A CASE STUDY OF THE INFLUENCING FACTORS OF SUPPLY CHAIN MANAGEMENT SERVICE QUALITY OF SF EXPRESS COMPANY

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This Independent Study has been Approved as a Partial Fulfillment of the Requirement of International Master of Business Administration

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ABSTRACT

The service quality of supply chain management has an important influence on the brand awareness and reputation of enterprises. Taking SF Express Company as an example, this paper analyzed the influencing factors of supply chain management service quality and their relationships. The four research objectives of this study there: 1) To examine whether there is a relationship between supplier selection and service quality of supply chain management; 2) To examine whether there is a relationship between logistics and transportation capacities and service quality of supply chain management; 3) To examine whether there is a relationship between information technology support and service quality of supply chain management; 4) To examine whether there is a relationship between customer service and communication capacities and service quality of supply chain management.

Based on the service quality of SF Express Company's supply chain, this study adopted the quantitative analysis method. Through questionnaire survey, 185 valid questionnaires were collected from customers, and the following conclusions were drawn: 1) There is a positive correlation between supplier selection and service quality of supply chain management; 2) There is a positive correlation between logistics and transportation capabilities and service quality of supply chain management; 3) There is a positive correlation between information technology support and service quality of supply chain management; 4) There is a positive correlation between customer service and communication capabilities and service quality of supply chain management.

Key words: Sf Express Company, supply chain management, quality of service

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Time is always rushing like running water, coming and going in a hurry. Stories in the past few years still come to my eyes: brainstorming with teachers in class, fighting with classmates and friends on the same shoulder, and discussing academics with tutors after class ... There are many things I want to say, all of which are summed up in one sentence: Thank you for letting us meet in life!

Thanks to my dearest mentor, who has answered my questions and pointed out the direction for me countless times over the past few years. All the achievements I have made today are inseparable from my mentor's teaching. The teacher's profound knowledge reserve, rigorous academic style, serious work attitude, optimistic life state and gentle personality all deeply infected me, which made me admire from the heart and longed to be like a teacher.

At the same time, thanks to the company of my classmates, I have made myself today. Thanks to my friends, my parents and my family, it is your constant encouragement that has brought me here today!

Finally, I would like to thank all the judging experts for their valuable suggestions for my thesis. I sincerely wish you a smooth work and a happy life forever!

Declaration

I, Yilin Zeng, hereby certify that the work embodied in this independent study entitled "Study on Influencing Factors of Supply Chain Management Service Quality of Sf Express Company" is result of original research and has not been submitted for a higher degree to any other university or institution.

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Chapter 1 Introduction

1.1 Background of the Study

With the deepening of globalization, supply chain management has gradually become one of the key strategies for enterprise competition. Supply chain management refers to the management process of meeting customers' needs, reducing costs and improving the overall efficiency of enterprises through effective organization and coordination of logistics and information flow. In the supply chain, the quality of logistics service is very important for the competitiveness and return of enterprises(Bodea, Govindan, & Jemai, 2013). As one of the largest logistics service providers in China, SF Express has been committed to providing high-quality supply chain management services. Therefore, it is of great theoretical and practical value to study the influencing factors of supply chain management service quality in SF Express Company.

In recent years, the e-commerce industry in China has achieved unprecedented growth, and has penetrated into all aspects of society, reshaping people's trading, living and working styles. As a new industry, the logistics industry has also made rapid growth and remarkable progress in recent times. After the introduction of supply chain logistics management into this industry, it can improve the operation efficiency of primary logistics, reduce various costs and improve service quality, thus gaining undeniable competitive advantages(Chang, Lo & Chen, 2014). Therefore, more and more companies put the improvement of supply chain management on the agenda. The number of companies that find that logistics management can bring experience and performance improvement is increasing. Especially for the supply chain management of the logistics industry, the logistics industry has gradually moved from the traditional mode of providing intermediate services such as processing, transportation, packaging, loading and unloading, warehousing and distribution to a more diversified business path. Among them, the postal logistics service has been added to all the links after the products leave the workshop, that is, factory packaging, distribution, warehousing, loading and unloading, processing and distribution. The core involves recycling, network deployment, debugging and maintenance. This has become a unique feature of the supply chain of logistics enterprises and a unique scene of their daily operation and management.

Aghazadeh & Behmadi (2016) studied supplier selection and order allocation by constructing a multi-objective model, and discussed the influence of multiple factors in the supply chain on the overall benefit. The research results show that supplier's service quality and product quality are one of the important factors affecting the service quality of supply chain management. Blanchard(2017) pointed out that in the supply chain, supplier management, logistics management, warehousing management and other links and service quality directly affect the efficiency of the overall supply chain. By analyzing the best practices of supply chain management, enterprises can improve the quality of logistics services, thus enhancing the overall competitiveness. Chiou et al. (2016) analyzed the antecedents of service quality of marine logistics through structural equation model. The results show that the reliability of suppliers, transportation time and attitude have a significant impact on the quality of logistics service. These research results can provide some enlightenment for SF Express Company and help them improve the quality of logistics service. Lam & Lee(2014) discussed the impact of green supply chain management on the environmental performance of China automobile industry. The results show that by implementing green supply chain management, enterprises can reduce environmental pollution and improve the overall efficiency of supply chain. These results can provide some guidance for SF Express to introduce environmental protection factors into supply chain management.

Based on the above scholars' research, this paper aims to explore the influencing factors of supply chain management service quality of SF Express Company, and provide some improvement suggestions to improve their overall competitiveness and service quality of supply chain management. In the specific research, we will analyze the influence of supplier selection, logistics service quality, green supply chain management and other factors on supply chain management service quality, and put forward corresponding management strategies. It is hoped that the research in this paper can provide some useful references for improving the quality of supply chain management services of SF Express Company.

1.2 Questions of the study

With the development of globalization and e-commerce, the position of supply

chain management in the logistics industry is increasingly prominent. As a leading logistics service provider in China, the quality of SF Express's supply chain management service is very important. The purpose of this study is to deeply explore the factors that affect the service quality of SF Express supply chain management, identify key factors by collecting and analyzing relevant data, and explore their interaction and influence mechanism. This will provide targeted improvement suggestions for SF Express Company to help it improve the quality and efficiency of supply chain management services, so as to better meet customer needs and enhance the competitiveness of enterprises(Deng, Wang & Sun et al, 2021). Based on this, the following four questions are introduced for research:

1. Is there a relationship between the supplier selection of SF and the service quality of supply chain management?

2. Is there a relationship between SF's logistics and transportation capalicitier and the service quality of supply chain management?

3. Is there a relationship between the information technology support of SF Company and the service quality of supply chain management?

4. Is there a relationship between SF's customer service and communication capalicitier and the service quality of supply chain management?

1.3 Objectives of the Study

The main research objectives of this article are as follows:

1. To examine whether there is a relationship between supplier selection and service quality of supply chain management.

2. To examine whether there is a relationship between logistics and transportation capalicitier and the service quality of supply chain management.

3. To examine whether there is a relationship between information technology support and the service quality of supply chain management.

4. To examine whether there is a relationship between customer service and

communication capalicitier and the service quality of supply chain management.

1.4 Scope of the Study

The focus of this paper is to analyze the optimization of supply chain management service quality of SF Express Company. By consulting 53 related literatures, this paper understands the relationship between the four influencing factors, namely supplier selection, logistics transportation capacity, information technology support and customer service and communication, and the service quality of SF Company's supply chain management, so as to provide a breakthrough answer for the company's better development.

1.5 Significance of the Study

1. Theoretical Significance

Although the service quality of supply chain management is one of the important contents of supply chain management research, in actual research, there is relatively little research on the influencing factors of supply chain management service quality. By analyzing the influencing factors of SF Express's supply chain management service quality, it can provide new ideas and methods for the research in this field. By analyzing the influencing factors of supply chain management service quality of SF Express Company, we can deeply study the internal essence and mechanism of supply chain management service quality, and provide theoretical basis for the construction and optimization of supply chain management service quality system. Supply chain management is an important strategic means for enterprises, and the service quality of supply chain management is one of the key elements of supply chain management. Through the research on the influencing factors of supply chain management service quality of SF Express Company, it can provide empirical cases and experiences for perfecting and enriching the theoretical system of supply chain management.

2. Practical Significance

By analyzing the factors affecting the service quality of SF Express Company's supply chain management, we can find out the key factors affecting the service quality, and put forward specific improvement measures for these factors. So as to improve the service quality of SF Express's supply chain management, meet the needs of customers and increase service quality of supply chain management. The service quality of supply chain management is one of the important factors of enterprise competitiveness. By studying the influencing factors of supply chain management service quality of SF Express Company, we can provide experience and reference for other enterprises, help them optimize the quality of supply chain management service and enhance their competitiveness. SF Express is a leading enterprise in the industry. By analyzing the influencing factors of supply chain management service quality, it can promote the standardization and standardization of supply chain management service quality to a certain extent. This will contribute to the development and progress of the whole industry and improve the quality level of the overall supply chain management service. Supply chain is an ecosystem composed of suppliers, manufacturers and distributors. By studying the influencing factors of supply chain management service quality, we can promote the healthy development of supply chain ecosystem, achieve win-win cooperation and improve the overall efficiency.

To sum up, it is of great theoretical and practical significance to study the influencing factors of supply chain management service quality in SF Express Company. By studying it, we can not only expand the theoretical system of supply chain management service quality, but also help to improve the supply chain management service quality of enterprises, enhance competitiveness and promote the healthy development of the industry. At the same time, it can also provide reference for other enterprises and promote the improvement of the service quality of the whole supply chain management.

1.6 Limitation of the Study

Although the research on the influencing factors of SF Express Company's supply chain management service quality has a significant contribution to the

improvement of the supply chain management service quality of enterprises and the development of the whole industry, the research also has certain limitations:

1. Limited sample size: The sample of the questionnaire used in this study is limited to SF Express Company, so there may be sample bias. It fails to fully cover other express logistics enterprises, so the generalization and representativeness of the research conclusions need to be further verified and improved.

2. Lack of time series data: This study only analyzes the influencing factors of supply chain management service quality of SF Express Company in the current period, but fails to consider the influence of time series changes, which affects the comprehensive grasp of the influencing factors of supply chain management service quality to some extent.

3. The influencing factors of different supply chain stages are quite different: the influencing factors of service quality in different supply chain stages are also very different. Most of the sample source customers in this study are aimed at the service in the final deployment stage, and the factors affecting the service quality of the upstream supply chain (such as the rapid response of suppliers, order processing cycle, etc.) and the factors affecting the downstream supply chain (such as service quality of supply chain management) are not sufficiently detected.

Chapter 2 Literature Review

2.1 Introduction

This chapter mainly analyzes the research summary of scholars on this research topic from five aspects: supplier selection, logistics and transportation capacity, information technology support, customer service and communication capacity, and service quality of supply chain management. This paper summarizes the experience of scholars by understanding the specific situation of SF Express Company, which provides theoretical support for the following discussion.

2.2 Literature Review

2.2.1 Supplier Selection

Supplier selection refers to a series of decisions and activities that enterprises need to carry out in procurement, distribution and inventory control, aiming at selecting the best supplier for enterprises, so as to ensure that enterprises can obtain maximum economic benefits and operating income in the process of production and operation(Hou, Liang & Zhou, 2014). In this process, enterprises need to comprehensively evaluate the supplier's quality, price, delivery capacity, after-sales service, large-scale processing capacity, service quality and other factors to finally decide whether to establish business relations with the supplier.

Supplier selection is a key activity in supply chain management, and its purpose is to select the most suitable supplier for the company to ensure the smooth production and operation of the company. In supplier selection, enterprises need to consider many factors, such as values, service quality, company reputation and contribution, to ensure that enterprises can always maintain a dominant position in supply chain management(Jiang, 2018). In this regard, many scholars have conducted in-depth research.

Supplier selection is one of the important factors that affect the service quality of enterprises in supply chain management. Selecting suppliers correctly can effectively improve the service quality of enterprises, and enable enterprises to develop and grow

faster by optimizing production and operation(Jin & Hua, 2008). The following are some scholars' studies to analyze the influence of supplier selection on the service quality of supply chain management:

Hoang & Laosirihongthong(2017) pointed out in the research that the supplier selection of enterprises can affect the service quality of supply chain management. In their research, they used grey relational analysis and entropy weight method to analyze the weight of many factors, among which the supplier's product quality, price, delivery ability, after-sales service and supplier's integrity were identified as the most important factors. Through a number of comparative studies on enterprises, the researcher draws the conclusion that the enterprise's decision on supplier selection can significantly affect the service quality, and the more suppliers are selected, the more obvious the key influencing factors will become.Lin, Huang & Hsu (2019) pointed out in the research that the supplier selection decision of an enterprise can affect the service quality of its supply chain management. They studied the budget, commitment, market impact, supplier process and transparency of supplier selection. The results show that if enterprises can adopt the correct optimal supplier selection strategy, the quality of supply chain management services of enterprises can be significantly improved.Park & Kim(2016) found in the research that supplier selection can affect the service quality of enterprises. Through the comprehensive evaluation model, they come to the conclusion that the correct degree of supplier selection is directly related to the service quality of enterprises. At the same time, the researchers also found that the supplier selection of enterprises can affect the cost management and customer satisfaction of enterprises, so the correct supplier selection strategy will help enterprises gain greater competitive advantage in the market.

Schulze & Liu(2016) emphasized the importance of supplier selection to supply chain quality. They pointed out that the choice of suppliers can significantly affect the supply chain quality indicators such as order delivery time, product quality, distribution accuracy and inventory level. Through a case study of a food distribution company, they found that improving supplier selection decision can significantly reduce order delivery time and inventory level, thus improving supply chain quality.Shen, & Hsueh (2015) used data envelopment analysis (DEA) and logistic regression model to study the influence of supplier selection on service quality. They studied the situation of an American auto parts manufacturer, and came to the conclusion that choosing the right supplier can effectively improve the service quality and ensure that the enterprise has a competitive advantage in its supply chain.

To sum up, for an efficient and stable management of supply chain service quality, suppliers must be selected correctly. The influence of various factors on supplier decision-making requires enterprises to have a deep understanding and formulate appropriate supplier selection strategies according to actual market conditions. Enterprises also need to dynamically track and manage suppliers to avoid any potential losses. Only by choosing the right suppliers can enterprises develop faster, improve market competitiveness and improve service quality.

2.2.2 Logistics and Transportation Capabilities

Logistics and transportation capacity refers to the ability of an enterprise to use advanced technology, equipment, software, manpower and management system to ensure the flow, storage, combination, distribution, transportation and delivery of goods in the supply chain when completing its business process(Niu & Wang, 2016). Logistics and transportation capacity is an essential part of an enterprise in the process of operation, because it can directly affect the important performance indicators such as delivery capacity, safety, flexibility, cost and customer satisfaction. Logistics and transportation capacity are also one of the important signs to distinguish the efficiency and operational capacity of enterprise supply chain.

Logistics transportation capacity has always been an important link in supply chain management, and SF Express is no exception. The following will analyze the factors that affect the service quality of SF Express's supply chain management from the aspects of transportation network, logistics facilities, vehicle management and distribution fleet management.

In terms of transportation network, Zhang, Wang & Chen (2017) pointed out that the quality of the company's transportation network has an important impact on service quality of supply chain management and transportation quality. Among them, the coverage of transportation network is one of the influencing factors. The wider the coverage, the higher the logistics efficiency, and the more customers will be affected, thus improving the transportation efficiency and service quality of the company. In addition, the accessibility of transportation network also affects the service quality of supply chain management. If the delivery operation can be completed within a limited time, the service quality of supply chain management can be improved.

In terms of logistics facilities, Zhou & Liu (2015) believe that the quality of logistics facilities directly affects transportation efficiency and service quality. This

includes storage facilities, loading and unloading equipment, etc., and SF Express has invested more in logistics facilities. For example, the company has invested heavily in building high-quality logistics warehouses to provide warehousing, sorting and distribution services. In addition, the company also comprehensively monitors logistics facilities through technical means, such as RFID technology, to ensure service quality. Wang & Wu (2014) believe that from the perspective of modern logistics facilities, SF Express has invested a lot in warehousing, transport vehicles, logistics processing equipment and other aspects, strengthened the construction of logistics infrastructure, and accelerated the process of realizing logistics modernization.

In terms of vehicle management, Ji & Lu (2013) pointed out that vehicle management and safety are the basis of the company's logistics operation, and also an important factor for SF Express to complete the delivery task quickly, accurately and safely, thus affecting the service quality. The company adopts scientific and technological means in vehicle management, for example, the GPS system and electronic fence are fully used to monitor and manage vehicles in real time, so as to ensure the safety and punctual delivery of vehicles and further improve the service quality. Yuan, Wei & Shi (2014) studied the application of the GPS monitoring system of SF Express vehicles, and found that SF Express can realize real-time monitoring of vehicles, tracking of path trajectory and management of drivers' behavior through this system, and improve the safety of vehicle scheduling and distribution process.

Yu & Liu (2018) focuses on the factors affecting the service quality of SF Express's fleet management. They believe that the scale, model and delivery schedule of the company's fleet are closely related to the quality of service. Accordingly, the company has improved the management level of the fleet and comprehensively improved the service level of SF Express in the supply chain by implementing a series of measures, such as intelligent vehicles, optimized queuing, accurate dispatching and vehicle distribution strategy. Wu & Yan (2020) put forward a causality diagram model to analyze the key factors of SF Express's fleet management, and found that the management of fleet size and delivery time is the most significant, but factors such as vehicle technical level and delivery area also have an impact on the service quality of supply chain management.

To sum up, logistics and transportation capacity is very important for SF Express's supply chain management service quality. In this respect, the company makes full use of scientific and technological means to pursue high efficiency, reduce

logistics costs and improve service quality of supply chain management, thus steadily enhancing its competitiveness in the market.

2.2.3 Service Quality of Supply Chain Management

Service quality in supply chain management refers to providing high-quality services to meet the needs and expectations of consumers through reasonable organization and management in the supply chain of enterprises(Chen & Chen, 2020). It includes fast, accurate, timely, reliable and personalized service elements and service processes. The service quality of supply chain management has always been one of the important issues that enterprises pay attention to. With the continuous development of global economy, the supply chain of enterprises has become more and more complex, and the influencing factors of service quality have become more and more diversified.

Firstly, Russo et al. (2014) discussed the influencing factors of service quality in supply chain management in their research. Through a case study of a European express delivery company, they found that the key factors in supply chain management include supplier management, inventory control, order processing and distribution process. The results show that these factors are very important for improving service quality and service quality of supply chain management. Then, Vachon and Klassen(2016) put forward six key dimensions of service quality in supply chain management, namely, on-time delivery, product quality, after-sales service, supplier cooperation, supply chain transparency and sustainability. Through the investigation of Canadian automobile manufacturing industry, the results show that these six dimensions are very important to improve the service quality in supply chain management.

In addition, Khan and Edenfeld(2017) studied the influence of service quality on service quality of supply chain management in supply chain management. By studying an electronic product supply chain in Germany, they found that the reliability, flexibility and responsiveness of the supply chain are important factors affecting service quality and service quality of supply chain management. The results also show that the cooperative relationship and information sharing in the supply chain also have a significant impact on service quality and service quality of supply chain management. Wu et al. (2018) studied the relationship between sustainable development of supply chain and service quality. Through a case study of an electronic manufacturing enterprise in China, they found that there is a positive

relationship between sustainable development of supply chain and service quality. The results also show that environmental management and social responsibility of suppliers are very important to improve service quality.

To sum up, in the service quality field of supply chain management, supplier management, inventory control, order processing, distribution process, on-time delivery, product quality, after-sales service, supplier cooperation, supply chain transparency, sustainability, cooperative relationship, information sharing, cooperative relationship and social responsibility are important factors affecting service quality. Improving the service quality in the supply chain can improve service quality of supply chain management, enterprise performance and market competitiveness. These studies provide important reference for the study of influencing factors of supply chain management service quality of SF Express Company.

2.2.4 Information Technology Support

Information technology support refers to providing support and enhancement for business processes of enterprises and organizations by using modern information technology tools and solutions. It includes all kinds of information technology equipment and systems such as hardware, software and network, as well as related technical services and resources(Yuan & Xu, 2014). Information technology support is one of the important factors that affect the service quality of supply chain management. In the past ten years, many scholars have conducted in-depth research on the role of information technology support. This paper will introduce some important literature research to help us understand the influence of information technology support on the service quality of supply chain management.

Firstly, Gaurav Khan & Kumar (2020) analyzed the influence of blockchain technology on supply chain management. The author points out that blockchain technology provides a decentralized platform, which enables all participants in the supply chain to conduct transactions and share data more transparently. This transparency promotes the flow of information, improves the quality of supply chain management services, and helps to shorten the delivery cycle of products and reduce inventory and costs. Secondly, Dong-Lee Kim & Lee (2018) discussed the impact of the use of enterprise resource planning (ERP) system on supply chain performance. The research shows that ERP system can help enterprises realize information integration, business process automation and data analysis, improve the responsiveness and efficiency of supply chain, and promote cross-functional

collaboration and data sharing, thus improving the quality of supply chain management services.

Zhou & Zhu (2016) mentioned that information technology support is one of the key factors for SF Express to improve the quality of supply chain management. They pointed out that with the help of information technology, the company can better coordinate logistics, warehousing, distribution and other links, improve distribution efficiency and response speed, and at the same time reduce security risks caused by human operation errors. In addition, the paper also discusses the use of various means of transportation, such as railways and waterways, and related problems in cross-border electronic commerce. Liu & Chen (2019) elaborated on the transformation and upgrading of SF Express Company and the realization of "internet plus" strategy. The article points out that information technology support is an important guarantee to realize "internet plus". At the same time, with the help of cloud computing, big data, blockchain and other technologies, companies can better control risks, improve efficiency and optimize user experience, thus improving the overall competitiveness of enterprises. Li & Fu (2021) emphasized the importance of information technology support for SF Express to accelerate the replacement of traditional sales channels. The results show that information technology can greatly improve the sales efficiency, fine management ability and brand awareness of enterprises, and then promote the business expansion and market competitiveness of enterprises.

To sum up, information technology support is an indispensable factor in the supply chain management of SF Express Company, and its application can improve the operational efficiency and service level of the enterprise and create more commercial value. Scholars' research shows that information technology support has a positive impact on the quality of supply chain management services. Through information technology such as blockchain and ERP system, enterprises can realize information integration, circulation and sharing, thus improving the efficiency, responsiveness and transparency of the supply chain. At the same time, the evaluation and optimization of information technology support is also the key to improve the service quality of supply chain. Therefore, with the continuous development of Internet and information technology, we expect that information technology support will play an increasingly important role in supply chain management.

2.2.5 Customer Service and Communication Capabilities

Customer service and communication ability refers to the ability of enterprises or

individuals to effectively understand customer needs and provide satisfactory solutions in the process of interacting with customers(Hugos, 2018). It includes good communication with customers through various communication channels, understanding customer needs and problems, establishing good customer relations, and providing high-quality products or services. In supply chain management, customer service and communication ability are one of the most important factors. It is of great significance to study the influence of customer service and communication ability on the service quality of supply chain management for improving the service quality of enterprises.

In the past ten years, many scholars have carried out research on the influence of customer service and communication ability on the service quality of supply chain management. Among them, Li (2014) found that customer service and communication skills have a significant impact on improving service quality through the case study of express delivery industry, and better communication skills can help reduce customer complaint rate and improve service quality of supply chain management. She also pointed out that effective customer service and communication skills can increase the brand loyalty and reputation of enterprises, thus promoting the competitiveness of enterprises in the market. On the other hand, Ouyang (2016) analyzed the communication problems in supply chain management. He believes that the lack of effective communication will lead to information asymmetry, misunderstanding, delay, errors and other problems, thus affecting the operation of supply chain and service quality. He put forward suggestions to improve supply chain communication, including strengthening internal communication, optimizing supplier selection and management, and establishing an effective information sharing mechanism. Recently, Liu (2021) studied the customer service of express delivery industry. She found that good communication skills and customer service level can improve the service quality and corporate image of enterprises and increase customer loyalty and satisfaction. At the same time, she also pointed out that customer service and communication skills need to be consistent with the actual situation of enterprises, and should be based on enterprise policies.

The development of modern technology provides more choices for customer service and communication. For example, the popularity of mobile devices enables supply chain enterprises to better interact with customers through mobile applications and message push. In view of this, Sarwoko & Dinata(2015) found that cloud computing technology can effectively improve service quality of supply chain management and improve the operational efficiency of the organization. In addition,

getting feedback from social media and online platforms has become a routine practice, and it can help enterprises better understand customers' needs and habits.

Best practices in customer service and communication are gradually standardized. The International Organization for Standardization (ISO) issued the ISO 10002 standard to help enterprises manage and solve customer complaints. This standard requires enterprises to establish a transparent complaint handling process, track and record complaint data, and take corrective measures when appropriate. Johnson & Johnson (2015) studied the implementation of ISO 10002 standard and found that it can help improve service quality of supply chain management and loyalty, and improve enterprise efficiency and competitiveness. Customer service and communication are the key elements to improve the overall supply chain management service quality. By providing highly specialized customer service support, enterprises can improve service quality of supply chain management and strengthen customer relations. Lin & Chang(2020) found that through meticulous demand analysis and service delivery, the communication between enterprises and customers can be improved, and a closer relationship can be established to promote the efficiency of supply chain.

To sum up, customer service and communication skills are one of the important factors affecting the quality of supply chain management services. Related research shows that the development of modern technology and the standardization of best practices are helpful to improve the quality of customer service and communication, and further improve the quality of the whole supply chain management service.

2.3 SF Express Company Introduction

SF Express is an integrated express logistics service provider in China, headquartered in Shenzhen, and its company website is http://www.sf-express.com/. After years of development, it has initially established the ability to provide customers with integrated integrated logistics solutions, not only providing logistics services at the distribution end, but also extending to the production, supply, sales and distribution links at the front end of the value chain. Starting from consumer demand, it uses big data analysis and cloud computing technology to provide customers with warehousing management, sales forecasting, big data analysis and financial management.

SF is also an intelligent logistics operator with the advantage of network scale. After years of dedicated management and forward-looking strategic layout, SF has formed a comprehensive logistics service network with "Skynet+Ground Network+Information Network", which can cover both home and abroad. Its direct network is a unique and scarce comprehensive logistics network system with strong network control and high stability among domestic peers. SF's logistics products mainly include: time-limited express delivery, economic express delivery, same-city delivery, warehousing service, international express delivery and other express services, such as heavy cargo express with less than one load as the core, and cold chain transportation services for customers in the fields of fresh food, food and medicine. Besides, SF also provides value-added services such as insured price and payment collection.

SF adopts a direct business model, and the headquarters implements unified operation and management for all branches, which ensures the overall operation quality of the network. SF is the first express delivery company in A-share to adopt a direct business model. On September 23, 2019, it was identified as the first batch of national vocational education teacher enterprise practice bases by the Ministry of Education and other four departments. In December, 2019, SF Express was selected as one of the top 100 brands in the 2019 China Brand Power Festival. On December 18th, 2019, People's Daily ranked 61st on the "China Brand Development Index" 100 list. On January 4, 2020, he won the evergreen award of 2020 Caijing "Sustainable Development Innovation Award".

2.4 Conceptual Framework

According to the analysis and summary of scholars' service quality of supply chain management, the service quality of SF Express Company's supply chain management is influenced by supplier selection, logistics and transportation capacity, information technology support and customer service and communication ability. Therefore, the theoretical framework of this paper is as follows:

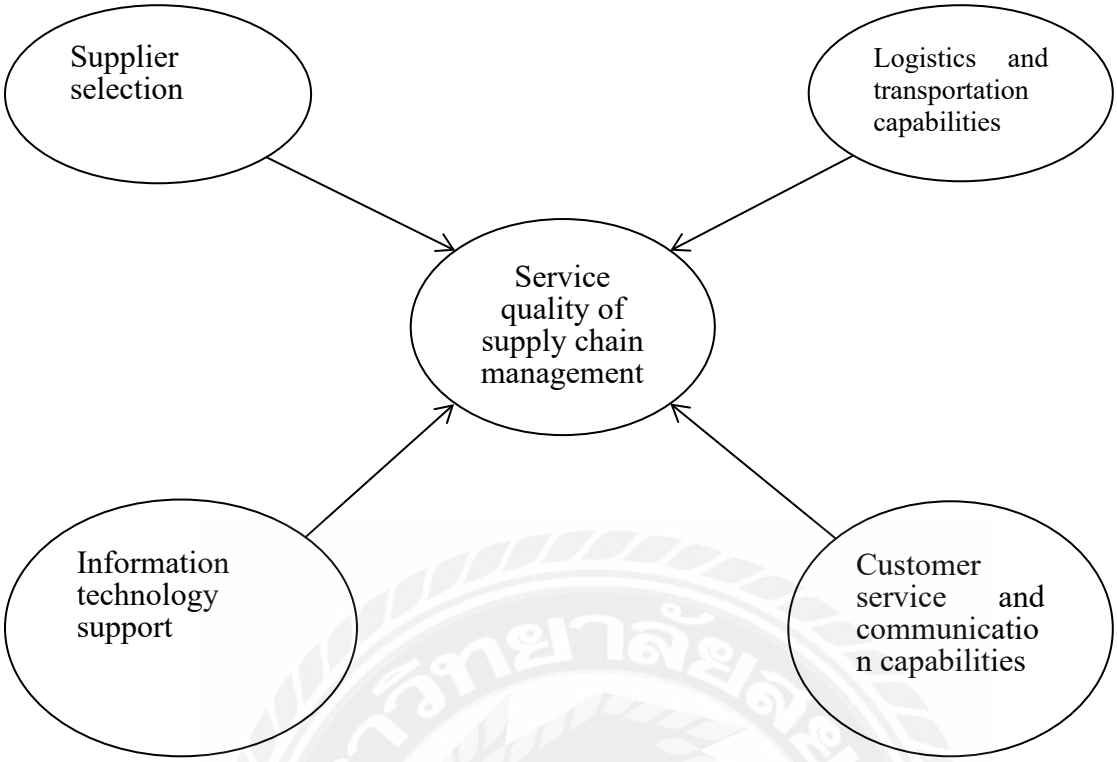

Figure 2.1 Conceptual Framework

Chapter 3 Research Methodology

3.1 Introduction

This study mainly conducts research through quantitative analysis methods. This chapter first analyzes the research design of this article, then points out the sample size and relevant data collection processes and methods involved in this article, and finally analyzes the reliability and validity of the survey scale, laying the foundation for the following data analysis.

3.2 Research Design

In this study, questionnaire survey method was used, questionnaires were distributed, and the supply chain management quality questionnaire was compiled by summing up previous experience, and Likert five-point method was used to collect data. The reliability and validity of the questionnaire are verified by SPSS, and the specific situation is summarized, which lays the foundation for the formulation and strategy of the problem. The scales involved in this paper are mainly as follows:

3.2.1 Supplier Selection Scale

In the aspect of supplier reputation, the research shows that supplier reputation is one of the important factors that affect enterprise buyers' choice of suppliers. Hassanzadeh, Kianian & Jafari (2013) studied enterprises' views on suppliers' reputation through questionnaires, and found that suppliers' reputation has great influence on the quality and cost of enterprise procurement. In terms of supply stability, this is a very important aspect of supply chain management, especially for companies that require service level and product quality. Ru, Zhu, Lu & Song (2019) found through big data analysis that when there is a long-term and stable business relationship between suppliers and enterprises, stability is of great significance for improving the procurement performance of enterprises.

Supplier selection involves many factors, among which supplier reputation and

supply stability are important aspects. These factors should be taken into account in purchasing decision-making, so as to select the most suitable supplier.Therefore, on the basis of summing up the experience of scholars, the scale of recruitment tests content is shown in Table 3.1.

Table 3.1 Supplier Selection Scale

Supplier reputation	When selecting suppliers, you will consider the reputation and evaluation of their past business cooperation.
	You will actively collect and evaluate the reputation information of suppliers to ensure the reliability of cooperation.
Supplier supply stability	Have you ever met a supplier who failed to deliver the goods on time, resulting in your business being damaged?
	You will evaluate the supplier's supply capacity and formulate corresponding countermeasures to deal with sudden supply problems.

3.2.2 Logistics and Transportation Capabilities Scale

Transportation speed and transportation cost are extremely important indicators in the field of logistics. With the continuous development of international trade and the rapid innovation of logistics technology, the research on these two indicators has also received more and more attention.

Yadav & Vrat(2013) studied the sequence selection of logistics centers by analyzing the logistics efficiency of different logistics nodes in the supply chain. They put forward a strategy based on global minimum time to reduce the overall logistics time and cost. Zhang & Guo(2019) take the operator's total revenue and customer's total satisfaction as objective functions, and propose a hierarchical price strategy based on greedy algorithm to optimize multiple cost indicators and improve logistics benefits and customer's satisfaction. Therefore, on the basis of summing up the experience of scholars, the scale of recruitment tests content is shown in Table 3.2.

Table 3.2 Logistics and Transportation Capabilities Scale

Travelling speed	Do you think transportation speed is very important?
	You have the means to measure and evaluate the transportation speed of different suppliers in order to make the best cooperation decision.
Transportation cost	You will choose suppliers with lower prices but higher

	transportation costs.
	You will make a trade-off between transportation cost and transportation speed to get the optimal solution.

3.2.3 Information Technology Support Scale

The response speed and quality of technical support are two important indicators that modern enterprises pay extensive attention to in the information age. Chen, Zhao & Choi (2019) proposed a new multi-objective optimization algorithm for human subjective perception and fast and slow experience, considering the response time and service quality comprehensively, in order to seek the optimal technical support response scheme. Kim & Kim (2019) used multiple regression model to extract the key features of technical support quality from complaint cases to help evaluate the quality of technical support quickly and accurately. The response speed and quality of technical support are two important indicators of successful operation and customer experience. Therefore, on the basis of summing up the experience of scholars, the scale of recruitment tests content is shown in Table 3.3.

Table 3.3 Information Technology Support Scale

Technical support response speed	The technical support you want is very responsive.
	You will consider the speed and ability of technical support response when selecting suppliers.
Technical support quality	You value technical support.
	You will know the quality and level of technical support from suppliers in advance.

3.2.4 Customer Service and Communication Capabilities Scale

Chu & Chen(2013) believe that customer service response speed is an important factor affecting service quality of supply chain management and repurchase intention. They found that customers have a clear expectation of the time needed to solve the problem, and customers who get a response within this expectation are more likely to buy again. Customer service response speed and communication ability are very important for improving service quality of supply chain management, repeat purchase rate and brand loyalty. Organizations should strengthen employees' communication skills and improve customer service response speed to enhance customer experience.

Therefore, on the basis of summing up the experience of scholars, the scale of recruitment tests content is shown in Table 3.4.

Table 3.4 Customer Service and Communication Capabilities

Customer service response speed	In the process of cooperation, you have encountered a slow response from customer service.
	You will pay attention to the speed and quality of customer service response when choosing suppliers.
Communication ability	You think the communication ability of suppliers is very important.
	You will pay attention to the communication ability of suppliers and whether they can keep smooth communication with you.

3.2.5 Service Quality of Supply Chain Management Scale

Service quality in supply chain management has always been one of the key areas of concern, and many scholars have conducted in-depth research in this area. Chen, Lai & Wang (2013) studied the influence of influencing factors of suppliers and customers on supply chain service quality. The results show that the supplier's ability, rich experience and attention to quality will improve the service quality, and the customer's order size and purchasing frequency are also positively related to the service quality. Many scholars have deeply studied the service quality in supply chain management. These studies discuss the influencing factors of service quality and service quality management practice from different angles, which provides a certain theoretical basis and guiding significance for supply chain management practice. Therefore, on the basis of summarizing the experience of scholars, the scale of recruitment tests content is shown in Table 3.5.

Table 3.5 Service Quality of Supply Chain Management Scale

Service quality of supply chain management	When you choose suppliers, you will consider the quality of their supply chain management services.
	You have high expectations for the quality of supplier's supply chain management service.

3.3 Hypothesis

1. H1: Supplier selection and service quality of supply chain management have a positive condition

2. H2: Logistics and transportation capabilities and service quality of supply chain management have a positive condition

3. H3: Information technology support and service quality of supply chain management have a positive condition.

4. H4: Customer service and communication capabilities and service quality of supply chain management have a positive condition.

3.4 Population and Sample Size

The purpose of this questionnaire survey is to discuss with customers of SF Express Company. The survey method is sampling survey, and 300 questionnaires are distributed online. This paper makes a detailed investigation and analysis on the service quality of SF Express Company's supply chain management, and obtains the corresponding results through data collection and analysis.

3.5 Data Collection

This study mainly adopts the method of questionnaire survey to collect data. The questionnaire was distributed for one month from April 15, 2023 to May 15, 2023, and 200 questionnaires were collected, with 185 points, and the recovery rate was 92.5%. The collected data can be used for follow-up research.

3.6 Data Analysis

The questionnaire discussed in this paper consists of two parts: basic questionnaire and specific questionnaire. In order to verify the authenticity and

reliability of the questionnaire, the reliability and validity of the specific part of the questionnaire are tested by SPSS software, and the survey results are displayed intuitively through charts. The following are the specific reliability and validity data of this questionnaire:

3.6.1 Reliability Analysis of the Questionnaire

According to Kehlenbach's α coefficient, if the reliability of the questionnaire is above 0.7, it can be regarded as good. In order to evaluate the reliability and internal consistency of the problem project, the reliability analysis method is used to test it. Specifically, this study uses Kehlenbach's α coefficient (a) to test the internal consistency of the scale, and the results show that the reliability of the scale is above 0.70, indicating that it is highly reliable. In this study, we tested Kehlenbach's α coefficient and found that all the questionnaire results were higher than 0.7, which indicated that the questionnaire was reliable.

Table 3.6 Questionnaire Reliability Analysis

	Cronbach's Alpha	Number of terms
Supplier selection	0.716	4
Logistics and transportation capabilities	0.813	4
Information technology support	0.796	4
Customer service and communication capabilities	0.856	4

3.6.2 Questionnaire Validity Analysis

When KMO value exceeds 0.7, the validity of the questionnaire needs to be further studied. It can be observed from Table 3.3 that the KMO values of all the factors in this questionnaire exceed 0.8, and the significance of bartlett sphericity test is 0.000, which means that it meets the standard.

Table 3.7 Questionnaire Validity Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	Bartlett's Test of Sphericity		
	Approx. Chi-Square	Df	Sig.

Supplier selection	0.843	256.454	6	.000
Logistics and transportation capabilities	0.856	246.456	6	.000
Information technology support	0.895	297.453	6	.000
Customer service and communication capabilities	0.843	213.456	6	.000

Chapter 4 Findings

4.1 Introduction

In the research process, the questionnaire survey method is mainly used. On the basis of the above research design and data collection, this chapter mainly analyzes and summarizes the corresponding data, identifies specific problems, studies the relevant data of SF Express Company's supply and service quality, analyzes its present situation and existing problems, and finally verifies the validity of the above assumptions.

4.2 Sample Size

The characteristics of the respondents are shown in Table 4.1 below. According to the age of the respondents, most customers of SF Express's cold chain logistics are relatively young, because young people are active on the Internet and often use express delivery. In terms of gender, SF Express customers are more women than men, accounting for 81.6%.

Table 4.1 Statistics on the Characteristics of Respondents

Survey Items	Category	Number of people	Percentage (%)
Gender	Male	151	81.6
	Female	34	18.4
Age	Under 30 years old	106	57.3
	30-40 years old	43	23.2
	40-50 years old	24	13.0
	50 years old or above	12	6.5
Position	First-line personnel	51	27.6
	Assistant level	86	46.5

personnel			
	Middle management	34	18.4
	Senior Management	14	7.5

4.3 Relationship between Supplier Selection and Service Quality of Supply Chain Management

By using the method of correlation analysis, the correlation between supplier reputation, supplier supply stability and service quality of supply chain management is studied respectively. As shown in Table 4.2.

Table 4.2 Correlation Analysis Results of Supplier Selection and Service Quality of Supply Chain Management

Dimension	supplier reputation	supplier supply stability	service quality of supply chain management
supplier reputation	1		
supplier supply stability	.715**	1	
service quality of supply chain management	.613**	.841**	1

As can be seen from the above table, P values are all less than 0.01, which are significant through significance test, and the correlation coefficients of supplier reputation, supplier supply stability and service quality of supply chain management are positive, which are 0.613 and 0.841 respectively. Therefore, the supplier reputation, supplier supply stability and service quality of supply chain management of this study, that is, there is a significant positive correlation between supplier selection and service quality of supply chain management, and the correlation is strong.

The correlation analysis between supplier selection and service quality of supply chain management shows that there is a positive correlation between them. Here, the supplier selection is taken as the independent variable, and the service quality of supply chain management is taken as the dependent variable for regression analysis. The results are shown in Table 4.3.

Table 4.3 Regression Analysis Results of Supplier Selection and Service Quality of Supply Chain Management

	Non-standardized coefficient		Standardized coefficient	t	p	R^2	AdjustingR^2	F
	B	Standard Error	Beta					
(Constant)	.615	.062	-	4.161	.000			
supplier selection	.716	.054	.719	14.569	.000	.516	.556	252.162

As can be seen from the above table, R^2 of the model is 0.516, which means that this research variable can explain 51.6% of the satisfaction change. The model passed the F test, which means that supplier selection have an impact on the service quality of supply chain management. As can be seen from the above table, B=0.716, $P<0.05$, indicating that supplier selection have a significant positive impact on service quality of supply chain management.

4.4 Relationship between Logistics and Transportation Capabilities and Service Quality of Supply Chain Management

By using the method of correlation analysis, the correlation between travelling speed, transportation cost and service quality of supply chain management is studied respectively. As shown in Table 4.4.

Table 4.4 Correlation Analysis Results of Logistics and Transportation Capabilities and Service Quality of Supply Chain Management

Dimension	travelling speed	transportation cost	service quality of supply chain management
travelling speed	1		
transportation cost	.812**	1	
service quality of supply chain management	.716**	.684**	1

As can be seen from the above table, P values are all less than 0.01, which is significant through significance test, and the correlation coefficients of travelling speed, transportation cost and service quality of supply chain management are positive, which are 0.716 and 0.684 respectively. Therefore, the travelling speed, transportation cost and service quality of supply chain management of this study, that is, there is a significant positive correlation between logistics and transportation capabilities and service quality of supply chain management, and the correlation is strong.

The correlation analysis of logistics and transportation capabilities and service quality of supply chain management shows that there is a positive correlation between them. Here, the logistics and transportation capabilities is taken as the independent variable, and the service quality of supply chain management is taken as the dependent variable for regression analysis. The results are shown in Table 4.5.

Table 4.5 Regression Analysis Results of Logistics and Transportation Capabilities and Service Quality of Supply Chain Management

	Non-standardized coefficient		Standardized coefficient	t	p	R^2	AdjustingR^2	F
	B	Standard Error	Beta					
(Constant)	.615	.106		3.461	.000	.542	.462	182.455

logistics and transportation capabilities	.796	.054	.716	13.155.000

As can be seen from the above table, the R^2 of the model is 0.542, which means that this research variable can explain 54.2% of the satisfaction change. The model passed the F test, which means that logistics and transportation capabilities have an impact on the service quality of supply chain management. As can be seen from the above table, B=0.796, and P<0.05, indicating that the logistics and transportation capabilities has a significant positive impact on the service quality of supply chain management.

4.5 Relationship between Information Technology Support on Service Quality of Supply Chain Management

By using the method of correlation analysis, the correlation between technical support response speed, technical support quality and service quality of supply chain management was studied respectively. As shown in Table 4.6.

Table 4.6 Correlation Analysis Results of Information Technology Support and Service Quality of Supply Chain Management

Dimension	technical support response speed	technical support quality	service quality of supply chain management
technical support response speed	1		
technical support quality	.522**	1	
service quality of supply chain management	.713**	.765**	1

As can be seen from the above table, P values are all less than 0.01, which is

significant through significance test, and the correlation coefficients of technical support response speed, technical support quality and service quality of supply chain management are positive, which are 0.713 and 0.765 respectively. Therefore, the storage management efficiency, technical support quality and service quality of supply chain management in this study, that is, there is a significant positive correlation between information technology support and service quality of supply chain management, and the correlation is strong.

The correlation analysis between information technology support and service quality of supply chain management shows that there is a positive correlation between them. Here, the information technology support is taken as the independent variable, and the service quality of supply chain management is taken as the dependent variable for regression analysis. The results are shown in Table 4.7.

Table 4.7 Regression Analysis Results of Information Technology Support and Service Quality of Supply Chain Management

	Non-standardized coefficient		Standardized coefficient	t	p	R^2	AdjustingR^2	F
	B	Standard Error	Beta					
(Constant)	.612	.156		4.456	.000			
information technology support	.784	.012	.641	12.459	.000	.452	.454	134.452

As can be seen from the above table, the R^2 of the model is 0.452, which means that this research variable can explain 45.2% of the satisfaction change. The model has passed the F test, which means that it has an impact on the service quality of supply chain management. As can be seen from the above table, B=0.784, and $P<0.05$, which shows that the information technology support has a significant positive impact on the service quality of supply chain management.

4.6 Relationship between Customer Service and Communication Capabilities and Service Quality of Supply Chain Management

By using the method of correlation analysis, this paper studies the correlation among customer service response speed, communication ability and service quality of supply chain management. As shown in Table 4.8.

Table 4.8 Correlation Analysis Results of Customer Service and Communication Capabilities and Service Quality of Supply Chain Management

Dimension	customer service response speed	communication ability	service quality of supply chain management
customer service response speed	1		
communication ability	.618**	1	
service quality of supply chain management	.752**	.824**	1

As can be seen from the above table, P values are all less than 0.01, which is significant by significance test. The correlation coefficients of customer service response speed, communication ability and service quality of supply chain management are positive, which are 0.752 and 0.824 respectively. Therefore, the customer service response speed, communication ability and service quality of supply chain management in this study, that is, there is a significant positive correlation between customer service and communication capabilities and service quality of supply chain management, and the correlation is strong.

The correlation analysis between customer service and communication capabilities and service quality of supply chain management shows that there is a positive correlation between them. Here, the customer service and communication capabilities is taken as the independent variable, and the service quality of supply chain management is taken as the dependent variable for regression analysis. The results are shown in Table 4.9.

Table 4.9 Regression Analysis Results of Customer Service and Communication Capabilities and Service Quality of Supply Chain Management

	Non-standardized coefficient		Standardized coefficient	t	p	R^2	AdjustingR^2	F
	B	Standard Error	Beta					
(Constant)	.512	.042		5.523	.000			
customer service and communication capabilities	.791	.082	.725	16.456	.000	.595	.556	238.451

As can be seen from the above table, R^2 of the model is 0.595, which means that this research variable can explain 59.5% of the satisfaction change. The model has passed the F test, which means that it has an impact on the service quality of supply chain management. As can be seen from the above table, B=0.791, and $P < 0.05$, which shows that customer service and communication capabilities has a significant positive impact on service quality of supply chain management.

Chapter 5 Conclusion and Recommendation

5.1 Introduction

In the previous chapter, the correlation between variables was analyzed and the corresponding conclusions were drawn. At the same time, on this basis, some improvement measures are put forward for the future development of the company, and corresponding guarantee suggestions are put forward.

5.2 Conclusion

According to the above analysis and questionnaire survey results, SF Express Company mainly has many problems, which are summarized as follows.

5.2.1 There is a Positive Correlation between Supplier Selection and Service Quality of Supply Chain Management

According to the above empirical data, the P value between supplier selection and service quality of supply chain management is less than 0.01, which shows that it is significant at 10% significance level. The correlation coefficients between supplier selection (supplier reputation and supplier supply stability) and service quality of supply chain management are 0.613 and 0.841 respectively. It shows that there is a significant positive correlation between the two dimensions of supplier selection and service quality of supply chain management, and the correlation is strong.

With the continuous development of logistics service industry, SF Express Company has already become a leading large-scale logistics enterprise in the industry, and its supply chain management service quality has attracted much attention. In supplier selection, as the core link of enterprise supply chain management, paying attention to how to select, manage and evaluate suppliers will directly affect the operating efficiency and brand image of enterprises. Therefore, it is of great practical and positive significance to establish a perfect supplier selection and management system to improve the service quality of enterprise supply chain.

1. Strengthen the Scientific and Systematic Selection of Suppliers.

Scientific supplier selection system is the key for enterprises to select suitable suppliers. Therefore, a set of effective evaluation standards can be formulated to strictly screen suppliers in terms of enterprise qualification, product quality, transportation capacity, after-sales service and reasonable price. At the same time, establish a perfect information management system with supplier information as the main element, realize the rapid query and update of supplier information, and realize the all-round management and monitoring of suppliers. In addition, the on-site inspection, investigation, audit and feedback of suppliers also need corresponding quality assurance and process specifications.

2. Strengthen the Management and Guidance of Suppliers.

Establishing a scientific evaluation system is only the starting point of supplier selection, and how to manage and guide cooperative suppliers for a long time is also the key link to ensure the quality of supply chain management services. Therefore, we can establish an effective communication mechanism, communicate and coordinate with suppliers regularly, keep abreast of their production, transportation and after-sales service, and ensure that suppliers can provide quality services according to the requirements of time, specification, quality and quantity. In addition, establish and implement supplier evaluation mechanism, regularly evaluate and check the comprehensive performance of suppliers, and give appropriate reward and punishment measures; At the same time, it is also necessary to manage and guide suppliers scientifically and effectively through supply chain integration and coordination.

3. Promote the Benign Cooperation of Suppliers

As the main supplier of the target market, it has a benign and friendly cooperative relationship, which is very important for the development and long-term interests of enterprises. Therefore, SF Express should promote the closer relationship between suppliers and themselves. Establish a good business cooperation model, give preferential respect and care to suppliers, enhance suppliers' recognition and loyalty to corporate feelings, and thus realize long-term and stable cooperative partnership. At the same time, we should adjust our own business strategy and model at any time to adapt to market fluctuations and changes in customer demand and maintain the competitive position of the company's commercial ability.

In a word, SF Express should strengthen the scientificity and systematicness of supplier selection, management and evaluation, and maintain a good cooperative relationship with cooperative suppliers in order to realize the company's sustainable development and quality service.

5.2.2 There is a Positive Correlation between Logistics and Transportation Capabilities and Service Quality of Supply Chain Management

According to the above-mentioned empirical data, the P value between the logistics and transportation capabilities and service quality of supply chain management is less than 0.01, which shows that it is significant at 10% significance level. The correlation coefficients between logistics and transportation capabilities (travelling speed and transportation cost) and service quality of supply chain management are 0.716 and 0.684 respectively. It shows that there is a significant positive correlation between the two dimensions of logistics and transportation capabilities and service quality of supply chain management, and the correlation is strong.

In the supply chain management of SF Express Company, logistics and transportation capacity is a very important aspect. Good logistics and transportation capacity can ensure that enterprises can provide high-quality services to customers in an efficient and low-cost way and improve their market competitiveness. Therefore, in view of the logistics transportation capacity, SF Express Company should take the following suggestions:

1. Improve the Quality and Quantity of Logistics and Transportation Equipment.

Logistics and transportation equipment has always been a vital part of supply chain management, which directly affects the efficiency and stability of logistics transportation. In order to improve the logistics and transportation capacity of SF Express Company, various measures should be taken, including increasing the number of logistics and transportation equipment, improving the quality of equipment, and introducing some efficient and intelligent equipment. In addition, the existing equipment also needs to be overhauled and maintained regularly to ensure normal operation. Only through the above measures can we improve the efficiency and stability of logistics transportation equipment and provide customers with more efficient, fast and reliable logistics services.

2. Optimize the Logistics Distribution Route

The optimization of logistics distribution route is an important means for SF Express Company to improve its logistics transportation capacity. Through the establishment of logistics information platform, the position and state of goods can be monitored in real time, and the logistics transportation route can be planned and adjusted reasonably, so as to make the most effective use of logistics resources and improve transportation efficiency. In addition, different logistics distribution strategies can be formulated according to different types and needs of goods, such as logistics distribution models and freight flights, to meet the needs of different customers. By optimizing the logistics distribution route, transportation efficiency can be improved, logistics cost can be reduced, and the quality of enterprise service can also be improved.

3. Strengthen Logistics Information Management and Tracking.

Logistics information can directly affect the efficiency of supply chain management and transportation quality. In order to improve logistics transportation capacity, SF Express Company should strengthen logistics information management and tracking. Real-time tracking and management of orders can be realized on the logistics information platform, so as to solve the problems in the process of logistics transportation in time. In addition, technologies such as Internet of Things and big data can be used to analyze and predict logistics information, so as to find potential problems in advance and prevent accidents. By strengthening the management and tracking of logistics information, SF Express Company can better ensure the safe, fast and efficient delivery of customers' goods, and improve the service level and customer satisfaction of enterprises.

To sum up, for SF Express Company, improving logistics and transportation capacity needs all-round management and promotion, including comprehensive consideration of equipment, route and information. Only by coordinating in multiple dimensions can SF Express Company optimize its logistics and transportation capacity in supply chain management. Therefore, SF Express should strengthen the evaluation of logistics and transportation capacity, standardize logistics and transportation management processes, promote the deep integration of traditional logistics and e-commerce, continuously improve service capacity and quality, and provide better logistics services for customers.

5.2.3 There is a Positive Correlation between Information Technology Support and Service Quality of Supply Chain Management

According to the above-mentioned empirical data, the P value between the information technology support and service quality of supply chain management is less than 0.01, which shows that it is significant at 10% significance level. The correlation coefficients between information technology support (technical support response speed and technical support quality) and service quality of supply chain management are 0.713 and 0.765 respectively. It shows that there is a significant positive correlation between the two dimensions of information technology support and service quality of supply chain management, and the correlation is strong.

As a leading supply chain management service enterprise, SF Express Company's information technology support is very important for its service quality. In terms of information technology support, SF Express can take the following suggested measures to continuously improve service quality:

1. Strengthen the Construction of Information Systems

Information system is the key link to support the supply chain management of SF Express Company. In order to improve information technology support, SF Express Company should strengthen the construction of information system. Can improve the stability of the system, strengthen the security of the system, to ensure the safety and reliability of data. At the same time, we should also increase the functions of the system, such as online ordering, instant tracking and other functions, in order to improve the convenience and experience of users. In addition, SF Express should continuously track and introduce new information technologies, such as Internet of Things, big data, artificial intelligence, etc., so as to improve the intelligence and automation of the system and provide more powerful information technology support for the supply chain management of enterprises.

2. Strengthen Data Analysis and Mining.

SF Express has a large number of logistics data, such as order information, transportation routes, cargo tracking, etc. Using these data for analysis and mining can provide more in-depth business insight and decision support for enterprises. In order

to strengthen information technology support, SF Express Company should strengthen the analysis and mining of data. By establishing data warehouse and data mining platform, logistics data can be integrated and analyzed, potential problems can be found, and supply chain management process can be optimized. In addition, data analysis can also be used to provide accurate prediction and decision support for enterprises to improve their operational efficiency and customer satisfaction. By strengthening data analysis and mining, SF Express can make better use of information technology to support supply chain management and improve service quality.

3. Optimize Information Sharing and Communication

In supply chain management, information sharing and communication are very important. In order to improve information technology support, SF Express should optimize the way of information sharing and communication. By establishing a supply chain information platform, real-time information sharing among all links of the supply chain can be realized, thus improving the collaborative management effect of the supply chain. In addition, the internal and external communication of enterprises should be strengthened to improve the timeliness and accuracy of information communication. Various information communication tools, such as telephone, email and instant message, can be used to increase the convenience of communication. By optimizing information sharing and communication, SF Express Company can better coordinate the resources of all parties, improve the response speed and accuracy of services, and thus improve the quality of services.

To sum up, information technology support is an important part of SF Express's supply chain management. By strengthening the construction of information system, strengthening data analysis and mining, and optimizing information sharing and communication, SF Express Company can continuously improve the service quality and improve the efficiency and competitiveness of supply chain management. Therefore, SF Express Company should attach importance to information technology support and make continuous improvement and innovation in all aspects to meet the market demand and development. Only in this way can SF Express maintain a leading position in the highly competitive logistics industry and provide customers with better supply chain management services.

5.2.4 There is a Positive Correlation between Customer Service and

Communication Capabilities and Service Quality of Supply Chain Management

According to the above empirical data, the P value between customer service and communication capabilities and service quality of supply chain management is less than 0.01, which indicates that it is significant at 10% significance level. The correlation coefficients between customer service and communication capabilities (customer service response speed and communication ability) and service quality of supply chain management are 0.752 and 0.824 respectively. It shows that there is a significant positive correlation between the two dimensions of customer service and communication capabilities and service quality of supply chain management, and the correlation is strong.

As a leading supply chain management service enterprise, SF Express's customer service and communication ability is one of the important factors of its service quality. In order to improve customer service and communication skills, SF Express can take the following suggestions:

1. Strengthen Personnel Training

The key to improve the quality of customer service lies in personnel training. SF Express Company should systematically train and educate its employees so that they can master professional knowledge and skills and improve their service level and quality. In terms of training, SF Express can establish a professional training system and platform, and carry out various forms of training courses, such as counter service skills, telephone reception skills, complaint handling procedures, etc. At the same time, employees can also participate in training and exchange meetings to improve their professional quality and comprehensive ability. By strengthening personnel training, SF Express Company can improve employees' service awareness and service ability, thus improving customer satisfaction and loyalty.

2. Optimize the Customer Service Process

The optimization of customer service process is directly related to customer service experience and satisfaction. SF Express should optimize and improve the customer service process. By establishing customer service standard process, the responsibilities and workflow of each link can be clarified to ensure the standardization and standardization of service. In addition, we can strengthen the monitoring and management of key links of customer service, such as written replies and complaints, to ensure that problems are solved in time. By optimizing the

customer service process, SF Express can improve the service efficiency and quality, and provide customers with a more convenient and satisfactory service experience.

3. Establish a Customer Feedback Mechanism

Customer feedback is an important channel for enterprises to improve and improve service quality. SF Express should establish a systematic customer feedback mechanism, collect customers' opinions and suggestions in various ways, and solve and reply to customers' feedback in time. We can set up customer complaint hotlines and online message boards to let customers put forward their opinions and suggestions. At the same time, we should also set up a special customer relationship management department to classify, analyze, handle and follow up customer feedback. Through the establishment of customer feedback mechanism, SF Express can understand customer needs and reflect, improve service quality according to customers' opinions and suggestions, and improve customer satisfaction and loyalty.

To sum up, customer service and communication skills are of great significance to the operation and development of SF Express Company. By strengthening personnel training, optimizing customer service process, establishing customer feedback mechanism and providing multi-channel communication, SF Express Company can continuously improve service quality, improve customer satisfaction and loyalty, and enhance market competitiveness. Therefore, SF Express should attach importance to customer service and communication skills, constantly innovate and optimize in the market competition, and provide customers with better supply chain management services.

5.3 Recommendation

As a supply chain management service enterprise, SF Express Company, in the process of continuous development and growth, customer service quality is one of the key factors for its success. However, there are still some challenges and problems that need further research and improvement. In the future research, we can look forward to the research on the influencing factors of supply chain management service quality of SF Express Company from the following aspects:

1. Strengthen the Research of Customer Demand.

Customer demand is the core of supply chain management service, and it is very important to understand and meet customer demand for improving service quality. Future research can be carried out from the categories of customer needs, changing trends, customer satisfaction and other aspects. Through in-depth study of customer needs, SF Express can better formulate service strategies and programs, and improve the personalization and differentiation of services.

2. Explore Ways of Service Innovation

Service innovation is an important means to improve the service quality of supply chain management. Future research can explore service innovation in the field of supply chain management services, such as the application of logistics technology and the optimization of supply chain system. By introducing new technologies and innovative models, SF Express can improve the efficiency and quality of services and realize cross-border integration and optimization of services.

3. Strengthen the Research of Supply Chain Partnership

Supply chain partnership has an important impact on the quality of supply chain management services. Future research can explore the establishment and management of supply chain partnership, such as supplier selection, cooperation contract, information sharing and so on. By strengthening cooperation and communication with supply chain partners, SF Express can improve the degree of service coordination and integration, and optimize the quality and effect of supply chain management services.

To sum up, the future research can be carried out from the aspects of strengthening the research of customer demand, exploring service innovation and strengthening the research of supply chain partnership. Through these studies, SF Express can continuously improve the quality of supply chain management services, enhance market competitiveness and achieve sustainable development.

References

Aghazadeh, S. M., & Behmadi, L. M. R. (2016). A comprehensive multi-objective model for supplier selection and order allocation with multiple products. *International Journal of Supply Chain and Operations Resilience*, 2(2), 137-152.

Blanchard, D. (2017). Supply chain management best practices. *John Wiley & Sons*.

Bodea, T.-N., Govindan, K., & Jemai, Z. (2013). Supplier selection in green supply chain considering transportations costs: An improved fuzzy TOPSIS method. *Transportation Research Part E: Logistics and Transportation Review*, 51, 129–141.

Chang, Y.-H., Lo, E. Y., & Chen, C.-T. (2014). A hybrid fuzzy decision model for supplier selection in global supply chain management. *The Journal of Applied Business Research*, 30(2), 475–482.

Chin, K.-S., Pun, K.-F., & Yang, J.-B. (2017). An integrated approach for supplier selection based on FMEA and fuzzy Topsis. *Applied Soft Computing*, 52, 98–109.

Chiou, J. S., Lee, W. H., & Ho, C. C. (2016). Analyzing the antecedents of logistics service quality in liner shipping using structural equation modeling. *Maritime Business Review*, 1(1), 31-48.

Chen, S. M., & Chen, C. Y. (2020). An analysis of the effects of supply chain qualitymanagement on performance with the Asian international automobile market as an example.*International Journal of Operations & Production Management*, 40(1), 101-126.

Chen, Y., Zhao, Y., & Choi, B. (2019). A multi-objective optimization approach for balancing support quality and response time in customer services. *Omega*, 83, 128-139.

Chen, C., Lai, F. K., & Wang, S. J. (2013). The impact of supplier and customer characteristics on service quality in supply chains: A moderated mediation analysis. *International Journal of Production Economics*, 146(1), 209-220.

Chu, K.-C., & Chen, M.-C. (2013). Service response speed, service quality of supply chain management, and loyalty: A study of banking industry in Taiwan. *International Journal of Business and Management*, 8(24), 1-10.

Choi, T. Y., & Kang, D. S. (2018). Strategic supplier selection and evaluation in the South Korean defense industry: An empirical investigation. *International Journal of Production Economics*, 197(6), 76-91.

Dong-Lee Kim, S., Han, K., & Lee, J. (2018). The effect of enterprise resource

planning system use on supply chain performance. *Journal of Business Research*, 88, 364-376.

Deng, J., Wang, R., Sun, S., et al. (2021). A research on optimizing service quality of archival website based on supply chain management [J]. *Journal of China Archives Research*, 2021(01), 161-178.

Gaurav Kumar, D., Khan, A., & Kumar, V. (2020). Impact of blockchain technology on supply chain management. *Journal of Cleaner Production*, 274, 122960.

Heo, C. H., & Nam, C. W. (2014). Evaluation of strategic partnership in reverse auction based on the analytical hierarchy process. *Journal of Intelligent Manufacturing*, 25(4), 851-862.

Hou, J., Liang, C., Zhou, M. (2014). A research on service quality and cost control of tourism supply chain [J]. *Modern Management Science*, 2014(04), 96-98+117.

Humphreys, P., & Li, W. (2015). Factors influencing supplier selection in the procurement of low-value products and services in China. *Journal of Purchasing and Supply Management,* 21(2), 109-117.

Hassanzadeh, A., Kianian, S., & Jafari, H. (2013). An integrated fuzzy approach for supplier selection in the presence of volume discount and truckload discount. *Journal of Intelligent Manufacturing*, 24(5), 991-1006.

Hugos, M. H. (2018). Essentials of supply chain management (4th ed.). Hoboken, NJ: Wiley.

Hoang, D. T., Igel, B., & Laosirihongthong, T. (2017). Multi-criteria decision making (MCDM) approaches for supplier evaluation and selection: A literature review. *European Journal of Operational Research*, 260(1), 1–16.

Ji, X., Li, M., & Lu, H. (2013). Analysis of the operation safety management information system for SF-Express delivery vehicle. *Procedia Engineering*, 52, 80-84.

Jiang, Y. (2018). A research on quality management of tourism supply chain in China under the new normal [J]. *Holiday Tourism*, 2018(06), 3-5.

Jin, H., Hua, S. (2008). Quality management and quality evaluation of logistics enterprises [J]. *Logistics Technology*, 2008(07), 67-71.

Johnson, M. W., & Johnson, M. C. (2015). Studying the effectiveness of ISO 10002 quality management system. *International Journal of Advanced Research*, 3(7), 1175-1186.

Kim, J., Kim, D., & Kim, J. (2019). Identifying key features of technical support quality through complaint classification and regression analysis. *International Journal of Information Management*, 46, 104-112.

Khan, Y., & Edenfeld, D. (2017). The influence of supply chain quality

managementdimensions on service quality of supply chain management: An investigation of the German electronics industry.*Procedia Manufacturing*, 8, 528-535.

Lam, W. L., & Lee, S. (2014). Green supply chain management and environmental performance in the Chinese automobile industry. *International Journal of Production Economics,* 147, 289-299.

Lin, C.-W., Huang, W.-H., & Hsu, Y.-C. (2019). An integrated approach for supplier selection criteria using the DEMATEL, ANP, and TOPSIS methods. *Journal of Business Research*, 96, 223–231.

Liu, H., Tu, W., & Chen, Y. (2019). The strategic upgrading and innovation of express logistics enterprises under the "Internet+" era. *Journal of Intelligence Studies in Business*, (2), 57-67.

Li, J., Chen, X., & Fu, X. (2021). Empirical study on the influence of information technology support on the development of SF express. *Logistics Technology,* 40(8), 30-36.

Liu, Y. L. (2021). Research on customer service quality of express delivery enterprises based on customer awareness. In IOP Conference Series: Earth and Environmental Science (Vol. 662, No. 2, p. 022045). *IOP Publishing*.

Lin, Y.-H., & Chang, P.-T. (2020). A study on customer-oriented service quality and service quality of supply chain management in relation to supply chain management. *International Journal of Operations & Production Management*, 40(9/10), 1245-1264.

Li, C. X. (2014). Research on the impact of customer service on the service quality of express delivery enterprises. In 2014 International Conference on Logistics Engineering, *Management and Computer Science (LEMCS)* (pp. 614-618). IEEE.

Niu, Y., Li, X., & Wang, J. (2016). Evaluation of transportation network quality for SF Express. *2016 8th International Conference on Modelling, Identification and Control (ICMIC),* 342-346.

Ouyang, S. L. (2016). Analysis of communication problems in supply chain management and countermeasures. *In 2016 International Conference on Intelligent Transportation, Big Data and Smart City (ICITBS)* (pp. 190-191). IEEE.

Park, H. J., & Kim, Y. (2016). Supplier selection based on fuzzy value stream mapping and fuzzy AHP for a Korean automaker. *Journal of Cleaner Production*, 112(3), 2288-2301.

Russo, I., Comi, A., & Castaldo, S. (2014). Supply chain quality management: literature reviewand some issues. *In International Conference on Industrial*

Logistics (Vol. 978). Springer, Cham.

Ru, J., Zhu, X., Lu, W., & Song, D. (2019). Supplier selection and order allocation under stochastic environments: An empirical study. *Journal of Cleaner Production*, 220, 123-132.

Schulze, A., & Liu, J. (2016). Factors influencing supplier selection for automated material handling systems: An exploratory study. *International Journal of Production Research*, 54(5), 1419-1435.

Sarwoko, E., & Dinata, D. (2015). The effect of cloud computing technology on service quality and service quality of supply chain management of courier company. *Applied Mechanics and Materials*, 794-795, 1285-1290.

Shen, Y., Thin, N. V., & Hsueh, C. F. (2015). An integrated fuzzy group decision process for green supplier selection. *Sustainability*, 7(11), 15100–15126.

Vachon, S., & Klassen, R. D. (2016). Green supply chain management: Past, present, future.*Operations and Supply Chain Management*, 9(4), 167-170.

Wang, J., Zhou, Y., & Wu, H. (2014). Research on the construction of logistics facilities in SF Express. *2014 Intl Conf on Transportation, Mechatronics and Artificial Intelligence (ICITMAI)*, 308-311.

Wu, J., Jia, K., & Yan, G. (2020). Research on influencing factors of vehicle fleet management in SF Express.

Wu, Y. C. J., Lin, M. J. J., & Huang, Y. C. L. (2018). Sustainable quality management inelectronics manufacturing supply chains. *Journal of Business Research*, 85, 418-428.

Yu, B., & Liu, Z. (2018). Research on effect factors of service quality of SF express in distribution vehicle dispatching. *2018 Chinese Automation Congress (CAC*), 594-598.

Yuan, R., Wei, Y., & Shi, H. (2014). Application of GPS monitoring system in SF Express vehicle management. *2014 IEEE 4th International Conference on Information Science and Technology (ICIST)*, 982-984.

Yuan, S., He, C., Xu, X., et al. (2014). Research on third-party logistics services based on supply chain management [J]. *China Business and Trade*, 2014(11), 102-103.

Yadav, R., & Vrat, P. (2013). A multi-objective approach for logistics center location problem in a supply chain in the presence of rivalry, demand disruption and delay in transportation. *Applied Mathematical Modelling*, 37(3), 1014-1030.

Zhang, Y., & Guo, Y. (2019). Tiered pricing strategy for time-sensitive logistics services: A new revenue and satisfaction model. *Journal of Cleaner Production*, 213, 1063-1073.

Zhang, T., He, X., Wang, Y., & Chen, Z. (2017). Research on logistics distribution

network optimization for express delivery enterprises: A case study of SF Express. *International Journal of Computational Science and Engineering*, 15(4), 378-386.

Zhou, J., Yao, X., & Liu, J. (2015). Evaluation of logistics service quality of SF Express based on ANP. *2015 12th International Conference on Service Systems and Service Managemen*t, 135-139.

Zhou, M., Wang, Y., & Zhu, J. (2016). Analysis of information technology support for supply chain management in SF express logistics. *Journal of Theoretical and Applied Information Technology*, 87(2), 303-310.

Appendix

Dear Sir/Madam, In order to have a more in-depth understanding of the current situation and future development of service quality of supply chain management.

Now we need to do a questionnaire about service quality of supply chain management, please fill in the questionnaire according to your actual situation, thank you!

Thank you for your support and cooperation.

Part I: Basic information

1 Your gender:

☐ Male

☐ female

2 Your age:

☐ below 30 years old

☐ 30-40 years old

☐ 40-50 years old

☐ 50 years old or above

3 Your position in the company is:

☐ First-line employee

☐ assistant level employee

☐ middle management

☐ senior management

Part II: The company's service quality of supply chain management survey, please tick under the option you think is most appropriate

Questionnaire on Influencing Factors of Supply Chain Management Service Quality of SF Express Company

Factors	Title item	Degree of agreement				
		1	2	3	4	5
supplier reputation	When selecting suppliers, you will consider the reputation and evaluation of their past business cooperation.					
	You will actively collect and evaluate the reputation information of suppliers to ensure the reliability of cooperation.					
supplier supply stability	Have you ever met a supplier who failed to deliver the goods on time, resulting in your business being damaged?					
	You will evaluate the supplier's supply capacity and formulate corresponding countermeasures to deal with sudden supply problems.					
travelling speed	Do you think transportation speed is very important?					
	You have the means to measure and evaluate the transportation speed of different suppliers in order to make the best cooperation decision.					
transportation cost	You will choose suppliers with lower prices but higher transportation costs.					
	You will make a trade-off between transportation cost and transportation speed to get the optimal solution.					
technical support response speed	The technical support you want is very responsive.					
	You will consider the speed and ability of technical support response when selecting suppliers.					
technical support quality	You value technical support.					
	You will know the quality and level of technical support from suppliers in advance.					
customer service response speed	In the process of cooperation, you have encountered a slow response from customer service.					
	You will pay attention to the speed and quality					

	of customer service response when choosing suppliers.					
communication ability	You think the communication ability of suppliers is very important.					
	You will pay attention to the communication ability of suppliers and whether they can keep smooth communication with you.					
service quality of supply chain management	When you choose suppliers, you will consider the quality of their supply chain management services.					
	You have high expectations for the quality of supplier's supply chain management service.					

Thank you for your active participation in this questionnaire, and have a nice life.