicator weight value.

After the pairwise judgment matrices that do not meet the subjective judgment of the consistency test are reasonably adjusted through the consistency test, the judgment matrix is normalized, and finally, the weight of each index is solved by the data processing software.

4. Result Analysis and Discussion

4.1. Implementation of Fuzzy Comprehensive Evaluation. In the first part, the secondary indicators of H company shall be established. In order to better implement the comprehensive evaluation, this paper introduces the secondary index of fuzzy comprehensive evaluation. Through the secondary index system, the membership matrix of various risks can be determined, and the data can be summarized and sorted. Therefore, the data source of this paper mainly depends on the research of relevant experts and scholars. Finally, based on the statistical results, the membership matrix of various risk assessment indicators composed of the following specific values is shown in Table 4.

According to the above evaluation steps, a related membership matrix is formed on the basis of the original multi-level index system, and the supply chain risk of H company is evaluated as a whole according to the results and evaluation criteria in the matrix. First, a membership matrix of five major aspects of enterprise operation risk is formed: planning risk, procurement risk, production risk, distribution risk and return risk, and represent them with R1, R2, R3, R4, and R5 respectively.

The index is calculated by weight: the weight of secondary indicators of infrastructure risk [0.258,0.192,0.235,0.315]; weight of secondary indicators of supply operation risk [0.121, 0.417, 0.193, 0.269]; weight of secondary indicators of production and operation risk [0.112, 0.403], 0.161, 0.258, 0.066]; the weight of the secondary index of distributed operational risk is [0.388, 0.143, 0.086, 0.067, 0.316]; the weight of secondary indicators of return and operational risk [0.466,0.101,0.433]. Using the formula Bi = wi RJ (W represents its weight), the fuzzy total evaluation value of each operation risk can be obtained.

Table 1: The company's supply chain risk evaluation index system.

	First-level indicator	Secondary indicators
H company supply chain risk evaluation index system A	Planning risk	SCR1: strategic plan risk U_{11}
		SCR2: inconsistent strategic goals U_{12}
		SCR3: strategic investment risk U_{13}
		SCR4: market demand fluctuates U_{14}
	Procurement risk	SCR5: uncertain purchase price U_{21}
		SCR6: uncertain purchase quality U_{22}
		SCR7: delivery not on time U_{23}
		SCR8: inadequate implementation of procurement management process U_{24}
	Production risk	SCR9: uncertain production costs U_{31}
		SCR10: the production and operation model is backward U_{32}
		SCR11: natural disasters U_{33}
		SCR12: market demand cycle U_{34}
		SCR13: the single structure of seed potato is severely degraded U_{35}
	Shipping risk	SCR14: low road accessibility and poor production and sales channels U_{41}
		SCR15: deterioration and loss of commodity potatoes U_{42}
		SCR16: storage facilities are lagging behind U_{43}
		SCR17: delivery delay U_{44}
		SCR18: service quality not up to standard U_{45}
	Return risk	SCR19: hidden dangers of product quality and safety U_{51}
		SCR20: cooperation risk U_{52}
		SCR21: improper handling of return business U_{53}

Table 2: 1–9 scaling method.

Scale value	Indicator description
1	Metric X_i is as important as X_j
3	Indicator X_i is slightly more important than X_j
5	Metric X_i is clearly more important than X_j
7	Indicator X_i is strongly important to X_j
9	Indicator X_i is extremely important to X_j
2, 4, 6, and 8	Corresponding to the intermediate situation of the judgment of the above two adjacent indicators
Reciprocal scale	If the result of the pairwise comparison between X_i and X_j is a_{ij}, then the result of the comparison between the indicator X_i and X_j is $a_{ji} = 1/a_{ij}$

Table 3: Disease random consistency test index (RI).

Step	1	2	3	4	5	6	7	8	9
RI	0	0.1	0.60	0.95	1.15	1.27	1.34	1.42	1.46

To sum up, the overall evaluation results of H company's supply chain have been obtained, and the specific data (with three decimal places) are shown in Table 5.

4.2. Enterprise Green Supply Chain Management Strategy Based on SCOR. At present, the research on the implementation of green supply chain management in Chinese enterprises is still in its infancy and exploration stage. Combined with the previous analysis, to effectively implement green supply chain management in Chinese enterprises, it is necessary to take measures from both macro- and microlevels. The design process is shown in Figure 5.

4.2.1. Macrolevel. (1) Government departments must strengthen environmental education to make environmental protection thoughts deeply rooted in the hearts of the people. The characteristics of enterprises determine the importance of developing green enterprises. In the process of guiding the green manufacturing of small and medium-sized enterprises, local government departments should not only spread the manufacturing and sales concepts of green products to entrepreneurs, but also create conceptual support and public opinion atmosphere for the green supply chain management of small and medium-sized enterprises to guide small consumers to carry out green consumption. (2) Government departments shall establish and improve environmental protection laws and policies. On the basis of drawing on the advanced environmental protection concepts of other developed countries and according to China's national conditions, China can study and introduce environmental protection legislation with more Chinese characteristics, strengthen the implementation, and severely crack down on acts violating the spirit of environmental

Table 4: Membership of supply chain risk indicators of company H.

	First-level indicator	Secondary indicators	Risk level				
			Very high	High	General	Low	Very low
H company supply chain risk evaluation index system A	Planning risk	SCR1: strategic plan risk U_{11}	0	0.3	0.4	0.3	0
		SCR2: inconsistent strategic goals U_{12}	0	0.2	0.5	0.3	0
		SCR3: strategic investment risk U_{13}	0	0.2	0.3	0.4	0.1
		SCR4: market demand fluctuates U_{14}	0	0.4	0.3	0.3	0
	Procurement risk	SCR5: uncertain purchase price U_{21}	0.3	0.4	0.2	0.1	0
		SCR6: uncertain purchase quality U_{22}	0.3	0.2	0.3	0.2	0
		SCR7: delivery not on time U_{23}	0	0.3	0.4	0.1	0
		SCR8: inadequate implementation of procurement management process U_{24}	0.2	0.3	0.4	0.3	0
	Production risk	SCR9: uncertain production costs U_{31}	0.4	0.3	0.1	0.2	0
		SCR10: the production and operation model is backward U_{32}	0.2	0.2	0.4	0.1	0.1
		SCR11: natural disasters U_{33}	0.3	0.3	0.4	0.1	0
		SCR12: market demand cycle U_{34}	0	0.4	0.4	0.2	.
		SCR13: the single structure of seed potato is severely degraded U_{35}	0.4	0.3	0.2	0.1	0
	Shipping risk	SCR14: low road accessibility and poor production and sales channels U_{41}	0.5	0.3	0.2	0	0
		SCR15: deterioration and loss of commodity potatoes U_{42}	0.4	0.3	0.3	0	0
		SCR16: storage facilities are lagging behind U_{43}	0.2	0.5	0.2	0.1	0
		SCR17: delivery delay U_{44}	0.2	0.4	0.3	0.1	0
		SCR18: service quality not up to standard U_{45}	0	0.1	0.5	0.4	0
	Return risk	SCR19: hidden dangers of product quality and safety U_{51}	0.4	0.3	0.3	0	0
		SCR20: cooperation risk U_{52}	0	0.1	0.4	0.5	0
		SCR21: improper handling of return business U_{53}	0	0.3	0.5	0.2	0

Table 5: Overall evaluation results of H company's supply chain.

Risk indicator	Evaluation results	Risk score
Planning risk	[0, 0.289, 0.364, 0.324, 0.024]	58.366
Procurement risk	[0.215, 0.270, 0.334, 0.180,0]	70.410
Production risk	[0.20, 0.269, 0.353, 0.137, 0.04]	69.040
Shipping risk	[0.282, 0.261, 0.316, 0.142,0]	73.652
Return risk	[0.186, 0.280, 0.397, 0.137, 0]	70.310
Company H potato supply chain risk B_{total}	[0.127, 0.277, 0.351, 0.227, 0.018]	65.401

protection legislation, thus creating a good legal environment for the implementation of the green supply chain management mode. The reward and punishment system has been improved, and the companies that implement the preferential policies of green supply chain management such as tax reduction and exemption have been rewarded, so as to increase the cost of pollution and garbage generated in the manufacturing process, and help the company further optimize industrial technology and innovative processes, and constantly improve products to better integrate with the environment.

4.2.2. Microlevel. (1) The company should change its management concept and establish a sustainable development concept. While seeking profits, the company should also take the use of environmental protection resources as the consideration of enterprise development, pay attention to long-term economic benefits, pay attention to long-term partnership with chain companies, and especially do a good job in supplier management. Through the full cooperation of the two enterprises, we will give full play to their core competitiveness and develop new products that are more

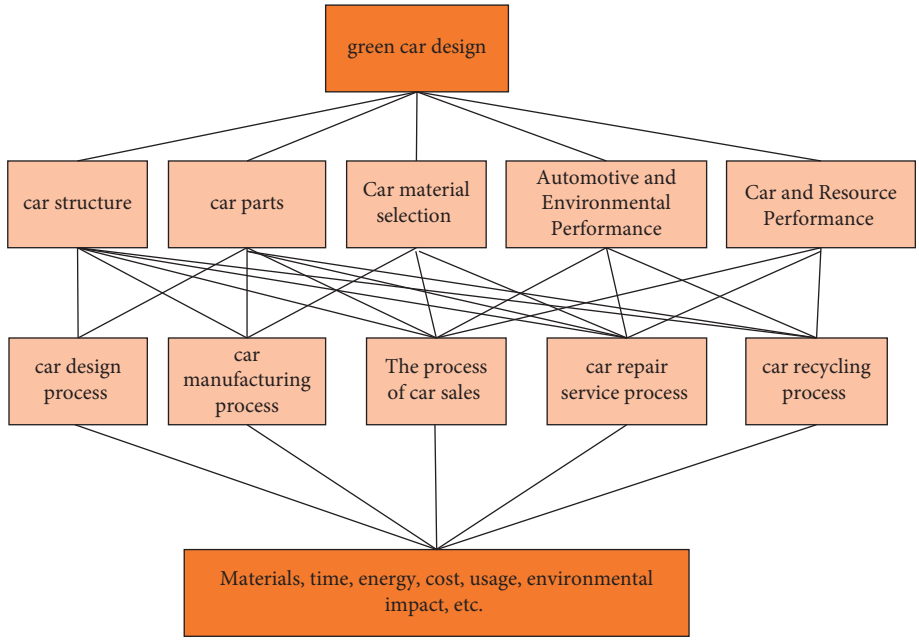

Figure 5: Green enterprise supply chain design process.

suitable for the enterprise's environmental protection concept, so as to enhance the overall advantages of the company and share the business risks of the enterprise. (2) Build strategic partnership with upstream and downstream companies. Producers should not only consider the strategic partnership with suppliers and sellers, but also consider the strategic partnership with consumers and recyclers to promote the development of green supply chain. In order to optimize the allocation of resources, protect the environment and achieve"win-win."

5. Conclusion

This paper focuses on B2C suppliers as the writing center and conducts a corresponding empirical study on the supplier behavior in B2C. In the analysis of supply chain problems, some arguments are obtained, which focus on the following aspects: (1) in the construction of the preliminary risk identification model based on SCOR model, because it is impossible to measure the risk index and collect relevant qualitative information, this paper only selects the qualitative index for risk identification. The expert group evaluation method is adopted. Although professional members have a lot of work experience in supply chain risk analysis and supply chain operation, they are still subject to a certain degree of subjectivity. In the future research work, more experimental data will be obtained, so as to improve some quantitative index factors and make the article more scientific. (2) In the selection of risk assessment indicators, because there are many factors, the factors with factor load of 0.5 must be selected through factor analysis. Although we can understand the main risk points leading to accidents, we still need to consider them comprehensively. There are some problems, which may be very one-sided. Therefore, in the future academic research and practical use, it is still necessary to improve the accuracy of each indicator data, reduce the degree of change in information collection and statistics as much as possible, and thus improve the indicators as much as possible. Only in this way can the risk analysis meet the actual results.

Data Availability

The labeled data set used to support the findings of this study is available from the author upon request.

Conflicts of Interest

The author declares that there are no conflicts of interest.

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