SERVICE QUALITY OF CHINA'S EXPRESS ENTERPRISES BASED ON

CUSTOMER SATISACTION —— A CASE OF ZTO EXPRESS

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Abstract

Title: Service Quality Of China's Express Enterprises Based On Customer
        Satisfaction 一 A case of ZTO Express
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At present, as the political, economic and social environment is becoming increasingly complex, the foreign logistics enterprises rapidly pour into China, which attempt to quickly seize the market through actively strengthening the service level and ability. As a result, China' express business is witnessing severe challenges. As the the market competition intensifies, most express enterprises have gradually realized the importance of the service quality to the enterprise's survival and development. Therefore, they hope to enhance market competitiveness via improving service quality and customer satisfaction.

From the perspective of customer satisfaction, this paper discusses how to improve the service quality of express enterprises in China by case study. First of all, a variety of design based on the principle of customer satisfaction index, from the point of view contains 4 indexes and 19 level two indexes, formed by the operation ability, service ability, information processing ability, long development ability dimensions of China express enterprise service quality evaluation index system. Then, using the method of qualitative and quantitative analysis, using the Kano model to determine the index weight, fuzzy comprehensive evaluation method to get the quality

and level of service quality. On this basis, through the questionnaire and the express service quality evaluation results, it summarized the main problems in the quality of service delivery; finally, it put forward the countermeasures to improve the quality of express delivery service.

Evaluation system of service quality of Chinese express enterprises based on customer satisfaction formulated in this paper can provide the basis for the diagnosis and promotion of the service quality for express enterprises. Moreover, it is of certain guiding significance and value to improving the service quality and customer satisfaction.

Key words: Customer Satisfaction; Express Enterprise; Service Quality; ZTO Express

摘　要

题目：　　基于顾客满意度的中国快递企业服务质量研究

　　　　　——以中通快递为例

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　　　　　2017 ， 12 ， 24

　　　　当前，政治、经济、社会环境日趋复杂，外资物流企业迅速涌入中国，并积极通过提升服务能力和水平来抢占市场，中国快递企业的经营发展受到了严峻挑战。随着市场竞争的加剧，大多数快递企业逐渐认识到服务质量对企业生存发展的重要性，他们希望通过改善服务质量，提高顾客满意度，进而提高市场竞争力。

　　　　本文以顾客满意度为视角，采用案例分析法探讨中国有快递企业服务质量提升路径。首先，基于多种设计指标原则，从顾客满意度的角度提出了包含 4 个一级指标和 19 个二级指标的评价指标体系，形成以运作能力、服务能力、信息处理能力、长久发展能力为维度的中国快递企业服务质量评价指标体系。然后，采用定性和定量分析结合的方法，运用 Kano 模型确定指标权重，模糊分析法进行综合评价，得到中通快递服务质量所处的水平与等级。在此基础上，通过问卷和中通快递服务质量评价结果，总结中通快递服务质量存在的主要问题；最后，有针对性的提出提升中通快递服务质量的对策。

　　　　本文构建的基于顾客满意度的中国快递企业服务质量评价体系能够为快递企业服务质量诊断和提升提供依据，对中通快递服务质量和客户满意度提升具有一定的指导意义和价值。

关键词：顾客满意度；快递企业；服务质量；中通快递

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Content

CHAPTER 1

INTRODUCTION

1.1 Research background

The political, economic and social environment become increasingly complex and enterprises are facing increasingly fierce competition. Social productivity develops quickly and the consumption level of customers is surging day by day, which greatly increase the uncertainty of the market competition. Moreover, customer demand becomes increasingly diverse. It is the service tenet of enterprise to satisfy customer demand. The quality level of products that can satisfy customers is the fundamental guarantee for enterprise profit and market share. With the rapid development and popularization of e-commerce, China's express delivery enterprises continue to grow and develop in unbeatable trend, which fill in all walks of life and present the galloping highlight. In 2015, express business volume reached 20.6 billion, with a year-on-year increase of 48%. The express service revenue reached 276 billion yuan, with the highest daily processing volume of over 160 million pieces. As of December 20, 2016, China's express delivery business volume has exceeded 30 billion pieces, which continues to dominate number one of the world. Furthermore, it also marks a good beginning of the express industry in the period of the "13th Five-Year Plan".

However, as the express delivery business quickly develops and the business volume   rapidly increases, the problem of undermined accuracy, low efficiency and poor service quality reveals gradually, which has aroused strong dissatisfaction of customers, thus hindering the further development of express enterprises. In September 2016, the State Post Bureau and the postal administrations of provinces (autonomous regions and municipalities)accepted 96528 consumer complaints through the "12305" telephone complaints platform and complaints websites. There were 3992 cases of the complaints involving postal services, accounting for 4.1% of

the total amount of complaints; There were 92536 cases of the complaints involving express service, accounting for 95.9% of the total amount of complaints. Based on this, it can be clearly seen that the most frequent complaints are express service issues, loss and damage caused in express delivery, delayed and inaccurate delivery etc. In March 28, 2016, Customer Satisfaction Measurement Center Of China Academy Of Standardization released customer satisfaction survey results of National Express Service Industry in 2016. Customer satisfaction for express service scores 74 points, which was in the above-average level in the investigated life service industry. Among the factors that affect customer satisfaction, brand image and perceived quality are able to exert greater influence on satisfaction. The perceived quality of express service given by customers is the highest, which is 78 scores, while the perceived value is lower, which is 73 scores. Express service's perceived quality involves a total of six observed variables. According to the graded dimensions, consumers are most satisfied with the goods integrity in the express service, followed by service diversity. However, consumers have the lower evaluation of service convenience and the lowest evaluation on the overall perceived quality. It's expected that delivery times can be reasonably arranged, delivery scope can be expanded, and delivery process can be better completed. In the course of rapid development, the express industry has witnessed many negative problems, such as delayed delivery, goods safety problem, customer complaints, unsatisfactory matters and the under-standard quality of service etc., which have become common concerns of the express industry and enterprises.

ZTO Express Co., Ltd. was established in May 8, 2002, which is domestic logistics express enterprise integrating express, logistics, e-commerce, printing in one. The company has more than 100 thousand employees, over 5000 service centers, 59 distribution centers, more than 18000 transportation and delivery vehicles. The company is engaged in domestic express, international express, logistics distribution and warehousing etc., thus providing door to door service and time-limited (delivery in the same day, delivery in the next morning, delivery in the next day, etc.) services.

On March 1, 2015, ZTO International held and invested by ZTO Express officially launched, which specialized in international logistics, international parcel business, cross-border electricity supplier export or import business. So far, plus the previous trial of cross border business (cross-border online shopping) by postal EMS, SF, STO, YTO, YUNDA and HTKY, seven express companies officially announced the completion of "gathering", which occupy 80% of the domestic express market shares, thus completing the Go Overseas Layout of China's express industry. On October 27, 2016 of U.S. local time, China ZTO Express officially listed on the U.S. stock exchange in New York, which has become a Chinese enterprise once again attracting close attention since Alibaba's listing in the United States.

According to the financial statement issued by ZTO express, the company's revenue in the fourth quarter of 2016 was 3.191 billion yuan, with an increase of 45.8% over the same period when compared with 2015; the adjusted net profit was 740 million yuan, with an increase of 52.7% when compared with 485 million yuan in the same period of 2015. In 2016, the annual revenue was 9.789 billion yuan, with an increase of 60.8% when compared with 2015; the adjusted net profit is 2.165 billion yuan, with an increase of 76.8% when compared with that of 2015.

From perspective of the customer satisfaction and based on the case of ZTO Express, this paper aims to explore the countermeasures to improve the service quality of Chinese express enterprises, so as to improve the competitiveness of Chinese express enterprises.

1.2 Research significance

Based on the case of ZTO Express, this paper analyzed the current situation of China's express service quality from the perspective of customer satisfaction. Combined with domestic scholars' service quality evaluation and relevant theories, this paper put forward evaluation system of service quality for express enterprise based on customer satisfaction, which is of critical theoretical and practical

significance:

Based on the research of express service quality from the perspective of customer satisfaction, this paper enables us to have an in-depth understanding of the customer satisfaction of the express company, and to deepen our understanding of the theory of express enterprise service quality. At the same time, this paper tries to establish a system of express enterprise service quality based on customer satisfaction. Moreover, Kano model and fuzzy comprehensive evaluation methods are adopted to analyze the service quality of ZTO Express, thus finding out the existing problems in the service quality system. Finally, this problem can be improved correspondingly, which is of a certain value to upgrading the theory and method of service quality evaluation of express enterprise.

In order to introduce the related theory of customer satisfaction into quality improvement of express enterprise service, express enterprises should target at improving customer satisfaction, improve the enterprise logistics activities and enhance the function and effect of customer satisfaction in improving the express service quality. Therefore, the enterprises shall subdivide customers, grasp the diverse needs of customers and formulate specified service plans and goals according to customer requirements, so as to enhance customer loyalty and satisfaction, thus to a greater degree improving service quality and long-term development ability of the express enterprises. These can also play a facilitating role in establishing a good long-term relationship between the logistics enterprises and customers.

Formulate the service quality evaluation system of express enterprises. At present, there are many theories related to enterprise service quality evaluation. Some scholars put forward related indexes, but most of them have qualitative evaluation of the quality of service delivery. As a result, the evaluation criteria and dimensions do not cover all areas of the express business. Combined with the status of China's express service quality, this paper formulates evaluation system by combining qualitative and quantitative evaluation methods; in the meantime, the evaluation index

in this paper is based on customer satisfaction. The quality evaluation is led to new perspective. It's a new exploration of theory since it has realized the double idea of logistics service quality evaluation and customer satisfaction.

1.3 Research Objective

As a branch of service industry, express enterprises provide the most direct service for customers. Therefore, it's not that effective and reasonable to evaluate the quality of customer service from perspective of enterprises. The customer satisfaction shall be considered when evaluating service quality of express enterprises. When it comes to the definition of logistics service quality, the 7RS theory put forward by Perreault and Russ in 1974 is the most representative. The 7RS theory is based on the time and place, which aims to evaluate the delivery of customer's goods to designated place by the right time, the right way and the reasonable price, thus meeting the individual needs of customers.

Customer value is mainly reflected as the increased profits in customer's subjective feeling, which is the contrast between customer expectation on service and actual feeling. When the customer's subjective expectations go beyond his actual experience, the service fails to achieve the desired level of customer, in which case they will feel the quality of service is poor or unacceptable; when the actual experience of customer exceeds the psychological expectations, they will think that the quality of service is quite good, which can be totally acceptable. Therefore, the quality of logistics services reflects the gap between the actual feelings of customers before service and after service, which is a perceived value of customers.

For service industry, service quality is the foundation of enterprise survival and development. However, the express enterprises in China are faced with a series of problems in the course of development, such as nonstandard service and single service items. Express enterprises should be committed to enhancing customer satisfaction. Therefore, express enterprises should understand the connotation of

logistics service quality and enhance customer satisfaction.

Through the study of this paper, the following two purposes are to be reached:

Combined with the results of literature research and practical investigation, based on customer satisfaction, the questionnaire was designed as the source of research data.

Establish service quality evaluation index system of ZTO Express. Through the Kano model and fuzzy comprehensive evaluation, ZTO service quality was evaluated and analyzed. Then this paper figured out the problem of ZTO in the process of providing service. Finally, it put forward the corresponding improvement measures.

1.4 Structure of this paper

Taking ZTO Express as an example, this paper explores service quality of China's express enterprises based on customer satisfaction. The specific organizational structure is as follows:

Chapter 1 is the introduction, which mainly outlines the background and significance of the research, and clarifies the purpose and main content of the research;

Chapter 2 is the literature review, which mainly conducts research on express service quality results of enterprises at home and abroad. It specifically outlines concept of quality of service in express enterprise, dimensions and evaluation methods, and other research results. Then the research results are reviewed and the shortcomings of existing studies are summarized;

Chapter 3 introduces the research method. First, the design of research program in this paper is introduced. Then the design of questionnaires and statistical investigation samples are introduced. Finally, it gives the basic situation of survey samples and data statistics program;

Chapter 4 is the analysis of research results. It aims to formulate evaluation index system of ZTO service quality. The Kano model and the fuzzy comprehensive evaluation methods are adopted to evaluate ZTO service quality. Then it summarizes the main problems existing in the quality of ZTO delivery service;

Chapter 5 is the conclusion and suggestion. The previous research results are processed. Then this paper proposes the countermeasures to improve the quality of the ZTO express service. Finally, the research limitations and future research direction are presented.

CHAPTER 2

LITERATURE REVIEW

Researches in China and the oversea researches results are outlined in this part. It summarizes the concept, dimension and evaluation method of domestic and international express logistics service. Furthermore, it reviews the existing research and points out its shortcomings, so as to explore the direction of this paper.

2.1 Oversea studies

In terms of the concept and dimensions of the logistics service quality, Lewis and Booms define "service quality as a tool to evaluate the service level of an enterprise to meet customer expectations". La Londe and Zinszer(1976)explain the quality of logistics service from the perspective of customer and the enterprise, claiming that the logistics service is a kind of activity targeted at meeting customer demand, taking customer satisfaction as measurement standard, regarding both the company's reputation and culture as a priority. Rinehart, Cooper and Wagenheim(1989)conclude that the availability, time and quality are the three indispensable elements through analyzing contained factors in delivery service quality, believing that the service quality of physical distribution is an integral part of the logistics service quality. Lalonde and Zinzez define logistics services as activities aimed at meeting customer needs, thus ensuring customer satisfaction and winning praise. This definition rises from the simple product operation level to the marketing level, maintaining that the logistics service targets at improving customer satisfaction.

In terms of express logistics service's quality evaluation method, Babakus(1992) analyzes logistics service quality by using the SERVPERF model and the SERVQUAL model. It's found that the two models have shortcomings in the evaluation of logistics service quality. Therefore, this paper proposed that the evaluation index of customer perceived service quality and customers' expectation

difference of service shall be applied to the actual evaluation process. Novock (1994) and other scholars conduct application research of the service quality gap analysis model, which is extended to the logistics field for analyzing the quality of logistics services. Mentzer and other scholars(1999, 2001)conduct research on unerring quality evaluation system of logistics based on the service process and results. The logistics service quality is especially evaluated in nine aspects, including information quality, order process, order release, timeliness, goods accuracy, goods quality, goods completeness, error handling and communication etc.. From perspective of customers, Mentzer, Flint and Keiit (2001) interview 15 U.S. senior executives engaged in large-scale logistics service. On the basis of recording interview, evaluation scale of service quality can be obtained, which covers 9 factors and 25 indexes. The indexes in the service quality evaluation scale include the quality of all links in the logistics activities, and specifically evaluate the customer perceived logistics service quality from aspects of the time, environment and availability. Through combining the characteristics of e-commerce and comparing logistics services between online retailers and offline retailers, Xing, Grant& Mc Kinno (2010) point out that the logistics service quality can be measured by the availability, timeliness, integrity and return of goods. Based on door-to-door service, Chou (2014) studies the relationship between logistics service quality, trust and customer loyalty, who also divides the quality of logistics service.

In terms of study on relationship between customer satisfaction and service quality, Oliver (1980) clearly defines the relationship between customer satisfaction and service quality, believing that the quality of service is the customer's view of the relative stability of the product or service, while customer satisfaction is a kind of emotional reaction produced by consumers after they have finished the consumption of products or services. The evaluation of service quality is based on a relatively broad basis, which is rarely affected by random factors. Customer satisfaction is a sort of overall evaluation, which is closely related to specific products and related

transactions. Therefore, customer satisfaction and service quality are interrelated, and the accumulation of customer satisfaction will lead to the formation of good customer perceived service quality. Zeithaml (1988) argues that the quality of perceived service can be defined as the perceptual judgment of a customer over the excellence of a service. Many scholars (such as: Cronin and Taylor，1992；Anderson and Sullivan，1993；Spreng and Mackoy，1996 etc.) have found empirical support for this argument. They unanimously agree that customer satisfaction originates from perceived service quality.

2.2 Studies in China

In terms of the concept and dimensions of logistics service quality, Wang Zhitai (1995) regards the logistics service quality as a whole. It's included in the quality of logistics, which is an important part of the logistics quality. He believes that the logistics service quality should not be subject to a unified standard. Instead, the personalized standards shall be formulated based on personalized customer demand. He holds that the most important goal of logistics quality is to achieve excellent logistics service quality, which also well proves the nature of logistics services. Combined with the actual situation of China, Zhu Meihong (2011) et al formulate evaluation scale of express logistics service quality by referring to the SERVQUAL scale. Meanwhile, by means of questionnaires, this scale is further verified. Finally, the new scale for express & logistics service quality evaluation is obtained. Yan Jingmin (2012) conducted in-depth analysis on the gap between the SEVRQUAL model and analysis model of service quality. According to the status and features of the express business enterprises in China, the evaluation index system for express logistics service quality is formulated, which includes 6 dimensions and 27 evaluation indexes. Moreover, the "remedial" dimension is added into traditional service quality evaluation system. Based on the SEVRQUAL model and LSQ model, combined with service standard of express industry and the particularity of B2C e-commerce Express

Logistics, Wang Zhen (2013) formulates service quality evaluation system of express, which is then applied in logistics service quality evaluation of T-mall supermarket and achieve reasonable results.

In terms of the evaluation methods of service quality for express logistics, Chen Chunli (2010) summarizes the influencing factors of service quality in all aspects of express activities based on the characteristic and status of logistics service. From perspective of customer, combining the theory of service marketing, Chen proposes logistics service quality management from the perspective of total quality management program. Meanwhile, Chen conducts the empirical analysis based on specific logistics enterprises to verify the rationality of the program. Li Ye et al (2011) adopts analytic hierarchy process to construct the evaluation index system of private express enterprises. Moreover, the analytic hierarchy process and fuzzy comprehensive analysis method are combined to formulate express service quality evaluation model of private enterprises, which is applied in specific case. Yu Lie (2012) proposes to set up a game model for improving the quality of express logistics service from perspective of considering customer behavior and no considering customer behavior, who also put forward some suggestions and measures to improve the quality of online shopping delivery service. Yang Shijun et al (2013) construct a new gap analysis model of express logistics service quality by compensation. The model is applied to analyze the actual difference of the quality of service in a courier company, proving that the analysis model of service quality gap has certain reliability and validity to express service quality analysis. Through combing with the characteristics of logistics service quality and referring to SERVQUAL evaluation model, Zhang Qiongfang (2015)constructs the evaluation index system of express logistics service quality. Targeting at information, economy, reliability, responsiveness and empathy as index, she completes the comprehensive evaluation of logistics service quality. Based on the aided calculation by Super Decisions, Wang Yajun (2016) studied how do indexes affect the quality of express service by ANP methods, and

determine the weight of each index. On this basis, express customers are investigated by questionnaire. The customer's evaluation data of express enterprise's service quality is collected. Combined with the fuzzy comprehensive evaluation method, comprehensive evaluation for its quality of service is analyzed. Based on the evaluation results of express service quality of 7 major express companies, the future development direction and development mode of express enterprises in China are expounded. Countermeasures and suggestions for improving express service quality of express company are put forward, so as to improve the overall level of delivery industry service.

In matter of research on service quality of express enterprise based on customer satisfaction, Xian Huijun (2010) analyzed and improved the research by express service quality of D company based on customer satisfaction. Starting from the status of D company, taking the service contact as the starting point, Xian investigates and analyzes the service quality of D company from the perspective of customer satisfaction and service quality, and proposes the thought and improvement plan of service. Liu Huanhuan (2010) defined the logistics service in the supply chain environment, so as to put forward the supply chain logistics service quality system based on customer satisfaction. Then, according to the problems in E company's actual operation, Liu puts forward the logistics service quality system based on customer satisfaction under the supply chain environment. Then, Liu conducted empirical research on the related system of E company based on the fuzzy AHP methods. Finally, the results of the empirical research were analyzed. The problems existing in the supply chain management of E company were pointed out, and some management suggestions were provided. Through research on logistics capability of express enterprise based on customer satisfaction, Li Shaorong (2010) investigated and researched factors of customer dissatisfaction with express service in China. QFD model is adopted to find out the direction and logistics resources that shall be perfected. Zhao Jing (2014) analyzed factors affecting service quality of logistics

enterprises, who meanwhile conducted in-depth analysis of the existing problems of the express service. Zhao summed up the difference between service quality and customer expectation of express enterprises, who proposed to improve customer satisfaction, prompt enterprises to actively face and improve customer satisfaction, thus enhancing the competitiveness of logistics enterprises in the market. Song Fen and Wang Mingxian (2015) analyzed the connotation of logistics service quality and the characteristics of logistics service quality based on customer satisfaction. On this basis, they proposed countermeasures for enterprises to improve the quality of logistics services. Based on customer satisfaction theory and service quality theory, He Jinshi, Sun Xuehua (2016) proposed the evaluation index of express service quality based on customer satisfaction theory and service quality theory. The weight of evaluation index and the score of evaluation matrix are obtained by means of principal component analytical methods. Taking the quality of campus express service as an example, this paper analyzes the evaluation results and existing problems of express service.

2.3 Summary

In summary, scholars have conducted a series of studies on the quality of logistics services and customer satisfaction, and achieved fruitful results. From comprehensive perspective, there are still shortcomings in the existing research, which are demonstrated as the following three aspects:

Evaluation dimension is not concise and comprehensive.From perspective of existing research results, even the more widely recognized foreign service quality assessment scale is also inadequate. Most prominently, the scale dimensions and indexes are not comprehensive and concise. Some indexes are complex and cross and repetition exist between indexes and indexes. Express delivery companies develop quickly with the passage of time. With the expanding of business scale, enterprises are facing more fierce competition, thus customers' demand becomes more diversified

and personalized, which propose new connotation and requirements for service quality of express enterprises. The current express enterprise service quality evaluation scale has been unable to fully and correctly complete the express service evaluation in the new period.

Evaluation method is too simple and single.In recent years, some scholars have tried to evaluate and study the service quality of express logistics enterprises through mathematical methods and mathematical models, and have achieved some research results. However, the current evaluation methods of logistics service quality are relatively simple, which mainly adopt the expert scoring method, analytic hierarchy process and expert evaluation method. These methods can more or less be affected by subjective factors. Express enterprise's service quality evaluation system is a complicated system. Too simple and single methods can hardly evaluate it in a comprehensive, accurate and scientific manner. The qualitative and quantitative analysis shall be combined for the evaluation. With regard to studying the service quality of express logistics enterprises, it is the basis and direction to find a reasonable combination of qualitative and quantitative methods.

Research on logistics service quality of specific express company is inadequate. Through the literature review concerning the service quality of express enterprises, it can be found that most current research is to find the service quality evaluation system and model which is suitable for all logistics enterprises. However, the author believes that, different express enterprises have certain differentiated characteristics, which cannot be identically considered. Evaluation results may be not scientific if blindly taking the existing scale for evaluation. Therefore, combined with the status of particular enterprises, the existing scale shall be upgraded and improved, so as to form a logistics service quality evaluation system that has its own characteristics and conforms to the internal situation of the enterprise, which can be the reasonable evaluation methods.

CHAPTER 3

RESEARCH METHOD

3.1 Research Design

On the basis of the domestic and foreign research results, this paper combs customer satisfaction for express enterprises and service quality knowledge related to express enterprises. Starting from the correlation between customer satisfaction and service quality of express enterprises, this paper expounds the purpose and significance of this study. Taking ZTO Express as an example, this paper first summarizes the basic situation of the ZTO express. Then the questionnaire was adopted to investigate the customer satisfaction and service quality of ZTO Express, which serves as the basic data for quantitative analysis ZTO Express's service quality; the Kano model and fuzzy comprehensive evaluation are adopted to evaluate ZTO express's service quality; the existing problems in the quality of delivery service are further summarized. Finally, based on the problems existed in express service quality, this paper proposes countermeasures to improve the quality of the express services from the angle of service process, service contents and ways, claims and complaints handling, employee and brand construction as well as comprehensive management.

3.2 Questionnaire design

Customer satisfaction survey of ZTO express was mainly carried out from the aspect of operational ability, service ability, information processing ability and long-term development ability etc.. Specifically through telephone and e-mail exchanges, the relevant logistics terms involved in the questionnaire were repeatedly communicated with customers, so as to ensure the authenticity of the results. Questionnaires were sent to practitioners mostly via e-mail.

3.3 Data analysis

EXCEL form was adopted for statistics, data processing and statistical analysis, so as to obtain relevant results and basic data.

3.4 Data collection and samples

There were 250 copies for each questionnaire. After a period of investigation, 248 questionnaires were collected, of which the questionnaire data of three copies was not complete. There were 245 copies of valid questionnaires, and the efficiency reached 98%. The basic situation of the sample survey can be seen from table 3-1.

Table 3-1 Basic situation of satisfaction survey samples

	Item	Number	Proportion
Gender	Male	89	36.33%
	Female	156	63.67%
Age	20 years old and below	15	6.12%
	20-30 years old	99	40.41%
	30-40 years old	84	34.29%
	40-50 years old	47	19.18%
	60 years old and above	0	0%
Position	Civil servant	60	24.49%
	Private owner	23	9.39%
	Student	64	26.12%
	Enterprise staff	89	36.33%
	Others	9	36.74%

246 copies of importance degree evaluation questionnaire were collected, in

which there were 243 effective questionnaires, and the effective rate reached 98.7%. The basic situation of survey sample is shown in table 3-2.

Table 3-2 Basic situation of significance degree evaluation samples

	Item	Number	Proportion
Gender	Male	88	35.92%
	Female	155	63.27%
Age	20 years old and below	13	5.31%
	20-30 years old	98	40.00%
	30-40 years old	86	35.10%
	40-50 years old	48	19.59%
	60 years old and above	0	0.00%
Position	Civil servant	58	23.67%
	Private owner	25	10.20%
	Student	65	26.53%
	Enterprise staff	88	35.92%
	Others	9	3.67%

The data provided by the questionnaire is the basis for the quality evaluation of the ZTO express service.

CHAPTER 4

RESULTS

In order to improve the quality of service, express enterprises must make a comprehensive analysis of the factors that affect their service quality, and analyze the influence mechanism of various factors on service quality. Therefore, it is necessary to establish a service quality evaluation system for express enterprises. Different consumers have different express service requirements, who also have quite diversified consumer behavior and perceived value. Moreover, there are no unified standards for the service process of express enterprises, and there are many factors influencing the service quality of express industry on the basis of customer satisfaction, which have increased the difficulty of constructing the evaluation index system of express service quality. By referring to previous research results and evaluating relevant literature about service quality evaluation system of express enterprise home and abroad, this paper tries to construct service quality evaluation system for express enterprises based on the customer satisfaction. Meanwhile, combined with the logistics professional knowledge and practical experience, it also explores relationship between service quality and influencing factors of express enterprises.

4.1 Construction of quality evaluation system for ZTO express service

4.1.1 Design principle of Evaluation system

Index is the most basic factor for the quality evaluation system of ZTO express service, and the index selection will directly affect the direction and result of quality evaluation. There are many factors affecting the quality of express delivery service. However, it's unreasonable to select too many indexes in order to ensure the integrity and feasibility of the system. Instead, the most representative indexes shall be selected. In this paper, combined with the previous researchers' idea and the idea of

customer satisfaction, some important principles of selecting indexes are proposed:

4.1.1.1 Customer-centered principle

From the perspective of customer satisfaction, this paper studies the quality of ZTO service. The selection of specific evaluation indexes and the construction of evaluation system are based on customer demand and customer perception. Therefore, the quality of express service mainly comes from the customer's evaluation. Only the service that satisfies the customer or meets the expectation for customer service quality is a good service. As a result, the construction of ZTO quality evaluation system shall adhere to the "customer-centered" principle.

4.1.1.2 Systematic principle

There are so many factors that affect the quality of ZTO express service. All aspects shall be systematically considered when selecting the evaluation index. Meanwhile, the influencing factors shall be classified for statistics, from which the appropriate evaluation indexes can be generated. Never shall we start from a single index or a large class, otherwise the index system is incomplete, and the final evaluation result is of little practical reference value.

4.1.1.3 Representative principle

Factors affecting the quality of ZTO service should be divided according to the class. In this process, representative principle and the pertinence principle shall prevail. The selected representative indexes can reflect the core feature of this class. Otherwise, the selected index is not reasonable. Finally, the influence degree of this kind of factor in service quality is weakened or enhanced, which is unfavorable to the accuracy of the whole evaluation result.

4.1.1.4 Principles of operability and practical feasibility

When selecting ZTO Express logistics service quality evaluation index, principles of operability and practical feasibility shall be firmly held. That's to say, the index can be supported by some data, and the feasibility of index data collection and statistics can be ensured. If the index data collection is difficult and time-consuming,

high-cost, it fails to conform to the basic principle of index selection. At the same time, the selected indexes must be obtained from the specific practice of express enterprises, which is practical and feasible. Eventually, the evaluation results will be of some reference value for the quality improvement of ZTO express service.

4.1.1.5 Comparability principle

The evaluation of ZTO express service quality mainly aims to comprehensively evaluate ZTO Express's service ability, find out its gap with other express enterprises, carry forward the advantage and compensate for the shortage, so as to constantly improve their service quality and overall competitiveness. Therefore, when selecting ZTO express service quality evaluation index, the Comparability Principle shall be insisted, so as to conduct horizontal comparisons and vertical comparisons among different enterprises. In this case, they can figure out the gap and timely find current problems.

4.1.2 Selection of evaluation indexes

As the logistics industry develops rapidly in China, an increasing number of scholars and enterprises pay more attention to its service quality. Based on the customer satisfaction, this paper considers customer perception and customer satisfaction as the key to evaluate the service quality. Through consulting literature and second-hand data, related books, and communicating with scholars and mentors, based on previous scholars' experience, four first grade indexes and several second grade index system based on customer satisfaction are put forward in this paper. Index system and the influence of index on service quality are introduced in details as follows.

4.1.2.1 Operation ability

Operation ability refers to the ZTO Express's ability to handle logistics in logistics operation activities, including order receiving, timely distribution, warehouse service, the processing and packaging services, customer receiving. Logistics service is a complete process system, in which customer care is nothing more than service

content and service quality. This is also the key to evaluate the quality of ZTO express service. The operation ability is the most distinctive characteristic of the logistics industry when compared with other industries, which is also the key to demonstrate the service quality of the express enterprises.

4.1.2.1.1 Order responsiveness

Order reception is the first step when the customer contacts with ZTO Express. The timeliness and accuracy of receiving order information is an important factor for the quality of service, because the order requirement is the service basis of logistics enterprises. Once the order information is incorrect, it's meaningless even if enterprises can provide quality services. In addition, the time length of order response is a necessary link for customers to judge the quality of the enterprise service.

4.1.2.1.2 Delivery timeliness

Customers' requirements for the logistics service mostly lie in the delivery time and efficiency. The sending time can directly influence the delivery time, so timely distribution and sending of goods after order reception can ensure accurate and timely delivery. The delivery time can be shortened only when the sending time can be ensured,which is a process that shall be developed and upgraded for the operation ability of logistics enterprises.

4.1.2.1.3 Inventory integrity

ZTO Express must have corresponding storage conditions and storage requirements in internal transportation, so that the goods can be kept in good conditions. Through ensuring the integrity of the inventory, the goods can eventually come to the customer in exact quantity and in proper condition.

4.1.2.1.4 Packaging processing compliance

Customer requirements for ZTO express include packaging and processing. When ensuring the practicability(easy to carry, moisture-proof, anti-skid, etc.) and functionality (marketing, gift, matching, etc.) of express packaging, enterprises shall focus on packaging and processing quality based on customer satisfaction, so as to

meet their expectations for the service.

4.1.2.1.5 Timeliness of goods delivery

The timeliness of goods delivery is a key index for customers to evaluate the service quality. The function of logistics enterprises is to send the goods to the destination in a fast and easy manner, so practicalness is a key factor to evaluate the quality of service.

4.1.2.1.6 Damage degree of goods

In the process of transportation, damage, deterioration and loss of goods will inevitably occur, which however shall be controlled within a certain range, and the lower the better. The arrival of goods to customers without loss and damage is a major factor affecting the quality of service.

4.1.2.2 Service ability

Express service industry is a branch of service industry, and its service ability is the most core competitive factor. At present, the service homogeneity of express enterprises is serious. If enterprises want to win customers, they need to provide high quality service. Only by having excellent service ability can ZTO Express improve customers' perception of the express service quality.

4.1.2.2.1 Attitude and motivation of service personnel

The customer's specific perception is one of the criteria to judge the quality of service. The quality of customer service is directly reflected in the attitude and importance of the service personnel in the face of customers. In the service process, customer service personnel should strive to improve the degree of emphasis to customers and actively serve for customers, so that the customer can feel the attention and care of customer service personnel. As a result, they can promptly win the favor of customers, which improve customers' evaluation of enterprise.

4.1.2.2.2 Professional qualities and professional abilities of service personnel

The main function of ZTO express is to provide professional services, which

requires the professional quality and ability of the internal staff. This can be reflected as whether employees have mastered the process of the logistics and the related knowledge, whether they have the ability to design logistics scheme and logistics system and whether they can calmly deal with and tackle emergencies. These professional abilities function as the key factor for customers to evaluate service quality.

Professional ability of the personnel can't be directly measured, which can be gained by the evaluation of relevant factors. There are three indexes that can be used for judging professional ability of ZTO express from perspective of service personnel's education and enterprises' input in professional abilities, including number of junior college staff, number of persons trained for post training in enterprises and the company's investment in job training. By measuring the above three factors, we can know the personnel proportion of those who acquire logistics knowledge and technology, and the degree to which an enterprise attaches importance to people's professional quality and ability.

4.1.2.2.3 Communication skills and communication channels

Service personnel should be equipped with good communication abilities and skills, so as to ensure smooth communication with customers and colleagues. They ought to understand the customer's needs and solve customers' problems. With the customer-centered concept, customer demand shall be placed in the first place. It is important to enhance trust and communication with customers by utilizing professional knowledge and communication skills. At the same time, whether the internal communication channels are smooth and whether the information and problems can be timely feedback and solved will also affect the quality of service. The quality of service can be evaluated by the frequency of communication between the customer and service personnel and the smoothness of channels.

4.1.2.2.4 Ability to resolve customer complaints

In the process of logistics services, the customers may complain about the

enterprise and services when their needs can not be fully satisfied. When there is shortage and loss of goods or service content error, customers' evaluation of service will decrease, which can seriously affect the credibility of enterprises. ZTO express should pay enough attention to this index, so as to reflect the service level of the enterprise. Meanwhile, ZTO shall find out the existing problems and defects of the enterprise, so as to correct and perfect it, thus obtaining the customer's trust and support. Moreover, there are chain effects in the logistics industry. As a result, the problems of the enterprises will not only damage their reputation, but also cause related enterprises' suspicion of the service quality and the corporate image of the enterprises in the supply chain.

4.1.2.2.5 Service flexibility

Customers may have demand changes when logistics enterprises provide service for customers. Enterprises may have corresponding adjustment when implementing logistics program and plan. Therefore, the enterprise must be flexible enough to ensure that the service is as accurate, timely and user-friendly as possible on the basis of the principle and direction of service. For example, many specific emergencies may occur in the logistics operation, such as weather changes, vehicle fault, road rectification, personnel changes, the wrong information, customers' new requirements etc.. It is quite important for ZTO express to respond timely and accurately, solve the unexpected situation and problems, so as to ensure the continuity of logistics activities.

4.1.2.3 Information processing capability

ZTO express has special requirements for informatization, which runs through the whole process of ZTO express service and affects the logistics service quality. The capacity and the level of informatization processing are one of the core factors to measure ZTO express's service quality.

4.1.2.3.1 Capability of call center function

Call center function capability means the time required to wait, the quality

of the consultants and the time length of problem solving when customers call ZTO Express. This factor is usually related to customers' direct evaluation of the service quality. The waiting time and the attitude of the personnel directly affect customers' evaluation of the service quality.

4.1.2.3.2 Information service ability

ZTO Express's enterprise information service ability can be reflected in terms of the basic hardware facilities, the ability of information technology, information system platform, information sharing degree to customers and logistics technology using ability etc.. ZTO Express is a combination of modern information technology and traditional transportation industry, which serves as the middleman between both supply and demand. Therefore, its information service ability can directly influence the quality of service.

4.1.2.3.3 Financial settlement capability

The settlement of payment and service charge between enterprises and customers, the circulation of funds and the accuracy of clearing of bills are important links that may influence the quality of service. In three essential factors: logistics, capital flow and information flow, the normal operation of capital flow can be of critical significance.

4.1.2.3.4 Contractual ability

Business activities between logistics enterprises and customers are based on the contract and contractual relationship. The rights and obligations of both parties can be stipulated by the contract provisions. Whether ZTO express can provide products and services in accordance with the contract requirements is one of the factors that affect customers' evaluation of the service quality. The condition of contract performance is also a major factor in evaluating service capability.

4.1.2.4 Long-term development ability

Most of the ZTO Express customers are enterprise groups with large business volume. Therefore, every customer is crucial to ZTO express. The theories of

the customer satisfaction require enterprises to establish a good long-term cooperative relationship with customers. In this case, enterprises shall be equipped with long-term development ability. At the same time, enterprises ought to formulate partnership and strategic alliances with customers, and seek long-term cooperation with customers.

4.1.2.4.1 Value-added service capability

ZTO express is now in the economic background where customers have high requirements for the quality and individuality. Many customers lodge their complaints about ZTO Express's incomplete service and lack of value-added services. Therefore, ZTO express should strengthen the overall service capacity beyond basic services.　ZTO express has two kinds of value-added services: Extended services that provide regular services and re-service of value added service. In the factors that can　improve the enterprise's future growth, the ability to provide value-added services is essential.

4.1.2.4.2 Customer evaluation survey

In the process of accepting and sending express goods by logistics enterprises, logistics enterprises should pay attention to the follow-up response of customers, such as: evaluation of enterprises, and strive to improve the service quality. Through the investigation for customer evaluation, problems and shortcomings existing in the development of enterprises can be analyzed. Generally speaking, customer suggestions can provide good reference for enterprises in the future to improve the quality of service. In the meantime, the implementation of customer evaluation survey　can also demonstrate enterprises' "people-oriented" business philosophy. In this case, customers can understand the enterprises' emphasis on them, thus strengthening customers' trust and support for enterprises.

4.1.2.4.3 Market growth

When considering whether the logistics enterprise can achieve the goal of sustainable development in the fierce market competition, market prospects and business development of the enterprises is essential, which is embodied in

enterprise's service quality promotion. Generally speaking, enterprises have a strong potential for development and growth capability when they focus on customer relationship maintenance and service quality improvement.

4.1.2.4.4 Corporate culture and value identities

From perspective of employees' recognition of corporate culture, core values, business philosophy and regulations, the sustainable development ability of the logistics enterprises can be figured out. Corporate culture is a powerful fusion point facilitating the staff for collaborative development. The process of logistics service is systematic, which requires collaboration between employees and employees, departments and departments, employees and departments. At this rate, enterprises and teams with strong centripetal force and cohesive force can be cultivated.Such enterprises and teams will work toward the expected goals, thus effectively improving service quality.

4.1.3 Kano Quantitative index analysis

After quantifying the results of the Kano questionnaire, the next step is to set up the corresponding quantitative indexes, so as to analyze the quantitative Kano of the findings.

For each service attribute f_i, using X_i to represent the average customer satisfaction without providing the product / service attribute f_i, $\overline{X}_i = \dfrac{1}{J}\sum\limits_{J-1}^{J} w_{ij} x_{ij}$; Y_i was set to represent the average customer satisfaction when providing the product / service attribute f_i, $\overline{Y}_i = \dfrac{1}{J}\sum\limits_{J-1}^{J} w_{ij} x_{ij}$.

Based on this, the values pair $\left(\overline{X}_i,\ \overline{Y}_i\right)$ is marked in two-dimensional graphs, in which the degree of dissatisfaction is expressed in abscissa, and the degree of satisfaction values is represented in ordinate. Most value pairs are not included in the calculation of average values, because negative values are inverse quality factors or problematic answers, so the range is 0-1. Subsequently, by setting the threshold

value of X and Y and based on the location of value pair $\left(\overline{X}_i,\ \overline{Y}_i\right)$ in the two-dimensional graph, the Kano type of attribute f_i can be determined, as shown in figure 4-1.
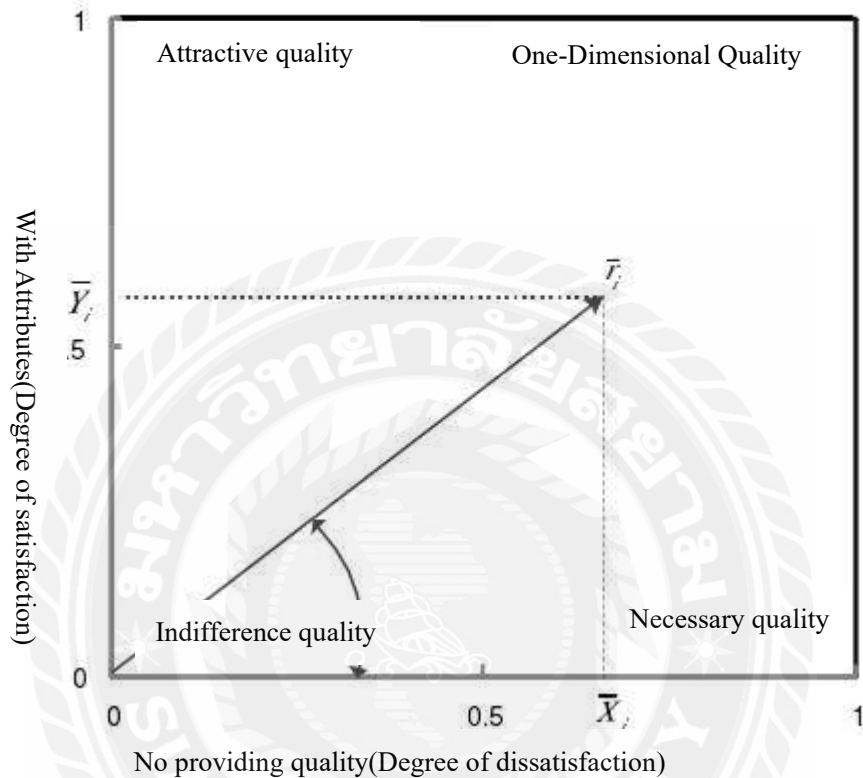

Figure 4-1 Customer satisfaction / dissatisfaction vector

From perspective of customers, the feature of the product / service attributes f_i can be expressed as f_i $\overline{r}_i \equiv (r_i,\ a_i)$, in which $r_i = |\overline{r}_i| = \sqrt{\overline{X}_i^2 + \overline{Y}_i^2}\left(0 \leq r_i \leq \sqrt{2}\right)$ is the moment of vector r_i, indicating the significance of the product / service attributes f_j to the customer. It's called Kano importance index; $a_i = \tan^{-1}\left(\overline{Y}_i / \overline{X}_i\right)\left(0 \leq a_i \leq \pi / 2\right)$ is the angle between the vector r_i and the horizontal axis, which determines the relative level of product / satisfaction of service attributes f_i / dissatisfaction. It's called the Kano satisfaction index. These two indexes are collectively referred to as the Kano indexes, which can be represented in polar coordinates, as shown in figure 4-1.

4.1.4 Fuzzy comprehensive evaluation

Evaluation process of ZTO express service quality is difficult and complex. The service itself can not be stored, and some specific data of indexes can hardly be obtained. As a result, fuzzy comprehensive evaluation was adopted to make a comprehensive and systematic evaluation of ZTO service quality.

The fuzzy sets was first put forward by the United States Automation Expert, Professor L．A．Zadeh, which is a kind of evaluation method to judge the fuzziness of things. Its basic theory is fuzzy mathematics, in which the qualitative indicators can be quantified. It targets the fuzzy weights and fuzzy matrix as the core, which is a process of comprehensive evaluation of index system by fuzzy computation. Fuzzy analysis method can solve the multi-level index system while conducting the layered comprehensive evaluation. The method of determining weights is flexible and the evaluation result is a vector, which can solve realistic problems of fuzziness and difficulty to quantify and lack of accurate data. The core elements of the fuzzy evaluation method are: index set U, comment grade V, fuzzy matrix R and fuzzy weight. As long as the four elements are identified, the service quality of ZTO Express can be evaluated by fuzzy comprehensive evaluation.

4.1.4.1 Determine factor sets U in ZTO express's quality evaluation system

The essence of evaluating object's factor is to evaluate its attribute. In previous evaluation index system of ZTO Express, there were a total of 4 first grade indexes and 19 second grade indexes. In order to facilitate the fuzzy evaluation, this paper adopts the form of set:

U= （U1+U2+3U+U4） =(Operation ability, Service ability, Information processing capability, Long-term development ability)；

U1=(U11+U12+U13+U14+U15+U16)respectively represents six second grade indexes that reflect operation ability；

U2=(U21+U22+U23+U24+U25) respectively represents five second grade indexes reflecting service ability；

4.1.4.2 Set comment set V

The comment set is specific evaluation for customers' satisfaction on ZTO express service, which are divided into five grades and seven grades. In order to make the whole evaluation system not too complex, five grades of evaluation standards are selected in this paper. Comment set of service quality of ZTO Express.

V=(V1+V2+V3+V4+V5)=(Very dissatisfied, dissatisfied, basically satisfied, satisfied, quite satisfied). Such comment grade division guarantees the completeness of the satisfaction level, which reflects the characteristics of fuzzy evaluation and has its practical operability.

4.1.4.3 Determine the weights of indexes

The Kano model analysis method is adopted to determine index weight, which is introduced in detail as follows .

4.1.4.4 Set up fuzzy relation matrix

First of all, determine the level of evaluation criteria at all levels. The evaluation methods have been described above in detail. Secondly, determine the membership vector R of evaluation factor set U at all level to comment set V, in which U=(U1+U2+3U+U4)，V=(V1+V2+V3+V4+V5)，r_{ijk}= the most appropriate number of j confirmed by evaluation staff indicators uki / total number =vijk/n.

As a result, a linear array of single index evaluation can be obtained:

$$R_{ij} = \left(r_{ij1},\ r_{ij2},\ r_{ij3},\ldots,\ r_{ijn}\right) = \left(v_{ij1}/n,\ v_{ij2}/n,\ v_{ij3}/n,\ldots,\ v_{ijn}/n\right)$$

Set up fuzzy matrix： $R = \left(r_{ij}\right)n \times n = \begin{bmatrix} R_1 \\ R_2 \\ R_3 \\ \vdots \\ R_n \end{bmatrix} = \begin{bmatrix} r_{11} & r_{12} & r_{13} & \cdots & r_{1n} \\ r_{21} & r_{22} & r_{23} & \cdots & r_{2n} \\ \vdots & \vdots & \vdots & & \vdots \\ r_{n1} & r_{n2} & r_{n3} & \cdots & r_{nn} \end{bmatrix}$

4.1.4.5 First grade fuzzy comprehensive evaluation

The First grade fuzzy comprehensive evaluation is based on the second index system. According to the above introduction of judgement matrix, the evaluation matrix of the second sub-indexes is:

$$R_i = \begin{pmatrix} r_{i11} & r_{i12} & r_{i13} & \cdots & r_{i1n} \\ r_{i21} & r_{i22} & r_{i23} & \cdots & r_{i2n} \\ \vdots & \vdots & \vdots & & \vdots \\ r_{in1} & r_{in2} & r_{in3} & \cdots & r_{inn} \end{pmatrix}$$

The corresponding weight vector coefficient is: Ai=(ai1+ai2+ai3+…ain).

The second grade index evaluation set can be obtained by the fuzzy formula: Bi=Ai×Ri:

$$B_i = (b_{i1}, \ b_{i2}, \ b_{i3}, \cdots, \ b_{in}) = (a_{i1} \ a_{i2} \quad a_{i3} \quad \cdots \quad a_{in}) \times \begin{pmatrix} r_{i11} & r_{i12} & r_{i13} & \cdots & r_{i1n} \\ r_{i21} & r_{i22} & r_{i23} & \cdots & r_{i2n} \\ \vdots & \vdots & \vdots & & \vdots \\ r_{in1} & r_{in2} & r_{in3} & \cdots & r_{inn} \end{pmatrix}$$

In which：

$$b_k = \oplus (a_{ij} \times r_{ijk})$$

The evaluation set of the first index is：

$$R = \begin{Bmatrix} B_1 \\ B_2 \\ B_3 \\ \vdots \\ B_n \end{Bmatrix} = \begin{pmatrix} b_{11} & b_{12} & b_{13} & \cdots & b_{1n} \\ b_{21} & b_{22} & b_{23} & \cdots & b_{2n} \\ \vdots & \vdots & \vdots & & \vdots \\ b_{n1} & b_{n2} & b_{n3} & \cdots & b_{nn} \end{pmatrix}$$

4.1.4.6 Second grade fuzzy comprehensive evaluation

Based on the matrix of the first level comprehensive evaluation and the fuzzy set $\overline{B} = A \times R$

The second fuzzy sets are as follows $\overline{B} = (\overline{B}_1, \ \overline{B}_2, \ \overline{B}_3, \cdots, \ \overline{B}_n) = A \times R$,in which $\overline{b}\overline{k} = \oplus (a_i \times b_{ik})$

Through the use of the maximum membership degree recognition method and weighted average method, the final result vector of fuzzy two-stage comprehensive evaluation was selected. During the evaluation process, this paper not only focuses on a single index, but also considers the effect of other factors. Therefore, each of the final result vector is the outcome of the measure itself, which is also final

judgment of all impact indexes. As a result, after finding the final result vector based on the maximum membership principle, the corresponding first grade index and second grade index of the result can be obtained. Consequently, links and reasons for the quality gap of ZTO express service can be obtained.

The judgment steps of the maximum membership matrix:

First, SUM the two-stage fuzzy evaluation set vector:

$$\sum_{i=1}^{n} \overline{b}_i$$

Second, find the maximum weight $\max\{\overline{b}_i\}$ in evaluation set and secondary minor weight $\sec\{\overline{b}_i\}$, and finally calculate the maximum membership degree:

$$\alpha = \frac{n\beta - 1}{2\gamma(n-1)}$$

In which,

$$\beta = \frac{\max \overline{b}_i}{\sum_{i=1}^{n} \overline{b}_i}, \quad \gamma = \frac{\sec\{\overline{b}_i\}}{\sum_{i=1}^{n} \overline{b}_i}$$

The larger the α, the higher the effectiveness; when α is between 0.5 and 1, it's believed that the maximum degree of membership is more effective; when α is less than 0.5, degree of membership loses efficacy; the weighted average method must be adopted to conduct fuzzy comprehensive evaluation analysis, the basic formula for evaluation is:

$$A = \sum_{j=1}^{n} \overline{b}_j^k \bullet \frac{j}{\sum_{j=1}^{n} \overline{b}_j^k}$$

4.2 Quality evaluation process of ZTO express service

4.2.1KanoVector model weight design and analysis

Table 4-1 weight table of Kano vector model

First grade index	Weight	Second grade index	Weight
Operation ability	0.351	Order responsiveness	1/20
		Sending timeliness	3/20
		Inventory integrity	2/25
		Packaging processing compliance	6/25
		Timeliness of goods delivery	6/25
		Damage degree of goods	6/25
Service ability	0.189	Attitude and motivation of service personnel	0.082
		Professional quality and professional ability of service personnel	0.115
		Communication skills and communication channels	0.292
		Ability to resolve customer complaints	0.272
		Service flexibility	0.235
Information processing capability	0.109	Call center capability	0.454
		Information service ability	0.238
		Financial settlement capability	0.216
		Performance of contract	0.092
Long-term development ability	0.351	Value-added service capability	0.234
		Market growth	0.548
		Long-term development ability	0.119
		Corporate culture and values identification	0.099

In this part, the index weight was specifically evaluated and tested. According to the opinion of numerous practitioners (collected data from questionnaire survey) and based on the application of Kano weight model, the significance degree of index is compared. Finally, the corresponding weight judgment matrix was obtained.

4.2.2 Fuzzy comprehensive evaluation

4.2.2.1 First grade fuzzy comprehensive evaluation

Based on the survey data, through analyzing and processing the various indexes, on the basis of the formula: r_{ijk}= the most suitable number of j by index u_{ki} / the total number of people involved in the evaluation = v_{ijk}/n, the evaluation subordinate matrix of each two level indexes was obtained:

$$R_1 = \begin{bmatrix} 0.10 & 0.25 & 0.42 & 0.16 & 0.07 \\ 0.06 & 0.14 & 0.30 & 0.35 & 0.15 \\ 0.10 & 0.20 & 0.45 & 0.20 & 0.05 \\ 0.18 & 0.20 & 0.30 & 0.19 & 0.13 \\ 0.06 & 0.15 & 0.40 & 0.20 & 0.19 \\ 0 & 0 & 0.38 & 0.35 & 0.27 \end{bmatrix} \quad R_3 = \begin{bmatrix} 0 & 0.2 & 0.30 & 0.3 & 0.20 \\ 0 & 0 & 0.40 & 0.35 & 0.25 \\ 0 & 0.05 & 0.30 & 0.40 & 0.25 \\ 0.1 & 0.2 & 0.3 & 0.3 & 0.1 \end{bmatrix}$$

$$R_2 = \begin{bmatrix} 0.10 & 0.05 & 0.33 & 0.50 & 0.02 \\ 0.09 & 0.21 & 0.38 & 0.22 & 0.1 \\ 0.12 & 0.22 & 0.35 & 0.30 & 0.01 \\ 0.12 & 0.24 & 0.40 & 0.23 & 0.01 \\ 0.03 & 0.26 & 0.33 & 0.25 & 0.13 \end{bmatrix} \quad R_4 = 0.36 \begin{bmatrix} 0.02 & 0.25 & 0.40 & 0.23 & 0.1 \\ 0 & 0.3 & 0.35 & 0.25 & 0.1 \\ 0 & 0 & 0.4 & 0.35 & 0.25 \\ 0.04 & 0.25 & 0.36 & 0.30 & 0.05 \end{bmatrix}$$

The fuzzy set Bi=Ai×Ri can be used to obtain the evaluation set of the two level indexes:

4.2.2.1.1 Evaluation of operation ability

$$B_1 = A_1 \times R_1$$

$$= (0.05 \quad 0.15 \quad 0.08 \quad 0.24 \quad 0.24 \quad 0.24) \times \begin{bmatrix} 0.10 & 0.25 & 0.42 & 0.16 & 0.07 \\ 0.06 & 0.14 & 0.30 & 0.35 & 0.15 \\ 0.10 & 0.20 & 0.45 & 0.20 & 0.05 \\ 0.18 & 0.20 & 0.30 & 0.19 & 0.13 \\ 0.06 & 0.15 & 0.40 & 0.20 & 0.19 \\ 0 & 0 & 0.38 & 0.35 & 0.27 \end{bmatrix}$$

$$= 0.08 \quad 0.136 \quad 0.361 \quad 0.254 \quad 0.172$$

4.2.2.1.2 Evaluation of service ability

$B_2 = A_2 \times R_2$

$$= (0.082 \quad 0.115 \quad 0.292 \quad 0.272 \quad 0.235) \times \begin{bmatrix} 0.10 & 0.05 & 0.33 & 0.50 & 0.02 \\ 0.09 & 0.21 & 0.38 & 0.22 & 0.1 \\ 0.12 & 0.22 & 0.35 & 0.30 & 0.01 \\ 0.12 & 0.24 & 0.40 & 0.23 & 0.01 \\ 0.03 & 0.26 & 0.33 & 0.25 & 0.13 \end{bmatrix}$$

$$= (0.093 \quad 0.219 \quad 0.359 \quad 0.275 \quad 0.049)$$

4.2.2.1.3 Evaluation of information processing ability

$B3 = A3 \times R3$

$$= (0.454 \quad 0.238 \quad 0.216 \quad 0.092) \times \begin{bmatrix} 0 & 0.2 & 0.30 & 0.3 & 0.20 \\ 0 & 0 & 0.40 & 0.35 & 0.25 \\ 0 & 0.05 & 0.30 & 0.40 & 0.25 \\ 0.1 & 0.2 & 0.3 & 0.3 & 0.1 \end{bmatrix}$$

$$= (0.009 \quad 0.110 \quad 0.324 \quad 0.334 \quad 0.214)$$

4.2.2.1.4 Evaluation of long-term development ability

$B4 = A4 \times R4$

$$= (0.234 \quad 0.548 \quad 0.119 \quad 0.099) \times \begin{bmatrix} 0.02 & 0.25 & 0.40 & 0.23 & 0.1 \\ 0 & 0.3 & 0.35 & 0.25 & 0.1 \\ 0 & 0 & 0.4 & 0.35 & 0.25 \\ 0.04 & 0.25 & 0.36 & 0.30 & 0.05 \end{bmatrix}$$

$$= (0.009 \quad 0.248 \quad 0.369 \quad 0.262 \quad 0.113)$$

The evaluation index of the first level index is：

$$R = \begin{pmatrix} B_1 \\ B_2 \\ B_3 \\ B_4 \end{pmatrix} = \begin{bmatrix} 0.08 & 0.136 & 0.361 & 0.254 & 0.172 \\ 0.093 & 0.219 & 0.359 & 0.275 & 0.049 \\ 0.09 & 0.110 & 0.324 & 0.334 & 0.214 \\ 0.009 & 0.248 & 0.369 & 0.262 & 0.113 \end{bmatrix}$$

4.2.2.2 Two-stage fuzzy comprehensive evaluation

According to the matrix of the first grade evaluation, the fuzzy formula is used as：

$$\overline{B} = A \times R = \begin{pmatrix} 0.351 & 0.189 & 0.109 & 0.351 \end{pmatrix} \times \begin{bmatrix} 0.08 & 0.136 & 0.361 & 0.254 & 0.172 \\ 0.093 & 0.219 & 0.359 & 0.275 & 0.049 \\ 0.009 & 0.110 & 0.324 & 0.334 & 0.214 \\ 0.009 & 0.248 & 0.369 & 0.264 & 0.113 \end{bmatrix}$$

$$= \begin{pmatrix} 0.0498 & 0.1882 & 0.3594 & 0.2695 & 0.1326 \end{pmatrix}$$

4.2.2.3 Comprehensive process of evaluation results

$$\beta = \frac{\max \overline{b}_i}{\sum_{i=1}^{n} \overline{b}_i} = 0.35947 / 0.99948 = 0.36$$

$$\gamma = \frac{\sec\{\overline{b}_i\}}{\sum_{i=1}^{n} \overline{b}_i} = 0.2695 / 0.99948 = 0.27$$

To calculate the maximum membership degree：

$$\alpha = \frac{n\beta - 1}{2\gamma(n-1)} = 0.37$$

It can be seen from the calculation results that the maximum membership degree is invalid, so it is necessary to use weighted average method for comprehensive analysis:

$$A = \frac{\sum_{j=1}^{n} \overline{b}_j^k \cdot j}{\sum_{j=1}^{n} \overline{b}_j^k} = 3.97, \quad \text{in which k=2}$$

A=3.97 is between the basic satisfaction degree 3 and the satisfaction degree 4, indicating that customers are satisfied with overall quality of the ZTO express service, but it has not reached the level of complete satisfaction. According to the survey on satisfaction degree of express service in 2016 and express service timeliness test results in 2016 issued by the State Post Bureau, the overall satisfaction score and rank of express enterprises are as follows: SF EXPRESS (84.6 scores), EMS (80 scores), ZTO express (76.9 scores), YTO express (74.8 scores), STO (74.7 scores), YUNDA Express (74.3 scores), HTKY Express (72.3 scores), ZJS Express (71.4 scores), TTK express (70.8 scores) and CCES Express (65.8 scores). In these cases, customers' the overall satisfaction for ZTO express, YUNDA Express, YTO

express and HTKY Express has been obviously improved. The overall satisfaction degree of the ZTO express is consistent with the conclusions in this paper.

In the following work, ZTO express shall take the customer demand as the core and the starting point. Moreover, ZTO express shall regard maintaining good relationship with customers as a long-term service strategy. Furthermore, ZTO ought to effectively improve its service quality, the operation ability, service ability, information processing ability and long-term development ability, so as to make services meet or exceed customers' expectation. At the same time, ZTO should positively explore and guide the potential customers, provide customers with rich and personalized value-added services, improve customer satisfaction, loyalty and trust, so as to cultivate customers as the enterprise's loyal customers, thus realizing the sustainable development and the lifetime value of enterprises.

4.3 Existing problems in quality of ZTO express service

Logistics is one of the core of modern economy and express is an important part of logistics, which is critical although it seems quite common. As the first group which started late, developed fastest and has the best momentum in China's express enterprises, ZTO Express plays the leading role in terms of express business volume, service quality and technological innovation etc..after ten years of rapid development. It is the "practitioner of public entrepreneurship and mass innovation", who also created a typical ZTO Express model for the capital market, e-commerce, express delivery, logistics industry, etc.. Although ZTO Express has witnessed leaps and bounds in recent years, its current problems can not be ignored. Through investigating the service quality of ZTO express service and the investigation of the status of express service, it is found that there are still several problems in terms of the quality of the ZTO express service:

4.3.1Ignorance of logistics packaging

China's logistics industry started late, but developed in fast pace. However,

this industry can hardly maintain its good development. What's worse, it shall bear the   fierce market competition and invasion of foreign enterprises. Obviously, it's technology is far behind the international advanced level. From aspects of the packaging, most logistics enterprises in China introduced and simulated packaging technology, who have no intellectual property rights and packaging technology.

The package condition can play a very important role in ensuring safe, accurate and fast delivery of express. In particular, without proper package, liquid and fragile items are vulnerable to damage, which may also foul other items, thus endangering the safety of staff. In the past, ZTO Express did not attach importance to the packaging and transportation, and the quality problems still existed, so that the products were damaged and lost in the course of transportation, which caused great losses to the national economy. According to reports, poor quality of packaging even caused economic losses of up to ten billion yuan, 80% of which incurred in the process of transportation. For example, 4.8 million tons of glass bottles was produced in China each year. As a result, 800 thousand tons got damaged due to gunny bag package, which can be compared with the annual output of 1.6 billion of factories. For example, although the package of bicycle has been improved in these years, it can be subject to damage, which has caused the surge of customer dissatisfaction. Therefore, improving the technology of logistics packaging can to a certain extent affect consumers' satisfaction degree and evaluation of service quality.

In addition to the packaging technology problem, standard packaging is another aspect that shall be considered. In the packaging standard, all kinds of signs, material specifications, technical specifications, quality requirements and inspection methods shall be linked closely. However, ZTO Express failed to do this. The non-unified and non-regulated standard can be seen from many aspects, such as non-unified equipment standard in various modes of transport and incomplete logistics equipment. As a result, the accidents in the logistics process happened frequently, which increased costs and seriously hindered the development of ZTO

express.

4.3.2 Lack of application of information technology

In 2009, due to the concept of anti software engineering, long-term planning and framework design, the information construction of ZTO express was forced to be halted. Therefore,the planning of logistics information system shall be based on actual situation of enterprises, so as to build information systems in line with individual characteristics. At present, ZTO Express still mainly depends on hands, who has no automated information network especially in the storage, transportation and distribution links. Due to the low-level application of information technology in the express delivery, it is easy to cause low quality of information and slow speed in ordering. ZTO express has inadequate infrastructure investment and lacks information technology foundation, thus the degree of its information automation is also low. In this regard, the product can hardly be distributed effectively. Moreover, ZTO express still communicates through the traditional backward logistics information platform, which may cause low information quality, so that the order processing speed is relatively slow, thus decreasing the logistics service quality. Although being equipped with logistics information systems, it's still underdeveloped. The application technology is not high, nor universal, which can hardly be applied to various links of ZTO express.

4.3.3 Inadequate staff quality and lack of professionals

In China, the logistics belongs to the low-end labor industry, which entered late into China. There are basically no high technical requirements for logistics industry, but simple sorting, packaging and distribution, so it has low requirements for logistics personnel. In this context, personnel in the express industry generally have low education degree, thus causing China's real shortage of professional logistics personnel. In the enterprise, the personnel's universal quality is not high. Low quality personnel may have negative emotion and can hardly understand the true meaning of the customer when communicating with the customer; secondly, low quality

personnel can be easily absent-minded in the work and irresponsible for the work, thus causing delay of delivery. Finally, considering the reduction of costs, most staff employed by ZTO Express fail to have high quality, and they did not have supporting specialized training after being employed, so their service consciousness and service ability can hardly meet customer demand for the service level. These can be specifically demonstrated as that staff often throw and flump the goods in the transportation process without considering the safety of the parcel, which also makes the damage rate increase in a long term. In the meantime, express parcel may inevitably be damaged because of extrusion in the long distance transportation process.

In the process of logistics informatization, ZTO express extremely lacks high level and compound specialized logistics information talents, who not only get familiar with logistics management, but also know computer technology and management knowledge; get familiar with the application of logistics informatization. Although the enterprise has quite modern logistics facilities and equipment, they can not be used properly and efficiently. The lack of professional talents can cause low development speed of ZTO express. ZTO express didn't have a core team to improve its level, let alone achieve international logistics standards. Furthermore, the lack of professionals can cause the lack of innovation and vitality of enterprises. Once the enterprise lack a fresh vitality to improve service quality, it can be impossible to facilitate healthy and rapid development.

4.3.4 Service management level needs to be improved

At the end of February 2012, it's stipulated in *The Notice On Further Strengthening The Inspection And Verification Work Of Express Delivery Enterprises* issued by the State Post Bureau that the express goods must be fully examined and spot inspected. However, as far as we can see, this provision is not effective for the addressee and courier. This is directly related to the low level of ZTO Express service. Due to low degree in internal management, there are some problems in the

management, specifically including: First, it just provides the primary type of service, which can not cover a higher level of logistics planning, related management consulting and some other services; second, ZTO express failed to have scientific management, so it has no systematic analysis of customer satisfaction and has no related reference. Enterprises do not have a true analytical solution mechanism, that is, establishing a better strategic relationship with customers, so a long-term relation and stable strategic customers can hardly be formed; third, the low management level is also reflected in the low informatization level. Affected by the application of information technology, ZTO Express has little business for electronic commerce and Internet transaction; finally, ZTO Express's ability to provide value-added service ability is not strong. However, encountering the accelerated economic globalization, international economic integration and the fierce market competition, this value-added services are required to meet the changing needs of customers. ZTO express shall introduce some value-added services and expand a much broader market through integrating other factors.

CHAPTER 5

CONCLUSION AND SUGGESTION

5.1 Conclusion

The service quality of the logistics enterprise refers to the degree to which the customer has expressed, implied, or fulfilled the needs or expectations that have been fulfilled. Satisfaction degree is feedback of customer satisfaction, which is an assessment of the performance of the product or service, and the product or service itself, thus giving a level of happiness related to the satisfaction of the consumer, including below or above the level of satisfaction. It is a kind of psychological experience. Through understanding customers' satisfaction with the quality of enterprise logistics services, enterprises can detect their own quality of service deficiencies, so as to improve correspondingly. This paper analyzed the quality of ZTO express service based on customer satisfaction, and the specific conclusion is as follows:

Through evaluating and analyzing ZTO Express's service quality based on the Kano model and the fuzzy comprehensive evaluation, it's found that customers are comprehensively satisfied with the overall service quality of ZTO Express. However, the absolute satisfaction degree has not been reached. In the following development process, ZTO express shall put the customer demand in the core position and adhere to the "people-oriented" philosophy, so as to regard customer relation maintaining as an essential part of a long-term service strategy. Meanwhile, ZTO ought to enhance the service quality, improve the enterprise's operation ability, service ability, information processing ability and long-term development ability, thus making efforts to make the services meet or exceed customer expectations. Besides, ZTO express can explore and guide the needs of potential customers, so as to meet customers' demand by constant value-added services. In this case, customers will add their trust and dependence on ZTO express. After realizing the transition from customer satisfaction

to customer loyalty, the lifetime value of customers and long-term development of the enterprise can be achieved.

There are still some problems to be improved for ZTO Express, such as ignorance of logistics packaging, inadequate information technology, low quality of staff, lack of professionals, and inadequate service management level.

In order to improve customer satisfaction, ZTO Express shall optimize business process of logistics services, innovate service content and service mode, strengthen the handling of complaints and claims, shape staff and brand image and implement diversified management.

5.2 Suggestion

Based on the quality evaluation results and existed problems, ZTO Express should take the following measures to improve customer satisfaction:

5.2.1 Optimize logistics service process

The complicated business process not only wastes resources, but also causes low service efficiency and low service quality. Due to lack of funds, technology, new modern equipment and working staff, the quality and efficiency of express logistics services can not be improved. Based on this, it is imperative for ZTO Express to simplify the logistics service process. ZTO express shall take the "most concise" concept as the principle, and focus on the simplification of the order link. ZTO express can list requirements for delivery of goods in advance on the official website, such as express weight, specifications, freight range, notes and so on; then customers fill in the waybill according to the requirements; then customers inform the company's customer service staff. If the waybill meets the requirements, the courier will pick up the parcel. Otherwise, customers will be informed to re-fill in it. This can avoid false information caused by telephone calls, and waste of time caused by repeated telephone communication.

5.2.2 Innovate service content and service mode

5.2.2.1 Introduce diversified service products

ZTO express is only engaged in some ordinary express services, and some value-added services. The volume is not so large, and express service content is the main part of the express enterprise. Therefore, it is necessary for ZTO express to expand diversified and personalized new services, so as to better meet customer demands.

ZTO express can learn from multiple value-added services of SF express, and improve the current deficiencies from the following three aspects. First, try to provide speed fresh distribution service. The modern tight pace and fresh products' features trigger people's increasingly larger demands for speed fresh distribution services. According to existing resources of the enterprise and targeting at regular customers engaged in e-commerce fresh and frozen food, ZTO express can offer privilege in terms of delivery timeliness, so as to ensure the quality of the fresh express goods. Second, launch the "virtual address service". ZTO can provide personalized service in order to meet customers' needs of information confidentiality and security. In this case, the receivers don't need to provide detailed address. Instead, the address is filled in by address codes for nearby service outlets or cooperative convenience stores. After the arrival of goods, customers can pick up the goods by text message information and valid documents. Third, introduce the "special warehousing service". If the address is in the port, airport, logistics center, bonded area, customs supervision area and so on, ZTO express can provide special warehouse service, and charge additional service fees according to the standard. In the meantime, ZTO Express can provide disbursement warehousing fee services for customers, so as to reduce the communication cost and improve the delivery timeliness.

5.2.2.2 Optimize delivery network

Delivery network is the "lifeline" of express enterprises. Network and net-outlets layout can influence delivery range. This can determine whether the express service can widely meet the needs of customers, thus determining the development prospects of express enterprises. The current network construction of ZTO express fades to SF express. Especially in some remote areas, ZTO express may have high cost and low efficacy. SF express's delivery network is more perfect than that of ZTO express and other private courier companies. SF Express has over 7800 outlets while ZTO express has about 7000 outlets. ZTO express should optimize its delivery network and narrow the gap with competitors.

SF Express has a perfect network, which is the first private express enterprise with the its own airlines company. SF Express has its own charter flights and 14 independent all cargo aircraft. ZTO Express shall learn from the experience of SF Express, improve and optimize its networks, thus targeting aviation as the development plan in the future. At present, ZTO express has 4 independent all cargo aircraft and 118 reaching airports, whose airport routes cover over 200 cities. Air capability must be the focus for future air express enterprises. In the future, in terms of future development planning and direction, ZTO express can take the air as main business and automotive transport as auxiliary. In order to realize differences in the development of competition, ZTO express can intensify the integration of aviation resources, establish its own market position and constantly optimize the network, so as to be the leader in China's express industry.

5.2.2.3 Provide flexible services

Service mode is the general term of the form of production and exchange of service products, which is one of the important contents that can demonstrate customer satisfaction. ZTO express should constantly improve the mode to provide service and provide flexible service for customers. ZTO express should implement from the following four aspects: First, customer satisfaction for ZTO express's home

delivery service is lower. ZTO express shall provide home delivery service in the university towns and relevant school districts. In addition to setting up outlets, it shall also arrange corresponding service staff. The university dormitory layout is more concentrated without long distance, so home delivery can not be so difficult. This service can help to improve company's image in minds of this group of customers, thus favoring company's long-term development. Second, ZTO express can learn from the SF Express. According to different customer needs, ZTO express can open "self sending and self receiving service" in designated outlets. For example, customers share the privilege electronic coupons or minus 2 yuan. In this aspect, customers can conveniently send and receive. The time can be more flexible and personal information can be more secure. Third, provide "night pickup service". In some developed regions, such as the Yangtze River Delta and Pearl River Delta, ZTO express can still provide relevant services after the normal time if customers still have some needs. Meanwhile, the normal delivery timeliness can still be guaranteed. Fourth, try to introduce "member e-billing service". The account business is a simple, convenient and efficient payment product tailored for customers. After the customer has become a member, he can pay the transportation and value-added service charges through the terminal of courier, mobile phone number and payment password. In addition to payment function, this business also supports online recharge, inquiries, offline consumption and other functions, bringing customers with flexible payment methods and much convenience.

5.2.3 Strengthen complaint handling and settlement of claims

There are many uncertain factors in the process of picking up and delivery. Express service is often complained by customers, and the key is how to correctly handle customer complaints. Through properly handling customer complaints, customers will enhance their trust to the company instead of getting disappointed.

When handling customer complaints, ZTO Express shall follow the following principles：

ZTO Express should dare to take responsibility after making mistakes, who shall not shirk all responsibility to customers; complaint handling must strictly comply with the rules and service specification;

The complaint handling must proceed in a timely manner. Even if the result can not be reached at that time, customer service staff shall inform customers that the complaint is in process;

Major complaints should be followed up by the manager of ZTO Express, so that customers can be taken seriously, which can also fundamentally solve the root causes of complaints and prevent similar problems from appearing again;

Complaint records should be filed so as to draw lessons and summarize experiences. The typical case of successes or failures can be discussed by employees, in which employees can learn and accumulate the practical experience of handling complaints, thus improving service quality;

Establish and continuously improve the process of complaint handling, improve the efficiency of handling complaints and make the customers satisfied.

In addition, the courier should inform the customer to purchase valuation insurance in accordance with the actual value. In this case, customers can also be compensated in accordance with the price of the declared value even if all goods get lost; If the express part is damaged or lost, The customer is liable for actual damages. Though express declaration value, customers and courier companies' losses caused by express losses can be avoided.

Any link of express may cause the loss. In a day, the company can hardly control the safety of express when the express is delivered from express taking site to distribution center. Facing this customer, both sides shall seek to compensation fund for third party negotiation: Each branch of the whole express network can establish a unified express loss compensation fund. After the loss has been caused, the company gives fixed penalty fund, then the fund gives to delivery company. Finally, the customer is compensated accordingly. The fixed compensated funds may more or less

exist gap with the actual compensated funds. After many times of loss and compensation, the amount will basically tend to be even. This methods can not only consider the actual value of express, but also consider the interest of the company. It can improve the whole compensation efficiency, which is an effective compensation plan.

5.2.4 Shape employees and brand image

5.2.4.1 Strengthen staff training

Employees will meet customers in the first time. They will contact customers at the first and provide customers with products and services, who are the people understanding customers most. Employee services directly determine customer satisfaction. The excellent staff can provide the most suitable products and services for customers in the first time, so as to improve customer satisfaction and attract customers for the company. Employees are the creators and bearers of the core competitiveness of enterprises. Therefore, it is necessary to train and manage employees. The excellent employees can greatly enhance the competitiveness of enterprises.

ZTO should train and manage personnel from the following three aspects: First, cultivate well-trained staff. In this aspect, the successful experience of UPS in training can be learned. UPS has strict requirements for staff, requiring staff can provide customers with sound and targeted professional service. Therefore, UPS the company invests hundreds of millions of dollars in training employees every year. The training content includes freight driver's safe driving, information technology personnel's knowledge renewal and American University's Management Curriculum etc.. Employees can continue to enrich themselves, constantly acquire new skills and new energy, so as to improve the enterprise quality of personnel. Second, emphasize the enthusiasm of employees in service. Staff's service attitudes can greatly affect customer satisfaction since employees directly contact with customers. It's commonly reflected that service attitudes of ZTO express fades to that of SF express. Therefore,

the sense of service attitude of staff shall be strengthened, so as to leave customers a good impression. Third, assess staff based on the "360 degree analysis", which is the famous professional management evaluation form. At the year end, ZTO express can score staff based on some selected indexes. The scores are given by the superior, colleagues and subordinates. In this case, employees can find their own shortcomings, make corresponding corrections and make progress.

5.2.4.2 Shape brand image

Jim Kathy, founder of UPS, said: "External performance of quality is extremely important. People identify enterprise image by visual and psychological feelings." If enterprises want to leave a good impression on the customer, employees must perform well and work hard, which are critical to the customer.

ZTO express should actively shape the company's excellent brand image from the following three aspects. First, standardize the external image of front-line personnel. Neat and unified dress, standardized operation, unified transportation tool, courteousness and timeliness will offer customers good service experience and leave a very good impression on them. These factors are together also known as the "brand experience". Second, pay attention to details. ZTO express can draft an employee handbook, stipulating the required morality and appearance, tone of speaking and and even walking speed etc.. Although these can be tiny details, it can ensure the high operation efficiency of the company, and form a good image for customers. Third, pay attention to the image of outlets and keep it clean and decent. When customers pick up the parcel by themselves, they can notice the conditions of the outlets, which is also one of the factors affecting the brand image and ought to be noticed.

5.2.4.3 Improve sales strategy

Promotion strategy is one of the basic strategies of marketing mix. Through promotions, advertising and sales promotion etc., ZTO express can transfer product information to consumers, arouse their attention and interest and stimulate their purchasing desire and purchasing behavior, thus achieving the purpose of expanding

sales.

In Customer satisfaction survey results of National Express Service Industry issued in 2016, respondents were investigated for their favorite promotions. 59% customers prefer on-site discount, 30% customers like freight vouchers, 7% customers love gifts and 4% customers like the way of lucky draw. Meanwhile, their way of learning the company is also investigated. 52% customers learn the company through the Internet, 18% customers learn the company through outlets, 23% customers learn the company through other people's introduction, 7% customers learn the company through newspapers or others. Therefore, most customers prefer on-site discount in promotions. In terms of channel, more than 50% customers choose the Internet. Therefore, based on the current situation, ZTO shall choose appropriate promotion strategies and advertising campaigns from the following aspects etc.. First, ZTO express can give on-site discount or vouchers to certain customers in certain time and location, which can also facilitate the sales in the off-season; Second, ZTO express's promotion information can be publicized via the Internet, which can to some degree save costs and achieve publicity effect. Third, ZTO express can pay attention to changes in the market, dynamics of competitors and the company's own business situation. Correspondingly, it can adjust the promotion strategy at any time, such as competitor soft rib strategy, differentiation strategy and holiday predominance strategy.

5.2.5 Implement diversified and integrated management

5.2.5.1 Implement diversified operation

Michael Porter, the master of enterprise management strategy, said that the competitive strategies for enterprises to win competitive advantages are diversity, cost leadership and specialization. ZTO Express is in specialized scope, which means concentration, but not necessarily singleness. In order to better support the specialization, the ZTO express shall develop the corresponding diversified business to create the profit, so as to provide the dynamic support for the specialization.

ZTO express can take diversified road from the following aspects: First, learn from SF Express. According to the company's resources, providing ordinary logistics services, trying to involve ordinary transport industry and implementing "cross-field" strategy. There are some differences between express mode and general transportation mode. For example, in terms of pick-up in transit store, express delivery seeks to rapid triage system, such as conveyor belt and mechanical manipulator; while forklift, manpower handling, loading and unloading are commonly used in ordinary delivery.   Therefore, based on different goods properties and needs, ZTO Express can set different modes of operation, further plan and improve the distribution of vehicles. Second, try to involve the whole supply chain management in the future. The whole supply chain management will become increasingly important logistics mode in the future, which is also the source of enterprise's profit growth. ZTO Express can do some preparation and accumulation for this. Third, try to innovate and try new things. In the future, ZTO express managers shall open the vision, carefully observe and cultivate a keen insight into the market, so as to find new opportunities and launch new products meeting demand of the market.

5.2.5.2 Implement customer-first philosophy

Chen Jialiang, FedEx Asia Pacific president, said that the future express competition mainly doesn't lies in a single brand, neither in the number of planes and vehicles, but in the final service. On the market, customers take the initiative, who have the right to choose the service. When selecting express, customers value more the service. As a result, only high quality service can facilitate customer satisfaction.

ZTO express should always adhere to the customer-first concept, and realize the following three service concepts: First, "Satisfying customers is to satisfy the boss". Customer is the source of wealth for an enterprise, which is the lifeline of the enterprise. Only by putting the interests of customers first can ZTO express win customer support, trust and continue business. In the end, ZTO express can win profit and make the boss satisfied. Second, "Learn from customers and improve customer

satisfaction". In the fierce market competition, fully understanding the needs of customers is the key to increase customer satisfaction. And "learning from customers" is the most direct and effective tool for understanding customer information and grasping business opportunities. In fact, "learning from customers" is to conduct comprehensive management of resources and information by means of information technology. Third, "tackle urgent needs of customers and provide personalized service". Employees shall consider from the customer's perspective. Based on different customer needs, all staff shall handle customers' worries and provide excellent services. Staff shall especially meet customers' urgent demand in a rapid and quality manner. This can not only improve customer satisfaction, but also affect the customer loyalty and may even obtain bright business opportunities.

5.3 Limitations of the study and future research direction

The quality of service has become the core competitiveness of the express company. A good long-term customer relationship can bring a larger development space for the enterprise. Integrating the customer requirements throughout the whole process of logistics service can greatly improve the service quality and customer satisfaction. The improvement of service quality can help enterprises to establish and maintain long-term customer relationships. Therefore, it's an urgent need to design index system from perspective of customer satisfaction and comprehensively evaluate express enterprises' service quality system.

Combined with the research results and related theory of domestic and foreign scholars on the service quality evaluation index system and evaluation method, based on various design indexes, this paper proposed evaluation index system, including 4 first grade indexes and 19 second grade indexes, from perspective of customer satisfaction. Then it made a detailed explanation of indexes and related influence on ZTO express. There are qualitative indexes and quantitative indexes, which basically cover all aspects of ZTO Express.

Meanwhile, the method of qualitative and quantitative analysis were adopted. The Kano model was adopted to determine the index weight and fuzzy analysis method was adopted for comprehensive evaluation. This paper constructs a complete, rigorous and scientific service quality evaluation system for ZTO Express; an empirical analysis of ZTO service quality was carried out. In the meantime, the operability of this model was verified.

In the future, ZTO express has bright prospects. It is bound to encounter various problems, but the quality of service is still the core part. This paper is only a phase summary, which may have many shortcomings due to tight schedule and lack of theory:

This paper adopts the fuzzy analysis method and Kano model.With the development of the express company, its service quality evaluation will also correspondingly show new features. The current methods shall be subject to further verification in order to actually be applied in service quality evaluation of express enterprises. Moreover, fuzzy analysis method and Kano model can not solve the flexibility problem in practice. It's expected that some scholars can improve the two methods or propose better evaluation method.

The sample size of this paper is tiny. Although it can reflect service quality status of ZTO express, it lacks accuracy and objectivity in reflecting the express enterprises' service quality in China, which calls for further improvement.

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Appendix

Service Quality Satisfaction Questionnaire Of ZTO Express

Dear Sir (or Madam):

Good morning/afternoon! This is a questionnaire on the quality of ZTO express service. Please spare a minute in your busy schedule, and help us complete this questionnaire according to your experience of the enterprise. Your valuable suggestions will be directly feedback to the ZTO express. Accordingly, the company will make some adaptation and adjustment. Your data is for academic research only and will not be used for other commercial purposes. Please feel free to fill in it.

Attached table 1: Likert scale

Item	Very dissatisfied	Dissatisfied	Basically satisfied	Satisfied	Very satisfied
Score	1	2	3	4	5

Attached table 2: Survey on satisfaction degree of ZTO express service quality

	Influencing factors of Service quality	Satisfaction degree
	Order responsiveness	
	Delivery timeliness	
	Inventory integrity	
Operation ability	Packaging processing compliance	
	Timeliness of goods delivery	
	Damage degree of goods	

	Attitude and motivation of service personnel	
Service ability	Professional quality and professional ability of service personnel	
	Communication skills and communication channels	
	Ability to resolve customer complaints	
	Service flexibility	
Information processing capability	Call center capability	
	Information service ability	
	Financial settlement capability	
	Performance of contract	
Customer evaluation survey	Value-added service capability	
	Market growth	
	Long-term development ability	
	Corporate culture and value identity	