Hindawi
Security and Communication Networks
Volume 2024, Article ID 9841928, 1 page
https://doi.org/10.1155/2024/9841928

Retraction

Retracted: Resilience Assessment and Risk Prediction in Supply Chain Management Based on Network Analysis

Security and Communication Networks

Received 8 January 2024; Accepted 8 January 2024; Published 9 January 2024

This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

(1) Discrepancies in scope

(2) Discrepancies in the description of the research reported

(3) Discrepancies between the availability of data and the research described

(4) Inappropriate citations

(5) Incoherent, meaningless and/or irrelevant content included in the article

(6) Manipulated or compromised peer review

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

In addition, our investigation has also shown that one or more of the following human-subject reporting requirements has not been met in this article: ethical approval by an Institutional Review Board (IRB) committee or equivalent, patient/participant consent to participate, and/or agreement to publish patient/participant details (where relevant).

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

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

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

References

[1] L. Zhu, "Resilience Assessment and Risk Prediction in Supply Chain Management Based on Network Analysis," *Security and Communication Networks*, vol. 2022, Article ID 7873338, 9 pages, 2022.

Hindawi
Security and Communication Networks
Volume 2022, Article ID 7873338, 9 pages
https://doi.org/10.1155/2022/7873338

Research Article

Resilience Assessment and Risk Prediction in Supply Chain Management Based on Network Analysis

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Received 14 June 2022; Revised 28 July 2022; Accepted 25 August 2022; Published 26 September 2022

Academic Editor: Jun Liu

As an important link of enterprise development, supply chain management should cause enterprise managers to attach great importance in order to enhance the competitiveness of enterprises. Based on enterprise supply chain management, this paper analyzes the current situation and risks of enterprise supply chain management and predicts the risks of supply chain management through network analysis. Supply chain management has strong resilience and can cope with greater risks for itself and various risk situations in the industry. The influence weight of risk types is assessed. The top three factors will restrict the supply chain management of enterprises and are factors that cannot be tolerated by management. In management practice, the influence should be avoided or mitigated as far as possible to improve the management level. In addition, corresponding measures are put forward according to the characteristics of enterprises, and scientific suggestions are provided for the development of enterprises. This assessment can be used as the basis of enterprise supply chain management risk control management decisions.

1. Introduction

The twenty-first century is an era of high modernization, knowledge, and informationization. People enjoy the convenience of contemporary society all the time. The vigorous development of the logistics industry and e-commerce enables people to quickly obtain what they need. It can even be asserted that the speed of circulation of commodities today is much higher than at any moment in the history of human society. Every second that people pass by, hundreds of commercial orders are placed on the Internet, and consumers just need to easily pick up and confirm on the Internet to complete the commercial order. Such a convenient and fast way of shopping is inseparable from the dependence on Internet technology. In order to adapt to the era of rapid development, logistics management and supply chain management and other industries are gradually informatized, automated, and unmanned. In the new era of Internet development, the organic combination of the Internet and the enterprise supply chain has become an inevitable development of the times, and the internet of things has emerged as the times require. As the product of the "Internet +" supply chain, IoT not only optimizes supply chain management but also enhances enterprise management efficiency. The development of the Internet has thus transformed the traditional state of separation between product suppliers and customers in the supply chain into a joint state, and product suppliers have changed from speculating about customer needs to use the Internet to mine customer demand information and meet customer needs in a timely manner. For example, in the logistics and transportation process, the application of the IoT (internet of things) technology can timely feed back the location information of the cargo transportation to each node enterprise through the supply chain, which is convenient for the enterprise to grasp the cargo location information at the first time and scientifically allocate the logistics vehicles, so as to enhance the efficiency of vehicle transportation and significantly improve the supply chain management efficiency. At the same time, in the manufacturing process, the application of internet of things technology helps staff control and track product production quality in a timely manner, improve the transparency of the entire production and operation process, and enhance the production efficiency of

enterprises. In addition, in the operation and development of enterprises, information sharing is very important for communication between various departments. Although the enterprise used the supply chain management mode before, there are still many deficiencies in technical support and information exchange, and the information lag affects the integration of enterprise resources. With the development of science and technology, the supply chain management mode has been optimized, which provides a bridge for communication and exchanges between various departments of the enterprise, realizes the sharing of information resources among enterprises, and improves the utilization rate of enterprise information. In addition, the new supply chain management model provides convenience for enterprises to cooperate with external enterprises, thereby attracting more potential customers, obtaining relevant information, and promoting the sustainable development of enterprises.

This topic has become popular [1, 2]. It has become an important part of business management. It mainly refers to enterprise managers using the business process between suppliers and customers to identify, analyze, and evaluate the development of internal economic activities and the operation of monetary funds in the enterprise. Guarantee the normal operation of business activities through appropriate risk management procedures [3, 4]. Through the replanning of the distribution of suppliers, the program is more concise, and the data information is more real, and the resources between all suppliers are unified and coordinated to form a complete coordination chain of data and objects [5, 6].

With the continuous application of supply chain management, it has become a good competitive target and means for enterprises [7]. Domestic construction enterprises, especially large construction enterprise groups, have increasingly serious homogeneous competition, and the barriers to technology and market access have been continuously reduced. Management innovation and continuous improvement of supply chain management level have become an inevitable choice for enterprises to maintain their competitive advantage and remain invincible [8]. With the increasingly complex changes in the international economic situation, the in-depth adjustment of the domestic economic structure, and the increasing competition among enterprises, the competition of supply chain management has become an important part of the competition in the construction industry, and the advantages of the supply chain have become the core value of leading companies [9–11]. Supply chain management evaluation will be the only way for enterprise development and the necessity of sustainable development.

At present, the research on inventory control performance of supply chains mainly adopts the analytic hierarchy process (AHP) and fuzzy AHP [12]. The analytic hierarchy process mainly divides the system into multiple layers; each time, only the relationship between the upper layer and the lower layer needs to be considered; and there will not be too many connections between each layer. This precondition simplifies the relationship between the elements in the system, and in the supply chain inventory, the elements of each layer and the elements in the same layer affect each other. Using the AHP method to study inventory control performance reflects the real level of inventory control comprehensively and scientifically [13–15]. Therefore, this paper uses the analytical network process (ANP) to evaluate and predict the risk of supply chain management.

2. Resilience and Risk of Supply Chain Management

What is resilience? This concept was first proposed in 2003 and was defined in 2004 as "the ability of a supply chain to return to its original or more desirable state after disruption." In layman's terms, the resilience of the supply chain means that when an enterprise is faced with a huge impact, its supply chain can still move, produce, and deliver, helping the company to survive the crisis. Throughout the past two decades, in the context of globalization, the supply chain has become more and more complex, and factors affecting the resilience of the supply chain have emerged in an endless stream. Natural disasters, trade conflicts, political conflicts, regional situations, epidemics, and global economic crises have all brought huge hidden dangers to the supply chain, and they are affecting the stability of the supply chain all the time. In the face of emergencies in the general environment, if the supply chain is stuck in the throat, even large and powerful enterprises may suffer huge economic losses or even close to bankruptcy or face serious consequences such as bankruptcy. Therefore, companies must have a strategy to deal with supply chain uncertainty before risks arrive. Building and maintaining a resilient supply chain will become a powerful tool for enterprises to bravely advance in the face of risks, and the continuously enhanced supply chain risk response capability will also help enterprises ride the wind and waves and set sail in an era full of changes.

Supply chain management has great advantages. First of all, the realization of supply chain management can bring huge economic benefits to the enterprise. For enterprises, the application of supply chain management can speed up the reaction speed of the market and make the internal logistics channels, functions, and transportation of the enterprise more efficient. To improve the links and other aspects, it is necessary to expand the scope of logistics services and help enterprises better adapt to the reform of the modern economic system. Especially in the "Internet +" era, through the effective application of information technology, the process of supply chain management is more transparent, which greatly reduces problems such as the backlog of goods, delayed delivery, and transportation, and brings more considerable economic benefits to enterprises [16]. Of course, businesses can gain additional profits through this management. Second, it can greatly improve the efficiency of enterprises. Enterprises can separate each other's data through the supply chain and thus avoid data loss; through supply chain management, enterprises can achieve unification and scale, thereby reducing costs caused by management; Third, in supply chain management, various enterprises can establish strategic cooperation alliances, and the transaction costs between them will be greatly reduced.

Fourth, with the development of science and technology, this management model not only connects enterprises in the industry but also brings the advantages of resource sharing to various enterprises. Enterprises should make good use of big data technology and constantly explore the development of a smart supply chain. Enterprises can also use the technology of human-computer interaction. Through the use of virtual reality, they can integrate their own advantages and auxiliary systems, which can improve the quality of production and logistics, and contribute to sustainable development. This management mode allows each other's enterprises to share resources and information and continuously improve their own management level. Supply chain management mainly consists of the following risks [17]:

(1) Compared with the supply chain management optimization work of foreign enterprises, the level of informatization of employees in Chinese enterprises is generally relatively low. At the same time, many hardware devices of information technology have not kept up in time, thus hindering the informatization development of enterprises. In addition, under the circumstance that online transactions are becoming more and more transparent, the work and management concepts of enterprise employees are too traditional and lack the ability to use computers, and some enterprise employees are more resistant to online transactions and ignore the regulations and instructions of the enterprise, which will increase the degree of difficulty in operation. This in turn hinders the improvement of the level of supply chain management.

(2) With the establishment of the enterprise's online sales system, the product transaction volume of the enterprise has also increased significantly, and there are also new requirements for distribution work. Although the enterprise will increase the warehouse on the way of delivery in order to ensure the efficiency of the transportation work, it does not pay attention to the management work, resulting in various problems in the management process, and neither customers nor the enterprise can obtain timely logistics information, thus affecting the level of enterprise supply chain management.

(3) In the "Internet +" environment, many large enterprises have established their own e-commerce websites, and the products they sell are limited to their own platforms. But what needs to be known is that many suppliers and users are on their own platforms, and some small businesses cannot attract more customers and suppliers. Small and medium-sized enterprises can conduct transactions through their respective platforms and strengthen business alliances in order to improve the level of supply chain management [18].

(4) With the continuous reform and development of the market, the competition among enterprises has become more and more fierce. With the emergence of the Internet economy, enterprises have gradually changed from a traditional single competition method to a diversified one. At this time, supply chain management is becoming more and more important, and management quality directly affects the development of enterprises. However, most enterprises in our country are influenced by traditional concepts, and their awareness of supply chain management is weak. In the process of enterprise management, although supply chain management ideas are also reflected and the basic methods of supply chain management are adopted, the supply chain management awareness has not penetrated into the hearts of management; it is difficult to reach a consensus inside and outside the enterprise so that the supply chain cannot become a value chain. The main purpose of the existence of the supply chain is to use each node on the supply chain to maximize the coordinated development of the resources of each node and provide high-quality services to customers. In fact, most enterprises in our country still follow the traditional mode of operation. Although they constitute a supply chain, the enterprises at each node still focus on their own interests and manage their own affairs, ignoring the direct communication and coordination of each node. It leads to a waste of resources, and most collaborative work is directly affected, which directly hinders the collaborative development of enterprises.

All in all, in supply chain management, various management systems not only have application resilience but also have various management risks, which require mutual support between enterprises to reduce risks.

3. Model Introduction

3.1. Basic Steps of the ANP Method

(1) Establish a system structure model. For a decision-making problem, it is first necessary to carry out a systematic analysis, study the interdependence and feedback relationship between judgment elements and levels, define decision-making goals and criteria, and then construct an ANP model formed by the control layer and the network layer.

(2) Determine the weight of each evaluation index in the evaluation system and construct a supermatrix. Since the network analysis method considers the information feedback between different levels and the interdependence between the elements of the same layer, it is more complicated than the AHP when determining the weight. It is no longer a simple comparison of two elements to the upper elements, but the degree to which each element is affected by other elements needs to be determined. The network matrix composed of the weight values of each element is a supermatrix.

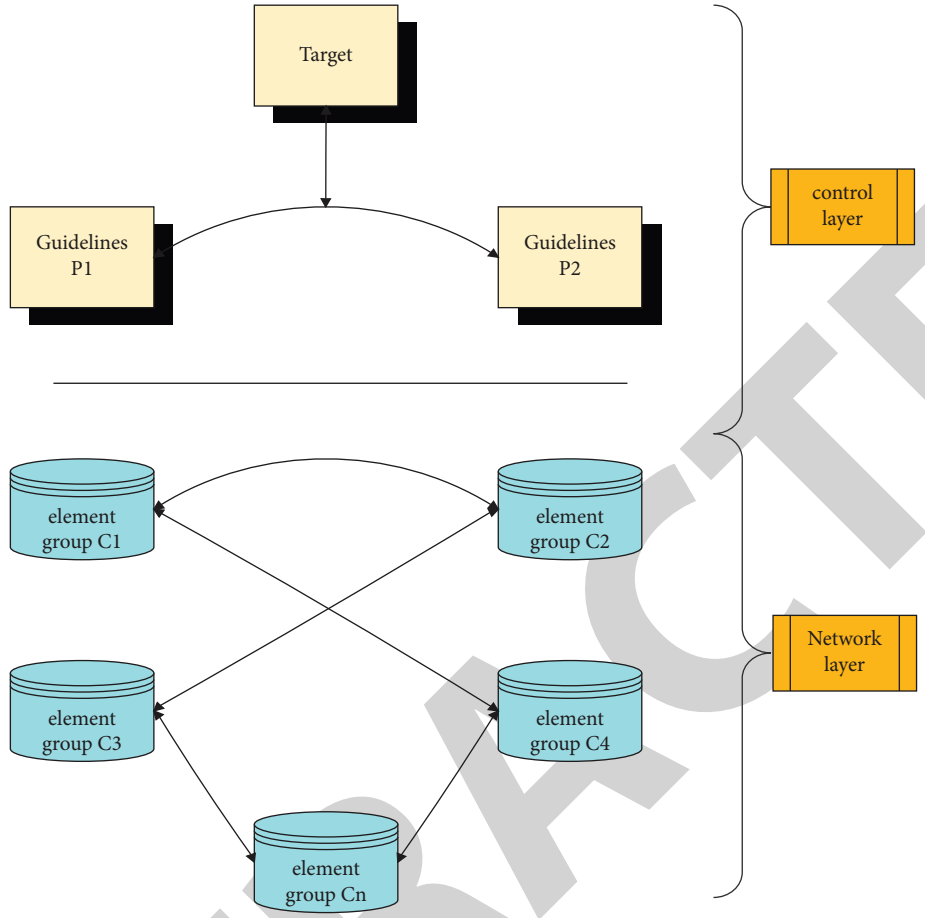

Figure 1: Classical ANP structure diagram.

(3) Introduce fuzzy matrix. Each factor is scored by experts, and a fuzzy evaluation matrix representing the membership degree of each element to the evaluation result grade is established by the fuzzy comprehensive evaluation method.

(4) Calculate the results and analyze the overall level.

(5) Analyze and predict supply chain risk management, analyze and compare the predicted results, and formulate corresponding risk avoidance measures to provide a good scientific basis for enterprise supply chain risk management.

3.2. Model Frame. ANP is the detection, analysis, and diagnosis of all transmitted data in the network, helping users to eliminate network accidents, avoid security risks, improve network performance, and increase the value of network availability. ANP includes a control layer and a network layer, and the elements are independent of each other (Figure 1) [19–21].

Assuming that there are N element groups in the network layer, first, based on ei k (i = 1···*N*; k = 1···n) in the element group Ci, construct the element (j = 1···n; l = 1···m) in the element group Cj ···m), then compare the relative importance of eik, that is, the judgment matrix, and obtain the sorting vector (ω(ik) j1, ω(ik) j2, ···, ω(jlik), ···, ω(ik) jm by the characteristic root method) T, and $\sum\omega$(jlik) = 1. Other elements are obtained by analogy; then $Wij = 0$.

$$A = \begin{bmatrix} W_{j1}^{i1} & W_{j1}^{i2} & \cdots & W_{j1}^{ik} & \cdots & W_{j1}^{in} \\ W_{j2}^{i1} & W_{j2}^{i2} & \cdots & W_{j2}^{ik} & \cdots & W_{j2}^{in} \\ \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\ W_{jm}^{i1} & W_{jm}^{i2} & \cdots & W_{jm}^{ik} & \cdots & W_{jm}^{in} \end{bmatrix}. \quad (1)$$

There are $N \times N$ such sorted matrices in total. The supermatrix W is obtained by forming sub-blocks from the sorted matrix. Then start solving the supermatrix as follows:

$$W = \begin{bmatrix} W_{11} & W_{12} & \cdots & W_{1N} \\ W_{21} & W_{22} & \cdots & W_{2N} \\ \cdots & \cdots & \cdots & \cdots \\ W_{N1} & W_{N2} & \cdots & W_{NN} \end{bmatrix}. \quad (2)$$

The judgment matrix is obtained by weighting the supermatrix, and the normalized eigenvector is obtained by the eigenroot method.

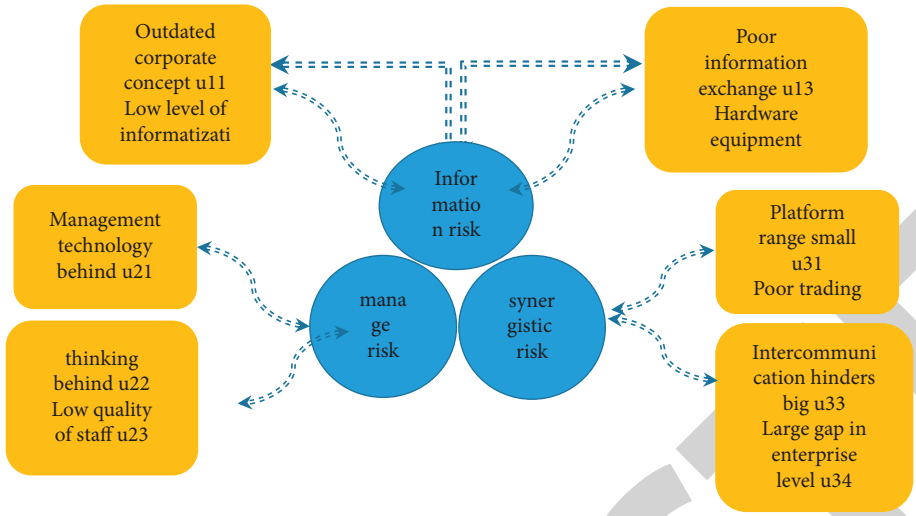

Figure 2: Risk investigation map.

$$A' = \begin{bmatrix} a_{11} & a_{12} & \cdots & a_{1N} \\ a_{21} & a_{22} & \cdots & a_{2N} \\ \cdots & \cdots & \cdots & \cdots \\ a_{N1} & a_{N2} & \cdots & a_{NN} \end{bmatrix}. \quad (3)$$

$\bar{W} = A \times W$ is the weighted supermatrix $\bar{W}$. Finally, as $W\infty = \lim t \longrightarrow \infty \bar{W}^{t}$ exists, that is to get the limit supermatrix $W\infty$.

4. Model Building Application

4.1. Raw Data Collection. Through the inspection of actual enterprises, the production of forms to solicit opinions, and the convening of expert meetings to obtain risk indicator data, these data have been discussed and analyzed by the investigation and research group and evaluated by the expert group, and the data has certain reliability. Obtain a risk survey map based on a large amount of enterprise management data (Figure 2). Supply chain management risk mainly includes three first-level indicators: informatization risk U1, management risk U2, and collaboration risk U3, as well as outdated corporate concepts u11, low level of informatization u12, poor information exchange u13, backward hardware and equipment u14, backward management technology u21, backward thinking u22, low quality of employees u23, small platform scope u31, poor transaction ability u32, and great barriers to interoperability u33. There is a big gap with the enterprise level u34 11 secondary indicators. Among them, the informatization risk U1 mainly depends on the development level of the company and the information level of the current era and belongs to social factors. The management risk U2 mainly refers to the internal management of the enterprise, and its own management is the main factor. It is the improvement of the enterprise through its own restraint. Collaborative risk U3 is mainly industry risk. The development of the industry directly restricts the development of enterprises and is also the main indicator of supply chain management risk. These indicators can reflect the risk factors of supply chain management in enterprise operations. Therefore, the overall target risk factor set of the model is expressed as follows:

$$U = [U_1, U_2, U_3]. \quad (4)$$

The model's secondary target risk factor set is expressed as follows:

$$\begin{aligned} U_1 &= [u_{11}, u_{12}, u_{13,} u_{14}], \\ U_1 &= [u_{11}, u_{12}, u_{13,} u_{14}], \\ U_3 &= [u_{31}, u_{32}, u_{33,} u_{34}]. \end{aligned} \quad (5)$$

Through the statistical analysis of the probability of occurrence and the degree of influence of each risk indicator in Figures 2, the relationship between the probability of risk occurrence and the degree of harm is obtained Figures 3. According to the analysis, the degree of impact and the possibility of risk occurrence are divided into five levels, among which the degree of impact is divided into "intolerable," "significant impact," "significant impact," "tolerable," and "negligible." The probability of risk occurrence is divided into "very likely," "probable," "probable," "unlikely," and "negligible." As can be seen from Figure 3, the most serious impact is "intolerable," which has the highest probability of occurrence; use "significant impact," "significant impact," "tolerable," and "negligible"to indicate the likelihood of occurrence. The sexuality gradually decreases, indicating that some factors that may occur can be ignored. It can be considered as a secondary factor in the actual management of the company's supply chain, mainly considering the risk of "cannot be easy." Each data in the figure clearly shows the relationship between risk factors and the possibility of risk occurrence.

4.2. Calculate the Weight of the First-Level Indicator and the Weight of the Second-Level Indicator. Building an ANP network is shown in Figure 4. According to the formula of

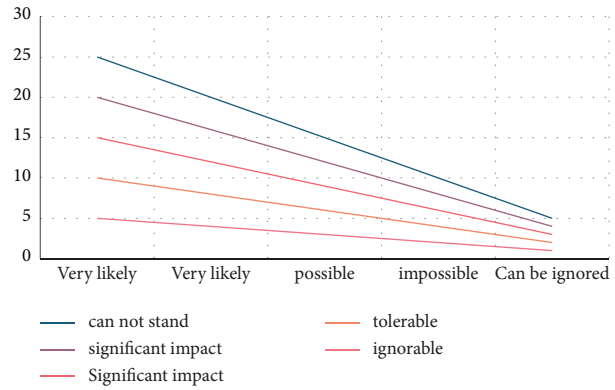

Figure 3: The relationship between the probability of occurrence of the risk and the degree of harm.

the network analysis method, the weight vectors of the first-level indicators under the conditions of each sub-criteria are calculated. The combination of the weight vectors can obtain the judgment matrix A for the first-level indicators, and the weight ratio of the first- and second-level indicators can be obtained through statistical analysis. Indicator weight ratio is provided in Figures 56. As can be seen from Figure 4, the first-level index synergy risk weight in supply chain management risk is 0.42, accounting for the largest proportion, which is the main factor of supply chain management risk, followed by management risk, accounting for 0.32, and information risk accounting for the smallest, accounting for 0.24. It can be seen from Figure 5 that the weights of secondary indicators vary greatly. The main proportion is the sub-factor in collaborative management, and the smallest is the sub-factor of information management, which is exactly in line with Figure 4. The level gap accounts for the largest proportion and is also the main factor for the secondary indicators. The second is the backward management technology of the secondary indicators, which mainly belong to the internal management of enterprises and can be improved by reforming the management system. The proportion of other secondary indicators is relatively small, which is the main factor of supply chain management risk. These main factors can be dealt with by simple measures or ignored in management. Key risks with high impact need to be analyzed.

$$A = \begin{bmatrix} 0.1134 & 0.1243 & 0.1512 \\ 0.3425 & 0.6127 & 0.3427 \\ 0.2611 & 0.3228 & 0.6112 \end{bmatrix}. \quad (6)$$

4.3. Calculate and Construct Judgment Matrix W. Taking W12 as an example, construct and calculate the judgment matrix. Taking u21 as the secondary criterion, the risk judgment of each element in the information risk set U1 can be obtained, and the dominance degree and normalized eigenvector of each element in the element set U1 can be obtained, as shown in Figure 7.

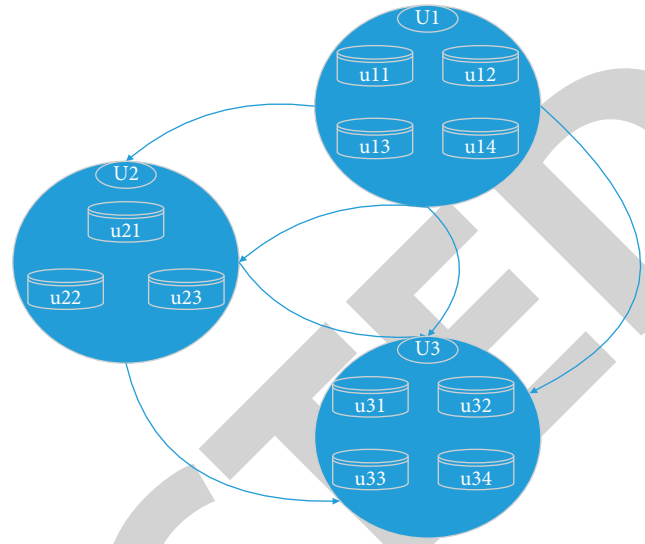

Figure 4: ANP network layer composition.

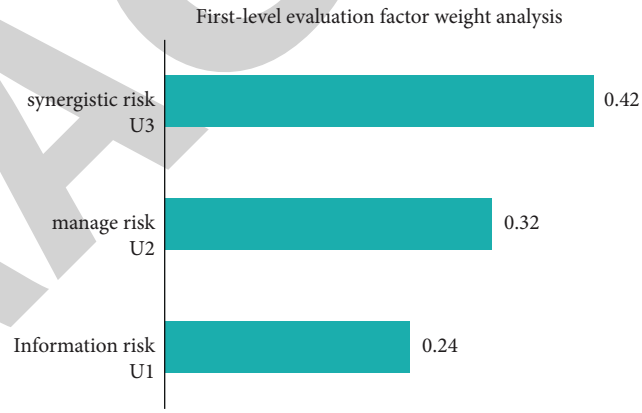

Figure 5: First-level indicator weight analysis.

Then, using u22 and u23 as the sub-criteria, the risk judgment of each element in U1 can also be obtained, and the dominance degree and normalized eigenvector of each element in the element set can also be obtained. And the normalized eigenvector composition scheme that can be obtained from the selection risk set U1 relative to the judgment matrix W12 of each element in the risk set U2 is

$$W_{12} = \begin{bmatrix} 0.0711 & 0.0572 & 0.0598 \\ 0.5281 & 0.3415 & 0.4003 \\ 0.3141 & 0.5211 & 0.4195 \\ 0.0730 & 0.0795 & 0.0949 \end{bmatrix}. \quad (7)$$

4.4. Construct Weighted Supermatrix and Normalize Limit Ordering Vector. According to the first-level index weight matrix A and the supermatrix W, the weighted supermatrix E is constructed. According to $\lim_{n\longrightarrow\infty} E_n$, the normalized limit

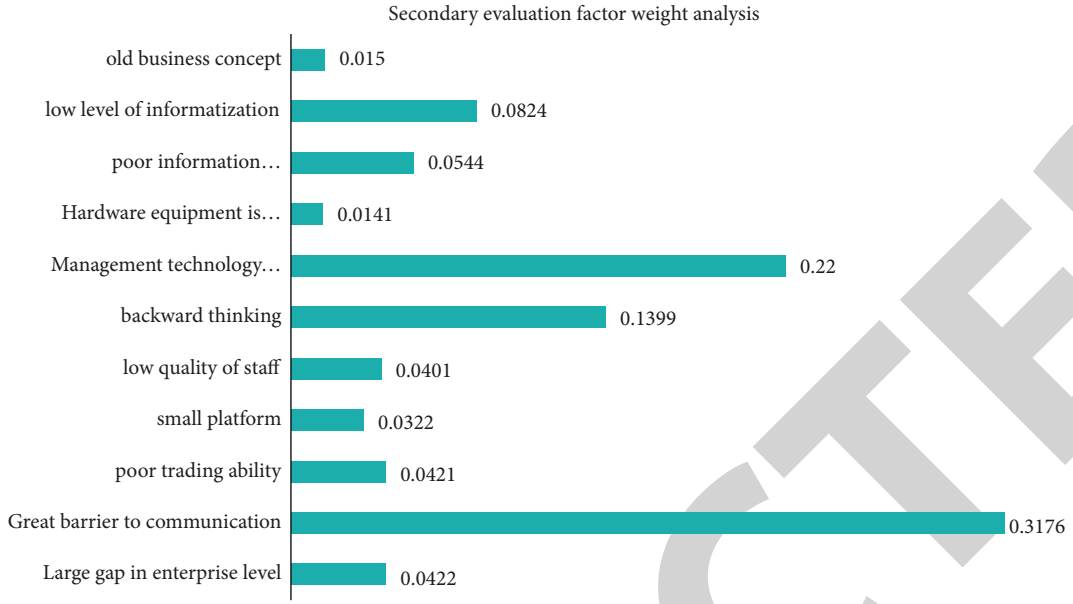

Figure 6: Secondary indicator weight analysis.

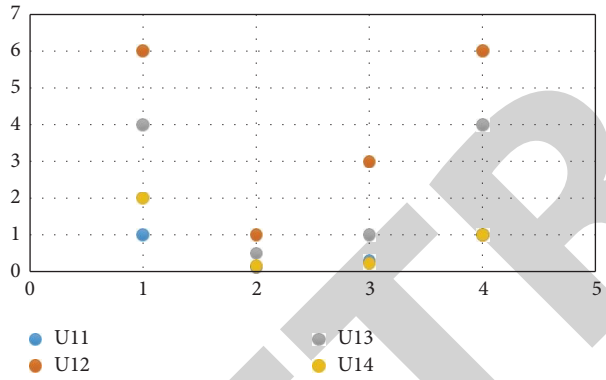

Figure 7: Comparison of the dominance of elements in U1.

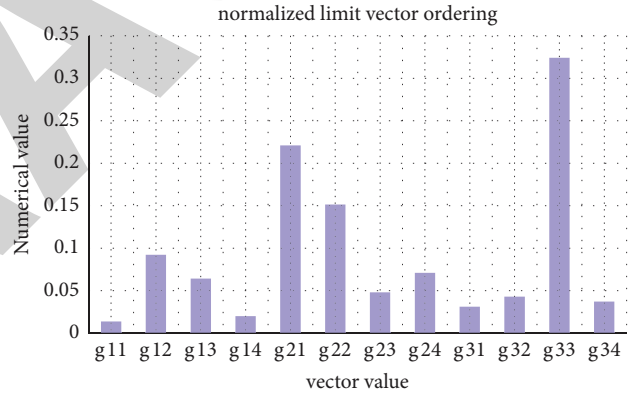

Figure 8: Normalized limit vector ordering.

sorting vector G of the weighted supermatrix E is obtained, and Figure 8 is obtained through statistical analysis.

$$W = \begin{bmatrix} W_{11} & W_{12} & W_{13} \\ W21 & W_{22} & W_{23} \\ W_{31} & W_{32} & W_{33} \end{bmatrix},$$
$$E = \left(a_{ij} W_{IJ}\right)$$
$$= \begin{bmatrix} a_{11}W_{11} & a_{12}W_{12} & a_{13}W_{13} \\ a_{21}W_{21} & a_{22}W_{22} & a_{23}W_{23} \\ a_{31}W_{31} & a_{32}W_{32} & a_{33}W_{33} \end{bmatrix}, \quad (8)$$
$$G = \lim_{n \longrightarrow \infty} E_n.$$

5. Analytical Discussion

According to the ordering of the normalized limit vector, it is known that its maximum value is 0.3240 corresponding to g34 (Figure 6). According to Figure 2, the ranking risk factor represented by it is the large gap in the enterprise level u34, which is very important. The second value is 0.221; 0 corresponds to g21, which represents the ranking risk factor of backward management technology u21; the risk of the third thought behind u22 corresponds to a value of 0.1514. All other values are less than 0.1, indicating that other factors have little influence or can be ignored. The final weights are ranked as follows: outdated enterprise concept u11, backward hardware equipment u14, poor transaction ability u32, great intercommunication barrier u33, low quality of staff u23, small platform scope u31, and so on. The order of sorting can give enterprises a clear direction of supply chain risk management, and enterprises can solve risk management priorities according to the size of supply chain management risks. It can be seen that management is not only resilient enough but also has many risk factors. Among them, the collaborative risk of supply chain management is the main risk factor, which should be the focus of future management.

Therefore, enterprises should prepare corresponding supply chain management strategic measures. First of all, enterprises need to formulate specific management goals, carry out business activities according to specific management goals, and formulate good and effective goals according to the actual situation of the enterprise. When setting specific enterprise supply chain management goals, it is necessary to make accurate judgments on the basis of the actual development of the enterprise. Development goals strengthen the level of logistics control management from the theoretical level. Second, enterprises should establish a unified supply chain management information system and formulate a standardized and unified management system, code of goods and services, and management procedures. Using many scientific and technological means to realize the real-time flow and sharing of various enterprise information, bring immeasurable information exchange space to each enterprise, bring advanced results to its management, and form a data closed loop in the whole process of the supply chain. Finally, supplier risk management can help companies monitor supplier risks at any time during the process of introducing suppliers and cooperating with suppliers and respond to the changing global market environment. Central construction enterprises should carry out supply chain risk management, as an important part of the comprehensive risk management system, and establish a risk management and control system that runs through the entire business process of the supply chain such as demand, procurement, and supply. In addition, improve the electronic risk identification function of the supply chain system and develop the risk monitoring function of automatic supervision, automatic identification, and automatic early warning. Units at all levels should formulate risk prevention and control plans for supply chain risk prevention and control points. When risks occur, they can select and implement corresponding emergency plans according to the actual situation to reduce losses caused by risks. In the entire system of the supply chain, each enterprise that constitutes the supply chain can be regarded as an organizational department, and the supply chain management of each organizational department is carried out. In the process of continuous adjustment and change of the market, the market demand will also change, so the enterprises in the supply chain are not fixed and will adjust with market demand accordingly. Efficient supply chain management can fundamentally achieve the strategic development goals of the enterprise, reduce the probability of enterprise risks, shorten the capital turnover cycle, and realize the economic development of the enterprise's rapid growth in benefits. Therefore, continuously strengthening the research on enterprise supply chain management and supply chain strategy mode plays an important role in promoting the rapid development of enterprises [22]. All in all, in today's advanced technology, many communication platforms have been established between enterprises through the supply chain. Each industry has played its own advantages, developed together, avoided controllable risks, and ultimately benefited all enterprises in the industry.

6. Conclusion

With the development of all walks of life, the competition between enterprises is becoming fiercer. If each other cannot be united and isolated from each other, each enterprise cannot last for a long time. In the face of such a market environment, every enterprise needs to consider how to build each other together. To this end, the supply chain model will provide a new development direction for the development of the enterprise. Enterprises can take the supply chain as an opportunity to manage the operation of the enterprise in a scientific and modern way, provide customers in the industry with stable services and reliable reliability, and meet the needs of customers with high quality. In addition, each enterprise should consider long-term planning and management, which not only provides a certain guarantee for its own foothold and development in the industry but also provides the efficiency of enterprise operation, thereby improving the efficiency of the enterprise and laying a scientific and effective basis for the comprehensive development of the enterprise.

In this paper, the network analysis method is used to evaluate the resilience and predict the risk in enterprise supply chain management; the risk evaluation model is constructed; and the ranking weight of the risk at each level is obtained, which provides the basis for the decision makers to make fast, efficient, and reliable decisions.

(1) Using the network analysis method, a risk assessment model is constructed by superimposing risk factors at multiple levels. A sample form of risk investigation was determined based on secondary risk factors, and the investigation scope involved industry experts, managers, on-site technical management, and payroll personnel. The risk factor weight level of the quantitative index is obtained through the risk evaluation model. The ranking reflects the weight of each factor affecting the supply chain management, which is in line with the current practical experience of enterprise supply chain management and can be used as the basis for risk control management decision-making or as a calculation.

(2) Enterprise supply chain management has strong resilience, can cope with common risks and some more complex risks in the industry and management, and provide a certain guarantee for the enterprise's own management. The supply chain management level of an enterprise is affected by multilevel factors, so it is also accompanied by a variety of risks, including informatization risks, management risks, collaboration risks, and so on. Therefore, choosing the most suitable sustainable supplier for the company itself requires consideration. One of the factors to consider is screening based on the challenges the business faces. Businesses need to communicate their company vision and values to suppliers in order to set the right expectations. The common way for enterprises in

supply chain management is through multicriteria decision-making (MCDM) method, based on the company's own requirements. It comprehensively evaluates all aspects of suppliers and selects the best supplier.

(3) Build a supply chain management risk prediction and evaluation model through the relationship between evaluation indicators and supply chain management. The model has certain advantages and practicability. The reliability of the data is high. The top three main risk factors have weights greater than 0.1 (all other indicators are less than 0.1). The most important factors are the large gap at the enterprise level and the backward management technology. These factors will directly affect the success or failure of enterprise supply chain management; therefore, these risk factors will be the key considerations in the decision-making of enterprise management.

Data Availability

The experimental data used to support the findings of this study are available from the author upon request.

Conflicts of Interest

The author declares that there are no conflicts of interest regarding this work.

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