

# Study on Customer Satisfaction of Cold Chain Distribution Service Fee of Fresh Agricultural Products

-- A Case Study of Nanchang City

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**Abstract:** In recent years, with the rapid development of fresh agricultural products, it is inevitable to affect the development of cold chain distribution services. Therefore, the satisfaction of consumers is studied, so as to find out the problems in order to promote the development of cold chain distribution. This paper starts with understanding the current situation of cold chain distribution service of fresh agricultural products, analyzes the existing problems and causes of consumer satisfaction: summarizes the main factors affecting consumer satisfaction with cold chain distribution service, conducts a questionnaire survey on consumers in Nanchang, and proposes relevant optimization plans and suggestions for cold chain distribution service through the analysis of consumer satisfaction.

**Keywords:** Fresh Agricultural Products; Cold Chain Distribution; Satisfaction Survey; Nanchang Cold Chain Distribution.

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## 1. Introduction

With the in-depth promotion of strategies such as "Internet +" and "several commerce promoting agriculture", the online trade of agricultural products in China presents a prosperous scene. According to the figures released by the Ministry of Agriculture, the total online sales of agricultural products in the first half of 2023 reached 290 billion, an increase of 12.4% over the same period last year. At present, fresh online shopping has gradually developed to provide consumers with fresh goods, and satisfaction is a key factor in determining their shopping choices, and also a key factor in prompting them to buy again [1]. There is a direct positive correlation between shopping experience and purchasing decision. How to improve customer satisfaction to enhance their trust in fresh electricity suppliers and enhance their stickiness to the platform is a very worthy of discussion. Through the analysis of customer satisfaction of fresh electricity supplier platform, it is found that cold chain logistics service system is the key to the development of fresh electricity supplier and the key to customer satisfaction [2]. At the same time, the reputation of online shopping platforms, perceived value and quality, quality traceability, and online shopping behavior are all important variables of online shopping experience.

Most of the existing studies are based on the expectation-result theory, the Chinese customer satisfaction index model and other theories, through the online purchasing behavior of fresh goods questionnaire survey [3]. By means of principal component analysis and regression analysis, the main factors affecting customer satisfaction are discussed. However, in practice, the questions in the survey are often set in advance, and are easily restricted by factors such as the model used and the knowledge of the researchers themselves, and the credibility of the results will be biased due to the survey design, so the results are highly subjective [4]. After the formation of online comments, users are more willing to share

their shopping experience with others through online comments, and the quality, quantity and visual comments of online comments are important factors affecting their purchasing behavior. However, it will have a greater impact on customers' satisfaction with the goods and purchasing behavior.

In recent years, online reviews based on text analysis have become an important tool to analyze consumers' shopping experience and satisfaction. Among them, subject analysis and emotion analysis are more common [5]. Through a textual analysis of online reviews, researchers have identified four important aspects that influence the consumption behavior of fresh produce: product quality, price value, packaging logistics, and customer service. At present, there have been studies using word frequency statistics on Jingdong Fresh online reviews to obtain important factors affecting customer satisfaction, and establish a feature dictionary, and use TFIDF algorithm for feature weighting to evaluate the overall customer satisfaction. Some studies have used LDA method to extract online comment topics in fresh online shopping, and calculated consumers' emotional preference score by establishing emotion dictionary to determine consumers' satisfaction [6]. Using structural equation analysis, some researchers have found that customer expectation, perceived quality and perceived value have significant effects on customer satisfaction with fresh agricultural products. Aiming at e-commerce users, some scholars have discussed their satisfaction with fresh agricultural products, and proposed to examine the influencing factors of customer satisfaction from three dimensions: before, during and after purchase. Some scholars believe that logistics, platforms, products and other factors have a significant impact on the quality of fresh agricultural products of e-commerce customers. Some researchers found that customer satisfaction with fresh agricultural products is related to marketing activities, customer service, word of mouth, logistics, after-sales service and other factors based on the establishment of customer

satisfaction model. Existing studies have integrated new retail characteristics with customer satisfaction indicators, and concluded that customer expectation, perceived quality integration and perceived value all work together to affect customer satisfaction with fresh agricultural products [7]. Most scholars examine customer satisfaction from different perspectives, and its impact factors are also different, which can be generally summarized into four dimensions: demographic characteristics, perception level, trust level and information exchange. At present, most of China's fresh e-commerce enterprises have not yet reached a profit state. At present, the development of fresh e-commerce in China is uneven, resulting in many problems such as packaging, fresh quality control, logistics preservation and so on. As a result, China's fresh e-commerce enterprises are facing huge competitive pressure, resulting in the loss of consumers and the closure of enterprises. Therefore, only by constantly paying attention to customers' shopping experience can it make them better developed [8]. However, there are few studies on online fresh agricultural products in the existing literature, and there is no study on the satisfaction degree of customers buying fresh food online. At the same time, the development of fresh electricity suppliers has also gone through an exploration, high-speed development and reshuffle, and entered a growth-type transformation and upgrading stage. In this process, the impact factors of consumer satisfaction have also changed. This project intends to take the user evaluation in the fresh website as the research object, and use topic analysis and other means to extract the main factors affecting user satisfaction. Combined with the previous research results, through regression of the user's emotional preference index, the extracted impact factors are tested and ranked. So as to China "number of commerce to rejuvenate agriculture" strategy of the in-depth development of targeted improvement measures.

## **2. Shortcomings in the Cold Chain Distribution System of Fresh Agricultural Products in China**

### **2.1. Due to the Waste of Logistics and Distribution Links, it is Difficult to Ensure Quality**

The high cost of refrigerated logistics of fresh food leads to the phenomenon of "pseudo-cold chain". At present, the logistics of fresh goods in China's cities and towns is still mainly transported at room temperature, and more than 60% of fresh goods are still carried out by conventional means of transportation [9]. At present, the "last kilometer" logistics distribution method of refrigerated transportation is mostly foam boxes, and some enterprises do not add ice, resulting in the quality of fresh food cannot be guaranteed, and the safety of food is also questioned. According to relevant data, although the existing fresh electricity suppliers through self-built logistics, distribution and pre-sale and other ways, can reduce the decay rate to 3%-5%, but the loss of less than 2% from advanced countries such as Europe and the United States is still a long way away.

### **2.2. The "Last Kilometer" Problem is Prominent, and the Cost of Cold Chain Logistics is High**

China's fresh electricity market has huge commercial

potential, but it is still facing the "last mile" logistics problem. At present, China's cold chain logistics in the transportation, warehousing and distribution industry chain in all aspects of the connection is not close enough, the division of labor is unclear, prone to "broken chain", resulting in quality is not guaranteed, the loss of goods is also very large, resulting in the overall cost of the entire distribution on the high side. In the e-commerce logistics system, the cold chain logistics cost accounts for 30%-50% of the entire logistics cost, which is still the biggest bottleneck restricting its development.

### **2.3. The Development of Community Fresh Food Supermarkets is Chaotic, and it is Difficult to Integrate Resources Effectively**

Fresh house matching is a new direction of the development of fresh commodity e-commerce in China. Community fresh business can not only adapt to the current requirements of life, but also occupy the market with more competitive prices and characteristics closer to the community [10]. At present, there are many and miscellaneous fresh shops in urban communities in China, and the development is disorderly, so it is difficult to form an effective cooperative relationship with them. Satisfaction with delivery personnel is not high. The problem of spatial coordination between fresh distribution centers and fresh supermarkets, the problem of warehouse management of fresh products, and the problem of service quality of distribution/self-pickup distribution need to be solved urgently.

### **2.4. The Supply of Terminal Logistics Equipment is Insufficient, and the Product and Service Standard System Needs to be Established**

Affected by factors such as limited arable land and the slow construction speed of supporting facilities for cold chain logistics, the existing cold chain resources in most cities of China are difficult to meet the needs of the development of cold chain logistics, such as large-scale planting bases, fresh agricultural products processing enterprises, most agricultural batch markets and regional agricultural products distribution centers, etc., the construction of cold storage such as pre-cooling, quick-freezing and refrigeration is relatively backward. In addition, the standardization process of pallets and turnover boxes in the city is slow, which is also an important reason for affecting the efficiency of its operation, indirectly leading to the low efficiency of China's current cold chain logistics operation [11]. China's current agriculture is still a vulnerable industry, its origin of pre-cooling, packaging and primary processing are relatively backward. At present, there are many norms and confusion in China's cold chain logistics industry, and agricultural production and processing enterprises and cold chain enterprises have not been well implemented in the implementation process, and there is a lack of mandatory measures to promote the implementation of relevant norms.

## **3. Text Collection Experiment**

### **3.1. Data Acquisition**

This paper selects the reviews of fresh products in Jingdong market as the research data. In view of the wide variety and complexity of fresh agricultural products in China at present,

four typical commodities such as vegetables, fruits, meat and seafood are selected from the four major categories for retrieval. The Octopus network data collector is used to conduct text evaluation and analysis of various commodities in February-March 2023.

The collected annotation data are output in excel format, among which the representative annotation data are listed in Table 1. The number of concluding comments in the four main categories is shown in table 2.

**Table 1.** Partial examples of Jingdong Mall review data

Member	Rank	Rating star	Comment content
****j	PLUS member	star5	Three two and a half kilos, very fast.
x***9	PLUS member	star5	I've had this bamboo shoot before and it was delicious, so I bought two more packets and will buy them when I run out."
Honey ***y	PLUS member	star5	It is still so fresh, small cucumbers, small tomatoes are prepared for the children, but also made some improvements, with the thermal box, the next day can arrive, very good, very delicious.
****F		star5	The steamed bread is delicious, the vegetables are fresh, SF Express is excellent
u***4		star5	Don't like that feeling, just like a pear, but there is not so much water pear, there is no pear so good taste, it is a waste!

**Table 2.** Number of aggregated reviews for four categories of products

Product category	Number of comments // pieces
vegetable	5343
fruit	5391
meat	4874
seafood	4676
total	20283

## 3.2. Data Cleaning

Because there are repeated values, invalid values and other errors, it will have an adverse impact on the subsequent analysis, so it must be cleaned first. Data cleaning is the inspection and inspection of data, eliminating duplicate data, invalid data and abnormal data to ensure the consistency of data. One of the most important points is to use Excel's hierarchical filtering system to delete messages such as "user did not complete the review," "default praise," and "+ vx got a discount coupon." Invalid comments for 4 categories were removed. After the preliminary sorting of the data, a total of 16835 valid messages were obtained.

## 3.3. Data Word Segmentation

### 3.3.1. Improved Segmentation Custom Dictionary

Segmentation is the division of the whole sentence into several words, so that each sentence can be lexical analysis. The network evaluation of users in online shopping is mostly

verbal language, and the automatic segmentation algorithm developed by ROST software will lead to low segmentation accuracy. The addition of customized fields can effectively improve the segmentation accuracy. Custom words have been added to the ROST dictionary.

### 3.3.2. Updating the Stop Word List

Word frequency statistics were carried out on the segmented articles, and it was found that there were some useless and infrequently used high-frequency words in the initial keywords, which would have a certain impact on the subsequent analysis, so banned words were used to clean up again [12]. The word frequency statistical filter table for keywords is added to ROST. Since the online evaluation of fresh agricultural products is the research object in this paper, adding the brand name of fresh agricultural products to the deactivated vocabulary.

### 3.3.3. Revision of the Integrated Vocabulary

**Table 3.** Examples of updates to merge vocabularies

Serial number	Frequently used words	conflator
1	fresh	Freshness, vividness
2	taste	Taste, taste, refreshing, fat, tender, soft, delicious, sweet, delicious, delicate, taste
3	appearance	Clean, even, full, color, large, beautiful, appearance, size, size, symmetry
4	weight	Portion size, quantity, net weight
5	package	Outer packing, vacuum, tight, damaged, intact, broken, complete, intact, bag, gift box, box
6	Material flow	Express, door-to-door delivery, Courier, distribution, transportation, SF Express, delivery, delivery, parcel, delivery
7	Quality	Quality, organic, bad fruit, meat quality, moisture
8	speed	Soon, fast, timely, long, slow, long
9	Price	Affordable, price, not expensive, cost-effective, preferential, cheap, price
10	service	Attitude, customer service, enthusiasm, caring, heart, patience, thoughtful, after-sales, refund, return, compensation
11	Cost performance	Good value, good value, good value, good value, good value, good value, good value



investigation, and 600 questionnaires were distributed, of which 586 were effective, with an effective rate of 98%, which could basically reflect the satisfaction degree of customers in Nanchang on agricultural fresh frozen food. This study used a five-level Likert scale (5 being very satisfied, 4 being satisfied, 3 being average, 2 being dissatisfied, and 1 being very dissatisfied). The contents of the questionnaire include:

#### **4.1.1. Research on Customers' Cognition Level of Frozen Food Supply Chain**

The frequency of refrigerated transportation of fresh agricultural products was studied. According to the survey data, about 80% of people use cold chain logistics every month, and only about 20% of people rarely use it, which shows that the development of cold chain logistics has been greatly developed in People's Daily life, so it is very necessary to study customer satisfaction. Cold chain logistics for customers' favorite fresh produce. The study found that customers prefer the "home matching" mode of family unit, accounting for 23.21%; The most disapproved of the way of delivery to the community, 16.55%. It can be seen that modern consumers are seeking convenient, time-saving and labor-saving distribution methods.

#### **4.1.2. Research on Customer Satisfaction in Agricultural Supply Chain**

Customer satisfaction with the current shipping time of fresh frozen food. In modern fast life, time is the most important factor, according to the survey, 60% of customers are satisfied with the transportation time, and 40% of customers are not satisfied, so in the future development, it should pay more attention to the convenience of logistics, but also to improve their distribution services. Customer information update and regional satisfaction in the frozen food supply chain. From the current latest trends, there are still 40% of customers are not satisfied with the current instant update, the future needs to pay attention to this group, and find a better way to update. For the cold chain distribution scale, some users are not satisfied. Survey results show that nearly 60% of customers are satisfied with this; Forty percent of customers are dissatisfied. In China, due to the popularization of "refrigerated transportation" and the increasing recognition degree of the public, it must be adjusted. Study on customer satisfaction with packaging of fresh agricultural products during refrigerated transportation. According to the survey, about 60% of customers are satisfied with the packaging of the product, but 40% of customers are not satisfied. Judging from the spread and impact of this epidemic, people have a high demand for fresh produce packaging. Customers have studied the variety and freshness of fresh agricultural products during refrigerated transportation. More than 50% of respondents were satisfied with their products. However, it is necessary to maintain a high level of freshness and strict requirements when transporting, to ensure the safety of food and to prevent deterioration as far as possible. In terms of product categories, the survey results show that more than 40% of customers are not satisfied with the category of frozen food; The single variety of goods restricts customer satisfaction to a large extent, therefore, in order to ensure the long-term development of refrigerated transportation and pay attention to the pain points of customers, it is necessary to moderately increase the variety of goods. From the customer's point of view, this paper analyzes the potential risks of cold chain food in the process of transportation. With the large-scale outbreak

of the new coronavirus epidemic in China, the new coronavirus has been detected in the outer packaging of cold chain products imported from abroad in some parts of China, which has aroused great attention from all walks of life. Overseas, due to the severity of the COVID-19 pandemic, some asymptomatic or mild employees unknowingly carried the virus into the outer packaging of goods. Therefore, in order to solve the problem of food safety hazards, the state should strengthen the supervision of imported goods, and stipulate that production workers should pay attention to health problems, report problems as soon as possible, and put people's health first.

#### **4.1.3. Customer Satisfaction of Cold Chain of Agricultural Products**

The customer satisfaction in cold chain logistics is studied. Through the analysis of the questionnaire, most of the customers are satisfied with their service, and the difference in satisfaction between them is very small, so they do not need to make big changes. The results show that customers are satisfied with the convenience of the refrigerated transport claim system. From the customer's evaluation of the express claim system, many customers are not satisfied with the "refrigerant" claim system, and should focus on solving customers' pain points and further improve.

### **4.2. Influencing Factors of Customer Satisfaction**

#### **4.2.1. Distribution Rate of Cold Chain**

Existing data show that the current annual circulation of fresh fruits and vegetables in China has reached nearly 400 million tons, and the turnover rate of the "cold chain" is not ideal. China's fresh fruit and vegetable circulation ratio is 5%, meat circulation ratio is 15%, aquatic product circulation ratio is 23%, meat circulation ratio is 100%, fruit and vegetable circulation ratio is 95%, while the circulation ratio of Europe and the United States and other major countries is 100%. In the process of the circulation of agricultural products in China, due to the restriction of science and technology, capital and other factors, there have been some "chain break" phenomena. The distribution of agricultural products in China is scattered, the region is small, the latitude and longitude span is large, which has a great restriction on the construction of logistics system. In today's fast food economy, the speed of delivery has become an important indicator to determine customer satisfaction.

#### **4.2.2. Food Quality and Packaging Damage**

Cold chain Cold chain is a professional project with strong operability, and many perishable fresh agricultural products must be packaged with special processing methods and special equipment. At present, there is still a lack of supporting equipment, the integration of industrial resources is not high, and the lack of a common development plan and protection means. Cold chain packaging started late in China and has not been well used. At present, the lack of specialized processing equipment and processing technology in many areas of China makes local fresh agricultural products easy to corrupt during the cold storage period. In the process of refrigeration, due to the backward storage cost and refrigeration technology, the quality of the goods has declined sharply, and the quality has deteriorated, resulting in the decline of customers' willingness to buy.

### 4.2.3. Distribution Quality and Customer Satisfaction of Fresh Agricultural Products

However, at present, the domestic special cold storage resources are scarce, and it is difficult to meet its demand for low temperature environment. At present, due to the constraints of various factors, it is difficult to realize the overall logistics distribution service in the circulation of fresh agricultural products, which seriously restricts the optimization of the circulation system of agricultural products in China. In addition, due to the underdeveloped cold chain logistics, the loss of fresh logistics is great. Meanwhile, during transportation, the corruption of products and the delivery date of products have also attracted the attention of customers. Whether customers can get the logistics information in time, master the freshness and loss of products, judge the quality of fresh agricultural products to consumers, and the after-sales service treatment methods of merchants, Will have a certain impact on the customer's shopping experience.

### 4.2.4. Corporate Image

It is found that the brand and word of mouth of the enterprise also have a great impact on customer satisfaction. With the rapid development of information technology and the wide application of big data, the company's reputation has become more critical, and the quantity and quality of praise will have a certain impact on users' re-purchase behavior. Therefore, there are better companies, what they can do is to have higher credibility and higher credibility. For example, in the eyes of customers, good reputation, good reputation of

merchants, Jingdong, SF, etc., will bring more satisfaction to customers, so that customers can get satisfaction psychologically and spiritually.

### 4.2.5. Market Environment

With the continuous increase of market demand, the underdeveloped cold chain logistics system has led to the imperfect development of agricultural products cold chain logistics, which is also the main factor restricting the development of agricultural products trade in China. At present, due to the lack of professional cold chain professionals, imperfect professional cold chain equipment, imperfect national policies, inaccurate markets, etc., these require the establishment of agricultural cold chain logistics system information system and cold chain logistics network innovation.

## 4.3. Experimental Results

### 4.3.1. Data Reliability and Validity Test

According to SPSS statistics, the Baha 'i reliability value of all scales is 0.878, which exceeds 0.8, indicating that the scales have good internal compatibility. Then, the corresponding observed variables of each hidden variable were analyzed, and the Cronbach 'salpha values of each hidden variable were shown in Table 6, all of which were above 0.6, indicating that the reliability of the scale met the needs of the research. The KMO value in Table 7 is 0.710. This is higher than the standard value of 0.5, and Bartlett sphericity test is significant, which indicates that the data investigated by the scale has high credibility and good validity.

**Table 6.** Questionnaire reliability analysis table

Latent variable	Corporate image	Enterprise infrastructure	Enterprise service quality	Enterprise service price	Customer satisfaction	Customer loyalty
Cronbach's Alpha	0.873	0.853	0.730	0.842	0.825	864.583

**Table 7.** Questionnaire validity analysis table

The Kaiser-Meyer-Olkin value	0.74	
Bartlett sphericity test	Approximate chi-square value	1098.19
	Dof df	142
	Significance Sig	0

### 4.3.2. Model and Data Fitting and Fit Test

The SPSS table mentioned above was input into AMOS17.0 for statistics and estimation of the data. The

results show that the overall performance of each adaptive degree index is good. In general, this model is more suitable, but the premise model is reasonable. Details are given in Table 8:

**Table 8.** Compatibility tests for major indices

Index	$\chi^2/DF$	GFI	AGFI	RMSEA
Output result	1.569	0.933	0.912	0.065
Evaluation criteria	<3	>0.9	>0.9	<0.08
Fit judgment	Ideal	Ideal	Ideal	Ideal

There is a positive negative correlation between service quality and service price, and between corporate image and service price, which indicates that there is no interaction between them, and these two approaches should be eliminated. The regression factors of all observed variables were statistically analyzed to obtain Table 9.

As far as the corporate image is concerned, it has little impact on the corporate image. In the enterprise's capital construction, the logistics monitoring system is not advanced; In the service quality of enterprises, the response speed is not obvious; All of the observed factors have reached significant

levels in service pricing, customer satisfaction and customer loyalty. Therefore, three observation criteria should be used: brand effect, logistics monitoring system leadership and response speed. The data were input into the corrected model, and it was verified that the matching degree of the main indicators met the requirements. By comparing the levels of 19 observed variables, the correlation of 5 observed variables, such as corporate social image, social contribution, advanced transportation equipment, reasonable compared with peers, and overall satisfaction, was obtained. The results show that in the survey enterprises, each service level has the greatest

effect on customer satisfaction. Therefore, enterprises should focus on these five levels in the process of improving customer satisfaction. Longitudinal comparison of external potential variables. Compared with the other three creep items, the relationship between enterprise service quality and customer satisfaction is more significant, which indicates that

enterprise service quality is the main reason for customer satisfaction. It can be seen in Table 10 that there is a significant relationship between creep items. Research shows that the corporate image and the basic structure of the company have a positive impact on customer satisfaction, but they have no obvious effect.

**Table 9.** Significant relationships among observed variables

Influence relationship		Significant
Brand effect	<--	Corporate image no
Asset capacity	<--	Corporate image Yes
Public image	<--	Corporate image Yes
Contribution to society	<--	Corporate image Yes
The advanced nature of logistics monitoring system	<--	Enterprise infrastructure no
The perfection of logistics information platform	<--	Enterprise infrastructure Yes
Advanced transportation facilities and equipment	<--	Enterprise infrastructure Yes
Advanced storage facilities and equipment	<--	Enterprise infrastructure Yes
Quick response capability	<--	Enterprise service quality no
Product integrity rate	<--	Enterprise service quality Yes
Ability to properly handle conflicts with customers	<--	Enterprise service quality Yes
Ability to communicate with customers in a timely and effective manner	<--	Enterprise service quality Yes
On-time delivery rate	<--	Enterprise service quality Yes
Reasonableness compared to peers	<--	Enterprise service price Yes
The reasonableness of the charging price	<--	Enterprise service price Yes
Satisfaction compared to expectations	<--	Customer satisfaction Yes
Overall satisfaction	<--	Customer satisfaction Yes
Positive word of mouth	<--	Customer loyalty Yes
Cooperate again	<--	Customer loyalty Yes

**Table 10.** Significance relationship of latent variables

Influence relationship		Whether there is a significant correlation	
Customer satisfaction	Yes	Enterprise service quality	Yes
Customer satisfaction	no	Enterprise infrastructure	no
Customer satisfaction	no	Corporate image	no
Customer satisfaction	Yes	Enterprise service price	Yes
Customer loyalty	Yes	Customer satisfaction	Yes

## 5. Discussion

### 5.1. Improve the Open Logistics System to Promote the Development of China's Cold Chain

In the face of the huge agricultural market demand and the relevant policies issued by the state, many enterprises have begun to implement the construction of cold chain logistics system, which has led to four kinds of competitors: traditional logistics enterprises, self-operated e-commerce, professional cold chain service providers and joint venture logistics enterprises. Compared with foreign countries, the cold chain logistics system of fresh goods in China is still relatively weak, especially some small and medium-sized fresh electricity suppliers are subject to their own cost constraints, and can not establish a perfect logistics network. Therefore, large e-commerce companies such as Suning and Hema can also open a part of the cold chain business while ensuring their own cold chain transportation capacity. This can not only increase the profitability of enterprises, but also drive more small and medium-sized e-commerce enterprises to participate in, but also promote the development of the entire fresh e-commerce industry, so as to ensure the sound of the cold chain logistics system.

### 5.2. Improve Customer Experience and Customer Satisfaction

The customer's demand for fresh food is positively correlated with the service quality provided. Improving

service quality can enhance customers' cognitive value and enhance customers' shopping willingness. For example, at the time of delivery, it is necessary to ensure the quality and freshness of the goods as much as possible, so as to enhance the shopping experience of customers. At present, our logistics information is only a simple geographical report in the logistics process, without specific supervision and feedback on the goods, which ignores the most critical step in cold chain logistics. It need to let customers know the freshness of the goods at any time, so as to ensure the safety of customers shopping. At present, Jingdong, Tmall, Hema and other companies have made some adjustments in the logistics of fresh food, such as in the delivery method, you can flexibly use the offline stores in the new retail, and organically integrate various distribution modes such as store pickup, self-pickup, and night delivery. For the return of the issue, Jingdong fresh opened a "good fresh compensation" channel; Hema also offers unjustified returns and exchanges. With the rise of fresh electricity suppliers, China's cold chain service standards are also constantly transparent and standardized. Through the improvement of refrigeration, food quick-freezing, cold storage automation, packaging and other technologies, it can not only reduce consumers' doubts, but also make them have the motivation to continue to buy, enhance customer stickiness, so as to enhance customer satisfaction.

### 5.3. Capacity for Emergency Disposal of Corrupt and Damaged Goods in Case of Emergency

People often encounter the situation that customers have to return the goods after they are returned because they are not fresh and damaged, and fresh goods are easy to deteriorate due to their own deterioration, and the proportion of deterioration during transportation is as high as 90%. This not only causes the cost loss of producers, but also makes it difficult for customers to ensure their own time and income, and also reduces customers' love for fresh agricultural products in cold chain logistics, which invisibly deducts scores, aggravates the pressure of logistics, and also causes great waste in society. Therefore, how to ensure the logistics staff's self-disposal and vehicle temperature control becomes particularly important. Maintaining a certain temperature, using advanced refrigeration equipment, safe packaging of cold chain logistics, and tightening of each step in the transportation process are urgent tasks.

### 5.4. Refrigerated Goods and Transport Risks of Refrigerated Goods

Online shopping transportation risks and the price of goods insurance, everyone is bought on the Internet, have also seen. In cold chain logistics, fresh agricultural products are the same, should establish appropriate transport insurance and preservation insurance, can bring safety to the enterprise, but also to protect the interests of customers, improve the satisfaction of buyers and sellers, improve the reputation and reputation of logistics companies.

### 5.5. In order to Reduce the Risk of Cold Chain Food, Non-Human Contact Transport is Implemented

Under the impact of the new coronavirus, people's lifestyle requirements have changed. Traditional industries such as logistics are also undergoing new changes. After the outbreak of the novel coronavirus, emerging technologies such as artificial intelligence and 5G have given birth to new distribution models such as precision distribution, unmanned transportation and contactless distribution, which have given birth to new development prospects. Under a series of stringent measures, the movement space of personnel has been restricted, resulting in a shortage of personnel and an increased risk of inter-personnel transmission. Through the implementation of unmanned distribution, it promotes the automation, unmanned and information of express delivery, improves the efficiency of distribution, improves the quality of express delivery, and makes express delivery more safe, reliable and convenient.

## 6. Conclusion

Using text mining technology, emotion and multiple regression methods, this paper conducted an empirical study on online comments on fresh food e-commerce platform. Quality, taste, logistics, price, packaging and service are the keys to customer satisfaction. In order to improve customer satisfaction, the e-commerce platform shall develop corresponding countermeasures. Compared with corporate image, infrastructure construction and service pricing, the service quality of an enterprise is the most important, which means that the service quality of an enterprise is an aspect that

consumers attach the most importance to when choosing an enterprise, and in these aspects, in addition to the two fundamental needs of on-time delivery and ensuring the integrity of the goods, It also includes humanized services such as timely and efficient communication with customers and correct resolution of conflicts with customers. Nanchang fresh agricultural products cold chain company should focus on improving customer satisfaction to improve the service level of enterprises as the center.

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