

## Chapter 4

### Research Results

This chapter introduces the Service Quality of Cold Chain Logistics based on Customer Relationship Management: A Case study of Shun Feng Express Co., Ltd. Results of data analysis and data interpretation for research objectives. These results are divided into four parts, as follows:

#### Part 1 Basic information of interviewees

In this questionnaire survey, 400 questionnaires were sent out in the form of field survey questionnaires, and 390 were effectively recovered, with an effective rate of 97%. It contains the basic information of the interviewees such as age, gender, etc., which meets the requirements of effective questionnaire survey.

**Table 4.1** the statistical table of basic characteristics of valid samples

Sample variable	Sample characteristics	quantity	percent
sex	Male	129	33.08
	Female	261	66.92
age	18-25 years old	25	6.41
	26-35 years old	216	55.38
	36-45 years old	128	32.82
	46-55 years old	11	2.82
	55 and older	10	2.56
Educational level	High school and below	10	2.56
	Junior college	122	31.41
	Undergraduate course	212	54.36
	Master degree or above	46	11.67
Place of Residence	city	180	46.28
	Countryside	151	38.71
	Suburb	45	11.54
	mountain area	14	3.47

**Table 4.1** the statistical table of basic characteristics of valid samples (cont.)

Sample variable	Sample characteristics	quantity	percent
Use SF cold chain logistics time	Less than 1 year	136	34.88
	1-3 years	117	29.74
	4-6 years	102	25.77
	More than 6 years	35	9.61

Table 4.1 shows the statistical table of basic characteristics of valid samples. The percentage of data can be seen more clearly according to the table. In terms of gender, male and female accounted for 33.08% and 66.92% respectively. The proportion of women is about twice that of men, indicating that women shop more through SF cold chain logistics and are more inclined to buy fresh goods.

From the perspective of age, the number of people aged 18-25, 26-35, 36-45, 46-55 and 56 years old accounted for 6.41%, 55.38%, 32.82%, 2.82% and 2.56%, respectively. Among them, the proportion of 26-35 years old accounted for the highest 55.38%, indicating that this part of the customer group's consumption power and consumption level is relatively high, the purchase of cold chain transport goods, more attention to the quality of life and quality of life.

From the perspective of education level, high school and below, college, bachelor, master and above accounted for 2.56%, 31.41%, 54.36%, 11.67%, of which the highest proportion of bachelor's degree is 54.36%, indicating that its audience generally has a high cultural level, From the perspective of residence, urban residents account for more than 46%, indicating that most users are distributed in cities, and the demand for cities is high.

From the perspective of use time, 34.88% are less than one year, and 29.74% are 1-3 years, indicating that most people do not use SF cold chain logistics for a long time, and SF cold chain logistics has great space to cultivate customer loyalty.

## Part 2 Logistics Service

**Table 4.2** the overall SERVQUAL

overall SERVQUAL	Average	S.D	Interpret	Ranking
Tangible assets	3.35	0.63	Medium	4
Reliability	4.07	0.68	High	1
Responsiveness	3.59	0.71	High	3
Guarantee	3.28	0.70	Medium	5
Empathy	3.67	0.69	High	2
Total	3.59	0.68	High	

According to the analysis of overall SERVQUAL from Table 4.2, the reliability opinions are at the highest level, with an average value of 4.07. Ranking all the mean values from highest to lowest, the average scores of reliability and empathy are high in overall SERVQUAL. It shows that respondents generally believe that reliability and empathy are the aspects with high satisfaction. A moderate standard deviation indicates a moderate degree of agreement among respondents.

**Table 4.3** Tangible Assets

Tangible Assets	Average	S.D.	Interpret	Ranking
Advanced logistics information software	3.89	0.69	High	1
Service personnel image	3.43	0.55	Medium	3
The staff have clean clothes	2.60	0.60	Medium	4
Cold chain facilities and equipment can meet the needs of the service provided	3.45	0.68	Medium	2
Total	3.35	0.63	Medium	

From the data shown in the table 4.3 of tangible assets, we can see that the respondents' satisfaction opinions on tangible assets are at the medium level, and the average value of each item is ranked from the highest value to the lowest value. The average score of advanced logistics information software is 3.89, and the opinions are at the highest level, indicating that the respondents have the highest satisfaction

with advanced logistics information software. The second is that the cold chain facilities and equipment can meet the needs of the service 3.45 points, the image of service personnel 3.43 points, the lowest score is the employee clean clothing, indicating that users have the lowest satisfaction with employee clothing, it is necessary to improve the management of employee clothing.

The standard deviation provided by each category indicates that there is relatively little divergence between advanced logistics information software and cold chain facilities and equipment to meet the needs of services provided, but overall there is relatively little variability or divergence in respondents' evaluations of these aspects because these values are relatively low. This suggests a degree of agreement among respondents.

**Table 4.4** Reliability

Reliability	Average	S.D.	Interpret	Ranking
Cargo damage	4.15	0.77	High	3
Packaging processing compliance	4.52	0.62	Highest	1
Inventory integrity	3.34	0.66	Medium	5
Delivery timeliness	3.37	0.64	Medium	4
The timely completion of the promised things to the customer	4.26	0.73	High	2
Total	3.93	0.68	High	

From the data shown in the reliability table 4.4, we can see that users' opinions on reliability are at a high level. The average value of each item is ranked from the highest value to the lowest value. The average score of compliance of packaging processing is the highest, which is 4.52 points. Secondly, the timeliness of completion of the things promised to customers is 4.26 points, and the degree of goods damage is 4.15 points. The item with the lowest score is inventory integrity, indicating that users have the lowest satisfaction with inventory integrity, and it is necessary to strengthen the management of goods inventory.

The standard deviation provided by each category indicates that there is relatively little divergence between advanced logistics information software and cold chain facilities and equipment to meet the needs of services provided, but overall there is relatively little variability or divergence in respondents' evaluations of these

aspects because these values are relatively low. This suggests a degree of agreement among respondents.

**Table 4.5** Responsiveness

Responsiveness	Average	S.D.	Interpret	Ranking
Order response capability	4.37	0.68	High	1
Ability to resolve customer complaints and complaints	3.31	0.76	Medium	3
Can accurately inform the customer delivery time	3.43	0.71	Medium	2
Customer service call through timely	3.23	0.69	Medium	4
Total	3.59	0.71	High	

From the data shown in the table 4.5 of responsiveness, we can see that users' opinions on responsiveness are at a high level. The average value of each item is ranked from the highest value to the lowest value. The average score of order responsiveness is the highest, which is 4.37, indicating that users are most satisfied with order responsiveness. Secondly, the average score of being able to accurately inform customers of the delivery time is 3.43 points, and the average score of being able to solve customer complaints and complaints is 3.31 points. The item with the lowest score is the timeliness of customer service phone connection, indicating that users have the lowest satisfaction with the timeliness of customer service phone connection, and it is necessary to strengthen the management of customer service.

The standard deviation provided by each category indicates a relatively small divergence in the ability to resolve customer complaints and complaints, but overall there is relatively little variability or divergence in respondents' ratings of these aspects because these values are relatively low. This suggests a degree of agreement among respondents.

**Table 4.6 Assurance**

Assurance	Average	S.D.	Interpret	Ranking
Professional quality and professional ability of service personnel	3.08	0.67	Medium	3
Provide suitable and accurate cold chain transportation, storage and other environments	3.43	0.74	Medium	1
The staff were very polite	3.34	0.71	Medium	2
Total	3.28	0.70	Medium	

From the data shown in the table 4.6 opinions on assurance were at a moderate level. Among them, providing suitable and accurate cold chain transportation, warehousing and other environments scored the highest, with an average score of 3.43, indicating that respondents believe this is the aspect of assurance with a high level of opinion. This was closely followed by "service staff are polite" with an average score of 3.34. "Professional quality and competence of service personnel" ranked third with an average score of 3.08. The standard deviation provided for each category suggests that there is relatively little variability or divergence in respondents' ratings of these aspects because the values are relatively low. This suggests a degree of consistency in the views of respondents. Overall, the data showed that respondents prioritized providing suitable and accurate cold chain transportation and warehousing as the most important aspect of assurance, followed by the professional quality and competence of service personnel "and" service personnel are polite".

**Table 4.7 Empathy**

Empathy	Average	S.D.	Interpret	Ranking
The ability to provide personalized service	3.21	0.77	Medium	4
Give priority to customer interests	3.61	0.72	High	2
Understanding of customer needs	3.34	0.73	Medium	3
Care for customers and provide customers with accurate information	4.51	0.56	Highest	1
Total	3.66	0.69	High	

It can be seen from the table 4.7 displayed in empathy that the respondents' opinions on empathy are at a high level. The average value of each item is ranked from the highest value to the lowest value. The average score of caring for customers and providing accurate information to customers is the highest, which is 4.51, indicating that respondents believe that this is the aspect with a high level of empathic opinions. In second place was "prioritizing customer interests," with an average score of 3.61. "Understanding customer needs" ranked third with an average score of 3.34, and "ability to provide personalized service" had the lowest average score of 3.21. It indicates that the respondents have the lowest satisfaction with the ability of personalized service, and it is necessary to improve the personalized service for customers to meet the needs of users.

The standard deviation provided for each category suggests that there is relatively little variability or divergence in respondents' ratings of these aspects because the values are relatively low. This suggests a degree of consistency in the views of respondents. Overall, these data show that respondents care about their customers and are satisfied with providing them with accurate information.

### Part 3 Customer Relationship Management

Table 4.8 overall CRM

overall CRM	Average	S.D.	Interpret	Ranking
Customer prospect	3.79	0.64	High	1
Relationships with customers	3.64	0.63	High	3
Interactive management	3.45	0.71	Medium	4
Customer expectation	3.77	0.71	High	2
Total	3.66	0.67	High	

According to the analysis of overall CRM from Table 4.8, customer outlook opinions are at the highest level, with an average value of 3.79. Ranking all the mean values from highest to lowest, the average scores of customer prospects and customer expectations are high in overall CRM. This indicates that respondents generally view customer prospects and customer expectations as the most satisfying aspects of CRM. Where the standard deviation is moderate, indicating a moderate degree of agreement among respondents.

**Table 4.9** the customer prospect

Customer Prospect	Average	S.D.	Interpret	Ranking
Customer relationship Management program	4.44	0.59	High	1
Sf Express cold chain logistics impression	3.27	0.68	Medium	3
New customer growth rate	3.66	0.64	High	2
Total	3.79	0.64	High	

From the data shown in the table 4.9 of customer prospect, we can see that respondents' satisfaction opinions on customer prospect are at a high level. The average value of each project is ranked from the highest value to the lowest value. The average score of customer relationship management plan is 4.44, and the opinions are at the highest level, indicating that respondents have the highest satisfaction with customer relationship management plan. The second is the growth rate of new customers of 3.66 points, the lowest score is SF cold chain logistics impression, indicating the need to improve the overall image of SF cold chain.

The standard deviation provided by each category indicates relatively little variability or divergence in respondents' evaluations of these aspects because the values are relatively low. This suggests a degree of consistency in the views of respondents. Overall, these data indicate that respondents are relatively satisfied with their CRM programs.

**Table 4.10** Relationship with Customers

Relationships with Customers	Average	S.D.	Interpret	Ranking
Loyal to SF cold chain logistics	3.17	0.64	Medium	2
Ability to sign contracts with customers	4.52	0.62	Highest	1
Total	3.64	0.63	High	

The data shows Table 4.10 that the respondents' opinions on the relationship with customers are at a high level, and the ability to sign contracts with customers is the highest score, with an average score of 4.52, indicating that the respondents believe that this is the relationship with customers. It was followed by "loyalty to SF Express



Cold chain Logistics" with an average score of 3.17 points. The standard deviation provided for each category suggests that there is relatively little variability or divergence in respondents' ratings of these aspects because the values are relatively low. This suggests a degree of consistency in the views of respondents.

**Table 4.11** Interaction Management

Interactive Management	Average	S.D.	Interpret	Ranking
Sf cold chain logistics and customer contact frequency	3.53	0.69	High	2
Sf Express cold chain logistics price	4.26	0.73	High	1
The diversity of forms of interaction between the two sides	2.55	0.71	Medium	3
Total	3.45	0.71	Medium	

From the table 4.11 displayed in interactive management, it can be seen that respondents' opinions on interactive management are at a moderate level, and the average value of each project is ranked from the highest to the lowest. Sf Cold Chain Logistics has the highest price score, with an average score of 4.26, indicating that respondents believe this is the aspect of interactive management opinions at a high level. In second place is "SF Express cold chain logistics and customer contact frequency", with an average score of 3.53 points. "Diversity of forms of interaction between two parties" ranked last with an average score of 2.55. It indicates that respondents are least satisfied with the diversity of interaction forms and need to increase multiple forms of interaction to strengthen the contact with customers.

The standard deviation provided for each category suggests that there is relatively little variability or divergence in respondents' ratings of these aspects because the values are relatively low. This suggests a degree of consistency in the views of respondents. Overall, these data indicate a moderate level of respondents' opinions on interaction management, which needs further improvement.

**Table 4.12** Customer Expectations

Customer Expectation	Average	S.D.	Interpret	Ranking
Availability of products or services	4.11	0.72	High	1
Overall service satisfaction	3.44	0.71	Medium	2
Total	3.77	0.71	High	

From the data in the table 4.12 of customer expectations, we can see that the availability of products or services has the highest score, with an average score of 4.11, indicating that respondents believe this is the aspect of customer expectations where opinions are highest. This was closely followed by "overall service satisfaction" with an average score of 3.44. The standard deviation provided for each category suggests that there is relatively little variability or divergence in respondents' ratings of these aspects because the values are relatively low. This suggests a degree of consistency in the views of respondents.

#### Part 4 Hypothesis Test Results

**Table 4.13** Hypothesis 1: Quality of service in tangible assets, reliability affects customer relationship management

	coefficient	std err	t	P> t	Results
Tangible assets	0.2122	0.037	5.68	0	Supported
reliability	0.4746	0.028	17.18	0	Supported

**Table 4.14** Hypothesis 2: Responsiveness, assurance, and empathy in quality of service affect customer relationship management

	coefficient	std err	t	P> t	results
responsiveness	0.0673	0.031	2.169	0.031	supported
assurance	0.1088	0.025	4.283	0	supported
empathy	0.1527	0.03	5.098	0	supported

From Table 4.13-4.14 The proposed hypotheses are tested and the results support the relationships proposed in each hypothesis. All hypotheses had very low

P-values of less than 0.001, indicating strong statistical significance. These results provide plenty of evidence to assert that each predictor does have a positive effect on the dependent variable "customer relationship management." Have a significant effect. Specifically, "(H1) was found to have a significant effect, as was (H2). Therefore, these data strongly support such a view, that is, under the background of the study, cold chain logistics service quality affects customer relationship management, and the five aspects of service quality have a significant impact on customer management quality, and the final table data shows that the five variables have a significant impact on customer management satisfaction, and all have a positive impact. A higher score on as-a-service can improve the score on customer relationship management.

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