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The Correlation Research of Service Quality, Customer Satisfaction and Customer Loyalty. Application to a shopping mall.

Master's Thesis

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Abstract

An enterprise that has a good development, cannot be separated from the customer's support. The customer, through the good service quality, will have a high evaluation of the enterprise, which is an important factor affecting the development of the company. The company should stand in the customer's point of view, listen to the customer's opinions and improve its deficiencies and quality to increase the level of service, satisfaction and loyalty. Even in companies with high levels of customer satisfaction and loyalty, there are areas that need to be improved. This paper takes Wanda Shopping Mall, one of the representative shopping malls in China, as an example, and investigates people's evaluation of the Wanda shopping mall and the impact on their quality of life by means of a questionnaire, analyzing people's positive and negative perception of the quality of the services. Data analysis of the questionnaire results is analyzed using multivariate techniques and SPSS. Through the research of the influence of service quality on customer satisfaction, and then on customer loyalty, customer's ideas customer ideas will be understood, and based on the analysis it will be possible to explore what services in the enterprise are deficient. According to the questionnaire feedback, data analysis and results optimization strategies will be analyzed to improve one by one, and ultimately, to achieve the purpose of increasing customer flow in shopping malls and reduce the negative evaluations of customers.

Key Words: Customer Satisfaction; Customer Loyalty; Service Quality; Optimization Strategy

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Chapter 1 Introduction

1.1 Background and Significance of Research

1.1.1 Research Background

In today's era, the economy has been rapid development, people's living standards have grown significantly, in terms of quality of life, people are no longer only concerned about food, clothing and warmth, but more people focus on the enjoyment of spiritual life. Today's society as the background, the service industry and the retail industry has received great attention, also obtained a better opportunity for development, which has led to a large number of enterprises have joined the industry, greatly increasing the degree of competition in the market, such industries are also facing many challenges. Nowadays, the change of consumers' lifestyle makes some enterprises change their original development mode. Consumers' growing demand for service quality and the acceptance and widespread use of information technology, mobile devices, internet and social media make people see more good service qualities and want to experience them. For the sake of their own development, enterprises need to reconsider their development strategies^[1]. Secondly, in today's economic development, the traditional business model is no longer new, e-commerce, live broadcasting and other novel business models are coming into the public's field of vision, which makes the market become diversified, but it also increases the degree of competition among enterprises. With such fierce competition, if the enterprises want to have a good development, they need to change their business strategies flexibility according to the market demand, in order to meet the fierce challenges.

In the process of enterprise development, the management of enterprise cannot consider the development of the enterprise according to the idea in the past, in their cognition, judging the customer's evaluation of the service only stops at whether the customer complain or not, they ignoring the customer's own idea. In the era of rapid economic development, enterprises should start from the perspective of convenience of service

and consideration of other people's feelings when improving their strategies, because they have to stand in the perspective of customers to evaluate the level of service. Customers are the core of the enterprise development, they gradually become the dominant players in the development of enterprises, they are no longer simply choosing products and services, and they are also no longer passively choosing products and services, but active, according to their own inner feelings to choose, it is also changed the development of the enterprise, according to the evaluation of different people on the service, in order to make improvements. At the same time, customers pay more attention to the psychological feeling, different services level determines different psychological feeling, which also increase the difficulty to the enterprise when they are developing themselves at the same time. The development was influenced by the intense competition, researchers and practitioners are aware of the importance of achieving a high level of customer satisfaction, especially in the service industry, where many enterprises focus on service quality improvement in order to improve customer satisfaction^[2]. The level of the service quality affects the customer satisfaction and customer loyalty, and the customer satisfaction and customer loyalty are also affected the development of the enterprise. Therefore, the enterprise should take the customer satisfaction and customer loyalty as the top priority and they need to explore how to attract more customers through good service.

It has been found by different scholars that customer satisfaction and customer loyalty has become one of the factors that are taken into consideration in the development of various enterprises. People's understanding and research on customer satisfaction have also reached a high degree, and the theoretical system is relatively perfect. In the fierce market competition, good service quality can achieve sustainable competitive advantage through customer satisfaction and loyalty. Therefore, the direct and indirect relationship between service quality, customer satisfaction and customer loyalty are an important factor for enterprise success. Moreover, many people believe that quality service is an important factor to improve customer satisfaction and customer loyalty. Customers are the focus of service, and enterprises should try their best to meet

customers' needs and expectations, so as to improve customers' evaluation of enterprises^[3]. Wanda shopping mall as a representative of the enterprise, it will also appear some shortcomings in the process of the development, for example, because one of their own services led to a decrease in customer satisfaction, then led to a decrease in customer loyalty, in order to avoid such a phenomenon, enterprises need to make timely adjustments in response to customer feedback on their own services, and they also need to put forward strategies that can benefit their own development, so as not to cause unnecessary losses to the enterprise.

1.1.2 Research Significance

(1) Theoretical Significance

At the present time, there are many researches on the service quality, customer satisfaction and customer loyalty, this paper will summarize the relationship between service quality, customer satisfaction and customer loyalty based on previous researches, and then establish an analytical model to explore how service quality affects customer satisfaction, then affects customer loyalty. Draw the relevant conclusions and apply them to the practical work, analyze its deficiencies and put forward corresponding improvement opinions to promote the development of enterprises.

(2) Practical Significance

Improving service levels and increasing the customer satisfaction and customer loyalty to the enterprise is an important strategy, it can help the enterprise to achieve stable development. This paper take Wanda shopping mall as the research object, and conducts a customer satisfaction survey on the customers of the Wanda shopping mall, analyzes the feedback obtained by Kruskal Wallis test, reliability analysis, validity analysis and correlation analysis and regression analysis respectively, analyzes the factors affecting customer satisfaction and customer loyalty under the current market in depth and in detail, explores the customer's consumption behavior, understands the importance of customer's evaluation on the satisfaction of the service, and gives relevant suggestions to improve customer satisfaction and customer loyalty. The propose of this paper is to

help enterprise understand the customer status and the ideas of the customer, help them to improve service level, finally to provide a theoretical guidance for the stable development of the enterprise.

1.2 Research Content and Research Method

1.2.1 Research Content

Reading more reference about the theme, in order to understand some theory about service quality, customer satisfaction and customer loyalty, take the customer of the Wanda shopping mall as the subject of the research, collecting the customers evaluation of various services in the Wanda shopping mall by means of the questionnaire, explore the link between service quality, customer satisfaction and customer loyalty. And formulate hypotheses, use SPSS and other application to validate and analyze the hypotheses, finally, draw the conclusions, and make responsible suggestions and improvement methods for shortcomings.

1.2.2 Research Method

(1) Literature Research Method

Through a review of the research by different scholars, organize and research the theory related to the service quality, customer satisfaction and customer loyalty, providing a foundation for the paper.

(2) Questionnaire Method

Through the previous research literature, summarize the appropriate questionnaires, then distribute them to the customers who have experienced the Wanda shopping mall services, finally returned the questionnaires, and organized the obtained data feedback.

(3) Empirical Research

Use SPSS and other application to analyze the data from the questionnaire, and verify the hypotheses. The data from the questionnaire is real and reliable, propose some solutions effectively by analyzing the data from the questionnaire.

1.3 Research Idea

First of all, through reading a lot of literature, understand the definition of service quality, customer satisfaction and customer loyalty, and define the service quality as the independent variable, the customer satisfaction and customer loyalty as the dependent variable. According to the relevant variables, establish the research model, and put forward the relevant hypothesis. Secondly, through the way of questionnaire survey, collect the relevant data, and use statistical methods to analyze the questionnaire data, then through the obtained data to verify and analyze the hypothesis proposed before, and finally make the conclusion. According to this paper, explore how service quality affects customer satisfaction and then customer loyalty. Finally, through the verified conclusions, analyze the shortcomings in the service, and then propose some optimization strategies.

1.4 The Structure of the Paper

This paper can be divided into six chapters.

Chapter 1: Introduction, firstly, describe research background, research significance and research method, and then, propose the whole research ideas for this paper and overall framework of the paper, let all the readers can understand this paper clearly.

Chapter 2: The elaboration of relevant theories, elaborate the relevant theories of service quality, customer satisfaction and customer loyalty. Firstly, let all the readers understand the definition of each word clearly, then let them understand the relationship between all the words through read relevant references.

Chapter 3: Empirical research, propose the hypotheses for the current research, design a suitable questionnaire based on the previous survey, receive the data through the distribution of the questionnaire, use SPSS and other application to analyze the data obtained, verify the hypotheses proposed.

Chapter 4: Discover the problems, analyze the data obtained in the previous chapter, explore which services need to be improved in the shopping mall.

Chapter 5: Propose the suggestions, in response to the deficiencies in the services, put

forward some suggestions and corresponding solutions, make the enterprise have a better development.

Chapter 6: Conclusion, make a conclusion at the end of the paper, and then put forward some expectations to the future development path.

Summary: In the first chapter, the introduction, it explains the background and significance of the research topic, so that readers have a clearer understanding of the research topic. Then it expounds the content and method of the research, and briefly introduces the content and research methods of the thesis. It also provides an overall research idea and organizational structure, so that readers can have a clear understanding on the structure of the whole thesis. At the same time, the first chapter introduces three topics related to the thesis, service quality, customer satisfaction and customer loyalty, so that readers can have a general understanding of the topic of the paper before reading the next chapter.

Chapter 2 Literature Review of Relevant Theories

2.1 The Theory of Service Quality

The concept of service quality emerged in the late 1970's, and since it was introduced, it has received a lot of attention from researchers and practitioners. In the past, the concept of service quality has been very important to the organizations and it has a very strong impact on the performance, customer satisfaction, customer loyalty and revenue generating capacity of the organization.

In the 1980s, Parasuraman, Zeithaml, Berry and others proposed the conceptual framework of service quality, and they found several gaps in service providers, that is, consumer expectations, service quality specification gaps, service delivery gaps, external communication gaps, and gaps between customer expectations and actual service perception received, which they define as service quality, these may affect customer perception of service quality. In subsequent research, they proposed five dimensions: tangibility, reliability, responsiveness, assurance, and empathy^[4]. These dimensions are widely accepted and used by people. They use five different parts to introduce the service quality that received by customers.

According to Abdullah and Afshar, it is important to distinguish the concept of goods and services because they have different characteristics, the former is more tangible and is an object, while the latter is intangible and is a concrete manifestation. The most important and unique feature of a service is that it is a process, not an object^[5]. In the process of experiencing the service, people will have different feelings due to the service experience, the experience is better, people's feelings are better, the experience is poor, and the feeling is also poor.

Service is a continuous interaction process between customers and service providers, including a series of intangible activities to provide quality solutions to customers' problems (Gronroos, 2004). High quality of service is the key for enterprises to gain competitive advantages, and customer satisfaction depends on their perception of service quality and trust in service providers (Ismail et al, 2006; Aydin & Ozer, 2005;

Parasuraman et al., 1988). By providing better service to customers, enterprises can restore customers' perception of service quality^[6].

Gronroos believes that service quality is essentially a perception of customers, and it is a subjective experience process of customers, customers make a comparison between perceived service performance and their own expectations, and the result of the comparison perceived service quality. Some studies have concluded that service quality is a measure of whether the levels of service meet customer expectations^[7].

Lewis and Booms believe that the assessment of service quality of customers is through the comparison of expected service and delivered service^[8]. Service quality is more important to the value perception, because the service quality will affect the customer satisfaction and their subsequent conduct.

After some other research it was concluded that the service quality is defined as the customer get it and they want to pay for it, rather than the supplier put into it (Drucker, 2007, 206). In some previous research, the service quality was defined as the service satisfy the customer's demand or the extent of the customer's expectation (Lewis & Mitchell, 1990; Dotchin & Oakland, 1994), but Zeithaml & Bitner (1996) conceptualized the service quality as the customers' overall impression of the service weakness and excellence. Therefore, the service quality often conceptualized the perceived difference between the expected service performance and actual service performance (Bloemer et al, 1999; Kara et al, 2005)^[9].

2.2 The Theory of Customer Satisfaction

Customer satisfaction is an evaluation that people make after experiencing something or the service. Satisfaction reflects people's evaluation of something, it represents that people give a high level or low level of evaluation to some products or the services, it is a psychological feeling, sometimes it will be lower than people's sense of experience of something, or it will be higher than people's sense of experience of something. The customer satisfaction is customer's expectation, it is an evaluation to the enterprise, the level of customer satisfaction is higher, the level of customer's evaluation of enterprise

is much higher, customer satisfaction will not remain constant, on the contrary, it will change as the development of enterprise and people's feel. In general, some products or services cannot be satisfied by all people at the same time, so the enterprise need to understand the various habits and preferences of different people, so they can have an opportunity that making more people have a higher level of satisfaction.

Fornell (1992) believes that customer satisfaction refers to the feelings formed based on the experience process by customers after purchasing products or experiencing services. At the same time, Ningsih and Segoro defined customer satisfaction as the attitude, evaluation and emotional response shown by consumers after the purchase process, which showed customers' evaluation of products or services. Ramayah et al. defined customer satisfaction as customers' overall evaluation of service providers^[10].

Customer satisfaction is more important to future purchase intent and customer loyalty (Edward and Sahadev, 2011). In generally, customer satisfaction can reflect the customer's perception of enterprise's service positively, so increase the level of customer satisfaction is more important to customer loyalty (Watson et al, 2015)^[11]. Therefore, enterprise need to understand that satisfy the customer's need and their expectations is so important to them, increase the level of satisfaction, the enterprise will attract more customer.

For people, satisfaction is a feeling of people, it was generated when people finish the experience of something, they usually compare it with their expectations. In other words, when people compare the experiential feelings with the previous expectations, they will have a satisfaction of it. If people's evaluation is very good, it indicates that they are very satisfy with something. If people's evaluation is very poor, it indicates that they are very dissatisfy with something.

Through the study of some theories, a good reputation can help the enterprise to develop, it indicates that enterprise have a good work attitude and service attitude, people also satisfy their work and attitude, it can help enterprise to have more customers. A good relationship also can help the enterprise to develop, the customer who have a good relationship with enterprise will recommend the products and services to their family

and their friends, which not only increase the number of customers, but also help the enterprise have a high profit.

2.3 The Theory of Customer Loyalty

Customer loyalty refers to the behavior that people have a better evaluation and impression of certain products or services, and after a period of time there will be repeated experience. It is mainly manifested in people's actions, for example, there are two catering stores, one catering store have a very good service and attitude, another has a very poor attitude and service, people are more prefer to choose the catering store with good service and attitude. Over time, people will often choose the catering store with very good service and attitude, and finally the catering store will gain higher loyalty from people. If people have higher loyalty, it indicates that the enterprise have a plenty of customers, it can help them to develop their business and increase their revenue.

Customer loyalty is multidimensional, and it is also a key concept in the service delivery and the formulation of service marketing strategies. The key management agenda of the service industry is to formulate strategies to enhance customer loyalty, thus driving business growth and promoting business sustainability. Good loyalty can help enterprises increase revenue and reduce the cost of increasing the number of customers and retaining the original customers^[12]. In other words, when people's evaluation of the company's product or service is very high, they may have repeated behaviors, or they may recommend to others, so that the enterprise not only retains the origin customers, but also attract some new customer, which is good for the development of the enterprise. Zeithaml and other people think that the customer loyalty can be a good behavior to the enterprise, through the likelihood of customer do the repeat business with the particular retailer, the brand can have a better publicity^[13].

The enterprise can improve the satisfaction of loyal customer, it can be used as a marketing tool for the enterprise. The former researcher has defined the customer loyalty broadly in the name of behavioral and attitudinal loyalty. The two kinds of

different classification all explain the intention of customer's purchase, repurchase and recommendation of buying products and services. Walsh and other people suggest that the enterprise can provide a better product and service to the loyal customer, because their cost is lower than the new customer^[14].

In some area, the loyalty can be seen, people can see the level of the customer loyalty through whether the people always buy the same kind of things or in the same place, so only when the enterprise obtain the trust of customer, the index of the loyalty can be increase.

Through the use of experience and experimental data, it can be concluded that loyalty is not only a long-term attitude, but also a long-term behavior. With the growth of time, a variety of experiences will make this behavior more and more intense, and then satisfaction becomes important, only when people are satisfied with these experiences, they can have a positive impact on long-term loyalty^[15]. Therefore, loyalty is crucial for any enterprise, and it can also bring stable long-term development for the enterprise.

2.4 The Relationship of Service Quality and Customer Satisfaction

There are many research of the relationship of service quality and customer satisfaction, many researchers and scholars have confirmed the relation of service quality and customer satisfaction. Some people think that these two words have a similar concept, because they represent a high correlation (Oliva et al). But other people have found that there has a difference between service quality and customer satisfaction (Sureshchandar et al, 2002; Bitner & Hubbert, 1994). But in a previous research, Oliver found that service quality is comes before customer satisfaction, these two words have a very close relationship^[16].

After research, Parasuranman et al. (1988) and Garuana (2002) found a positive correlation between service quality and customer satisfaction. Similarly, Linier (2013) also found that service quality would affect customer satisfaction. Nathan and Elsaghier (2012) also believe that service quality has a positive impact on customer satisfaction, which means that higher quality service will attract more repeat customers and generate

recommendation intention and intention^[17]. The level of service quality is one of the keys to affect customer's satisfaction, enterprise can use many ways to improve customer's satisfaction, for example, provide a good service, high quality products, maximizing the usefulness of the product, all of the methods can improve the customer's satisfaction. On the contrary, if the enterprise provides a poor service, people will have a bad impression of it, they will dissatisfy the products and services, finally the satisfaction will not high.

Enterprise can take the improvement of service quality as a goal, it correlates with the satisfaction, when they are shopping, a good service quality can make them have a good quality experience. Therefore, the enterprise can focus on the service quality as the developmental priority, improve the level of satisfaction. When the enterprise knows people's evaluation, they can improve the deficiency of service by people's evaluation. Service quality and customer satisfaction is an important part of enterprise development, providing a good service quality can improve customer's experience, attract more customers, improve customer satisfaction of enterprise, and also increase the revenue. Therefore, if the enterprise wants to have a better development, they need to continue to improve the development of service quality, pay attention the needs of customer and their ideas, improve the quality of service itself, the customer satisfaction will be improved, so as to have a greater competitive advantage in the market.

2.5 The Relationship of Service Quality and Customer Loyalty

Good or bad service quality is one of the important criteria for customer to evaluate the enterprise, a good service quality can increase the level of customer satisfaction and loyalty to the enterprise significantly, if the enterprise has a high level of satisfaction and loyalty, there will be an advantage to increase their operational revenue.

Service quality also plays a mediating role in customer loyalty, it mainly represents that service quality affects the customer satisfaction, then affects customer loyalty. Satisfaction is considered to be an important factor influencing customer loyalty, and service quality can affect customer satisfaction directly, so improving service quality

can affect customer loyalty indirectly.

Good service quality can improve customer loyalty to the enterprise, the service quality is much better, the evaluation will be much higher, then people will experience more times, finally there will be formed a higher loyalty. On the contrary high loyalty indicates that customer's evaluation is much higher, the service is much better, which is the best evaluation for the enterprise, so the good relationship between service quality and customer loyalty brings more advantages to the development of the enterprise.

Gain customer loyalty and retain old customer is the key to success in the competition, if the enterprise wants to succeed in the market, the key direction is customer, they need to focus on relation with customer. Whether it is from the development of enterprise itself or the service of enterprise itself, they must to be perfectly, they need to make the customer believe that the enterprise is really listening their ideas and their opinions. There are many factors affecting customer loyalty, such as service quality, consumer satisfaction, trust, spirit of devotion, communication, switching cost (Bobâlcă, 2014) (Doney and Cannon, 2017)^[18]. For example, when people shopping in a shopping mall, the staff can introduce the product and answer the doubt to them patiently and smilingly, it will give the customer a good impression of the shopping mall, in the mind of the customer, they will have a good evaluation of the shopping mall, the good service, the good attitude will affect their willingness to buy again.

2.6 The Relationship of Customer Satisfaction and Customer Loyalty

After the experience, customers will evaluate the experience, that is, whether they are satisfied with the experience process. If the satisfaction is high, it indicates that people's evaluation is still relatively high, and people may go to experience the service next time. After more experiences, if the satisfaction and evaluation are still very high, there will be formed loyalty, that is, people have a good impression on the enterprise, and the service or product provided by enterprise is also worthy to trust and experience.

Although customer satisfaction and customer loyalty are two different concepts, they are still relatively related. Customer loyalty refers to the end result of overall feeling

and accumulated experience of the customer in the enterprise. Customer satisfaction can lead to customer loyalty, because people tend to be rational and risk averse, they are more inclined to reduce risks and cooperate with enterprises with good experience. There are also many types of relationships between customer satisfaction and customer loyalty. For example, satisfaction is the core of loyalty, satisfaction is one of the important components of loyalty, satisfaction and loyalty are the components of final loyalty, and satisfaction is the starting point of loyalty^[19]. Although these two concepts have a certain correlation, there are still some people who will confuse the two concepts, satisfaction is a psychological performance, it is people's inner thoughts, and loyalty is a specific performance, when people have a high degree of satisfaction, they may to buy something again. Customer loyalty is a kind of improvement of customer satisfaction. When enterprises pay attention to the satisfaction, they should also be aware of the importance of loyalty, so that enterprises can have a good development.

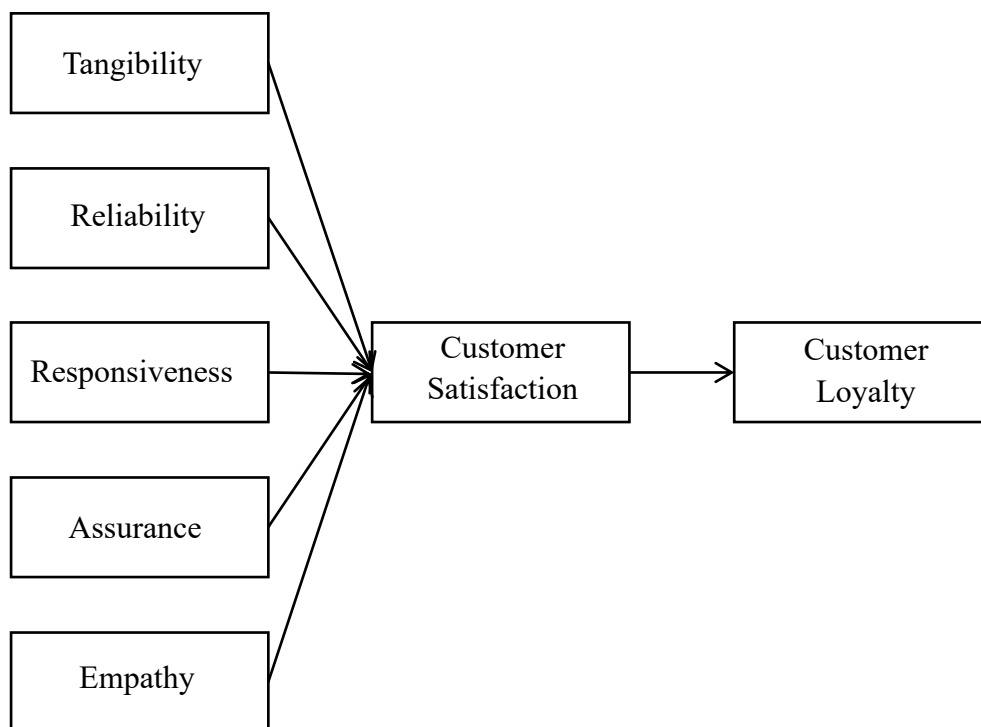
Summary: In the second chapter, according to the three variables proposed in the previous chapter, read the relevant articles of other scholars, explained their definitions through the description of each variable in the paper, and expounded the relationship between different variables. After understanding the relevant theories, there will be build a research models in the next chapter, and then distribute questionnaires to propose relevant hypotheses to verify the relationship between variables. Finally, use the results of analyzing the data to validate the proposed hypothesis.

Chapter 3 The Empirical Research of Service Quality, Customer Satisfaction and Customer Loyalty

3.1 Establish Research Model

Through the research of the theories of service quality, customer satisfaction and customer loyalty, this paper will be established on the basis of these variables. Therefore, in this model, service quality is the independent variable of the research, customer satisfaction and customer loyalty are the dependent variable, through the established research model, explore the relationship between these three. As show the chart 3.1:

Chart 3.1



3.2 Research Hypothesis

1. Service Quality affects Customer Satisfaction

Service quality and customer satisfaction are one of the key factors for enterprise success, they have an inextricably relationship. When the enterprise provides high

quality product and service to people, the customer's evaluation for enterprise will be higher, then the degree of customer satisfaction will be improved.

Customer's perceived value is based on the customer service experience, it also influences their degree of satisfaction (El-Adly, 2019). For the enterprise, customer satisfaction depends on quality (Song et al. 2022). Therefore, the influence of service quality on customer satisfaction is the key to enterprise success^[20]. Parasuraman and other people put forward a new service quality evaluation system in the service industry based on the total quality management theory, they divided the service quality into five parts, tangibility, reliability, responsiveness, assurance, empathy. The following research hypotheses were put forward based on the above-mentioned model:

H1-1: There is a positive effect between tangibility and customer satisfaction;

H1-2: There is a positive effect between reliability and customer satisfaction;

H1-3: There is a positive effect between responsiveness and customer satisfaction;

H1-4: There is a positive effect between assurance and customer satisfaction;

H1-5: There is a positive effect between empathy and customer satisfaction;

2. Service Quality affects Customer Loyalty

Customer's perception of service quality is the key factor affecting customer loyalty (Caruanan, 2002, Kotler&Keller, 2012), the customer's evaluation of the service (quality) and their reaction to the service provider (loyalty) are important for maintaining business relationships (Oliver, 2006)^[21]. Service quality affect the customer loyalty, nowadays, many researchers drown conclusions on the relationship between service quality and customer loyalty. Based on the discussion, the following hypothesis are proposed:

H2-1: There is a positive effect between tangibility and customer loyalty;

H2-2: There is a positive effect between reliability and customer loyalty;

H2-3: There is a positive effect between responsiveness and customer loyalty;

H2-4: There is a positive effect between assurance and customer loyalty;

H2-5: There is a positive effect between empathy and customer loyalty;

3. Customer Satisfaction affects Customer Loyalty

After putting forward the relevant theories of customer satisfaction and customer loyalty, some researchers believe that customer satisfaction is an important information affecting customer loyalty. After learning about the relationship between customer satisfaction and customer loyalty, people believe that the improvement of customer satisfaction has a positive effect on customer loyalty. According to the researcher's theories, the following hypothesis are proposed:

H3-1: There is a positive effect between customer satisfaction and customer loyalty;

3.3 Research Design

3.3.1 Operation Definition of the Research Variables

It is an explanation of the variables of the research in terms of some specific actions, characteristics and indicators. That means turning the more abstract concepts of research into something observable and testable.

The variables of this research are service quality, customer satisfaction and customer loyalty, which correspond to the independent variable, and dependent variable respectively. The variables in this research are explained from some specific actions, characteristics and indicators.

(1) Service Quality

In this research, through understand the SERVQUAL model of service quality proposing by Parasuraman and other people, they divided the service quality into five different parts, tangibility, reliability, responsiveness, assurance and empathy, each five parts corresponds to its own characteristics. The five parts are represented as, the first one is tangibility, it corresponds the actual facilities and specialized equipment of certain sites, and some requirements for service personnel, etc. For example, whether some enterprises have specialized equipment, whether certain facilities and equipment have a high appeal to people, and the requirements for the employees, etc. The second one is the reliability, it refers to whether the service staff is reliable, whether it can be accurate in the face of the customer's requirements, for example, whether the enterprise is reliable and trustworthy, whether they can provide services to customers with high

efficiency. The third one is the responsiveness, it is mainly reflected in whether the enterprise can answer the need of customers quickly when customer express their needs, for example, whether the service provided by the enterprise to customers is timely, and whether the employees will neglect the requirements of customers. The fourth one is the assurance, whether the staff is skilled and familiar with the professional knowledge of the work, whether the staff is friendly to the customer, whether they are trustworthy and whether the customer feels at ease when they are shopping. The fifth one is the empathy, whether employees really care about customers and help customers solve problems, whether the enterprise believes that customers in the most important and considers the ideas of customers.

Chart 3.2 Operation Definition of the Service Quality

Variable	Operational Definition
Tangibility	Operational facilities, specialized equipment and personnel specifications.
Reliability	Reliability, trustworthiness of employees and enterprises.
Responsiveness	Enterprises and employees can respond quickly to customer's requests.
Assurance	Employees are familiar with every professional knowledge and skills. Customer feels at ease.
Empathy	Customers is most important and care about their feelings at all time.

(2) Customer Satisfaction

Customer satisfaction is a psychological phenomenon, and there is no practical explanation, it is people's evaluation of a certain product or service. The level of satisfaction is depending on the product or service itself.

Chart 3.3 Operational Definition of Customer Satisfaction

Variable	Operational Definition
Customer Satisfaction	When customer face the introduction of service personnel and a certain service, customer will evaluate according to their own feelings.

(3) Customer Loyalty

Customer loyalty is based on customer satisfaction. When customers are satisfied with a certain product or service, they may want to experience it again. When the satisfaction level is high enough, loyalty will increase.

Chart 3.4 Operational Definition of Customer Loyalty

Variable	Operational Definition
Customer Loyalty	It is mainly reflected in whether people depend on the mall when shopping, and then evolve into the behavior of repeated choice.

3.4 Research Process

3.4.1 Descriptive Statistics of the Sample

In descriptive statistics, sort out and summarize the data of samples by charts or other methods, and then explain and analyze the data.

This time, the respondent was the customer of Wanda shopping mall, collect people's evaluation of Wanda shopping mall by the way of distributing questionnaires. At last, a total of 258 valid questionnaires were collected.

Analyze the recovered questionnaires to obtain statistical data.

(1) The Gender of Respondents

In the survey of the gender of respondents, the number of men is 99, account for 38.37%

of the total; the number of women is 159, account for 61.61% of the total. The overall distribution of gender in the sample is as follows:

Chart 3.5 Gender Statistics

Gender	Frequency	Percent
Male	99	38.4
Female	159	61.6
Total	258	100

(2) The Age of Respondents

In the survey of the age of respondents, the age group with the largest proportion is 36-40 years old, the total number is 49 people, account for 18.99% of the total; the age group with the smallest proportion is under 20 years old, the total number is 6 people, account for 2.33% of the total. The number of other age groups of the respondents respectively are, 21-25 years old, the total number is 37 people, account for 14.34% of the total; 26-30 years old, the total number is 21 people, account for 8.14% of the total; 31-35 years old, the total number is 45 people, account for 17.44% of the total; 41-45 years old, the total number is 36 people, account for 13.95% of the total; 46-50 years old, the total number is 25 people, account for 9.69% of the total; over 50 years old, the total number is 39 people, account for 15.12% of the total. The overall distribution of age in the sample is as follows:

Chart 3.6 Age Statistics

Gender	Frequency	Percent
Less than 20	6	2.3
21-25	37	14.3
26-30	21	8.1
31-35	45	17.4
36-40	49	19

Chart 3.6 Age Statistics

Gender	Frequency	Percent
41-45	36	14
46-50	25	9.7
50 and above	39	15.1
Total	258	100

(3) The Education Backgrounds of the Respondents

In the survey of the educational backgrounds of respondents, the largest proportion of education backgrounds of the respondents is college degree, the total number is 86 people, account for 33.33% of the total; the smallest proportion of education backgrounds of the respondents is high school degree, the total number is 27 people, account for 10.47% of the total. The number of other educational backgrounds of the respondents respectively are, junior high school degree, the total number is 42 people, account for 16.28% of the total; technical secondary school degree, the total number is 29 people, account for 11.24% of the total; bachelor degree or above, the total number is 74 people, account for 28.68% of the total. The overall distribution of education backgrounds in the sample is follows:

Chart 3.7 Education Background Statistics

Education Background	Frequency	Percent
Junior high school degree	42	16.3
Technical secondary school degree	29	11.2
High school	27	10.5
College degree	86	33.3
Bachelor degree or above	74	28.7
Total	258	100

(4) The Income of the Respondents

In the survey of the income of respondents, the largest proportion of income of the respondents is 3001-5000CNY, the total number are 90 people, account for 34.88% of the total; the smallest proportion of income of the respondents is 12000CNY and more, the total number is 8 people, account for 3.1% of the total. The number of other incomes of the respondents respectively are, less than 3000CNY, the total number is 58 people, account for 22.48% of the total; 5001-8000CNY, the total number is 72 people, account for 27.91% of the total; 8001-12000CNY, the total number is 30 people, account for 11.63% of the total. The overall distribution of the income in the sample is as follows:

Chart 3.8 Income Statistics

Income	Frequency	Percent
Less than 3000	58	22.5
3001-5000	90	34.9
5001-8000	72	27.9
8001-12000	30	11.6
12000 and above	8	3.1
Total	258	100

(5) The Occupation of the Respondents

In the survey of the occupation of respondents, the largest proportion of occupation of the respondents is other occupation, the total number is 176, account for 68.22% of the total; the smallest proportion of occupation of the respondents is financial staff and administrative personnel respectively, their number is equal, the total number are all 12 people, they both account for 4.65% of the total. The number of other occupations of the respondents respectively are, student, the total number is 22 people, account for 8.53% of the total; marketing personnel, the total number is 21 people, account for 8.14% of the total; teacher, the total number is 15 people, account for 5.81% of the total. The

overall distribution of the occupation in the sample is as follows:

Chart 3.9 Occupation Statistics

Occupation	Frequency	Percent
Student	22	8.5
Marketing staff	21	8.1
Financial staff	12	4.7
Administrative staff	12	4.7
Teacher	15	5.8
Other	176	68.2
Total	258	100

3.4.2 Descriptive Statistics of Variables

3.4.2.1 Descriptive Statistics of Service Quality

(1) Tangibility

Chart 3.10 Descriptive Statistics of Tangibility

	N	Minimum	Maximum	Mean	Std. Deviation
The services offered by Wanda shopping mall are very attractive	258	1	7	2.31	1.199
Wanda shopping mall's image logo is striking	258	1	5	2.12	1.074
The information content provided by Wanda shopping mall is closely related to its services	258	1	7	2.24	1.124

According to the above chart, in the descriptive statistics of tangibility, the first question,

"The services offered by Wanda shopping mall are very attractive," its average value is 2.31, the standard deviation is 1.199. The second question, "Wanda shopping mall's image logo is striking", its average value is 2.12, the standard deviation is 1.074. The third question, "The information content provided by Wanda Shopping Mall is closely related to its services", its average value is 2.24, the standard value is 1.124.

According to the data in the chart, the overall level of tangibility service is low, the degree of dispersion is large, and different customers have different evaluations of tangibility service. According to the average value, it can be seen that the score of the tangibility services provided by the shopping mall is not high, and there are still many aspects of the tangibility services that make customers dissatisfied, which need to be improved.

(2) Reliability

Chart 3.11 Descriptive Statistics of Reliability

	N	Minimum	Maximum	Mean	Std. Deviation
Wanda shopping mall is genuinely trying to solve customers' problems	258	1	6	2.28	1.189
Wanda shopping mall puts customer service first	258	1	7	2.31	1.243
Wanda shopping mall has the will to fulfill its promises to customers	258	1	6	2.29	1.173
Wanda shopping mall is reliable	258	1	7	2.28	1.183
Wanda shopping mall is trustworthy	258	1	6	2.28	1.123

According to the above chart, in the descriptive statistics of Reliability, the first question, “Wanda shopping mall is genuinely trying to solve customers' problems”, its average value is 2.28, the standard deviation is 1.189. The second question, “Wanda shopping mall puts customer service first”, its average value is 2.31, the standard deviation is 1.243. The third question, “Wanda shopping mall has the will to fulfill its promises to customers”, its average value is 2.29, the standard value is 1.173. The fourth question, “Wanda shopping mall is reliable”, its average value is 2.28, the standard deviation is 1.183. The fifth question, “Wanda shopping mall is trustworthy”, its average value is 2.28, the standard value is 1.123.

According to the data in the chart, the overall level of reliability service is low, the degree of dispersion is large, and different customers have different evaluations of reliability service. According to the average value, it can be seen that the score of the reliability services provided by the shopping mall is not high, and there are still many aspects of the reliability services that make customers dissatisfied, which need to be improved.

(3) Responsiveness

Chart 3.12 Descriptive Statistics of Responsiveness

			N	Minimum	Maximum	Mean	Std. Deviation
Wanda shopping mall's employees handle business quickly			258	1	6	2.35	1.165
Wanda shopping mall's service response is fast			258	1	6	2.30	1.12
Wanda shopping mall's service speed is fast			258	1	6	2.33	1.129

According to the above chart, in the descriptive statistics of Responsiveness, the first

question, "Wanda shopping mall's employees handle business quickly", its average value is 2.35, the standard deviation is 1.165. The second question, "Wanda shopping mall's service response is fast", its average value is 2.30, the standard deviation is 1.12. The third question, "Wanda shopping mall's service speed is fast", its average value is 2.33, the standard value is 1.129.

According to the data in the chart, the overall level of responsiveness service is low, the degree of dispersion is large, and different customers have different evaluations of responsiveness service. According to the average value, it can be seen that the score of the responsiveness services provided by the shopping mall is not high, and there are still many aspects of the responsiveness services that make customers dissatisfied, which need to be improved.

(4) Assurance

Chapter 3.13 Descriptive Statistics of Responsiveness

	N	Minimum	Maximum	Mean	Std. Deviation
Wanda shopping mall's staff are always ready to help customers	258	1	6	2.33	1.186
Wanda shopping mall's staff always adhere to the standardization of operation in their work	258	1	6	2.35	1.165
Customers feel at ease when shopping at Wanda shopping mall	258	1	6	2.30	1.167

According to the above chart, in the descriptive statistics of Assurance, the first question, "Wanda shopping mall's staff are always ready to help customers", its average value is 2.33, the standard deviation is 1.186. The second question, "Wanda shopping mall's staff always adhere to the standardization of operation in their work", its average value

is 2.35, the standard deviation is 1.165. The third question, “Customers feel at ease when shopping at Wanda shopping mall”, its average value is 2.30, the standard value is 1.167.

According to the data in the chart, the overall level of assurance service is low, the degree of dispersion is large, and different customers have different evaluations of assurance service. According to the average value, it can be seen that the score of the assurance services provided by the shopping mall is not high, and there are still many aspects of the assurance services that make customers dissatisfied, which need to be improved.

(5) Empathy

Chapter 3.14 Descriptive Statistics of Empathy

	N	Minimum	Maximum	Mean	Std. Deviation
Wanda shopping mall cares about the needs of customers proactively	258	1	7	2.38	1.252
Wanda shopping mall's good service attitude can be throughout all aspects of the service	258	1	6	2.38	1.233
Wanda shopping mall understands customer habits proactively and recommends relevant products	258	1	6	2.42	1.261

According to the above chart, in the descriptive statistics of Assurance, the first question, "Wanda shopping mall cares about the needs of customers proactively", its average value is 2.38, the standard deviation is 1.252. The second question, “Wanda shopping mall's good service attitude can be throughout all aspects of the service”, its average

value is 2.38, the standard deviation is 1.233. The third question, “Wanda shopping mall understands customer habits proactively and recommends relevant products”, its average value is 2.42, the standard value is 1.261.

According to the data in the chart, the overall level of empathy service is low, the degree of dispersion is large, and different customers have different evaluations of empathy service. According to the average value, it can be seen that the score of the empathy services provided by the shopping mall is not high, and there are still many aspects of the empathy services that make customers dissatisfied, which need to be improved.

3.4.2.2 Descriptive Statistics of Customer Satisfaction

Chart 3.15 Descriptive Statistics of Customer Satisfaction

	N	Minimum	Maximum	Mean	Std. Deviation
The service of Wanda shopping mall makes me satisfied	258	1	6	2.27	1.107
I'm satisfied with the service experience of Wanda shopping mall	258	1	6	2.31	1.149
I had a good experience when I went to Wanda shopping mall	258	1	7	2.28	1.178
Overall, I am satisfied with Wanda shopping mall	258	1	7	2.30	1.15

According to the above chart, in the descriptive statistics of Customer satisfaction, the first question, "The service of Wanda shopping mall makes me satisfied", its average value is 2.27, the standard deviation is 1.107. The second question, “I'm satisfied with the service experience of Wanda shopping mall”, its average value is 2.31, the standard deviation is 1.149. The third question, “I had a good experience when I went to Wanda shopping mall”, its average value is 2.28, the standard value is 1.178. The fourth question, “Overall, I am satisfied with Wanda shopping mall”, its average value is 2.30,

the standard value is 1.15.

According to the data in the chart, customers' satisfaction with the services provided by shopping malls is low, and the degree of dispersion is large, and different customers' satisfaction evaluation of services is different. According to the average value, it can be seen that customers' satisfaction with shopping mall services is not high, and there are still many unsatisfactory aspects in various services provided by shopping mall. Therefore, enterprises should propose some service improvement methods to increase customer satisfaction.

3.4.2.3 The Descriptive Statistics of Customer Loyalty

Chart 3.16 Descriptive Statistics of Customer Loyalty

	N	Minimum	Maximum	Mean	Std. Deviation
I plan to continue shopping in Wanda shopping mall in the future	258	1	7	2.30	1.167
I am willing to continue shopping in Wanda shopping mall in the future	258	1	7	2.33	1.198
I will often go shopping in Wanda shopping mall in the future	258	1	7	2.34	1.216
I would like to recommend my friends to go shopping in Wanda shopping mall	258	1	7	2.34	1.245

According to the above chart, in the descriptive statistics of Customer loyalty, the first question, "I plan to continue shopping in Wanda shopping mall in the future", its average value is 2.30, the standard deviation is 1.167. The second question, "I am willing to continue shopping in Wanda shopping mall in the future", its average value

is 2.33, the standard deviation is 1.198. The third question, “I will often go shopping in Wanda shopping mall in the future”, its average value is 2.34, the standard value is 1.216. The fourth question, “I would like to recommend my friends to go shopping in Wanda shopping mall”, its average value is 2.34, the standard value is 1.245.

According to the data in the chart, customers' loyalty to shopping mall is low and the degree of dispersion is large. Different customers have different intentions on whether they are willing to go to shopping malls for experience in the future. It can be seen from the average value that the customer loyalty score is not high, and people have different views on whether they are willing to go to the shopping mall to experience in the future. It indicates that customers do not give a high evaluation of the services or products provided by the enterprise, and customers are reluctant to experience the service again, which leads to the decrease of customer loyalty. therefore, the enterprise needs to propose improvement methods to improve customer satisfaction and enhance loyalty.

3.4.3 Multigroup Analysis

After the descriptive statistical analysis of five dimensions of service quality, customer satisfaction and customer loyalty, use the Smart-PLS to make a multi-group analysis of gender.

Multigroup analysis can be used to determine whether there is a significant difference. Observe the path coefficient in the data, which is equivalent to the regression coefficient in regression analysis, to test whether there is a significant difference between variables. The P value of the path coefficient is less than 0.05, it indicates that there is a significant difference between variables; the P value is greater than 0.05, it indicates that there is no significant difference between variables.

Chart 3.17 Path Coefficient

	Male	Female	Replacement mean difference	2.50%	97.50%	Permutation p-value
Service Quality -> Customer Loyalty	0.315	0.376	-0.005	-0.428	0.471	0.834

Chart 3.17 Path Coefficient

	Male	Female	Replacement mean difference	2.50%	97.50%	Permutation p-value
Service Quality -> Customer Satisfaction	0.891	0.916	0	-0.086	0.075	0.548
Customer Satisfaction -> Customer Loyalty	0.643	0.578	0.005	-0.469	0.408	0.814

As can be seen from the above chart, in the relationship between service quality and customer loyalty, the path coefficient of males is 0.315, the path coefficient of females is 0.376, which indicates that females are higher than males in the influence of service quality on customer loyalty. However, the replacement p value is 0.834, which is higher than 0.05, indicating that gender has no significant difference in the impact of service quality on customer loyalty.

In the relationship between service quality and customer satisfaction, the path coefficient of males is 0.891, the path coefficient of females is 0.916, which indicates that females are higher than males in the influence of service quality on customer loyalty. However, the replacement p value is 0.548, which is higher than 0.05, indicating that gender has no significant difference in the impact of service quality on customer satisfaction.

In the relationship between customer satisfaction and customer loyalty, the path coefficient of males is 0.643, the path coefficient of females is 0.578, which indicates that males are higher than females in the influence of service quality on customer loyalty. However, the replacement p value is 0.548, which is higher than 0.05, indicating that gender has no significant difference in the impact of service satisfaction on customer loyalty.

According to the data in the chart, gender cannot be used as an influencing factor of service quality affecting customer satisfaction and customer loyalty. When enterprise consider the factors that affect customer satisfaction and customer loyalty, they can exclude gender as a factor.

3.4.4 Kruskal-Wallis Test

Use the method of Kruskal-Wallis Test to analyze the experimental data, it is a nonparametric test and it can test whether samples are in the same distribution. By observing the significance P-value, the P-value is less than 0.01, indicating that there is a significant difference between the variables. Test statistic H to determine the significance of the difference, the value of H is larger, it is more likely that there is a significant difference.

1. Service Quality and Customer Satisfaction

(1) Tangibility

Chart 3.18 Ranks

	Tangibility	N	Mean Rank
Customer satisfaction	1	93	62.19
	2	70	129.82
	3	73	184.79
	4	22	229.52
	Total	258	

Chart 3.19 Test Statistics^{a, b}

Customer satisfaction	
Kruskal-Wallis H	161.492
df	3
Asymp. Sig.	<.001

a Kruskal Wallis Test

b Grouping Variable: Tangibility

As can be seen from the above chart, the value of Kruskal-Wallis H is 161.492, the

value of df is 3, and the value of asymptotic significance is less than 0.001, the data in the chart shows that there are significant differences between the values. There is a close relationship between tangibility service and customer satisfaction.

(2) Reliability

Chart 3.20 Ranks

	Reliability	N	Mean Rank
Customer satisfaction	1	94	55.95
	2	62	130.06
	3	79	185.78
	4	20	233.15
	5	3	249.17
	Total	258	

Chart 3.21 Test Statistics^{a, b}

Customer satisfaction	
Kruskal-Wallis H	189.88
df	4
Asymp. Sig.	<.001

a Kruskal Wallis Test

b Grouping Variable: Reliability

As can be seen from the above chart, the value of Kruskal-Wallis H is 189.880, the value of df is 5, and the value of asymptotic significance is less than 0.001, the data in the chart shows that there are significant differences between the values. There is a close relationship between reliability service and customer satisfaction.

(3) Responsiveness

Chart 3.22 Ranks

	Responsiveness	N	Mean Rank
Customer satisfaction	1	84	48.17
	2	62	117.97
	3	84	187.27
	4	23	230.96
	5	4	216.88
	6	1	140.5
	Total	258	

Chart 3.23 Test Statistics^{a, b}

Customer satisfaction	
Kruskal-Wallis H	207.618
df	5
Asymp. Sig.	<.001

a Kruskal Wallis Test

b Grouping Variable: Responsiveness

As can be seen from the above chart, the value of Kruskal-Wallis H is 207.618, the value of df is 5, and the value of asymptotic significance is less than 0.001, the data in the chart shows that there are significant differences between the values. There is a close relationship between responsiveness service and customer satisfaction.

(4) Assurance

Chart 3.24 Ranks

	Assurance	N	Mean Rank
Customer satisfaction	1	87	48.79
	2	60	116.99
	3	83	188.1
	4	24	235.27
	5	3	249.17
	6	1	140.5
	Total	258	

Chart 3.25 Test Statistics^{a, b}

Customer satisfaction	
Kruskal-Wallis H	219.026
df	5
Asymp. Sig.	<.001

a Kruskal Wallis Test

b Grouping Variable: Assurance

As can be seen from the above chart, the value of Kruskal-Wallis H is 219.026, the value of df is 5, and the value of asymptotic significance is less than 0.001, the data in the chart shows that there are significant differences between the values. There is a close relationship between assurance service and customer satisfaction.

(5) Empathy

Chart 3.26 Ranks

	Empathy	N	Mean Rank
Customer satisfaction	1	89	51.53
	2	55	117.45
	3	73	181.96
	4	33	223.91
	5	7	205.93
	6	1	251.5
Total		258	

Chart 3.27 Test Statistics^{a, b}

Customer satisfaction	
Kruskal-Wallis H	205.433
df	5
Asymp. Sig.	<.001

a Kruskal Wallis Test

b Grouping Variable: Empathy

As can be seen from the above chart, the value of Kruskal-Wallis H is 205.433, the value of df is 5, and the value of asymptotic significance is less than 0.001, the data in the chart shows that there are significant differences between the values. There is a close relationship between empathy service and customer satisfaction.

2. Service Quality and Customer Loyalty

(1) Tangibility

Chart 3.28 Ranks

	Tangibility	N	Mean Rank
Customer loyalty	1	93	62.17
	2	70	132.31
	3	73	182.72
	4	22	228.59
	Total	258	

Chart 3.29 Test Statistics^{a, b}

Customer loyalty	
Kruskal-Wallis H	159.035
df	3
Asymp. Sig.	<.001

a Kruskal Wallis Test

b Grouping Variable: Tangibility

As can be seen from the above chart, the value of Kruskal-Wallis H is 159.035, the value of df is 3, and the value of asymptotic significance is less than 0.001, the data in the chart shows that there are significant differences between the values. There is a close relationship between tangible service and customer loyalty.

(2) Reliability

Chart 3.30 Ranks

	Reliability	N	Mean Rank
Customer loyalty	1	94	54.56
	2	62	130.04

Chart 3.30 Ranks

	Reliability	N	Mean Rank
	3	79	187.59
	4	20	232.68
	5	3	249
	Total	258	

Chart 3.31 Test Statistics^{a, b}

Customer loyalty	
Kruskal-Wallis H	197.689
df	4
Asymp. Sig.	<.001

a Kruskal Wallis Test

b Grouping Variable: Reliability

As can be seen from the above chart, the value of Kruskal-Wallis H is 197.689, the value of df is 4, and the value of asymptotic significance is less than 0.001, the data in the chart shows that there are significant differences between the values. There is a close relationship between reliability service and customer loyalty.

(3) Responsiveness

Chart 3.32 Ranks

	Responsiveness	N	Mean Rank
Customer loyalty	1	84	48.85
	2	62	118.52
	3	84	185.56

Chart 3.32 Ranks

	Responsiveness	N	Mean Rank
	4	23	226.41
	5	4	247.25
	6	1	176
	Total	258	

Chart 3.33 Test Statistics^{a, b}

Customer loyalty	
Kruskal-Wallis H	205.445
df	5
Asymp. Sig.	<.001

a Kruskal Wallis Test

b Grouping Variable: Responsiveness

As can be seen from the above chart, the value of Kruskal-Wallis H is 205.445, the value of df is 5, and the value of asymptotic significance is less than 0.001, the data in the chart shows that there are significant differences between the values. There is a close relationship between responsiveness service and customer loyalty.

(4) Assurance

Chart 3.34 Ranks

	Assurance	N	Mean Rank
Customer loyalty	1	87	52.87
	2	60	115.92
	3	83	184.21

Chart 3.34 Ranks

	Assurance	N	Mean Rank
	4	24	236.27
	5	3	240
	6	1	176
	Total	258	

Chart 3.35 Test Statistics^{a, b}

Customer loyalty	
Kruskal-Wallis H	203.803
df	5
Asymp. Sig.	<.001

a Kruskal Wallis Test

b Grouping Variable: Assurance

As can be seen from the above chart, the value of Kruskal-Wallis H is 203.803, the value of df is 5, and the value of asymptotic significance is less than 0.001, the data in the chart shows that there are significant differences between the values. There is a close relationship between assurance service and customer loyalty.

(5) Empathy

Chart 3.36 Ranks

	Empathy	N	Mean Rank
Customer loyalty	1	89	52.22
	2	55	122

Chart 3.36 Ranks

Empathy	N	Mean Rank
3	73	174.92
4	33	223.42
5	7	236.86
6	1	253
Total	258	

Chart 3.37 Test Statistics^{a, b}

Customer loyalty	
Kruskal-Wallis H	201.84
df	5
Asymp. Sig.	<.001

a Kruskal Wallis Test

b Grouping Variable: Empathy

As can be seen from the above chart, the value of Kruskal-Wallis H is 201.840, the value of df is 5, and the value of asymptotic significance is less than 0.001, the data in the chart shows that there are significant differences between the values. There is a close relationship between empathy service and customer loyalty.

3. Customer Satisfaction and Customer Loyalty

Chart 3.38 Ranks

Customer satisfaction	N	Mean Rank
Customer	1	90
Loyalty	2	65

Chart 3.38 Ranks

Customer satisfaction	N	Mean Rank
3	79	189.48
4	21	235.26
5	3	251.33
Total	258	

Chart 3.39 Test Statistics^{a, b}

Customer loyalty	
Kruskal-Wallis H	219.561
df	4
Asymp. Sig.	<.001

a Kruskal Wallis Test

b Grouping Variable: Customer satisfaction

As can be seen from the above chart, the value of Kruskal-Wallis H is 219.561, the value of df is 4, and the value of asymptotic significance is less than 0.001, the data in the chart shows that there are significant differences between the values. There is a close relationship between customer satisfaction and customer loyalty.

3.4.5 Reliability Statistics

After the questionnaire survey and data statistics, through the method of reliability statistics to analyze the data. Reliability statistics is an analytical method to test the validity and reliability of questionnaire evaluation, its detection method is that taking a measure of something, and measure it many times, after finishing the measure, check the degree of consistency of the results obtained, through the degree of consistency of the data analyzing whether the data obtained is reliable. A questionnaire will be

influenced by many factors in the research, it can affect the results of experimental research, cause the actual results differing with the expected results, the propose of using reliability statistics is to ensure the reliability and validity of collected data.

Reliability statistics is divided into two types, one type is internal reliability, one type is external reliability. Internal reliability is focus on the consistency of questionnaire structure, which is mainly reflected in whether the option of questionnaire is in the same direction. External reliability is generally about the time, focusing on the results obtained at different times. This research does not include the problems of time, this research will use the internal statistics to test the data.

When using reliability statistics to test the data, the Cronbach's alpha coefficient will be used in general, it is a method of checking whether the data is reliable, using the internal consistency of the detection as an indicator of reliability. After the detection, if the value obtained was larger, the internal consistency is higher, the reliability is higher, on the contrary, if the value obtained was smaller, the internal consistency is lower, the reliability is lower. After relevant research, it is found that the coefficient is generally higher than 0.7, indicating that the reliability is acceptable, the coefficient between 0.7 and 0.95, indicating that the reliability is higher acceptable, if the index is lower than 0.35, it indicates low reliability.

(1) Reliability Statistics of Service Quality

Chart 3.40 Reliability Statistics of Service Quality

Measurement item	Cronbach's Alpha	N of Items
Tangibility	0.886	3
Reliability	0.957	5
Responsiveness	0.967	3
Assurance	0.941	3
Empathy	0.954	3

Through the data analysis in the above chart, it is found that in the reliability statistics of service quality, the Cronbach's index of tangibility is 0.886; the Cronbach's index of reliability is 0.957; the Cronbach's index is 0.967; the Cronbach index of responsiveness is 0.941; the Cronbach index of empathy is 0.954. These values are between 0.7 and 0.98, which belong to high confidence. When collecting data on service quality, customer satisfaction and customer loyalty, it indicates that the obtained data on service quality are valid and reliable.

(2) Reliability Statistics of Customer Satisfaction

Chart 3.41 Reliability Statistics of Customer Satisfaction

Measurement item	Cronbach's Alpha	N of Items
Customer satisfaction	0.954	4

Through the data analysis in the above chart, it is found that in the reliability statistics of Customer satisfaction, the Cronbach's index of customer satisfaction is 0.954. The value is between 0.7 and 0.98, which belong to high confidence. When collecting data on service quality, customer satisfaction and customer loyalty, the obtained data on customer satisfaction are valid and reliable.

(3) Reliability Statistics of Customer Loyalty

Chart 3.42 Reliability Statistics of Customer Loyalty

Measurement item	Cronbach's Alpha	N of Items
Customer loyalty	0.982	4

Through the data analysis in the above chart, it is found that in the reliability statistics of Customer loyalty, the Cronbach's index of customer loyalty is 0.982. The value is greater than 0.7, which belong to high confidence. When collecting data on service quality, customer satisfaction and customer loyalty, the obtained data on customer loyalty are valid and reliable.

3.4.6 Validity Analysis

Validity analysis is a method of measuring whether a survey question express the research variable or dimension effectively, in general, some researchers can use validity analysis to determine whether research questions are responsible, or whether certain questions represent certain variables.

After the validity analysis, the KMO test statistics will be obtained, KMO test statistics can compare the simple correlation coefficient and partial correlation coefficient between different variables. The KMO value is higher than 0.8, it indicates that the validity of experiment is high, the KMO value is between 0.7-0.8, it indicates that the validity of experiment is good, the KMO value is between 0.6-0.7, it indicates that the validity of experiment is average, the KMO value is less than 0.6, it indicates that the validity of experiment is not good.

There is also have a data in the validity statistics, it is statistical significance, statistical significance is the evaluation of difference of some data in statistics. The value of statistical significance display more smaller, it indicates that there are more difference between things, if the value of statistics significance greater than 0.5, it indicates that the data result of this experiment is not significant, if the value of statistics significance less than or equal to 0.05, it indicates that the data result of this experiment is significant, if the value of statistics significance less than or equal to 0.01, it indicates that the data result of this experiment is very significant.

Chart 3.43 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.961
Bartlett's Test of Sphericity	Approx. Chi-Square	11245.042
	df	300
	Sig.	.000

From the above chart, the KMO value of these experiment is 0.961, it is higher than 0.8, it indicates that the validity of experiment is good. The value of Sig is 0.000, the value

is less than 0.01, it indicates that the result of Bartlett's Test of Sphericity of this experiment is very significant, there is a correlation between the variables.

3.4.7 Correlation Analysis

Correlation analysis is a statistical method used to compare the correlation between two different random variables or more random variables. The data of this experiment were analyzed by simple linear correlation coefficient (Pearson), the Pearson correlation coefficient ranges from $[-1,1]$, the Pearson correlation coefficient close to 1, it indicates that the correlation between variables is more stronger; the Pearson correlation coefficient close to -1, it indicates that the correlation between variables is more weaker; the Pearson correlation coefficient close to 0, it indicates that the variables are relatively independent, and there are no correlation.

It is generally believed that if the value is between 0.8-1, it indicates that the correlation of the research variables is very high; if the value is between 0.6-0.8, it indicates that the correlation of the research variables is high; if the value is between 0.4-0.6, it indicates that the correlation of the research variables is at a moderate level; if the value is between 0.2-0.4, it indicates that the correlation of the research variables is low; if the value is between 0-0.2, it indicates that the correlation of the research variables is very low, or they have no correlation.

After analyzing the value of Pearson coefficient, it also have to analyzed the value of the statistical significance, the value of statistical significance is greater than 0.5, it indicates that there is no correlation between the research variables; the value of statistical significance is less or equal to 0.05, it indicates that the correlation of the research variables is strong; the value of statistical significance less or equal to 0.01, it indicates that the correlation of the research variables is very strong.

1. The Correlation between Tangibility and Customer Satisfaction

(1) Tangibility

Chart 3.44 Tangibility and Customer Satisfaction

		Tangibility	Customer satisfaction
Tangibility	Pearson Correlation	1	.811**
	Sig. (2-tailed)		<0.01
	N	258	258
Customer satisfaction	Pearson Correlation	.811**	1
	Sig. (2-tailed)	<0.01	
	N	258	258

** Correlation is significant at the 0.01 level (2-tailed).

From the above chart, the Pearson Correlation is 0.811, the value is between 0.8-1, and the value of the Sig is less than 0.01, it indicates that the correlation between tangibility and customer satisfaction is very high. It indicates that when enterprises improve services related to tangibility, customer satisfaction will be higher and higher, which is a good development for enterprise.

(2) Reliability

Chart 3.45 Reliability and Customer Satisfaction

		Reliability	Customer satisfaction
Reliability	Pearson Correlation	1	.870**
	Sig. (2-tailed)		<.001
	N	258	258
Customer satisfaction	Pearson Correlation	.870**	1
	Sig. (2-tailed)	<.001	
	N	258	258

** Correlation is significant at the 0.01 level (2-tailed).

From the above chart, the Pearson Correlation is 0.870, the value is between 0.8-1, and the value of the Sig is less than 0.01, it indicates that the correlation between reliability and customer satisfaction is very high. It indicates that when enterprises improve services related to reliability, customer satisfaction will be higher and higher, which is a good development for enterprise.

(3) Responsiveness

Chart 3.46 Responsiveness and Customer Satisfaction

		Responsiveness	Customer satisfaction
Responsiveness	Pearson Correlation	1	.863**
	Sig. (2-tailed)		<.001
	N	258	258
Customer satisfaction	Pearson Correlation	.863**	1
	Sig. (2-tailed)	<.001	
	N	258	258

** Correlation is significant at the 0.01 level (2-tailed).

From the above chart, the Pearson Correlation is 0.863, the value is between 0.8-1, and the value of the Sig is less than 0.01, it indicates that the correlation between responsiveness and customer satisfaction is very high. It indicates that when enterprises improve services related to responsiveness, customer satisfaction will be higher and higher, which is a good development for enterprise.

(4) Assurance

Chart 3.47 Assurance and Customer Satisfaction

		Assurance	Customer satisfaction
Assurance	Pearson Correlation	1	.904**

Chart 3.47 Assurance and Customer Satisfaction

		Assurance	Customer satisfaction
		Sig. (2-tailed)	<.001
		N	258
Customer satisfaction	Pearson Correlation	.904**	1
		Sig. (2-tailed)	<.001
		N	258

** Correlation is significant at the 0.01 level (2-tailed).

From the above chart, the Pearson Correlation is 0.904, the value is between 0.8-1, and the value of the Sig is less than 0.01, it indicates that the correlation between assurance and customer satisfaction is very high. It indicates that when enterprises improve services related to assurance, customer satisfaction will be higher and higher, which is a good development for enterprise.

(5) Empathy

Chart 3.48 Empathy and Customer Satisfaction

		Empathy	Customer satisfaction
Empathy	Pearson Correlation	1	.862**
		Sig. (2-tailed)	<.001
		N	258
Customer satisfaction	Pearson Correlation	.862**	1
		Sig. (2-tailed)	<.001
		N	258

** Correlation is significant at the 0.01 level (2-tailed).

From the above chart, the Pearson Correlation is 0.862, the value is between 0.8-1, and

the value of the Sig is less than 0.01, it indicates that the correlation between empathy and customer satisfaction is very high. It indicates that when enterprises improve services related to empathy, customer satisfaction will be higher and higher, which is a good development for enterprise.

2. The Correlation between Service Quality and Customer Loyalty

(1) Tangibility

Chart 3.49 Tangibility and Customer Loyalty

		Tangibility	Customer loyalty
Tangibility	Pearson Correlation	1	.793**
	Sig. (2-tailed)		<.001
	N	258	258
Customer loyalty	Pearson Correlation	.793**	1
	Sig. (2-tailed)	<.001	
	N	258	258

** Correlation is significant at the 0.01 level (2-tailed).

From the above chart, the Pearson Correlation is 0.793, the value is between 0.6-0.8, and the value of the Sig is less than 0.01, it indicates that the correlation between tangibility and customer loyalty is high. It indicates that when enterprises improve services related to tangibility, customer loyalty will be higher and higher, which is a good development for enterprise.

(2) Reliability

Chart 3.50 Reliability and Customer Loyalty

		Reliability	Customer loyalty
Reliability	Pearson Correlation	1	.875**

Chart 3.50 Reliability and Customer Loyalty

		Reliability	Customer loyalty
Sig. (2-tailed)			<.001
N		258	258
Customer loyalty	Pearson Correlation	.875**	1
Sig. (2-tailed)		<.001	
N		258	258

** Correlation is significant at the 0.01 level (2-tailed).

From the above chart, the Pearson Correlation is 0.875, the value is between 0.8-1, and the value of the Sig is less than 0.01, it indicates that the correlation between reliability and customer loyalty is very high. It indicates that when enterprises improve services related to reliability, customer loyalty will be higher and higher, which is a good development for enterprise.

(3) Responsiveness

Chart 3.51 Responsiveness and Customer Loyalty

		Responsiveness	Customer loyalty
Responsiveness	Pearson Correlation	1	.864**
Sig. (2-tailed)			<.001
N		258	258
Customer loyalty	Pearson Correlation	.864**	1
Sig. (2-tailed)		<.001	
N		258	258

** Correlation is significant at the 0.01 level (2-tailed).

From the above chart, the Pearson Correlation is 0.864, the value is between 0.8-1, and the value of the Sig is less than 0.01, it indicates that the correlation between

responsiveness and customer loyalty is very high. It indicates that when enterprises improve services related to responsiveness, customer loyalty will be higher and higher, which is a good development for enterprise.

(4) Assurance

Chart 3.52 Assurance and Customer Loyalty

		Assurance	Customer loyalty
Assurance	Pearson Correlation	1	.872**
	Sig. (2-tailed)		<.001
	N	258	258
Customer loyalty	Pearson Correlation	.872**	1
	Sig. (2-tailed)	<.001	
	N	258	258

** Correlation is significant at the 0.01 level (2-tailed).

From the above chart, the Pearson Correlation is 0.872, the value is between 0.8-1, and the value of the Sig is less than 0.01, it indicates that the correlation between assurance and customer loyalty is very high. It indicates that when enterprises improve services related to assurance, customer loyalty will be higher and higher, which is a good development for enterprise.

(5) Empathy

Chart 3.53 Empathy and Customer Loyalty

		Empathy	Customer loyalty
Empathy	Pearson Correlation	1	.876**
	Sig. (2-tailed)		<.001
	N	258	258
Customer loyalty	Pearson Correlation	.876**	1

Chart 3.53 Empathy and Customer Loyalty

	Empathy	Customer loyalty
Sig. (2-tailed)	<.001	
N	258	258

** Correlation is significant at the 0.01 level (2-tailed).

From the above chart, the Pearson Correlation is 0.876, the value is between 0.8-1, and the value of the Sig is less than 0.01, it indicates that the correlation between empathy and customer loyalty is very high. It indicates that when enterprises improve services related to empathy, customer loyalty will be higher and higher, which is a good development for enterprise.

3. The Correlation between Customer Satisfaction and Customer Loyalty

Chart 3.54 Customer Satisfaction and Customer Loyalty

		Customer satisfaction	Customer loyalty
Customer satisfaction	Pearson Correlation	1	.923**
	Sig. (2-tailed)		<.001
	N	258	258
Customer loyalty	Pearson Correlation	.923**	1
	Sig. (2-tailed)	<.001	
	N	258	258

** Correlation is significant at the 0.01 level (2-tailed).

From the above chart, the Pearson Correlation is 0.923, the value is between 0.8-1, and the value of the Sig is less than 0.01, it indicates that the correlation between customer satisfaction and customer loyalty is very high. It indicates that when enterprise improve service quality, customers' satisfaction with service will increase, and then customers' loyalty will become higher and higher, which is a good development for enterprises.

3.4.8 Regression Analysis

After the correlation analysis of the research variables, the five dimensions of service quality and customer satisfaction, the five dimensions of service quality and customer loyalty, the customer satisfaction and customer loyalty all show a high correlation. In order to verify the theoretical model and the research hypothesis of the experiment, it will have the regression analysis to the research variables.

In the statistics, the regression analysis is an analytical method that can determine whether there is an interdependent relationship between different research variables. In the data, R square represents the degree of sample prediction, and observe the P-value to test whether there is a significant influence between variables. The P-value less than 0.01, it indicates that there is a significant influence between variables.

1. The Regression Analysis between Service Quality and Customer Satisfaction

(1) Tangibility

Chart 3.55 Model Summary b

R	R ²	Adjusted R ²	Std. Error of the Estimate	F	Sig. F
.811a	0.658	0.657	0.62958	492.642	<.001

a Predictors: (Constant), Tangibility

b Dependent Variable: Customer satisfaction

Chart 3.56 Coefficients a

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	0.399	0.094		4.25	<.001		
Tangibility	0.852	0.038	0.811	22.196	<.001	1	1

a Dependent Variable: Customer satisfaction

In the first chart, the R value of this experiment is 0.811, it indicates that there is a

strong linear relationship between tangibility and customer satisfaction. In this case, with the improvement of tangibility, customer satisfaction will also increase, it indicates that tangibility can affect the change of customer satisfaction. The R square is 0.658 and the adjusted R square is 0.657, which means that it can predict 65.7% samples. The F value is 492.642, and the significance P value is less than 0.001, it indicates that there is significant. In the second chart, the Standardized coefficient Beta is 0.811, it indicates that tangibility has a strong positive effect on customer satisfaction. Significance P-value is less than 0.001, it indicates that there is significant. VIF is 1, it indicates that there is no multicollinearity problem. Through the data of charts, it indicates that tangibility has a positive impact on customer satisfaction, which proves that hypothesis H1-1 is valid.

(2) Reliability

Chart 3.57 Model Summary b

R	R ²	Adjusted R ²	Std. Error of the Estimate	F	Sig. F
.870a	0.756	0.756	0.53131	795.172	<.001

a Predictors: (Constant), Reliability

b Dependent Variable: Customer satisfaction

Chart 3.58 Coefficients a

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	0.337	0.077		4.382	0		
Reliability	0.855	0.03	0.87	28.199	0	1	1

a Dependent Variable: Customer satisfaction

In the first chart, the R value of this experiment is 0.780, it indicates that there is a strong linear relationship between reliability and customer satisfaction. In this case, with the improvement of reliability, customer satisfaction will also increase, it indicates

that reliability can affect the change of customer satisfaction. The R square is 0.756 and the adjusted R square is 0.756, which means that it can predict 75.6% samples. The F value is 795.172, and the significance P value is less than 0.001, it indicates that there is significant. In the second chart, the Standardized coefficient Beta is 0.870, it indicates that reliability has a strong positive effect on customer satisfaction. Significance P-value is less than 0.001, it indicates that there is significant. VIF is 1, it indicates that there is no multicollinearity problem. Through the data of charts, it indicates that reliability has a positive impact on customer satisfaction, which proves that hypothesis H1-2 is valid.

(3) Responsiveness

Chart 3.59 Model Summary b

R	R ²	Adjusted R ²	Std. Error of the Estimate	F	Sig. F
.863a	0.745	0.744	0.54366	747.973	<.001

a Predictors: (Constant), Responsiveness

b Dependent Variable: Customer satisfaction

Chart 3.60 Coefficients a

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	0.333	0.079		4.198	<.001		
Responsiveness	0.841	0.031	0.863	27.349	<.001	1	1

a Dependent Variable: Customer satisfaction

In the first chart, the R value of this experiment is 0.863, it indicates that there is a strong linear relationship between responsiveness and customer satisfaction. In this case, with the improvement of responsiveness, customer satisfaction will also increase, it indicates that responsiveness can affect the change of customer satisfaction. The R square is 0.745 and the adjusted R square is 0.744, which means that it can predict 74.4%

samples. The F value is 747.973, and the significance P value is less than 0.001, it indicates that there is significant. In the second chart, the Standardized coefficient Beta is 0.863, it indicates that responsiveness has a strong positive effect on customer satisfaction. Significance P-value is less than 0.001, it indicates that there is significant. VIF is 1, it indicates that there is no multicollinearity problem. Through the data of charts, it indicates that responsiveness has a positive impact on customer satisfaction, which proves that hypothesis H1-3 is valid.

(4) Assurance

Chart 3.61 Model Summary b

R	R ²	Adjusted R ²	Std. Error of the Estimate	F	Sig. F
.904a	0.818	0.817	0.45926	1150.914	<.001

a Predictors: (Constant), Assurance

b Dependent Variable: Customer satisfaction

Chart 3.62 Coefficients a

	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	0.252	0.067		3.782	<.001		
Assurance	0.876	0.026	0.904	33.925	<.001	1	1

a Dependent Variable: Customer satisfaction

In the first chart, the R value of this experiment is 0.904, it indicates that there is a strong linear relationship between assurance and customer satisfaction. In this case, with the improvement of assurance, customer satisfaction will also increase, it indicates that assurance can affect the change of customer satisfaction. The R square is 0.818 and the adjusted R square is 0.817, which means that it can predict 81.7% samples. The F

value is 1150.914, and the significance P value is less than 0.001, it indicates that there is significant. In the second chart, the Standardized coefficient Beta is 0.904, it indicates that assurance has a strong positive effect on customer satisfaction. Significance P-value is less than 0.001, it indicates that there is significant. VIF is 1, it indicates that there is no multicollinearity problem. Through the data of charts, it indicates that assurance has a positive impact on customer satisfaction, which proves that hypothesis H1-4 is valid.

(5) Empathy

Chart 3.63 Model Summary b

R	R ²	Adjusted R ²	Std. Error of the Estimate	F	Sig. F
.862a	0.743	0.742	0.54559	740.866	<.001

a Predictors: (Constant), Empathy

b Dependent Variable: Customer satisfaction

Chart 3.64 Coefficients a

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	0.437	0.076		5.741	<.001		
Empathy	0.775	0.028	0.862	27.219	<.001	1	1

a Dependent Variable: Customer satisfaction

In the first chart, the R value of this experiment is 0.862, it indicates that there is a strong linear relationship between empathy and customer satisfaction. In this case, with the improvement of empathy, customer satisfaction will also increase, it indicates that empathy can affect the change of customer satisfaction. The R square is 0.743 and the adjusted R square is 0.742, which means that it can predict 74.2% samples. The F value is 740.866, and the significance P value is less than 0.001, it indicates that there is significant. In the second chart, the Standardized coefficient Beta is 0.862 it indicates

that assurance has a strong positive effect on customer satisfaction. Significance P-value is less than 0.001, it indicates that there is significant. VIF is 1, it indicates that there is no multicollinearity problem. Through the data of charts, it indicates that empathy has a positive impact on customer satisfaction, which proves that hypothesis H1-5 is valid.

2. The Regression Analysis between Service Quality and Customer Loyalty

(1) Tangibility

Chart 3.65 Model Summary b

R	R ²	Adjusted R ²	Std. Error of the Estimate	F	Sig. F
.793a	0.629	0.627	0.71756	433.604	<.001

a Predictors: (Constant), Tangibility

b Dependent Variable: Customer loyalty

Chart 3.66 Coefficients a

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	0.304	0.107		2.839	0.005		
Tangibility	0.911	0.044	0.793	20.823	<.001	1	1

a Dependent Variable: Customer loyalty

In the first chart, the R value of this experiment is 0.793, it indicates that there is a strong linear relationship between tangibility and customer loyalty. In this case, with the improvement of tangibility, customer loyalty will also increase, it indicates that tangibility can affect the change of customer loyalty. The R square is 0.629 and the adjusted R square is 0.627, which means that it can predict 62.7% samples. The F value is 433.604, and the significance P value is less than 0.001, it indicates that there is significant. In the second chart, the Standardized coefficient Beta is 0.793, it indicates

that tangibility has a strong positive effect on customer loyalty. Significance P-value is less than 0.001, it indicates that there is significant. VIF is 1, it indicates that there is no multicollinearity problem. Through the data of charts, it indicates that tangibility has a positive impact on customer loyalty, which proves that hypothesis H2-1 is valid.

(2) Reliability

Chart 3.67 Model Summary b

R	R ²	Adjusted R ²	Std. Error of the Estimate	F	Sig. F
.875a	0.765	0.764	0.57083	833.680	<.001

a Predictors: (Constant), Reliability

b Dependent Variable: Customer loyalty

Chart 3.68 Coefficients a

	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	0.177	0.083		2.142	0.033		
Reliability	0.94	0.033	0.875	28.874	<.001	1	1

a Dependent Variable: Customer loyalty

In the first chart, the R value of this experiment is 0.875, it indicates that there is a strong linear relationship between reliability and customer loyalty. In this case, with the improvement of reliability, customer loyalty will also increase, it indicates that reliability can affect the change of customer loyalty. The R square is 0.765 and the adjusted R square is 0.764, which means that it can predict 76.4% samples. The F value is 833.680, and the significance P value is less than 0.001, it indicates that there is significant. In the second chart, the Standardized coefficient Beta is 0.875, it indicates that reliability has a strong positive effect on customer loyalty. Significance P-value is less than 0.001, it indicates that there is significant. VIF is 1, it indicates that there is no

multicollinearity problem. Through the data of charts, it indicates that reliability has a positive impact on customer loyalty, which proves that hypothesis H2-2 is valid.

(3) Responsiveness

Chart 3.69 Model Summary b

R	R ²	Adjusted R ²	Std. Error of the Estimate	F	Sig. F
.864a	0.746	0.745	0.5939	750.673	<.001

a Predictors: (Constant), Responsiveness

b Dependent Variable: Customer loyalty

Chart 3.70 Coefficients a

	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	0.184	0.087		2.12	0.035		
Responsiveness	0.921	0.034	0.864	27.398	<.001	1	1

a Dependent Variable: Customer loyalty

In the first chart, the R value of this experiment is 0.864, it indicates that there is a strong linear relationship between responsiveness and customer loyalty. In this case, with the improvement of responsiveness, customer loyalty will also increase, it indicates that responsiveness can affect the change of customer loyalty. The R square is 0.746 and the adjusted R square is 0.745, which means that it can predict 74.5% samples. The F value is 750.673, and the significance P value is less than 0.001, it indicates that there is significant. In the second chart, the Standardized coefficient Beta is 0.864, it indicates that responsiveness has a strong positive effect on customer loyalty. Significance P-value is less than 0.001, it indicates that there is significant. VIF is 1, it indicates that there is no multicollinearity problem. Through the data of charts, it indicates that responsiveness has a positive impact on customer loyalty, which proves

that hypothesis H2-3 is valid.

(4) Assurance

Chart 3.71 Model Summary b

R	R ²	Adjusted R ²	Std. Error of the Estimate	F	Sig. F
.872a	0.760	0.759	0.57705	810.332	<.001

a Predictors: (Constant), Assurance

b Dependent Variable: Customer loyalty

Chart 3.72 Coefficients a

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	0.177	0.084		2.114	0.035		
Assurance	0.924	0.032	0.872	28.466	<.001	1	1

a Dependent Variable: Customer loyalty

In the first chart, the R value of this experiment is 0.872, it indicates that there is a strong linear relationship between assurance and customer loyalty. In this case, with the improvement of assurance, customer loyalty will also increase, it indicates that assurance can affect the change of customer loyalty. The R square is 0.760 and the adjusted R square is 0.759, which means that it can predict 75.9% samples. The F value is 810.332, and the significance P value is less than 0.001, it indicates that there is significant. In the second chart, the Standardized coefficient Beta is 0.872, it indicates that assurance has a strong positive effect on customer loyalty. Significance P-value is less than 0.001, it indicates that there is significant. VIF is 1, it indicates that there is no multicollinearity problem. Through the data of charts, it indicates that assurance has a positive impact on customer loyalty, which proves that hypothesis H2-4 is valid.

(5) Empathy

Chart 3.73 Model Summary b

R	R ²	Adjusted R ²	Std. Error of the Estimate	F	Sig. F
.876a	0.767	0.766	0.56873	841.762	<.001

a Predictors: (Constant), Empathy

b Dependent Variable: Customer loyalty

Chart 3.74 Coefficients a

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	0.267	0.079		3.362	0.001		
Empathy	0.861	0.03	0.876	29.013	<.001	1	1

a Dependent Variable: Customer loyalty

In the first chart, the R value of this experiment is 0.876, it indicates that there is a strong linear relationship between empathy and customer loyalty. In this case, with the improvement of empathy, customer loyalty will also increase, it indicates that empathy can affect the change of customer loyalty. The R square is 0.767 and the adjusted R square is 0.766, which means that it can predict 76.6% samples. The F value is 841.762, and the significance P value is less than 0.001, it indicates that there is significant. In the second chart, the Standardized coefficient Beta is 0.876, it indicates that empathy has a strong positive effect on customer loyalty. Significance P-value is less than 0.001, it indicates that there is significant. VIF is 1, it indicates that there is no multicollinearity problem. Through the data of charts, it indicates that empathy has a positive impact on customer loyalty, which proves that hypothesis H2-5 is valid.

3. The Regression Analysis between Customer Satisfaction and Customer Loyalty

Chart 3.75 Model Summary b

R	R ²	Adjusted R ²	Std. Error of the Estimate	F	Sig. F
.923a	0.852	0.851	0.45374	1468.697	<.001

a Predictors: (Constant), Customer satisfaction

b Dependent Variable: Customer loyalty

Chart 3.76 Coefficients a

	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance VIF
(Constant)	0.014	0.067		0.213	0.831	
Customer satisfaction	1.009	0.026	0.923	38.324	<.001	1 1

a Dependent Variable: Customer loyalty

In the first chart, the R value of this experiment is 0.923, it indicates that there is a strong linear relationship between customer satisfaction and customer loyalty. In this case, with the improvement of customer satisfaction, customer loyalty will also increase, it indicates that customer satisfaction can affect the change of customer loyalty. The R square is 0.852 and the adjusted R square is 0.851, which means that it can predict 85.1% samples. The F value is 1468.697, and the significance P value is less than 0.001, it indicates that there is significant. In the second chart, the Standardized coefficient Beta is 0.923, it indicates that customer satisfaction has a strong positive effect on customer loyalty. Significance P-value is less than 0.001, it indicates that there is significant. VIF is 1, it indicates that there is no multicollinearity problem. Through the data of charts, it indicates that customer satisfaction has a positive impact on customer loyalty, which proves that hypothesis H3-1 is valid.

From the above experimental data, the various hypothesis previously proposed have been proved, as show the chart:

Chart 3.77 Summary of Relevant Hypothesis

No.	Hypothesis content	State
H1-1	Tangibility has a positive effect on Customer satisfaction	Yes
H1-2	Reliability has a positive effect on Customer satisfaction	Yes
H1-3	Responsiveness has a positive effect on Customer satisfaction	Yes
H1-4	Assurance has a positive effect on Customer satisfaction	Yes
H1-5	Empathy has a positive effect on Customer satisfaction	Yes
H2-1	Tangibility has a positive effect on Customer loyalty	Yes
H2-2	Reliability has a positive effect on Customer loyalty	Yes
H2-3	Responsiveness has a positive effect on Customer loyalty	Yes
H2-4	Assurance has a positive effect on Customer loyalty	Yes
H2-5	Assurance has a positive effect on Customer loyalty	Yes
H3-1	Customer satisfaction has a positive effect on Customer loyalty	Yes

Through the above analysis, it can be found that each dimension of service quality has a positive effect on customer satisfaction and customer loyalty, it also shows when people experience the service of better tangibility, reliability, responsiveness, assurance and empathy, it can help them generate a good impression on the enterprise, then they can also generate loyalty. If the enterprise wants to have a high degree of satisfaction and loyalty, they need to take the service quality as an important goal to develop, so as the enterprise can improve the customer satisfaction and customer loyalty.

Summary: In the previous chapter, understood the meaning of each variable and the relationship between different variables, and there will be established a research model in this chapter, that is, how service quality affects customer satisfaction and then customer loyalty. Then, proposed different hypotheses through the research model, and distributed the questionnaires to the customers who had experienced the service. Used

SPSS and other applications to analyze the questionnaire data in different ways. Through the analysis of each data, it was found that there was a significant influence between variables, which also verified that the hypotheses proposed before were correct. In other words, each variable has a positive effect on the other. After the research hypothesis is verified, in the next chapter, observed the score of each question in the questionnaire and then determined whether the service has deficiencies. There will be listed the services with low scores and analyzed the reasons for customers' dissatisfaction with a certain service.

Chapter 4 The Deficiency of Service in Shopping Mall

According to the above experimental analysis, it is clear that there is a positive effect between the service quality, customer satisfaction and customer loyalty, however in the five dimension of service quality, tangibility, reliability, responsiveness assurance and empathy, there are still some shortcomings.

4.1 Analysis of Tangibility Problems

From the experimental research data, it is clear that the score of tangibility service of customers for the shopping mall is from 2.12-2.31, it indicates that the overall level of tangibility service is not high. In terms of the identification of logo and facilities, the management of shopping mall does not do well, and the score of the service attractiveness is not high, they do not take the service quality as a strategy to attract customers, however when the shopping mall develop themselves, they did not take service quality to attract customer as an important goal, which lead a decline in people's evaluation of the service. Some information provided by the shopping mall cannot be connected with the services of the shopping mall, they provide some useless information to the customers, leading to customers misunderstanding of the service, which shows that the shopping mall still need to improve the level of the tangibility service.

(1) Environment and Facilities

First, in terms of service facilities, modern service facilities are what enterprises need to pay attention to, maybe they not consider the use of service facilities too much, without listing relevant introductions according to the use of facilities, or proposing optimization strategies based on the customer feedback, thus they ignore this aspect, finally, resulting in a low evaluation of customers. Secondly, when enterprises invest funds into service facilities, they do not take into account the development needs of the market and put the required service facilities into the use of the shopping mall, but into all fields, because some kinds of service facilities are not required. The enterprise needs to judge whether certain facilities can be used in the shopping mall according to the use

of a facility and the services provided by the shopping mall.

(2) Information Relativity

In terms of information provision, enterprises do not fully provide accurate information to customers, or some of the information proposed to customers is not related to the services of the shopping mall, which leads to the confusion of customers in some services or information, resulting in a low score in service evaluation. Enterprises cannot blindly provide information to customers, according to the current development and operation of enterprises to provide customers with useful and consistent with the shopping mall service information.

Finally, in terms of attracting customers, through people's feedback, the service and logo of the shopping mall cannot attract more customers, which makes the shopping mall has not developed its own characteristic service. Enterprise should develop their own personalized services through their own positioning.

In general, enterprise need to upgrade existing services, improve people's evaluation of tangibility services in the shopping mall, and then improve the customer satisfaction.

4.2 Analysis of Reliability Problems

According to the experimental research data, it is clear that the score of reliability service of customers for the shopping mall is between 2.28 and 2.31, it indicates that the overall level of reliability service is not high. There are still opportunities for improvement in the reliability service of shopping malls. Reliability can show whether an enterprise is worthy of customers' trust when facing different customers. Employees do not put customers in the first place, so when customers need help, employees do not sincerely solve problems, and they do not have a strong sense of service, as a result, the shopping mall are not reliable in the minds of customers, and some people do not believe that they can provide good service.

(1) Professional Training

First of all, in the service process, the service system of the enterprise is not fully displayed to the customers, such as whether the service consciousness and service

ability of the enterprise service personnel are up to the standard, and whether the training of the enterprise staff is up to the standard. When the service personnel of the enterprise show their weak service consciousness, service knowledge and service behavior to the customers, many customers will feel dissatisfied. This can lead customers to believe that the service of the shopping mall is not good.

(2) Service Feedback

In terms of solving problems, enterprise has not formed a complete solution to the problem, such as where there are deficiencies in a certain service and whether there are corresponding solutions. In terms of priority handling, enterprise management has ignored the priority handling mechanism of customer complaints and feedback, resulting in more and more problems in feedback. In the long run, customer feedback cannot be solved, which greatly reduces customer satisfaction and loyalty to the enterprise, reduces the customer flow of the enterprise, and ultimately greatly limits the development of the enterprise. Customer service feedback is the best way to reflect the shortcomings of enterprise services. Through the content of feedback, the management of shopping mall will know what aspects need to be improved. At the same time, it also reflects whether the enterprise sincerely pays attention to the customer's request, and the enterprise's service behavior reflects its own reliability and whether it is worthy of customer's choice. If the enterprise does not take customer feedback or complaint as an important step in the development of the enterprise, it means that the enterprise has not done a good job, which also shows that the management of enterprise does not put customers in the first place and does not wholeheartedly help customers when they are in trouble, thus reducing the status of the enterprise in the hearts of customers. Customers believe that the company does not care about their ideas, in the face of customer requests, the enterprise does not help them.

(3) Service Time

Secondly, on the issue of time, whether the enterprise can accurately calculate the service time, which things need how much time to complete, rather than wasting a lot of time on one thing, the accurate use of time is also a test for the enterprise. When the

management of shopping mall in the face of a lot of busy work, under the pressure of multi-faceted work, whether an enterprise can fulfill its commitments to customers in time and whether they can complete promised things on time, it is also a test for the service consciousness and ability of managers and service personnel. With strong service consciousness and service ability, the time to deal with affairs will be short, and customers will not feel out of order in the face of multiple tasks.

The development of reliability services is an important step for enterprise to attract more customers. Only by sincerely putting customers in the first place and seriously solving customers' requests, the enterprise can develop customers' trust in themselves.

4.3 Analysis of Responsiveness Problems

From the experimental research data, it is clear that the score of responsiveness service of customers for the shopping mall is between 2.30-2.35, it indicates that the overall level of responsiveness service is not high. The low score of responsive service is reflected in when shopping mall staff handle some business, they did not handle the business quickly, then resulting in long waiting times for customers. When customers need help and seek solutions from the employees, the employees of shopping mall do not respond in time, or the employees of shopping mall do not respond quickly to the needs of customers. And when the staff of shopping mall are working, whether it is to provide services to customers or help customers solve problems, it does not reflect higher efficiency, so that customers wait too long, and then the customer are not satisfied the service.

(1) Business Processing Speed

First of all, on the problem of the slow processing speed of employees, it indicates that some employees in shopping mall are not very skilled in business skills. The enterprise does not make a systematic business training for their employees, which leads to the situation that employees are not skilled in serving customers. For the problems such as slow service response time, the enterprise does not make a corresponding management policies and solutions for such services, and it is also not formulated a standard for such

incidents.

(2) Employee's Proficiency in Handling Business

For some new employees in shopping mall, they do not understand the management system and service system of shopping mall, so it is inevitable that there will be mistakes when serving customers. The management of the enterprise did not make a unified training and management for new employees before the entry of the new employees, which leading the management of shopping mall neglects the business training of new employees, then causing them to make mistakes in their work. In addition to their unproficiency ability in business, new employees are not fast enough to respond to work, which leads to their inability to meet customers' service demands in a timely manner. Besides, when new employees do not receive unified training and management from enterprise management, they will show a state of being unfamiliar when dealing with business. Therefore, new employees need to improve their service ability and many other aspects.

4.4 Analysis of Assurance Problems

From the experimental research data, it is clear that the score of assurance service of customers for the shopping mall is between 2.30-2.35, it indicates that the overall level of assurance service is not high. The low score of the assurance service indicates that the staff of shopping malls are not diligent enough in helping customers, and customers do not appreciate the enthusiasm of the staff to help customers solve problems. In the work, employees did not adhere to the standardization of operation, which led to the phenomenon of customer dissatisfaction with the service of employees. The staff's operation is not standardized and the customer service is not careful, which leads to the customer's feeling of insecurity when shopping.

(1) Professional Skills

First of all, in terms of business operation, it is also manifested that the management of the enterprise fails to provide unified training to the employees, resulting in employees following their own habits at work, which will appear to be out of order at work, it

indicates that the enterprise has neglect the management of employees in terms of system management and operation norms, which is a major mistake for the enterprise in terms of management. This will greatly reduce the number of customers.

(2) Service Consciousness

At the same time, the performance of employees will make customers feel that employees are not sincere in helping customers, which cannot guarantee that they can have a better service experience. Employees have no empathy and are unwilling to help customers with their requests, these phenomena will cause customers to have a lower sense of experience. When customers feel poor service or have a bad experience in the whole shopping process, for the place that the operation of the staff is not standardized, quality experience is not guaranteed, employees are impatient, they will think whether it is worthy to experience, which greatly reduces people's satisfaction with the enterprise. Over time, the customer flow of the enterprise will decrease with the increase of these unfavorable factors.

4.5 Analysis of Empathy Problems

From the experimental research data, it is clear that the score of empathy service of customers for the shopping mall is between 2.38-2.43, it indicates that the overall level of empathy service is not high. The low score of empathy service indicates that employees do not show too much concern for customers, customers do not experience the better service throughout the whole process of shopping, and employees do not recommend related products to people who have experienced the service of shopping malls many times according to their preferences. This shows that employees do not show enthusiasm and care for customers during their work.

Judging from the score, the training system of employees is not perfect, employees simply work on the post, and their empathy is not reflected. Due to different types of work, the performance of employees is also different, and the better service cannot run through the whole process. Because there are different shops in the shopping mall, this leads to the dispersion of different systems, and enterprises lack a unified management

system for them.

(1) Empathy

In terms of empathy, it means that employees have not pay attention to this aspect. Taking the initiative to care about customers' needs need to be shown by employees, which shows that employees care about customers very much at any time, which makes customers feel good. As can be seen from the numbers, the performance in this respect is not outstanding. When there is an old customer experience, employees do not recommend relevant products to customers according to their past habits or when there is a new type of similar products, employees do not take the initiative to recommend customers in time, but customers take the initiative to ask about the product, which is a mistake for the management. The enterprise does not strengthen the management and training in this aspect, resulting in an increase in the probability of such things. In the management of empathy, customers are not only required to take the initiative to care about the needs of customers, but also to consider the details of things, so that they can better recommend products to customers.

The problem of empathy is an important factor to reduce customer satisfaction, and it is also an important factor to improve customer satisfaction. If enterprise do not make a corresponding management system, the satisfaction will be always reduced.

Summary: In the last chapter, analyzed the data content of the questionnaire, and also verified the hypotheses put forward before. In this chapter, by observing the score of each question in the questionnaire, inferred which service were dissatisfied by customers in the shopping mall, analyzed the reasons for the low evaluation of the service, and then propose improvement methods for the low service evaluation in the next chapter.

Chapter 5 Improvement Suggestions of Service for Shopping Mall

In the previous chapter, the data obtained in the experiment was analyzed, and learned about the shortcomings in the service process. Through the analysis of different problems, proposing some improvement methods respectively to these shortcomings.

5.1 Improvement of the Service of Tangibility

The first is to strengthen the construction of service scenarios and hardware facilities, which is a relatively basic part of the enterprise, because it is the customer can see and feel in the first time, so the enterprise should pay attention to this point, they cannot ignore this point because of busy business. The management should ensure that the environment of the shopping mall is good and the facilities in the shopping mall are complete and in good condition, as well as whether the image and the logo of all the facilities are clearly visible. These are the basic standards to measure whether customers can have a good experience in the shopping mall. Only when these basic standards are perfected, the management can consider the next step of development. Enterprise should focus on the long-term vision, not only the people who enter the shopping mall experience are customers, but also the people outside the shopping mall and those who do not understand the shopping mall are potential customers. Enterprises should develop it into a means of publicity, make it as their own unique way to attract customers.

(1) Improvement of Environment and Facilities

The first is the environment of the shopping mall, it can directly reflect whether to attract customers to come to experience, which also determines whether they are willing to go to experience, so enterprise should pay attention to the optimization of the shopping mall environment. In terms of environmental beautification, through the use of appropriate colors, exquisite decorative content to create a comfortable and beautiful experience environment for people. For example, what kind of lighting facilities, the

decorative effect of the walls and the overall layout of the shopping mall. Now, People's first impression of the overall evaluation of shopping mall services is its environment and facilities, so enterprise should pay attention to this part.

Then there are various types of hardware service facilities in the scene. Enterprise can decide whether to use some service facilities according to market demand, rather than blindly investing money in all service facilities, over time, some useless equipment will appear. In the process of the initial construction or later renovation of the shopping mall, the enterprise should pay attention to the overall layout of all facilities, so as to ensure that the rationality of each layout in the shopping mall and avoid chaos, so as to bring customers a poor shopping experience. In some other service facilities, enterprise should also ensure the perfection of each facility and whether it can be used normally. For example, elevators, toilets and leisure areas in shopping mall, enterprise should not only consider their distribution, but also ensure their normal use. If these infrastructures bring some inconvenience to customers, people's evaluation of shopping mall will be greatly reduced. For example, in the shopping mall, increase some convenience for special people, they can add some barrier-free exclusive channels, which will bring them convenience.

(2) Improve Visibility of Facilities and Logo

In addition to the distribution and use of facilities, it is also necessary to pay attention to whether the logo of shopping mall is eye-catching. It is not enough for the logo and service facilities of the enterprise to be distributed in the right place, so that customers who come to experience can know the location and distribution of service facilities at a glance, which is crucial for customer experience, if people can't solve problems in the shopping mall with the help of eye-catching signs, it will confuse customers with the environment because they don't know the place, and it will reduce their sense of experience. The first is the legibility of the logo, the logo can connect two different areas, suitable legibility has a great value, enterprise can consider adding only one or two languages, images, and the size and shape of these information on the logo, remove excess information, so that customers can see the information in a suitable distance.

Then the color combination will also affect the visual effect of customers, enterprises can use achromatic color, it is an effective background chroma, reading time is relatively short. In the lighting of the logo, enterprises can increase the lighting of the environment, and with the increase of lighting, the legibility of the logo will also increase. For the height and viewing angle of the logo, the enterprise also needs to find the right location, with the increase or decrease of the height and viewing angle of the logo, it is also important to the visibility of logo^[22]. Enterprise should pay attention to the problem of eye-catching logo, eye-catching logo also represents the image of the enterprise, they can create their own characteristic image through the development concept.

(3) Improve the Relevance of Information and Services

In terms of information content, no matter what kind of information is provided, enterprise should ensure that the information provided is consistent with its related services, and should not mislead customers because of wrong information, therefore, enterprise can establish relevant departments to confirm the information and related services provided to avoid misleading people, and relevant departments can also check the released information, timely modify the wrong information to avoid misleading and make relevant records.

Enterprise not only rely on advertising, leaflets and other traditional publicity methods to attract customers, strengthen the optimization of the shopping mall environment, the use of service facilities and the logo of shopping mall image and service facilities, through their own unique image to attract more customers.

5.2 Improvement of the Service of Reliability

(1) System Training

In terms of improving the reliability of service, the management of enterprise also needs to strengthen the management and training of whether the employees are dedicated to serving customers. No matter what the purpose of customers coming to the shopping mall is, the employees should show a good service attitude towards customers, which

is conducive to the next development. For example, the enterprise can set up a special training department, before the employees take up their jobs, they can popularize service knowledge and conduct service training for employees, and cultivate their service awareness through various examples and incidents. Employees should show a warm and patient service attitude in front of customers, and customers should feel that employees are willing to help them. The quality, professional knowledge and skills of employees can affect the quality of service, and appropriate content training is conducive to the work of employees, such as cultivating people's consciousness of serving customers wholeheartedly and showing a correct and good service attitude in the face of customers, but not showing an impatient service attitude in the face of customers. A good service attitude can make customers feel that they are respected and cared for during the shopping experience.

When customers ask for help, employees not only verbally agree to the customer's request, but also ensure that they fully fulfill their commitments to customers in action, which should also be fully reflected in corporate training and practice. Customers not only have shopping experience in the shopping mall, but also may have after-sale feedback and other phenomena after the shopping experience. Therefore, at this point, the employee's commitment to the customer should be fulfilled 100%. In addition to service awareness and good attitude, skill training is also an important part. In addition to mastering basic professional knowledge and skills, good etiquette and good communication are also included in a good service attitude. Through special training, employees should be able to show strong professional ability in front of customers. For example, when communicating with customers or helping customers solve problems, they can clearly express themselves to customers and solve problems.

(2) Establish a Perfect After-Sales Treatment System

When dealing with problems such as after-sales service, enterprises should develop a set of detailed plans, such as what kind of problems should be solved, and if the employees show that they do not know what to do when certain events occur, this habit cannot happen in work, which will make customers feel that employees are not

professional. When dealing some problems such as after-sales treatment, it is necessary to give priority to the event, which is also reflected in the training, and should be regarded as the focus, another place to pay attention to is that when dealing with different events, the staff should take into account the priority order of handling certain events, as well as the severity of different events. In the process of dealing with the problem, they should always maintain communication with the customer to ensure that the event is completed within the promised time.

(3) The Control of Business Processing Time

Whether it is in the service process or in solving after-sales problems, employees should grasp the control of time, and handle problems should not be too fast or too slow. Enterprise should also develop a series of relevant systems, it does not make customers think that employees don't have patience to serve because of too short service time, it also cannot make customers wait too long because of too long service times so that they are not willing to wait, which will directly relate to the evaluation of customer satisfaction. After handling the event, employees can review the service process and service feedback in the form of meetings. How to solve the same type of event and how to control the time well, it needs to be discussed and practiced repeatedly.

From service awareness, service attitude, commitment to customer service, how to deal with after-sales service and how to ensure good service time are extremely important to the management of an enterprise, which is also a more important step to improve satisfaction and show its importance.

5.3 Improvement of the Service of Responsiveness

In terms of responsiveness, the most important thing is speed, and employees should deal with problems in a timely manner. First of all, enterprise management should pay attention to this issue and respond to customer requests in the process of service as soon as possible, which requires employees to improve their service awareness, service skills is also crucial, only skilled business can help customers in a timely manner. In terms of after-sales responsive service, the first is to help customers solve problems in a timely

manner, not because of busy work and ignore customer problems, they need to show concern for customers. Whether it is a new employee or an old employee, they must do a good job on the issue of responsiveness, they also need to have a relevant training before work, and also improve the service awareness of employees through some methods or games, so that employees feel that customers are important.

(1) Develop online Reservation Application

Now, people's lives are inseparable from the internet and mobile phones, and enterprise can take advantage of this to improve the service efficiency of employees. First of all, to solve the problem of service efficiency, enterprise can develop their own intelligent applications, which will contain the service information of various merchants. Customers can make advance service reservations online according to their own needs, and enterprises can make preparations in advance after receiving relevant reservation information, and customers can save a long waiting time after arriving at the shopping mall. It's a convenience for both employees and customers, as for the employees, they can provide customers with punctual service. Similarly, in terms of after-sales service, the management of the enterprise can set up a special after-sales department for this service, they can observe the after-sales service information in real time every day. Customers use the application to give feedback on after-sales problems and make an appointment for service. After receiving the appointment information, the after-sales department can have time to analyze such problems and propose solutions, which greatly reduces the waiting time. Because the staff can know the feedback content in advance before the customer arrives at the shopping mall and they can discuss the solution.

(2) Develop the Teamwork

Whether it's employee training or application development, employees need to put their emotions on the sincere intention to help customers solve problems. Although employees have different emotional awareness, the management of enterprises can observe the performance of each employee in serving customers after training employees. In addition, according to the customer's evaluation of the employee's

service on the application, the employees with poor performance can be separately trained and guided, so as to find out what they are not doing well and give some suggestions for improvement. For some new employees, after the practice of business training, there may be some performance of business rusty, at this time, the management of enterprise can let some experienced old employees to teach them some experience, and enable old employees to bring new employees together, promote the enthusiasm of new employees, and cultivate their sincere willingness to help customers. In such an atmosphere, employees can quickly adapt to the working environment, and have a good attitude and state to face customers every day. After the work, employees can score and evaluate according to the performance of the day, find out the deficiencies in the team, and put forward their own opinions to improve them, which not only drives the enthusiasm of employees in service, it will also make customers feel the good atmosphere of the staff team, and satisfaction will be improved.

5.4 Improvement of the Service of Assurance

(1) The Improvement for Professional Knowledge and Etiquette

On the issue of assurance, part of the reason for the low satisfaction level is that employees do not show enthusiasm for service to customers. In this regard, employees need continuous training to promote their enthusiasm for service. The management of enterprise can conduct regular training and management for employees, such as weekly or monthly training, mainly to deepen professional knowledge and professional skills, or after training, employees can conduct service simulation through team drills, so as to strengthen the practicality of professional skills and avoid the irregular operation of business operations when serving customers. Part of the reason for irregularities at work is that they are not familiar with their own business, so regular business training is very important for employees. Through regular professional training, employees can show their professionalism in business to customers, and employees can also feel trust from customers. It is also possible to establish a complete service operation plan, which lists the specific content and what specific service items need to do, so that employees can

understand the correct operation of the business, in order to prevent operational errors in front of customers.

What customers care about in shopping experience is the quality of service, which includes the etiquette, behavior, speaking and communication skills of employees, all of which need to be well shown to customers by employees. Therefore, the management of enterprise should designate their own service standardization system according to these contents, and make every employee familiar with and master the above contents through learning. And put it into practice. In particular, it is very important to communicate with customers, because communication and interpersonal relationships are crucial to organizational factors that can produce better job satisfaction and performance (Jo & Shim2005), which can effectively improve the overall performance of the enterprise. Therefore, effective and good communication is important for all parts, it can ensure the normal development of the enterprise (Brownell, 1991)^[23]. For example, when talking with customers, the tone is gentle, the words are appropriate, and the face of each customer with a smile. When customers need help, take the initiative to ask, and solve problems for customers in a timely manner, and bring good experience to every customer.

(2) Implement a Reward System

In order to improve the service awareness and enthusiasm of employees, enterprise can promote employees through reward mechanism. Enterprise can establish an employee reward system, such as individual reward for employees and team reward for group, for the individual reward for employees, enterprises can evaluate employees' performance at work, customers' evaluation and feedback on employees at work, and evaluation among employees. Give material and psychological rewards to employees who perform well. As for the selection among teams, it is necessary to ensure that the performance of each employee in the team is the best, not only through the performance at work and the evaluation and feedback of customers, but also between different groups, so as to select excellent groups and give material and psychological rewards. Through the reward system, employees' service awareness and work enthusiasm will also be

improved, so that they can have better performance in front of customers and their satisfaction will be improved.

Whether it's through system training, formulating service standard system or reward system, it is necessary to successfully improve the professional skills of employees, the standardization and enthusiasm of services. Only when employees have mastered these, their work performance will be improved, and customers can see their good service attitude. To make customers have a sense of trust in employees and the enterprise, the increase of trust indicates that customers are satisfied with the performance of employees, and it is also a kind of incentive for employees, make the employees to work harder.

5.5 Improvement of the Service of Empathy

Empathy is very important in people's work, and employees with empathy can become intimate friends of customers. On the issue of empathy services, the management of enterprise can also adopt the way of employee training, put empathy issues in the content of training, so that employees can experience what the service with empathy is like.

In the empathy training activities, it is necessary to strengthen the awareness of employee's empathy, and let them know the importance of empathy through training explanation and interaction. No matter which department of the enterprise, it is necessary to work with this emotion, to care about customers all the time, when customers have needs, employees should be the first time to show concern and help solve. Both in thought and in action, it is necessary to show customers that they are welcome and sincerely serve them. It may be difficult for some people, but only when they do well in training, they will not make mistakes when they work.

(1) Role Experience

A common technique for improving empathy among service providers is to use the method of transpositional consideration, which asks employees to actively imagine how others are affected by their situation. It can be done in a variety of ways, such as

character modeling, problem-solving games, role playing and other many methods^[24]. In the process of training, employees can also role-play, respectively play customers and employees to drill, so that employees can personally experience what it is like, or simulate two different scenarios, one is empathetic employees, the other is not empathetic employees, after the drill is over, employees can say how they feel in the face of two different scenarios. Only when they personally experience such a scenario, employees will work hard at work and show their empathy.

After the training, employees will have on-the-job training. The enterprise can set up an observation team to observe the employees on the job, mainly to check whether they serve customers with empathy and evaluate them. Employees with good empathy performance can continue to work, while those with poor empathy performance need to have another empathy training after the day's work, when the performance is more excellent, they can continue to work.

(2) Demonstration Effect

While cultivating employees' empathy, enterprise leaders can also demonstrate and take the lead for employees. For example, they show concern for employees during their work, ask them about their work status after work, offer timely encouragement and suggestions about what they don't understand or do badly in their work, and pay more attention to employees' work and life status, giving concern to their employees. When employees are affected by this kind of atmosphere, they will have a deep understanding in their own hearts, and they will also show this performance at work. For the leaders or employees of enterprise, if they can work in this kind of atmosphere, it will help to cultivate their own empathy, and at the same time, if they bring this kind of atmosphere to work, the customers will also experience this good atmosphere.

(3) Observe the Details

The performance of empathy is also reflected in the work details. Employees should observe more details, such as the preferences or habits of customers during the shopping experience. At this time, employees can record these details one by one, when the customer experiences shopping again, the staff can recommend some related products

according to the customer's preferences and habits, which is a very good performance in front of the customer. These small details also determine the customer's evaluation. Or employees can do a small survey of customers and record some customers' preferences and habits, when customers come to experience, employees can understand these habits in advance and provide services according to the records.

Summary: Through the model building and data analysis in the previous chapters, the hypotheses put forward before have been verified. In the last chapter, pointed out the service that the evaluation is not high in the shopping mall and analyzed the reasons of the low evaluation of service. This chapter puts forward some corresponding solutions to the service with low evaluation, aiming at helping the management of shopping mall to improve the service deficiencies and improve customer satisfaction and loyalty.

Chapter 6 Research Conclusion and Research Prospect

6.1 Research Conclusion

In the process of this research, the paper is divided into six chapters. Firstly, in the first and second chapters, expounded the research background and significance, so that readers can have a clear understanding of the research theme background. Then introduced the content and methods of the research briefly. By reading relevant literature, understood the definition of three different variables and the relationship between variables clearly.

In the third chapter, established the research model and proposed relevant hypotheses. Use SPSS and other applications to analyze the data of the questionnaire. First of all, make an operational definition for the different variables, transformed the abstract concept into something real.

In the descriptive statistics of samples and variables, organized and summarized the data. Subsequently, use the multigroup analysis to analyze gender, and it can be seen from the chart that the P values of the three groups are all greater than 0.05, indicating that gender has no significant difference in the interaction between service quality, customer satisfaction and customer loyalty.

In the Kruskal-Wallis test between service quality and customer satisfaction, customer loyalty, and Kruskal-Wallis test between customer satisfaction and customer loyalty, the significance P-value is less than 0.001, indicating that there are significant differences between different values.

Use Reliability analysis to test whether the data were valid and reliable. In the chart, Cronbach's alpha coefficients of service quality, customer satisfaction and customer loyalty were all between 0.7 and 0.98, indicating that all the data belonged to high reliability.

In the validity analysis, the KMO value is used to determine whether the survey item effectively represents the variable. The KMO value of this experiment is greater than 0.8, which indicates the validity of experiment is high. The P-value of significance is

less than 0.01, indicating that the results of this experiment are very significant.

In the correlation analysis, use Pearson coefficient and significance to test the correlation between different variables. It can be seen from the chart that the Pearson coefficient between service quality and customer satisfaction, the Pearson coefficient between service quality and customer loyalty, and the Pearson coefficient between customer satisfaction and customer loyalty are all greater than 0.7, it indicates that the validity of experiment is high. The P-value of significance is also less than 0.01, it indicates that the experimental results are very significant.

In regression analysis, use regression analysis to test whether different variables are interdependent. The R square of each group in this experiment predicted more than 60% of the samples, and the significance P-value is less than 0.01, indicating that the influence between service quality, customer satisfaction and customer loyalty is positive. It also proves that several hypotheses proposed before are valid, and conclusions are as follow:

- (1) Service quality including Tangibility, Reliability, Responsiveness, Assurance and Empathy has a positive impact on Customer satisfaction.
- (2) Service quality including Tangibility, Reliability, Responsiveness, Assurance and Empathy has a positive impact on Customer loyalty.
- (3) Customer satisfaction has a positive impact on Customer loyalty.

The above conclusions also prove that in shopping mall, by improving the service quality of enterprises, customers' satisfaction with enterprises will be improved, and customers' satisfaction will be improved, and their loyalty will also be improved.

Research data have proved the correlation between different variables, but enterprises still need to improve different specific service contents. In terms of Tangibility services, enterprise also need to make various services and image logos more eye-catching, provide various services to customers, and publish information content to be more relevant to the services provided. In terms of Reliability services, people's evaluation of such services is not high, mainly reflected in the employees do not sincerely help customers solve problems, the importance of customers in the minds of employees is

not high, the will of employees to fulfill the commitment to customers is not strong, whether the shopping mall is reliable and trustworthy for customers. In the Responsiveness service, the business proficiency of employees needs to be improved, the response speed needs to be improved, and the service speed needs to be accelerated. In terms of Assurance services, it mainly reflected in the fact that employees adhere to the standardization of operation, and are willing to help customers at any time and the sense of confidence when shopping experience cannot be fully guaranteed. In terms of Empathy services, the initiative of employees needs to be improved, and the good service attitude throughout all aspects needs to be improved, the understanding of customer's preference is not deep enough, and they cannot be recommended the relevant products to customers.

In the aspect of tangibility service, improve the environment and service facilities to provide customers with a good shopping experience. Improve the visibility of the logo by changing the color and position of the logo. Establish relevant departments to check the information and services provided to avoid misleading information. In the aspect of reliability service, conduct systematic training for employees, show customers a good service attitude and professional knowledge and skills. Establish a perfect after-sales processing system to help customers solve problems as quickly as possible and complete the processing of incidents within the promised time. Pay attention to the control of time, develop and abide the relevant system, avoid the problems such as too long or too short times. In the aspect of responsive service, develop online reservation application to reduce customer waiting time and increase convenience. Develop teamwork, make employees to adapt the working environment and motivate them. In the aspect of assurance services, conduct a training of professional knowledge and etiquette, and make a simulation in the way of team exercises to avoid irregular business operations. Implement a reward system for employees to drive their service awareness and work enthusiasm. In the aspect of empathy service, let employees have role experience, respectively experience the feeling of service with or without empathy. Conduct demonstration activities, through leaders who care about their employees,

bring this atmosphere to their work. Observe and remember customer habits and preferences while working, so as to provide better service to customers.

6.2 Research Prospect

The correlation between the service quality, customer satisfaction and customer loyalty of shopping mall needs continuous attention and improvement. Through this paper, people understood the theories of service quality, customer satisfaction and customer loyalty respectively, and also understood the shortcomings in the service of shopping mall. In future research, it is also necessary to continue to pay attention to various service data, timely improve the deficiencies in the service, for some factors that have not been considered or new factors, it is also need to be pay attention to.

The Relationship of the Thesis with the Sustainable Development Goals of the Agenda 2030

The Degree of Relationship with the Thesis and Sustainable Development Goals
(SDGs)

Sustainable Development Goals	High	Intermediate	Low	Not Applicable
SDGs 1. No Poverty				
SDGs 2. Zero Hunger				
SDGs 3. Good Health and Well-Being				
SDGs 4. Quality Education				
SDGs 5. Gender Equality				
SDGs 6. Clean Water and Sanitation				
SDGs 7. Affordable and Clean Energy				
SDGs 8. Decent Work and Economic Growth		√		
SDGs 9. Industry, Innovation and Infrastructure				
SDGs 10. Reduced Inequalities				
SDGs 11. Sustainable Cities and Communities				
SDGs 12. Responsible Consumption and Production		√		
SDGs 13. Climate Action				
SDGs 14. Life Below Water				
SDGs 15. Life on Land				
SDGs 16. Peace, Justice and Strong Institutions				
SDGs 17. Partnerships for the Goals		√		

The United Nations proposed the Sustainable Development Goals (SDGs) in 2015 and it has been unanimously agreed by all member States. The United Nations Sustainable Development Goals (SDGs) contain 17 different components, which represent different

directions of development. Calling on people around the world to act together through the Sustainable Development Goals, end poverty, protect the planet, and improve the lives and futures of all people everywhere.

The theme of this paper is to explore the correlation between service quality, customer satisfaction and customer loyalty, and it is reflected in the actual shopping mall. By improving the service quality of shopping malls, improve level of customer satisfaction and enhance customer loyalty. The purpose is to point out the shortcomings of service in the shopping mall, and put forward corresponding improvement suggestions and solutions.

Integrate the thesis theme with the Sustainable Development Goals (SDGs) and contribute to the development of SDGs through improved recommendations.

In the paper, when improving different service quality, put forward the corresponding improvement suggestions respectively. Enterprise can recruit a certain number of personnel to set up corresponding work teams, respectively facing different aspects of work. This corresponds to SDGs number eight, Decent Work and Economic Growth. During the COVID, a large number of jobs were lost and most people lost their jobs. Through the establishment of different departments in the enterprise, it can provide jobs. Enterprises set up a special after-sales team, in the face of different customer service feedback, the team can help them solve problems in a timely manner. Enterprise can recruit some IT staff and set up an IT team. Develop the enterprise's own application, and customers can make appointments in advance according to their needs through the application. For example, customers send after-sales feedback to the after-sales team in advance, and they can prepare solutions in advance after receiving an appointment. It not only improves the service speed of employees, but also reduces the waiting time of customers. IT teams also update and maintain applications daily to prevent them from becoming unusable. By setting up new work teams, enterprise can provide more jobs to the society and reduce the loss caused by people losing their jobs. Through these methods, the enterprise can improve the shortcomings in the service, improve the service quality, and the customers give a higher evaluation of the service, improve the

customer satisfaction, and then improve the customer loyalty. It also helps enterprise attract more new customers and achieve economic growth goals.

The Sustainable Development Goals (SDGs) number 12, Responsible Consumption and Production. Enterprises can take sustainability as their own development concept, and when launching products, enterprise can choose enterprises with sustainable production methods, and strengthen cooperation with them to promote the sustainability of products. Meet the basic needs of products, improve the quality of life at the same time, through prevention, emission reduction, recycling and reuse methods, reduce waste generation, waste of resources. This not only achieves sustainable consumption and production, but also becomes a way of publicity and development concept for enterprise, attract more customer to experience. Employees can introduce the sustainability of products to customers and make more people realize the importance of sustainability. When customers are interested in the concept of sustainability, let them try to choose this consumption concept in their future consumption and experience.

The Sustainable Development Goals (SDGs) number 17, Partnerships for the Goals. To improve the quality of services, enterprise can carry out activities with other enterprises or governments, and enterprises can cooperate and communicate with them to develop sustainable development goals. Through the concept of sustainable development, enterprise can jointly hold commercial activities with partners, and launch relevant products or experience activities in shopping mall or activities, strengthen the communication between enterprise and customers, and the cooperation between enterprise and partners. It is not only bringing publicity to enterprises, but also lets customers experience the concept of sustainable development. Enterprises can choose to cooperate with other enterprises, jointly propose ways to improve service quality, achieve mutual benefit and win-win situation, and strengthen cooperation and communication between different enterprises. The two parties make suggestions to improve the quality of service, which can not only improve customer satisfaction and loyalty, but also achieve a good partnership.

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Appendix

Questionnaire^[25]

Question	Option						
The services offered by Wanda shopping mall are very attractive	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied
Wanda shopping mall's image logo is striking	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied
The information content provided by Wanda shopping mall is closely related to its services	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied
Wanda shopping mall is genuinely trying to solve customers' problems	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied
Wanda shopping mall puts customer service first	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied
Wanda shopping mall has the will to fulfill its promises to customers	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied
Wanda shopping mall is reliable	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied
Wanda shopping mall is trustworthy	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied
Wanda shopping mall's employees handle business quickly	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied
Wanda shopping mall's service response is fast	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied

Questionnaire^[25]

Question	Option							
Wanda shopping mall's service speed is fast	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied	
Wanda shopping mall's staff are always ready to help customers	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied	
Wanda shopping mall's staff always adhere to the standardization of operation in their work	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied	
Customers feel at ease when shopping at Wanda shopping mall	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied	
Wanda shopping mall cares about the needs of customers proactively	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied	
Wanda shopping mall's good service attitude can be throughout all aspects of the service	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied	
Wanda shopping mall understands customer habits proactively and recommends relevant products	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied	
The service of Wanda shopping mall makes me satisfied	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied	
I'm satisfied with the service experience of Wanda shopping mall	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied	
I had a good experience when I went to Wanda shopping mall	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied	
Overall, I am satisfied with Wanda shopping mall	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied	

Questionnaire^[25]

Question	Option						
I plan to continue shopping in Wanda shopping mall in the future	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied
I am willing to continue shopping in Wanda shopping mall in the future	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied
I will often go shopping in Wanda shopping mall in the future	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied
I would like to recommend my friends to go shopping in Wanda shopping mall	very satisfied	more satisfied	satisfied	not care	dissatisfied	more dissatisfied	very dissatisfied