An Analysis of Critical Impact Factors on Chinese

E-Commerce Customer Satisfaction:

a Case Study of Tmall

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ABSTRACT

With the continuous development of e-commerce, e-commerce companies are facing increasingly fierce competition. In a highly competitive market environment, customers are the intangible assets of businesses. How to achieve customer satisfaction and understand the key factors affecting customer satisfaction in e-commerce activities are the key elements for merchants to gain competitive advantage. Only by maximizing customer satisfaction can companies stand out from the fierce competition.

Based on the previous research on the index system and the characteristics of online shopping and online consumers, this paper uses the largest B2C e-commerce platform Tmall in China as an example to construct and apply the evaluation index system of Tmall customer satisfaction. Then, according to the index system, a satisfaction survey questionnaire was designed. The questionnaire includes two parts: the respondent's basic information and Tmall's customer satisfaction survey.A 5 point Likert-type scale is used to measure various indicators in the study. A total of 300 questionnaires were issued. 252 valid questionnaires were retrieved, and the effective return rate was 84%. The customer's actual experience provides data support for research on Tmall customer satisfaction, and customers actually participate in the entire customer satisfaction study.

For the questionnaire data collected, the sample descriptive statistics analysis was first used by the statistical software SPSS 20.0 to find that the indicator of the highest average customer satisfaction was the diversity of commodity classification. The most unsatisfactory indicator was customer privacy protection. Then Pearson's correlation coefficient was applied to processing analysis. The most important factor influencing the customer satisfaction of Tmall was the security and convenience of electronic payment. Combining the two methods of analysis, propose the corresponding countermeasures that merchants should take to promote the further development of Tmall e-commerce.

In addition, Tmall is the e-commerce platform industry benchmark and Chinese B2C shopping site with the largest market share. Therefore, choosing Tmall as case study object and doing the influence factors analysis of Tmall e-commerce customer satisfaction, to establish which factor is the most important element that impacts Tmall customer satisfaction have a certain role in reference and inspire for other companies.

Keywords: Influencing Factors, E-Commerce, Customer Satisfaction, B2C, Chinese Tmall

ACKNOLEDGEMENT

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CHAPTER 1

INTRODUCTION

1.1 Background of the Study

With the rapid development of information technology, e-commerce has become more and more integrated into our daily life. People use the Internet technology to make themselves have a more comfortable living environment.

E-commerce is the new product that was born in this new era. It grows with the development of the Internet and is gradual maturity after entering the new century. It is subdivided into several different e-commerce models that are distinguished by buyers and sellers. It has greatly enriched people's material life. Shopping has never been as convenient as now like. As long as a computer can access the Internet, people can stay at home at any time, ready to buy their favorite products. For consumers, e-commerce provides a new consumer experience and sets up a new consumer service relationship at the same time. It is not only a supplement to traditional real economy but also an impact.

Tmall is one of the best representatives of e-commerce in China. Tmall, also known as Taobao Mall (old name), is a comprehensive shopping site. On the morning of January 11, 2012, Taobao Mall officially announced its new name as "Tmall."It is a new B2C one-stop

shopping platform created by Alibaba Group based on Taobao. Besides, Tmall is the e-commerce platform industry benchmark and Chinese B2C shopping site with the largest market share. In other words, Tmall e-commerce platform has significant advantages in user scale and market share. Therefore, choosing Tmall as case study object and doing the influence factors analysis of Tmall e-commerce customer satisfaction, to establish which factor is the most important element that impacts Tmall customer satisfaction have a certain role in reference and inspire for other companies.

In recent years, the development of Chinese e-commerce is shown in the figures below.

● The Entire E-commerce Data

Figure1.1.1 Chinese E-commerce Market Transaction Scale 2011-2016
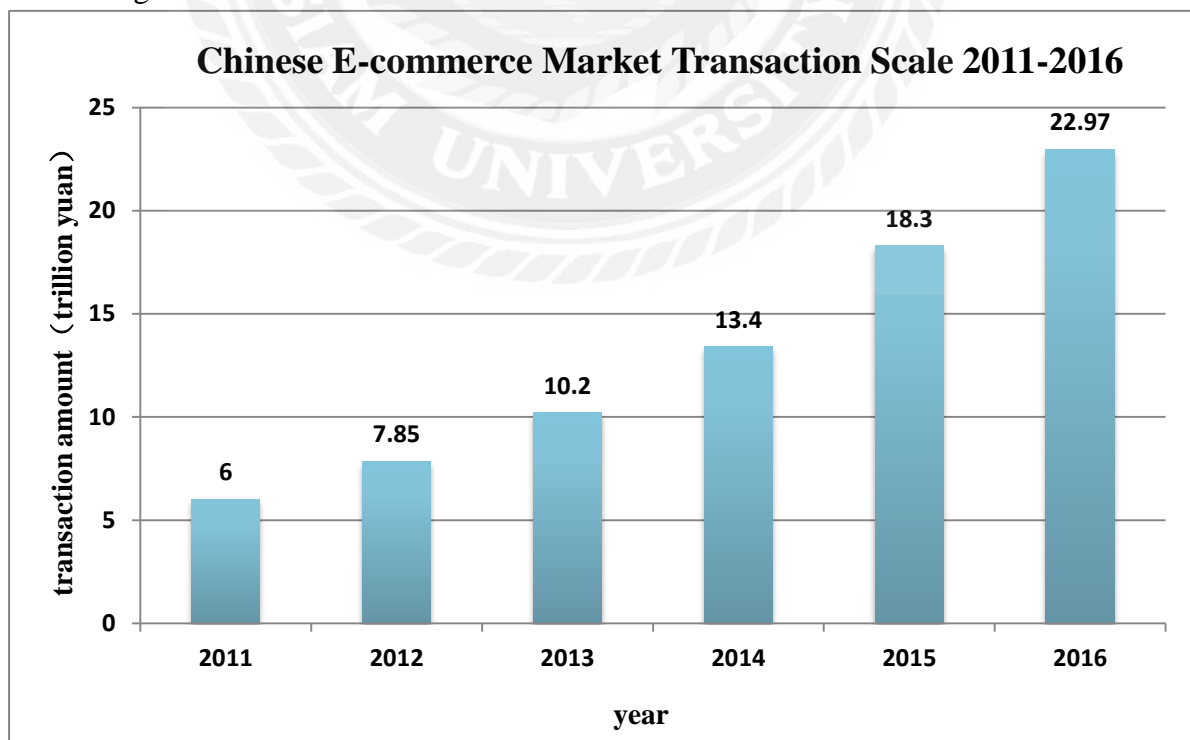
Source: China e-commerce research center monitoring data

In 2016, the transaction volume of e-commerce in China was 22.97 trillion yuan, with year-on-year growth of 25.5% over the same period of last year. Among them, the B2B market turnover took up 16.7 trillion yuan with increase of 20.14% compared to the same time; online retail market turnover grew 39.1%, accounting for 5.3 trillion yuan. Life service e-commerce turnover was 970 billion yuan.

Figure1.1.2 Chinese E-commerce Service Companies Practitioners 2011-2016
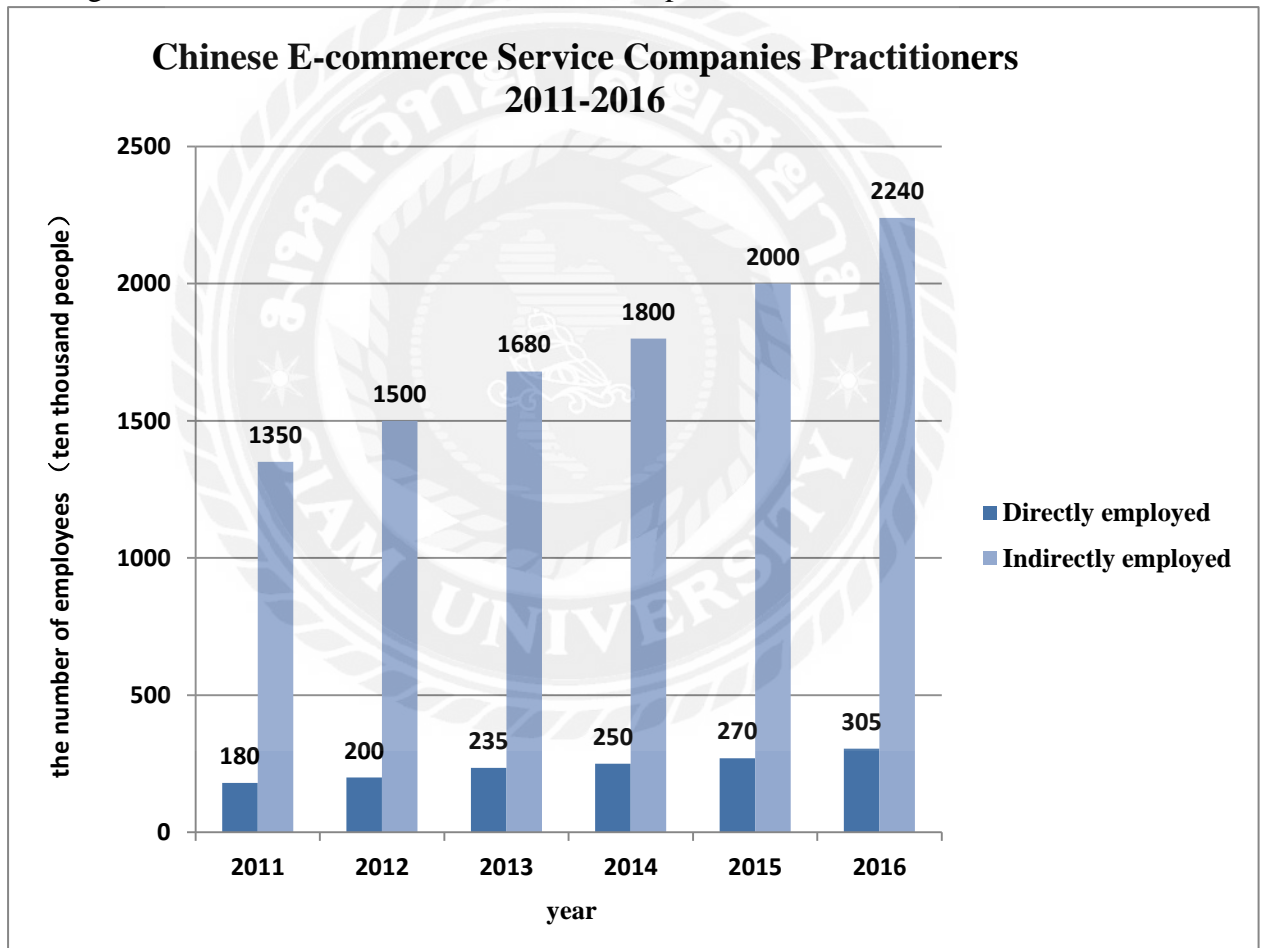
Source: China e-commerce research center monitoring data

As of December 2016, there were more than 3.05 million direct employees in China's e-commerce service enterprises and over 22.4 million quantity of employment were indirectly driven by e-commerce.

Figure1.1.3 Revenues from China's above-scale Express Delivery Business2012-2016
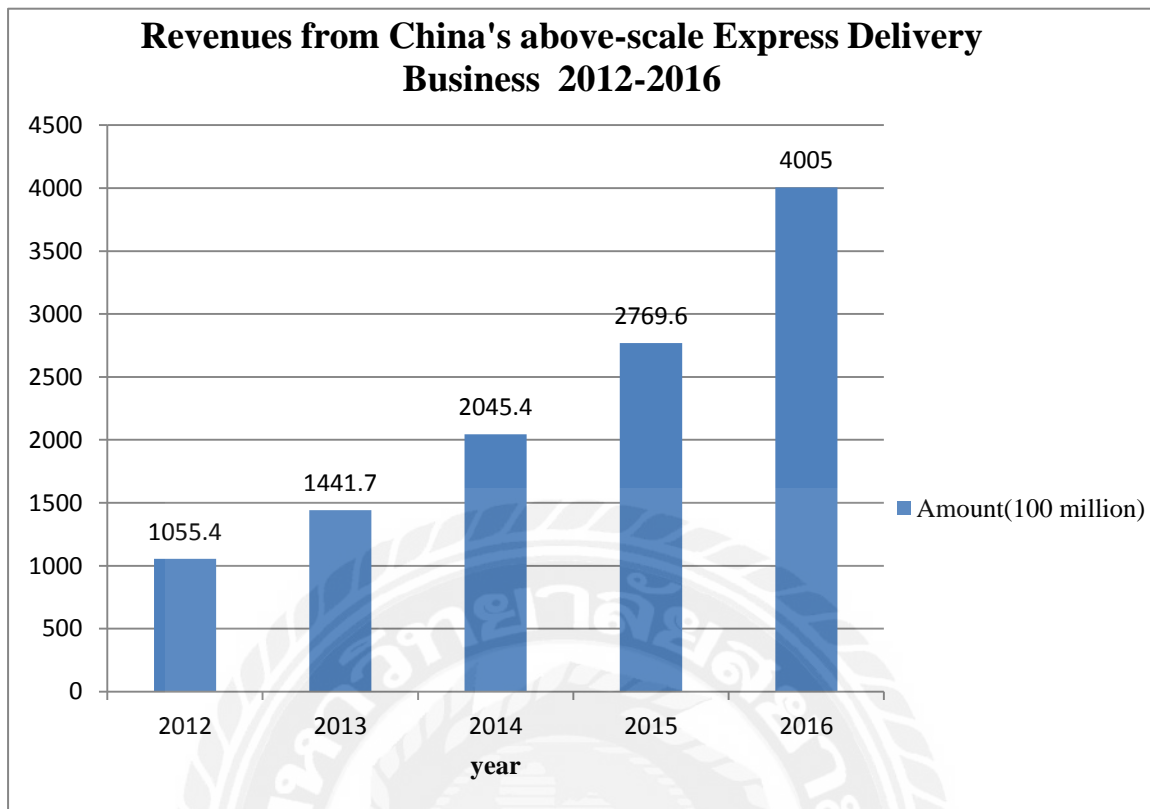
Source: China e-commerce research center monitoring data

It can be seen from the chart that revenues of China's large-scale express delivery enterprises were 400.5 billion yuan in 2016, increasing by 44.6% compared with the revenues of 276.96 billion yuan in 2015. In recent years, revenues of express delivery enterprises above the national scale have been continuing to grow and be stimulated by online parcels of e-commerce.

● B2B E-Commerce Data

Transaction Size: The trading scale of B2B e-commerce market in 2016 was 16.7 trillion yuan with year-on-year growth of 20.14%.

Revenue: In 2016, the revenue of China's B2B e-commerce platform reached 26 billion yuan, up 18.18% over the same period of last year.

Market Shares:

Figure1.1.4   2016 China B2B platform market share situation
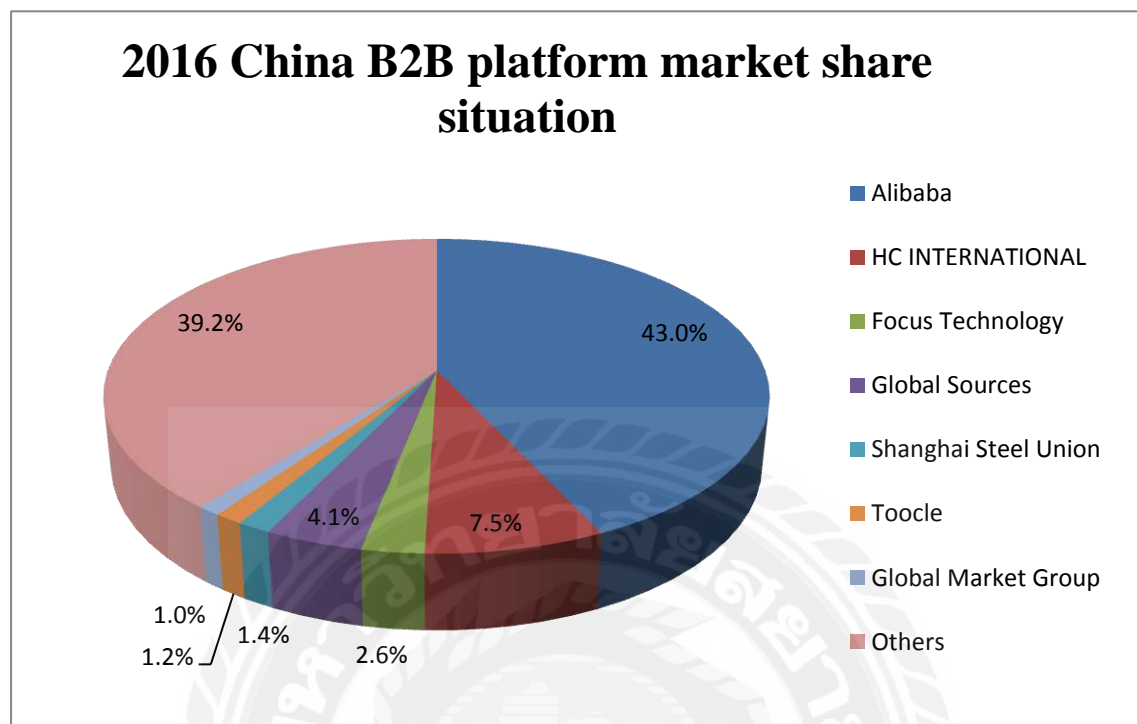
Source: China e-commerce research center monitoring data

● B2C E-Commerce Data

Scale of Online Retail Market: The transaction scale of online retail market in China was 5,328.8 billion yuan in 2016, up 39.1% over the same period of last year.

Proportion of online shopping in total retail sales: In 2016, the online retail market in China accounted for 14.9% of the total retail sales of consumer goods and rose by 2.2%, compared with 12.7% in 2015.

Size of Online Shopping Users: The number of online shopping users in China reached 500 million in 2016, representing an increase of 8.6% as compared with 460 million in 2015.

Market Shares:

Source: China e-commerce research center monitoring data
Note: 2016 China B2C Internet retailing markets (including open platform and self-sales, excluding brand e-commerce)

From these figures above, it can be clearly seen that online retail sales will remain at medium and high growth rates. The competition pattern of "Only Super Power (B2C: Tmall, B2B: Alibaba) and Multi-great Power" will basically keep stable. The integration of Online to Offline will become the main tone of industrial development. With traditional retail sales declining, the retail transformation of the Internet has become one of the most important growth drivers for all retailers in the future.

Besides, E-commerce has become the pillar of China's economy. In 2016, China continued to increase its policy support to promote the

traditional enterprises of transformation upgrading through "Internet +". From the central to local governments, e-commerce has become the key point of development. In 2016, the B2B field was still the battleground for the military in the investment circle. In addition to the continuous injection of venture capital funds outside the industry, the B2B sector has also attracted continuous capitalization of industrial capitals in various industries in B2B sectors, bringing a steady stream of momentum to the development of the entire industry.

This study is mainly about the influence factors analysis of Tmall e-commerce customer satisfaction, to establish which factor is the most important element that impacts Tmall customer satisfaction. Many people may think of the product itself such as products price, promotion situation and products quality is the most crucial factor that influences customer satisfaction. However, for e-commerce sellers, their technology including the security and convenience of electronic payment, stability of the web's server, friendliness of website design, their service (logistics, packaging, response to customer inquiries, etc) are also important factors that could affect it. Then which one is crucial, for each factor, how much influent extent to customer satisfaction are the following problems to be discussed.

1.2 Statement of the Problem

The customer's actual experience provides data support for research on Tmall customer satisfaction, and customers actually participate in the entire customer satisfaction study. The right to evaluate a product or service in the past is usually in the hands of an official agency rather than the customer who actually purchased the product or service. This may cause the result of the research to be distorted to some extent. The customer satisfaction study requires that all customers involved in the survey have actually used relevant goods or services and asked them to reflect their true feelings on the questionnaire to ensure the authenticity of the data. Companies also need such negative information so that they can really feel some neglected aspects. Sometimes such negative information helps the business far more than the false praise. Therefore, only the customer's actual participation in the customer satisfaction research can show the true value.

According to China e-commerce research center monitoring data, for Chinese Retail E-commerce in 2016, "Top Ten Annual Complaints Hot Issues" are as followed: shipping issues (13.27%), logistics (9.57%), customer service (9.48%), refund problems (8.42%), the difficulties of return and/or exchange goods (7.93%), false promotions (7.46%), the quality of the products (6.82%), the suspected fakes (5.85%), the unmatched items (5.34%) and the information leakage (3.78%).

With the popularity of e-commerce and sharply increasing crowd of online shopping, the satisfaction of e-commerce customer is becoming more and more important and to be an issue of common concern. Furthermore, Customer satisfaction is one of the important factors that can decide whether the enterprise can have a long-term operation and the degree of profitability. For many online shopping customers, this study also matters to their benefits. Therefore it is necessary to do a research about which factor will influence customer satisfaction most. Through analysis of case company Tmall's success and failure, give other companies some degree inspirations and reference functions, and help them to improve their products and service quality with more directions.

1.3 Objective of the Study

The objective of this study is to investigate which factor (independent variable, e.g. products, service and technology) affecting customer satisfaction of Tmall (dependent variable) and the extent to customer satisfaction. The following three purposes will be achieved through the investigation and analysis of customer satisfaction:

1. Make Tmall understand this rapidly changing market, find many shortcomings in the course of business and provide inspiration and reference to other enterprises.

2. Enable Tmall to compare with other companies in the same industry, clarify the position in the current development situation and the future development trend of the industry and their own possible competitive advantages.

3. Through the questionnaire survey to obtain the numerical value of customer satisfaction, Tmall can obtain a set of true and effective evaluation results for its own goods and services, which will help Tmall to formulate future business decisions and find out the problems then make targeted improvements to improve customer satisfaction.

1.4 Research Hypotheses (Null and Alternative Hypothesis)

Ho1: There is no relationship between products and customer satisfaction.

Ha1: There is a relationship between products and customer satisfaction.

Ho2: There is no relationship between service and customer satisfaction.

Ha2: There is a relationship between service and customer satisfaction.

Ho3: There is no relationship between technology and customer satisfaction.

Ha3: There is a relationship between technology and customer satisfaction.

1.5 Conceptual Framework

Independent Variables   **Dependent Variable**

Figure 1.5.1 Conceptual Framework of the Study

1.5 Conceptual Framework

Independent Variables   **Dependent Variable**

Products

➢ Products Price
➢ Promotion Situation
➢ Products Quality
…………..

Service

➢ Logistics
➢ Packaging
➢ Response to Customer Inquiries
…………….

Customer Satisfaction on Tmall Shopping Website

Technology

➢ The Security and Convenience of Electronic Payment

➢ Stability of the Web Server

➢ Friendliness of Website Design
…………….
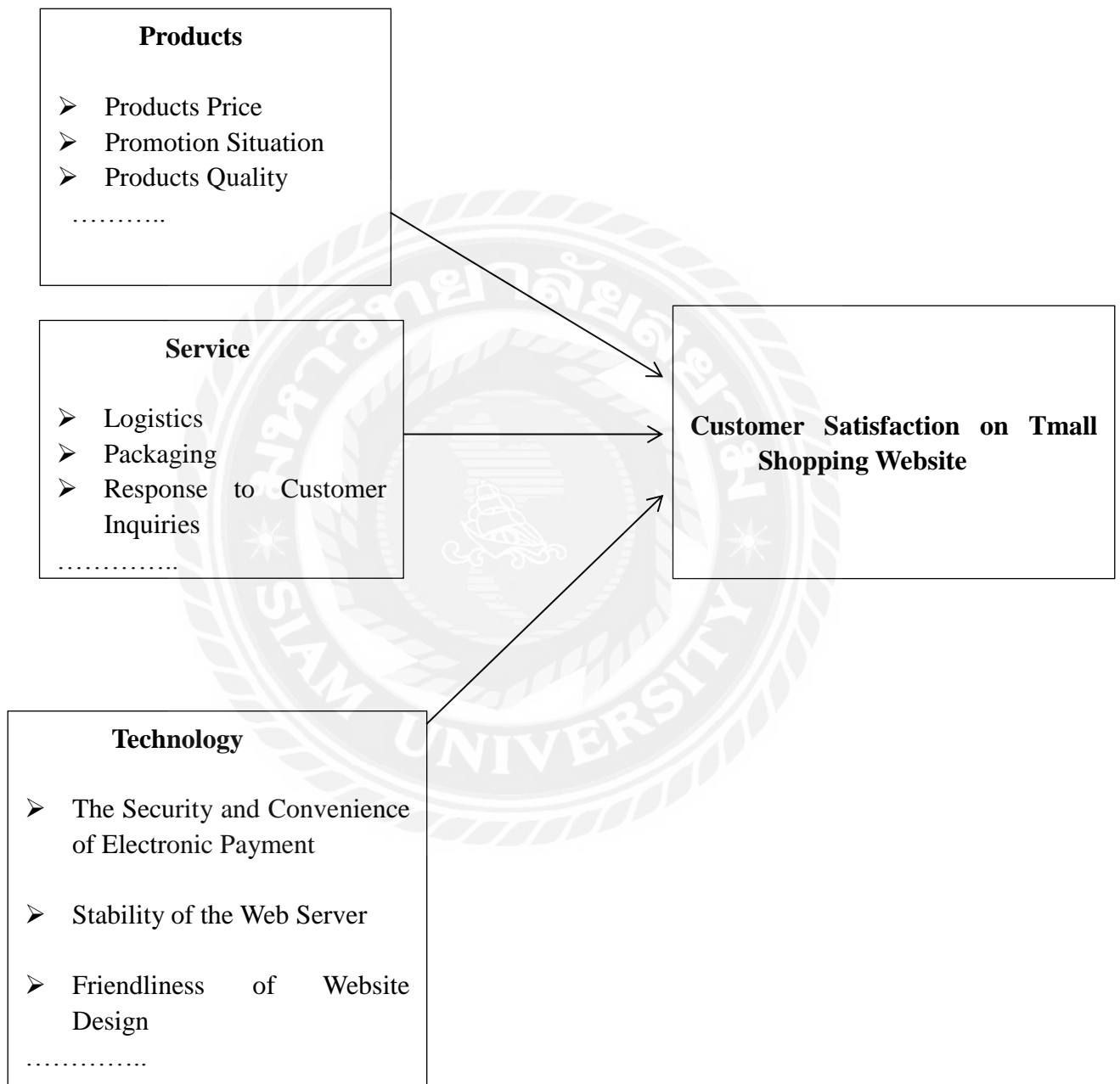
Figure 1.5.1 Conceptual Framework of the Study

1.6 Significance of the Study

Customer satisfaction is one of the best-studied areas in marketing, because it has become a principal factor in achieving organizational goals, and is considered a baseline standard of performance and a possible standard of excellence for any organization. The slogan "the customer is always right" highlights a high priority and the importance of customer satisfaction. Customer satisfaction generally means customer reaction to the state of fulfillment, and customer judgment of the fulfilled state. There are many benefits for a company from a high customer satisfaction level. It heightens customer loyalty and prevents customer churn, lowers customers' price sensitivity, reduces the costs of failed marketing and of new customer creation, reduces operating costs due to customer number increases, improves the effectiveness of advertising, and enhances business reputation.

After many scholars researched on customer satisfaction, they got a conclusion that customer satisfaction will increase the customer's behavior of repeated purchase and customer loyalty, thereby enhancing the profits and benefits of the enterprise. As a general rule, customer satisfaction and customer loyalty are very closely related. Customer satisfaction functions as an antecedent of customer loyalty. It prevents customer churn and consolidates retention, thereby constituting an important cause of customer loyalty. Vilfredo Pareto put forward, "20%

loyal customers for the enterprise will bring nearly 80% profits", which is also called principle of 80/20 or Pareto Rule. Companies recognize that keeping current customers is more profitable than acquiring new customers to replace those who have been lost. Therefore, making a survey research about customer satisfaction difference is very essential, which will help other enterprises to improve their products and services quality with more directions. In addition, through the analysis of customer satisfaction of Tmall that is the e-commerce platform industry benchmark and Chinese B2C shopping site with the largest market share, give others a certain degree of inspiration and reference to achieve the sustainable development of e-commerce platform.

Tmall e-commerce platform has significant advantages in user scale and market share. However, with the rise of other e-commerce companies, Tmall should be highly vigilant and users' demands for e-commerce platforms are increasing. Paying attention to the service perception of e-commerce platforms customers is increasingly important. Different user groups have different levels of awareness for platform. Surveying user satisfaction from different user perspectives can understand the actual needs of different user groups.

Through the questionnaire survey method to collect the user satisfaction feedback of Tmall e-commerce platform, it is possible to grasp the user group's consumption experience and actual needs, clarify

the main issues and the main factors affecting user satisfaction in the Tmall e-commerce platform, put forward targeted corresponding strategies to improve the service quality and user experience of Tmall e-commerce platform, reduce loss of customers, increase customers satisfaction and loyalty, improve the competitiveness of Tmall e-commerce platform, and promote the long-term development of Tmall e-commerce platform.

1.7 Limitations of the Study

This study is doing based on questionnaires whose sample size 252 people is not so large due to operability and reality. Besides, the differences between online shoppers in different regions have not been taken into consideration. Therefore, whether the conclusion of this study is applicable to whole China remains to be studied. Nevertheless, the samples are selected as representatively as possible, which will minimize the impact on results. Furthermore, the number of chosen company is limited. This research mainly focuses on the B2C online store Tmall as its research object. It does not deal with other e-commerce models such as B2B and C2C and the method of using data analysis software SPSS 20.0 for analysis is limited. Finally, the indicators and questions of the questionnaire design have not been guided by experts. There may be some flaws and irrationalities

CHAPTER 2

LITERITURE REVIEW

2.1 Electronic Commerce

2.1.1 E-Commerce Theories

The development of e-commerce triggered everyone's discussion. Foreign scholars generally believe that the core of e-commerce definition is a new business model that realizes the contents of commodity service information trading, enterprise management and financial settlement payment via Internet communication technology. Among them, Haynes (1995) [1], Kalakota (1996) [2] and Kosiur (1997) [3] think that e-commerce is a modern business transaction mode based on Internet communication technology, which can effectively realize online commodity trading and high efficiency of enterprise development management. It is not only conducive to reducing the cost of production and development and improving the efficiency of operation and management, but also playing an important role in macroeconomic development.

From November 6 to November 7, 1997 in the French capital Paris, the International Chamber of Commerce held a conference on world e-commerce. For e-commerce, the most authoritative concept of

e-commerce elaborated: Electronic Commerce refers to the electronization realization of the entire trading activity. Laudon et al. (2003) [4] argue that e-commerce is a series of business transactions conducted through the Internet, that is, it's the digital business transactions between the businesses and businesses, individuals and individuals, businesses and individuals.

In addition to related research on the concept of e-commerce, more literatures tend to focus on the development issues of e-commerce. As early as 2000, L. M. Matthew et al. [5] proposed that traditional views such as "low-tech, multi-touch, personalization" are no longer acceptable. At present, everyone in the academic field has a professional analysis on the development of e-commerce and influencing factors and other aspects from different disciplinary views. Yoo and Boonghee et al. (2001) [6] studied the quality of service through e-commerce platform and proposed SITEQUAL scale.

Based on the traditional SERVQUAL scale, Zeithaml (2002) [7] put the focus on the service quality of online shopping and then proposed the E-SERVQUAL scale to measure the quality of e-service. In 2005, she further explored the dimensions of e-service quality and expanded the scale of e-service quality. Westland and Bay (2002) [8] pointed out that e-commerce can break through the time and space constraints, provide a broad platform for information dissemination, exchange and search for

commodities, reduce information asymmetry, reduce channel intermediaries, reduce transaction costs and improve transaction efficiency.

Deng Shunguo and Zong Qianjin (2013) [9] pointed out that socialized and mobile e-commerce will be the development trend of e-commerce in the future because of their localization, portability, and international characteristics. At the same time, vertical e-commerce and platform e-commerce will continue to coexist. Cao Jin (2014) [10] analyzed and considered the essence of e-commerce from the perspective of dialectics. Then he proposed that the purpose of e-commerce is business. Its essence is a means to transform people's work and lifestyle. E-commerce is the process of informatization of corporate business activities. It is essentially an activity of information sharing and resource exchange between the enterprise and the outside. And it is one of the means by which the company extends its management that reaches to the outside world.

2.1.2 The Type of E-Commerce Platform

E-commerce platform is not directly involved in the transaction between buyers and sellers. The platform is the intermediary between buyers and sellers, providing sales platform for sellers and buying platform for buyers. E-commerce platform needs to provide help to coordinate the trading disputes. E-commerce platform is divided into

different types in accordance with the different trading partners:

➢ B2B refers to the e-commerce between enterprises. The main role is to integrate the information integration of enterprises from top to bottom and reduce the cost of communication and simplify the transaction process;

➢ C2C is the e-commerce between consumers and consumers. The sellers create their own shops and display products and then buyers buy their own goods. Consumers can sell goods on the e-commerce platform, can sell idle second-hand products or new products and can bid products. Representative website is Taobao;

➢ C2B is an innovative business model where consumers decide what products manufacturers should produce to create collective bargaining through consumer clusters, which can improve purchasing efficiency.

➢ B2C is the e-commerce between e-retailers and consumers. Furthermore, it's the most common form of e-commerce and the e-commerce type of case company Tmall. Businesses display products in rich forms on e-commerce platforms, providing consumers with convenient purchasing interfaces and online transactions. The following will focus on the main types of B2C e-commerce shopping model:

At present, there are mainly three types of B2C e-commerce shopping modes in China:

The first category is a shopping website with completely open platform, and the typical representative is Tmall. Tmall does not have its own products. The products on the site are entirely operated by branded merchants settled in Tmall where it only provides the trading platform. The profit mainly comes from the trading commissions and advertising expenses of the settled merchants. Tmall is similar to the real life shopping mall.

The second category is based on Jingdong Mall as an independent management website. Most of the products on the site are self-financing by Jingdong, and it has built a warehousing logistics system only owned by Jingdong. Jingdong Mall is responsible for the procurement of goods, putaway, distribution, customer service. Its profit comes from the price difference of product, costs of logistics and distribution. Jingdong Mall is similar to real life Wal-Mart, Carrefour and other large shopping malls.

The third category is vertical B2C shopping site represented by Vancl whose biggest feature is the production of self-owned brands. Vancl produces and markets all by itself. The outstanding representative of this type of shopping website is Xiaomi Technology that had rapid development since 2012. Their common ground is rooted in online marketing without inter-channel costs.

2.1.3 The Analysis of E-Commerce Process

B2C e-commerce makes consumers have a new shopping experience. Through a computer with Internet access, consumers can trade with sellers all over the world without having to rush around crowds of crowds and to complain about the inefficiency of cashiers at the checkout counter. The reason why B2C e-commerce attracted a large number of consumers is its easy and convenient shopping process. The basic process of online shopping, as shown below:

Online Shopping Basic Flow Chart
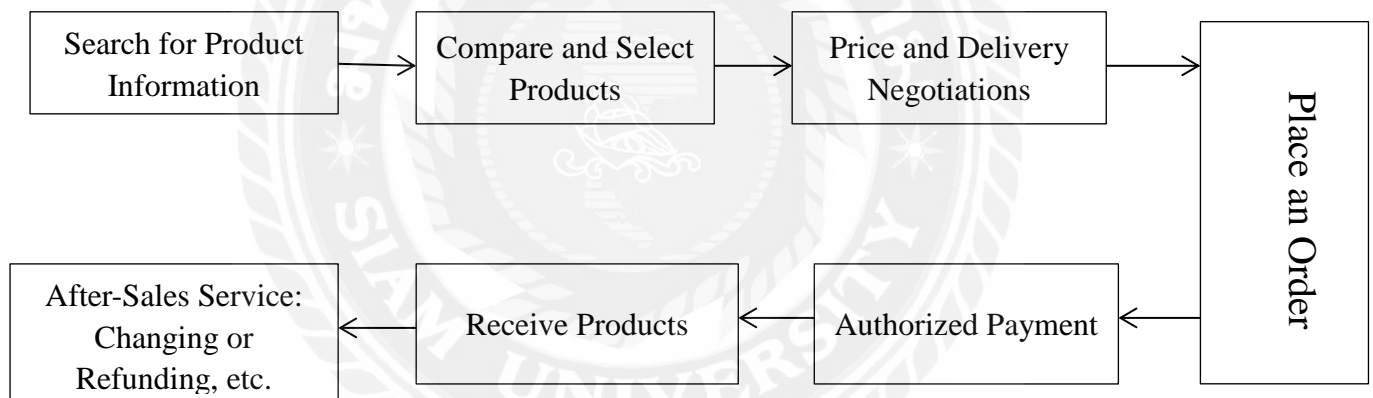
Figure 2.1.3.1 Online Shopping Basic Flow Chart

From figure 2.1.3.1 above can be seen: The basic process of online shopping can be divided into three stages: before the transaction, in transaction, the completion of the transaction.

For the customer, pre-transaction is a search information process. In any one B2C online shopping site transactions, customers must do first is

to become a registered user of this site. Then, enter the desired product name or feature description in the navigation bar to search. Customers can also do the classified search according to the category set by B2C online shopping site.

Trading stage, is the stage that customer understand the goods and negotiate with sellers. Customers have found the goods they need, and he can find out the specific information through the description and photos of the goods in the seller's online store. If the customer still has questions about the product, he can ask the seller directly through the contact information left by the seller. When customers make purchasing decisions, there is also a way to determine the payment and logistics with the seller. Actually, this is not only the stage of direct communication between buyers and sellers, but also an important stage affecting customer satisfaction.

When the customer has determined the purchase of goods, the completion of the transaction stage is coming. At this point, the customer needs to pay the purchase price in time according to the payment method agreed with the seller. Paying by Alipay is the choice of most buyers. After the sellers receive the notification of payment arrival, the goods are delivered to the customer according to the agreed logistics method. After customers receive the goods, their evaluations to the seller will be based on the quality of the goods and the seller's service. At this point, the entire

process of online shopping is over.

According to the above analysis of B2C e-commerce process, rearrangement flow chart is as follows:

Figure 2.1.3.2 Process of B2C E-Commerce
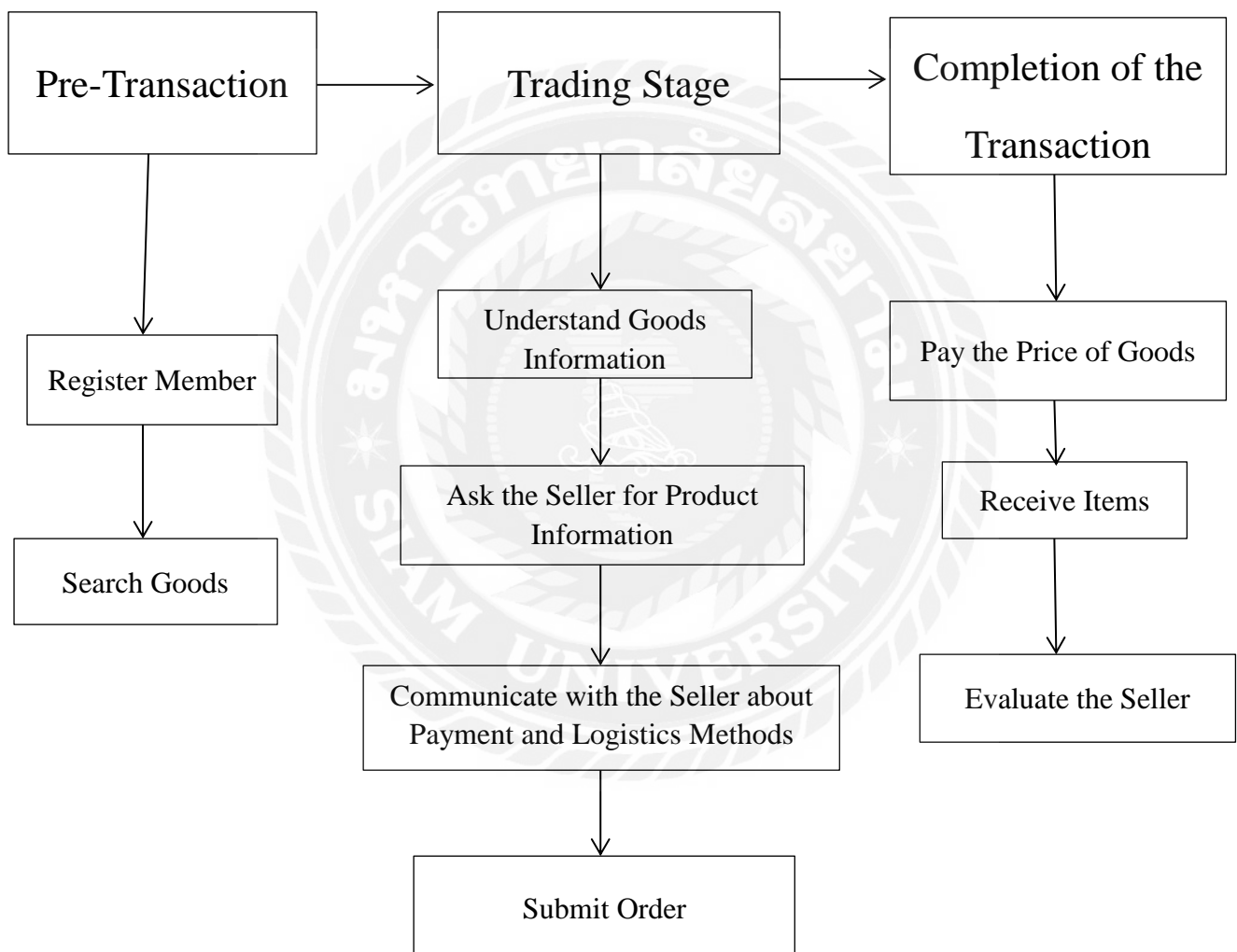
2.2 Theoretical Research on Customer Satisfaction

The concept of customer satisfaction has been controversial in academia so far. For the first time, Cardozo (1965) put forward the

concept of "Customer Satisfaction" in the field of marketing. He pointed out that the entry point of marketing should be the subjective feeling of customers on products and whether the products can bring comfortable and good experience for customers. [11]

At present, there are many explanations about satisfaction. According to Howard and Selth (1970), satisfaction is an abstract description of a person's psychological state, which is a comparison between the real situation and the expected situation of the enterprise providing the goods or services to the customer. [12]

Scholar Oliver (1980) found that customer satisfaction enables customers to think that the consumption can meet their own needs or goals and they are willing to recommend it to others. A satisfied customer will think this consumption is comfortable and pleasant. The level of satisfaction is the important factor to stimulate the desire of consumers to buy again in the future. [13]In 1986, the psychologist in the United States started to study customer satisfaction from the field of psychology. He described the customer satisfaction that it is the state of satisfaction that customers meet when they are spending. Thus, customer satisfaction theory evolved into a scientific theoretical concept.

The concept of Customer Satisfaction was put forward by Claes Formel (1992), a U.S. economist. In the market, assuming that customers are rational, he believes that the starting point for any modern enterprise

to carry out any business activities should be to meet customer needs. Start from the real needs of customers rather than company's own interests and constantly shorten the gap between company's products or services and customer requirements to achieve customer satisfaction. [14]

American scholar Ernest R. Cadotte and Robert B. Woodruff (1997) proposed a comparative experience model for consumers. They argued that whether consumers are satisfied with the goods or services provided by the enterprises at present largely depends on the comparison that they have similar consumptions. According to this comparison, customers make good or bad judgments on current goods or services. [15] Szymanski (2000), a scholar, has found out that positively influence customer satisfaction factors such as convenience of consumption, product information, website design and customer financial safety through a large number of surveys. [16] Kotler Philips (2001), his point of view is that customer satisfaction arises from: when the effect＜as expected, the customer is not satisfied; and when the effect≥ as expected, it represents the feeling of the customer is basically satisfied. [17]

dissatisfied customers can express their feelings through their behavior (Zeelenberg and Pieters, 2004).[18] These negative behavioral responses may impact on a firm's profitability. At the very least, consumers can express negative feelings to people they know, and due to advancements in digital communication, word-of-mouth can spread

rapidly, which can very likely affect a business's reputation in a positive, or, more worryingly, a negative way (Babin and Harris, 2012). [19]Research shows that an unsatisfied customer will communicate to nine other people his or her bad experience (Hoffman and Bateson, 2010). [20]This negative word-of-mouth can be very harmful, and can adversely impact the firm's reputation and profitability. The good news for marketers is, however, that if firms satisfactorily resolve customers' problems, previously dissatisfied customers will spread this news to five other people concerning the treatment they have received, and they will be more likely to do business again with the firm than non-complainers.

2.3 Research on Influencing Factors of Online Shopping Customer Satisfaction

Online shopping first appeared in the United States. In 1995, online bookstore Amazon was formally established. About Online shopping, customers can pay on delivery or online. At that time, Amazon's online payment was realized by the US's No. 1 security network bank. Online shopping is different from the traditional shopping model. It must be implemented by the network and also involves logistics. This increases the complexity of customer satisfaction. The foreign researches of evaluation on online shopping customer satisfaction have relatively more and early results:

Szymanski and Hise (2000) thought that the factors affecting

customer satisfaction were web design, perceptual convenience, product category, and perceived security. It was found that there was a significant positive impact on customer satisfaction through empirical research, that is, perceived convenience, web design and perceived security. The degree of influence is as the order in turn [21].

Heiner and Gopalkrishnan (2004) used Szymanski and Hise's research framework and research methods to study the customer satisfaction of online shopping in Germany. The findings were consistent with the findings of Szymanski and Hise [22].

Szymznski and Hise (2007) have shown through research that the important factors affecting customer satisfaction include web design, website convenience, marketing planning, financial security, and came up with a model of customer online shopping satisfaction[23].

Chinese customer satisfaction with online shopping started at the end of the 20th century. In recent years, the development of e-commerce in China has been in full swing, and domestic research on online shopping customer satisfaction has gradually increased. There are also many scholars who have researched and discussed the factors affecting the customer satisfaction of online shopping. They studied from different perspectives and established a customer satisfaction model based on online shopping.

Yang Hongfen (2002) believes that customer satisfaction can make

enterprises obtain better long-term profitability. This is a necessary condition for e-commerce companies to achieve long-term success, is the key to achieving the healthy development of online shopping. Moreover, she put forward the main factors affecting online shopping customer satisfaction: system performance, product information, goods, guarantees, customer relations, etc. [24]

Based on Philip Kotler's customer transfer value theory, Gao Dan (2004) summarized the evaluation index of B2C e-commerce customer satisfaction. The customer satisfaction evaluation index system consists of two parts: total customer value and total customer cost [25].

Meng Fanrong, Zhang Xin and Yuan Liqun (2007) believe that customer satisfaction is an important factor affecting customers' online shopping, and pointed out that product quality, the safety of shopping websites, the services of websites, and the convenience of online shopping are main factors influencing customer satisfaction. On the basis of empirical verification, they proposed several strategies to improve customer satisfaction [26].

Li Haiying and Lin Liu (2009) applied the transaction cost theory to the online shopping satisfaction study to explore the impact factors of online shopping satisfaction—the relationship among time efficiency, price saving and customer satisfaction [27].

Zhai Qinghua and Ye Penghai (2009) measure customer satisfaction

through online shopping product satisfaction and service satisfaction. They used the structural equation model and took college students as the main survey objects to verify the influence of the three on customer loyalty [28].

Wang Feng (2010) built an initial theoretical model based on a large number of relevant literatures and in-depth interviews on the composition of customer satisfaction in online customer service. He used questionnaires to conduct empirical research, discovering customers perceived service quality is an important factor affecting customer satisfaction. Its four quality dimensions (validity, reliability, availability, and privacy) influence customer satisfaction indirectly by perceived service quality [29].

Zhang Yang (2011) used the factor analysis method to build a satisfaction evaluation index system for B2C e-commerce companies based on the analysis of the factors that influence the online purchase customer satisfaction. The Vancl website was taken as an example and the fuzzy comprehensive evaluation method was used to measure customer satisfaction. At last, Zhang Yang analyzed the results and proposed countermeasures and suggestions [30].

Guo, Ling, and Liu (2012) developed a model of factors influencing online shopping satisfaction in China. They identified eight influencing factors on customer satisfaction; namely, website design, security,

information quality, payment method, e-service quality, product quality, product variety, and delivery service. They found that all eight of these factors are positively related to consumer satisfaction when buying online. [31]

From the literatures above, it can be seen that the factors affecting the customer satisfaction of online shopping are based on the customer satisfaction degree in the traditional real economy model shopping and combined with the characteristics of online shopping.

2.4 Tmall Introductions

Tmall, also known as Taobao Mall (old name), is a comprehensive shopping site. On the morning of January 11, 2012, Taobao Mall officially announced its new name as "Tmall." Tmall Mall has over 70,000 brands, more than 400 million buyers and 50,000 merchants. [32]Tmall is a new B2C one-stop shopping platform created by Alibaba Group based on Taobao. A one-stop solution and various high quality after-sales services are provided among manufacturers, merchants and consumers.

Through the promotion of Taobao, the largest C2C website in China, Tmall quickly captured consumers' hearts with its high-quality goods and services. Every November 11th is the so-called "Singles' Day" which Taobao gives a special meaning: the double 11th shopping carnival. On November 11th, 2012, Tmall made a fortune with the Singles Festival,

claiming to sell 10 billion in 13 hours and created a world record. On November 11, 2013, the single-day sales reached 35 billion yuan, which is equivalent to half of China's total daily social retail sales. On November 11th, 2016, Tmall double 11 renewed the day record of world's largest shopping with a single day trading of 120.7 billion. Tmall Double 11 Global Carnival transaction in 2017 amounted to 91.2 billion yuan in 7 hours 22 minutes 54 seconds, exceeding the double 11 full day in 2015. [33]

The goals set by Tmall at the beginning of its establishment are as follows: 1. The consistency of the goods. The goods the consumer sees on the website must be consistent with the goods opened at the time of delivery. The textual description of the goods must be true; 2. Goods are in stock. Sellers must ensure that goods are in stock before consumers place orders, that is, goods that are in stock can be put on shelves. 3. Timeliness of logistics. Make sure that goods are timely and safely deliver to the hands of consumers; 4. The platform is open. Make Tmall shopping platform and marketing resources open for more well-known branding business to achieve a win-win situation.

The reason why B2C developed so rapidly has its specific advantages. The advantages of Tmall are: 1. Brand advantages. Tmall brings together many well-known brands. These brands have established a good reputation and corporate image in the hearts of consumers, which

has generated appeal for consumers. Therefore, the loyal customers of each brand will also shift to Tmall due to the convenience and low price of online shopping. 2. Market positioning. There are many merchants with good and bad mixed together in Taobao. Besides, the quality of products is uneven and the quality of service cannot keep up. The positioning of mid-to-high end consumers is ambiguous. Tmall Mall just fills this gap in the market. It has increased the level of consumption through some international and domestic big-name brands, attracting many mid-to-high end consumers. 3. Resource advantages. Compared to other B2Cs Shopping sites such as Jingdong, the development of Tmall is based on mature Taobao, which helped Tmall rapidly expand its popularity and Taobao's original consumer groups have also been attracted to Tmall.

Tmall is not only a collection of big brands and big sellers, but more importantly, its products and service features. It can provide more thoughtful and high-quality services that ordinary shops cannot. Tmall's products and service features: 1. Genuine guarantee. Tmall's sellers promise that the sales of goods are genuine goods, and there is a security code that can be verified by official. 2. Seven days no reason to return goods. If consumers are not satisfied with the goods bought, they can return goods to the seller with no reasons. Let consumers feel comfortable with the ease of buying. 3. Standard logistics services. Tmall has

promised nine logistics companies to increase 1 million orders every day. As a reward, logistics companies provide Tmall with a variety of exclusive logistics distribution value-added services.

In addition, when it comes to Tmall, Alipay has to be mentioned. Alipay is not only the preferred payment solution for transactions on Tmall.com but the number 1 online payment system for China and owned by Alibaba, China's number 1 e-commerce company. Users must pre-pay RMB (Chinese Yuan) credits into their Alipay accounts then they can spend these credits with merchants whom have Alipay accounts. It is a third-party mobile and online payment platform, established in Hangzhou, China in February 2004 by Alibaba Group and its founder Jack Ma. Alipay overtook PayPal as the world's largest mobile payment platform in 2013. USD $760 Billion was handled via the Alipay system. As of August 2014 there were 800 million registered accounts. In the fourth quarter of 2016, Alipay had a 54% share of China's US$5.5 trillion mobile payment market, by far the largest in the world, although its share fell from 71% in 2015 as its rival Tencent's WeChat Pay was rapidly catching up. [34]

Alipay claims it operates with more than 65 financial institutions including Visa and MasterCard to provide payment services for Taobao and Tmall as well as more than 460,000 online and local Chinese businesses. Alipay is used in smartphones with their Alipay Wallet app. QR code payment codes are used for local in-store payments. The Alipay

app also provides features such as credit card bills payment, bank account managements, P2P transfer, prepay mobile phone top-up, bus and train ticket purchase, food order, ride hailing, insurance selection, digital identification document storage. Alipay also allows online check-out on most Chinese-based websites such as Taobao and Tmall. [35]As on Tmall Marketplace, the B2C e-commerce platform under Alibaba Group, buyers and sellers can communicate prior to the purchase through AliWangWang, its proprietary embedded instant messaging program. It has become a habit among Chinese online shoppers to "chat" with the sellers or their customer service team through AliWangWang to inquire about products, engage in bargaining, etc. prior to purchase.

In the B2C domain, Tmall's biggest competitor is JD (Jingdong Mall). JD and Tmall have different operating models. JD is a self-selling shopping website. Tmall is an open platform shopping website. Each of them has its advantages and disadvantages. JD has the largest market share in the self-selling website, accounting for 43.3%. It has launched "211 Limited Time Arrival Service" in some large and medium-sized cities, which means that the orders placed before 11am in the morning will be delivered to consumers on the same day. Orders before 23 o'clock on the same day can arrive before 15 o'clock the next day. Therefore, JD's self-built logistics system is very destructive for Tmall's third-party logistics distribution.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Research Methods

This study adopts the quantitative research method. Quantitative research means that researchers establish hypotheses in advance and determine various variables with causality. Then they measure and analyze these variables using certain tested tools to verify the researchers' presuppositions. Data was collected using cross-sectional that is a survey conducted for different people at the same time. A random sample questionnaire for 300 people who have shopping experiences in Tmall provides data for further analysis and can measure what aspect Tmall does well and needs to be strengthened. The essence of customer satisfaction measurement is the quantitative analysis of various indicators. This research is intended to explain the various factors that affect the Tmall e-commerce customer satisfaction through numbers. Therefore, a 5 point Likert-type scale is used to measure various indicators in the study, that is, 1=very dissatisfied, 2=dissatisfied, 3= general, 4=satisfied, 5=very satisfied. The advantage of Likert-type scale is that they are easy to design and easy for respondents to understand. [36] Finally, Sample Descriptive Statistics and Pearson correlation analysis were performed on

the collected data through SPSS 20.0(data analysis software) to verify the hypothesis and draw conclusions.

3.2 Purpose of the Survey and Respondent Selection

The main purpose of this survey is to understand the most important factors affecting the satisfaction of Chinese customers shopping at Tmall through the statistics and analysis of questionnaire data. According to the aim of the survey, the survey selected Chinese consumers who had shopped at Tmall which is the B2C shopping site with the largest market share. Therefore, selecting Tmall as the target object has a certain degree representation.

3.3 Questionnaire Design and Content

This questionnaire is designed on SO JUMP website (www.wjx.cn) and consists of two parts: the first part is the basic information for respondents; the second part is the text of the questionnaire, based on a 5 point Likert-type scale. 1-5 represents low to high satisfaction. The design evaluation index system of customer satisfaction influencing factors is divided into three levels indicators. The first level indicator is Tmall e-commerce satisfaction, which is the overall indicator of the evaluation; the types of factors that affect customer satisfaction are classified into three second-grade indicators. In the end, all secondary indexes are subdivided into twelve third-grade indicators. According to

these twelve tertiary indicators, design issues and complete the questionnaire design.

3.4 Distribution and Recycling of Questionnaire

The questionnaire is mainly conducted through SO JUMP platform. At the same time, with the help of related forums, electronic survey questionnaires can be promoted to expand the scope of participants and maximize the total number of samples, thereby increasing the effectiveness of the investigation.

Questionnaires are issued in the following two ways: 1. Put questionnaires publicly on SO JUMP website where people who come from Chinese different regions can fill in this questionnaire. 2. Send the questionnaire link to relevant forums and some friends and classmates around so that they could fill in the questionnaire through SO JUMP website link.

In order to make the measurement scale used in the survey effective and the data obtained can reflect the real situation, a round of pre-investigation was first conducted. Moreover, some friends who often shop on Tmall were asked. Combining both of them, questionnaire questions were adjusted to form a formal questionnaire for reissue.

In the pre-survey stage of the questionnaire, a total of 30 questionnaires were issued and all of them were recycled. In the formal investigation stage, a total of 300 questionnaires were issued. 252 valid

questionnaires were retrieved, and the effective return rate was 84%. The number of invalid questionnaires is 48. Invalid questionnaires refer to questionnaires that do not pass the questionnaire screening and individual basic information is incomplete.

3.5 The Structure of Indicator System

Table 3.5.1 The Structure of Indicator System

First-Class Indicator	Second-Class Indicators	Third-Class Indicators
Customer Satisfaction on Tmall Shopping Website	Products	Products Price; Products Quality; Promotion Strength; Diversity of Commodity Classification
	Service	Logistics Delivery Time; Response to Customer Inquiries; Packaging Services; Changing or Refunding Service
	Technology	The Security and Convenience of Electronic Payment; Stability of the Web Server; Friendliness of Website Design; Privacy Protection

3.6 Influencing Factors Summaries of Tmall Customer Satisfaction

The factors affecting Tmall's customer satisfaction are mainly focused on three aspects: merchandise, website technology and services.

Commodities are the most concerned aspects of a customer's shopping behavior. Buying a commodity is the ultimate goal of shopping behavior. If Tmall only provides customers with a brand new shopping experience that is different from the traditional business model, however, the product itself does not meet the customer's requirements, and this new business model also fails. Consequently, the traditional requirements of customers for goods, such as quality, price, variety, etc., still play an important role in Tmall e-commerce, at the same time affecting customer satisfaction.

The distinction between virtual economy and traditional economy lies in the intervention of the Internet. Tmall e-commerce relies on the existence of the network. When analyzing customer satisfaction factors, network technology cannot be ignored. This involves the friendliness of website design, privacy protection, payment security and convenience, etc. Customers need to fill out some personal information when making online purchases to ensure the successful completion of the transaction. A large amount of personal information is transmitted on the Internet, and there is a danger that such information is maliciously stolen by lawbreakers. In addition, because online shopping is usually the first to use online banking or third-party payment methods, for the sake of

financial security, many consumers still have doubts about using credit cards online. Therefore, the security and reliability of the network are also very important aspects that affect customer satisfaction.

Service here refers to the pre-sale, post-sale, logistics and packaging services. In Tmall e-commerce, customers can't directly touch the goods they want to buy. They can only obtain the information of the goods through the introduction and comments of the merchants on the Internet and the communication with the merchants. Accurate and efficient pre-sales services can help customers make purchase decisions. After the sale, if the merchant can provide customers with a worry-free changing or refunding service, the customer's satisfaction with the business is usually greatly increased. The purchase of goods through the Internet usually uses the express delivery or EMS method to deliver the goods to the customer. For this reason, a good package can not only better protect the integrity of the product, but also increase the customer's love and satisfaction with the commodity and merchant. In addition, different logistics methods, different logistics companies, their work efficiency, delivery time and actual differences are all very large. Businesses also have to be very careful about the choice of logistics. Excellent service can greatly improve the convenience of shopping and save the customer's time, which is also an important reason for Tmall to attract customers. [37]

CHAPTER 4

DATA ANALYSIS AND RESEARCH FINDINGS

4.1 Basic Statistics of the Returned Questionnaire

4.1.1 Frequency Table of Respondents Basic Information

Statistics

Gender

N	Valid	252
	Missing	0

Table 4.1.1.1 Frequency Table of Respondents Gender

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	112	44.4	44.4	44.4
	Female	140	55.6	55.6	100.0
	Total	252	100.0	100.0	

Figure 4.1.1.2 Pie Graph of Gender
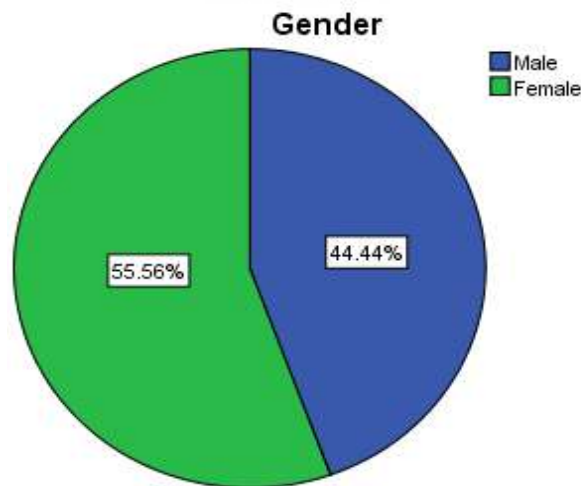
From Table 4.1.1.1 and Figure 4.1.1.2, it can be easily seen that the ratio of women respondents in online shopping (44.44%) is slightly higher than the proportion of men (55.56%), indicating that women are more willing to buy goods online.

Statistics

Age

N	Valid	252
	Missing	0

Table 4.1.1.3 Frequency Table of Respondents Age

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20 years old or younger	46	18.3	18.3	18.3
	21-30 years old	100	39.7	39.7	57.9
	31-40 years old	69	27.4	27.4	85.3
	40 years old or older	37	14.7	14.7	100.0
	Total	252	100.0	100.0	

Figure 4.1.1.4 Pie Graph of Age
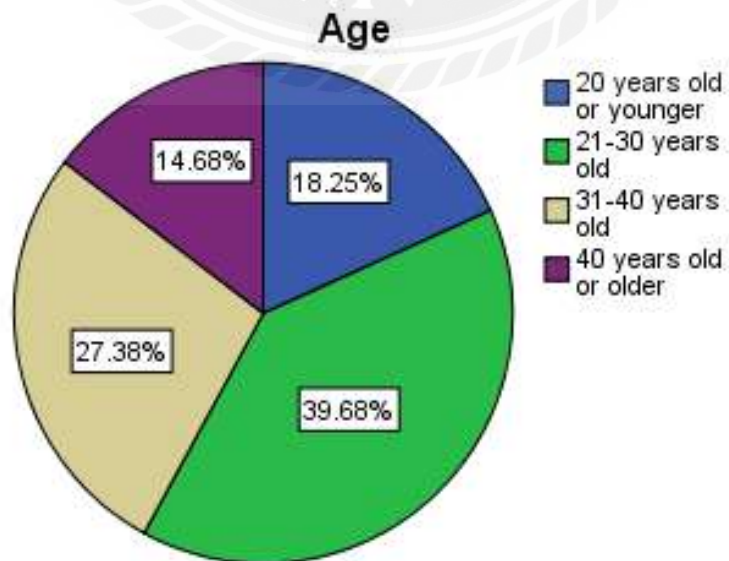
From Table 4.1.1.3 and Figure 4.1.1.4 above, it shows that the group of 21-30 and 31-40 years old are major online shopping consumer groups, taking up 39.68% and 27.38% respectively. Between them, 21-30 years old group accounts for the largest share (39.68%).

In the feature of age, we can see that the main online shopping customers is the generation after 80s and 90s, indicating that young people are more willing to buy goods online and are keen to experience new things. Besides, people of this age group have a certain economic foundation and are passionate about shopping.

Statistics

Education Level

N	Valid	252
	Missing	0

Table 4.1.1.5 Frequency Table of Respondents Occupation

Education Level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Undergraduate Degree	79	31.3	31.3	31.3
	College Degree	42	16.7	16.7	48.0
	Master Degree or Above	108	42.9	42.9	90.9
	Below College Degree	23	9.1	9.1	100.0
	Total	252	100.0	100.0	

Figure 4.1.1.6 Pie Graph of Education Level
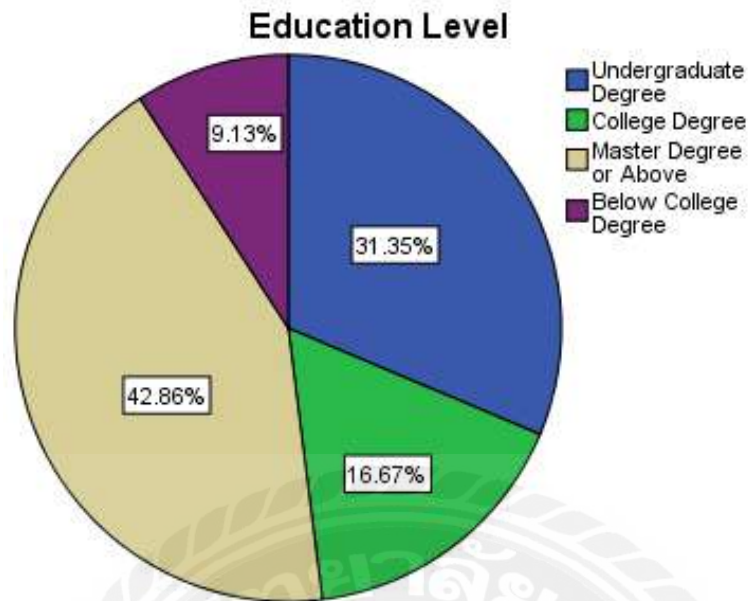
In terms of educational level, most of the respondents were well-educated, of whom 31.35% had undergraduate education, and 42.86% had master degree or above. This group of people has acquired a good level of computer skills and the necessary knowledge of shopping online because they have received a good education, and it is easier to accept the concept of online shopping and pattern of consumption.

4.1.2 Questionnaire Statistics of Online Shopping Customer Satisfaction

1=very dissatisfied;

2=dissatisfied;

3= general;

4=satisfied;

5=very satisfied.

People Counting:

About Goods	1	2	3	4	5	Total
Products Price	0	8	93	136	15	252
Promotion Strength	7	24	96	112	13	252
Products Quality	7	18	115	103	9	252
Diversity of Commodity Classification	2	3	35	140	72	252

Table 4.1.2.1 Tmall Customer Satisfaction with Product

As can be seen from Table 4.1.2.1, the diversity of commodity classification does the best among customer satisfaction in terms of commodities. Its number of people with four and five points is the largest and the number of very satisfied ones is significantly higher than other indicators. Regarding the price of commodities, the number of people who gave four points and five points is relatively high. Moreover, no one is very dissatisfied with product price, indicating that Tmall does relatively well in terms of price.

People Counting:

About Service	1	2	3	4	5	Total
Logistics Delivery Time	8	29	83	125	7	252
Package Integrity and Aesthetics	10	34	91	110	7	252
Response to Customer Inquiries	8	23	101	95	25	252
Changing or Refunding Service	7	26	121	90	8	252

Table 4.1.2.2 Tmall Customer Satisfaction with Service

It can be seen from Table 4.1.2.2 that the distribution of customer satisfaction scores on the four indicators about services is relatively close. Only the indicator of response to customer inquiries has a clear advantage in terms of the number of full score five points. Other indicators have yet to be improved.

People Counting:

About Technology	1	2	3	4	5	Total
The Security and Convenience of Electronic Payment	8	30	103	99	12	252
Stability of the Web Server	0	19	112	82	39	252
Friendliness of Website Design	0	11	50	164	27	252
Customer Privacy Protection	13	55	119	62	3	252

Table 4.1.2.3 Tmall Customer Satisfaction with Technology

According to Table 4.1.2.3, about technical aspects, Tmall does better in stability of the Web server and friendliness of website design. The number of people who gave four points and five points is more than other indicators and nobody is very unsatisfied, while the indicator of customer privacy protection is obviously weak and needs to be strengthened.

4.2 Descriptive Analysis of Third-Class Indicator Data

Table 4.2.1 Descriptive Analysis of Third-Class Indicator Data

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Products Price	252	2.00	5.00	3.6270	.64659
Promotion Strength	252	1.00	5.00	3.3968	.83813
Products Quality	252	1.00	5.00	3.3532	.78219
Diversity of Commodity Classification	252	1.00	5.00	4.0992	.73208
Logistics Delivery Time	252	1.00	5.00	3.3730	.84433
Package Integrity and Aesthetics	252	1.00	5.00	3.2778	.87587
Response to Customer Inquiries	252	1.00	5.00	3.4206	.90464
Changing or Refunding Service	252	1.00	5.00	3.2619	.79519
The Security and Convenience of Electronic Payment	252	1.00	5.00	3.3056	.85961
Stability of the Web Server	252	2.00	5.00	3.5595	.84237
Friendliness of Website Design	252	2.00	5.00	3.8214	.67086
Customer Privacy Protection	252	1.00	5.00	2.9484	.84761
Valid N (listwise)	252				

Using the SPSS 20.0 statistical software, the descriptive statistics of the 12 third-level indicators in the questionnaire are shown in the above table. Through descriptive statistics, a preliminary understanding of the questionnaire survey results could be had. Except the three indicators, products price, stability of the Web server, and friendliness of website design, their lowest score of customer satisfaction are 2 points. Respondents gave 1 point for rest of 9 indicators as the lowest score, which means they are very dissatisfied. At the same time, all indicators

got the highest grade 5 points.

The highest mean value of customer satisfaction is diversity of commodity classification (4.0992), which is the only one indicator that reaches 4 points. Then, the average of satisfaction from high to low is friendliness of website design (3.8214), products price (3.6270), which basically reflects the characteristics of B2C e-commerce. The standard deviation of response to customer inquiries is the highest, indicating that it has a large degree of volatility and respondents' satisfaction with this indicator is quite different.

The lowest average customer satisfaction is customer privacy protection (2.9484), which is the only one indicator that reaches 2 points. Online shopping requires the registration of a series of personal information, including detailed address, telephone number, name and identity information. Once the information is used by criminals, it will result in many negative consequences. Therefore, many online consumers are reluctant to disclose their true information in order to prevent phone and online fraud. In addition, some personal products purchased by consumers on the Internet do not want others to know. These constitute personal privacy. Consumers are most dissatisfied with the personal privacy protection of Tmall and this aspect must be strengthened in the future.

The second lowest indicator of satisfaction is the changing or refunding service (3.2619). Online shopping differs from traditional shopping where the product can be tried on the spot. Consumers are faced with the problem of returning goods when they find that the goods purchased on the Internet are not suitable, goods are wrong, or goods are defective. The on-line customer service on the website takes responsibility for handling this problem. Some consumers may feel angry when they find that the goods they are purchasing are not suitable or send the wrong goods. In this case, there may be a dispute with the customer service staff. Due to the inability to personally see the degree of damage to the product and other conditions on the Internet, the customer service agent did not dare to allow consumers to return goods. Therefore, in order to reduce such unnecessary troubles, merchants must check the size and packaging of the goods when they are shipped to avoid unnecessary misunderstandings and losses.

Package integrity and aesthetics (3.2778), the security and convenience of electronic payment (3.3056), products quality (3.3532), and logistics delivery time (3.3730) scores are also relatively low. It shows that Tmall should shorten the express delivery time while ensuring the integrity of the goods and strengthen the electronic payment security and product quality checks so that customers do not have to worry about shopping online.

4.3 Pearson Correlation Analysis

Pearson Correlation analysis is a method used to analyze the linear relationship between two variables. It is to study whether there is a close relationship between the two variables and the degree of such close relationship and its directionality. If the correlation coefficient between variables is greater than 0, then the two variables are positively correlated; if the correlation coefficient between variables is less than 0, the two variables are negatively correlated. The closer the correlation coefficient is to 1, the greater the degree of interaction between the two variables. Next, by correlation analysis of customer satisfaction index and 12 measurement indicators, judge the degree of closeness and orientation between them, which could verify the research hypotheses proposed by Chapter 1 about the relationship among product, service, technology and Tmall customer satisfaction.

4.3.1 Correlation Analysis of Product and Customer Satisfaction

Null and Alternative Hypothesis

Ho1: There is no relationship between products and customer satisfaction.

Ha1: There is a relationship between products and customer satisfaction.

Table 4.3.1.1 Correlations of Product and Customer Satisfaction

		Customer Satisfaction	Products
Customer Satisfaction	Pearson Correlation	1	.991**
	Sig. (2-tailed)		.000
	N	252	252
Products	Pearson Correlation	.991**	1
	Sig. (2-tailed)	.000	
	N	252	252

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

Correlation analysis results show that: $\alpha = 0.01$, p (sig) = 0.000 <0.01, Pearson Correlation of product and customer satisfaction is 0.991, which is a very high positive correlation. It indicates that the null hypothesis should be rejected. Therefore, there is a positive relationship between products and customer satisfaction at significant level 0.01.

Table 4.3.1.2 Correlations of Third-Class Indicators of Product and Customer Satisfaction

		Customer Satisfaction	Products Price	Promotion Strength	Products Quality	Diversity of Commodity Classification
Customer Satisfaction	Pearson Correlation	1	.887**	.966**	.954**	.898**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	252	252	252	252	252
Products Price	Pearson Correlation	.887**	1	.870**	.821**	.727**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	252	252	252	252	252
Promotion Strength	Pearson Correlation	.966**	.870**	1	.934**	.825**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	252	252	252	252	252
Products Quality	Pearson Correlation	.954**	.821**	.934**	1	.822**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	252	252	252	252	252
Diversity of Commodity Classification	Pearson Correlation	.898**	.727**	.825**	.822**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	252	252	252	252	252

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

From the above results of the correlation analysis between the third grade indicators of product categories and customer satisfaction, it can be seen that each indicator conforms to the assumption of alternative hypothesis (Ha), that is, there is a positive correlation between each measurement indicator and customer satisfaction. When the satisfaction of these evaluation indicators is higher, the overall satisfaction with Tmall e-commerce is also higher. Among them, for customer satisfaction, the correlation coefficients of promotion strength (0.966) and products quality (0.954) indicator are extremely high, indicating that customers are more concerned with these two key indicators which have a great influence on customer satisfaction in Tmall e-commerce environment. If these two indicators can meet the needs of customers, they can effectively improve customer satisfaction.

4.3.2 Correlation Analysis of Service and Customer Satisfaction

Null and Alternative Hypothesis

Ho1: There is no relationship between service and customer satisfaction.

Ha1: There is a relationship between service and customer satisfaction.

Table 4.3.2.1 Correlations of Service and Customer Satisfaction

		Customer Satisfaction	Service
Customer Satisfaction	Pearson Correlation	1	.991**
	Sig. (2-tailed)		.000
	N	252	252
Service	Pearson Correlation	.991**	1
	Sig. (2-tailed)	.000	
	N	252	252

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

Correlation analysis results show that: α = o.o1, p (sig) = 0.000 <0.01, Pearson Correlation of service and customer satisfaction is 0.991, which is a very high positive correlation and this number is the same with products. It indicates that the null hypothesis should be rejected and services and products have equal impact on customer satisfaction. Therefore, there is a positive relationship between service and customer satisfaction at significant level 0.01.

Table 4.3.2.2 Correlations of Third-Class Indicators of Service and Customer Satisfaction

		Customer Satisfaction	Logistics Delivery Time	Package Integrity and Aesthetics	Response to Customer Inquiries	Changing or Refunding Service
Customer Satisfaction	Pearson Correlation	1	.952**	.964**	.969**	.949**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	252	252	252	252	252
Logistics Delivery Time	Pearson Correlation	.952**	1	.942**	.910**	.892**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	252	252	252	252	252
Package Integrity and Aesthetics	Pearson Correlation	.964**	.942**	1	.923**	.908**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	252	252	252	252	252
Response to Customer Inquiries	Pearson Correlation	.969**	.910**	.923**	1	.910**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	252	252	252	252	252
Changing or Refunding Service	Pearson Correlation	.949**	.892**	.908**	.910**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	252	252	252	252	252

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

From the above results of the correlation analysis between the third grade indicators of service categories and customer satisfaction, it can be seen that each indicator conforms to the assumption of alternative hypothesis (Ha), that is, there is a positive correlation between each measurement indicator and customer satisfaction. When the satisfaction of these evaluation indicators is higher, the overall satisfaction with Tmall e-commerce is also higher. From the table above, it can be clearly seen that between all indicators of service and customer satisfaction are extremely high and positive correlation. Among them, the correlation coefficients of response to customer inquiries (0.969) is the highest, indicating that customers are more concerned with this key indicator which has a great influence on customer satisfaction in Tmall e-commerce environment. The second highest coefficient is indicator of package integrity and aesthetics (0.964) that is very close to the highest. If these two indicators can meet the needs of customers, they can effectively improve customer satisfaction.

4.3.3 Correlation Analysis of Technology and Customer Satisfaction

Null and Alternative Hypothesis

Ho1: There is no relationship between service and customer satisfaction.

Ha1: There is a relationship between service and customer satisfaction.

Table 4.3.3.1 Correlations of Technology and Customer Satisfaction

		Customer Satisfaction	Technology
Customer Satisfaction	Pearson Correlation	1	.985**
	Sig. (2-tailed)		.000
	N	252	252
Technology	Pearson Correlation	.985**	1
	Sig. (2-tailed)	.000	
	N	252	252

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

Correlation analysis results show that: α = o.o1, p (sig) = 0.000 <0.01, Pearson Correlation of technology and customer satisfaction is 0.985, which is a very high positive correlation. It indicates that the null hypothesis should be rejected. Therefore, there is a positive relationship between products and customer satisfaction at significant level 0.01.

Table 4.3.3.2 Correlations of Third-Class Indicators of Technology and Customer Satisfaction

		Customer Satisfaction	The Security and Convenience of Electronic Payment	Stability of the Web Server	Friendliness of Website Design	Customer Privacy Protection
Customer Satisfaction	Pearson Correlation	1	.971**	.919**	.876**	.910**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	252	252	252	252	252
The Security and Convenience of Electronic Payment	Pearson Correlation	.971**	1	.869**	.813**	.842**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	252	252	252	252	252
Stability of the Web Server	Pearson Correlation	.919**	.869**	1	.770**	.833**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	252	252	252	252	252
Friendliness of Website Design	Pearson Correlation	.876**	.813**	.770**	1	.867**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	252	252	252	252	252
Customer Privacy Protection	Pearson Correlation	.910**	.842**	.833**	.867**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	252	252	252	252	252

From the above results of the correlation analysis between the third grade indicators of technology categories and customer satisfaction, it can be seen that each indicator conforms to the assumption of alternative hypothesis (Ha), that is, there is a positive correlation between each measurement indicator and customer satisfaction. When the satisfaction of these evaluation indicators is higher, the overall satisfaction with Tmall e-commerce is also higher. From the table above, it can be clearly seen that except friendliness of website design (0.876), between all indicators of technology and customer satisfaction are extremely high and positive correlation. Among them, the correlation coefficients of the security and convenience of electronic payment (0.971) is significantly the highest, indicating that customers are more concerned with this key indicator which has a great influence on customer satisfaction in Tmall e-commerce environment. If this indicator can meet the needs of customers, it can effectively improve customer satisfaction. Hence, Tmall should focus on strengthening the aspect of the security and convenience of electronic payment.

CHAPTER 5

CONCLUSION, SUGGESTION AND TREND

5.1 Conclusion

Table 5.1.1 Summary Results of Null and Alternative Hypothesis

Null and Alternative Hypothesis	Sig. (2-tailed)	Results
Ho1: There is no relationship between products and customer satisfaction.	0.000	Rejected
Ha1: There is a relationship between products and customer satisfaction.	0.000	Accepted
Ho2: There is no relationship between service and customer satisfaction.	0.000	Rejected
Ha2: There is a relationship between service and customer satisfaction.	0.000	Accepted
Ho3: There is no relationship between technology and customer satisfaction.	0.000	Rejected
Ha3: There is a relationship between technology and customer satisfaction.	0.000	Accepted

Table 5.1.2 Summary from Pearson Correlation

Independent Variables	Dependent Variable	Pearson Correlation	Relationship
Products	Customer Satisfaction on Tmall	0.991^{**}	Extremely High and Positive Correlation
Service	Customer Satisfaction on Tmall	0.991^{**}	Extremely High and Positive Correlation
Technology	Customer Satisfaction on Tmall	0.985^{**}	Extremely High and Positive Correlation

As shown in two tables above，there is an extremely high and positive correlation between products, services, technology, and customer satisfaction. When the satisfaction of these first-class indicators is higher, the overall satisfaction with Tmall e-commerce is also higher. Among them, the Pearson correlation coefficient between products, services and customer satisfaction on Tmall is the highest, which indicates customers are more concerned with product and service that have the most important influence on customer satisfaction in Tmall e-commerce environment. If product and service can meet the needs of customers, they can effectively improve customer satisfaction. Hence, Tmall should focus on strengthening the aspect of the product and service.

Table 5.1.3 Average customer satisfaction and Pearson Correlation
of Third-Class Indicator

	Customer Satisfaction	
	Mean	Pearson Correlation
Products Price	3.6270	0.887[**]
Promotion Strength	3.3968	0.966[**]
Products Quality	3.3532	0.954[**]
Diversity of Commodity Classification	4.0992	0.898[**]
Logistics Delivery Time	3.3730	0.952[**]
Package Integrity and Aesthetics	3.2778	0.964[**]
Response to Customer Inquiries	3.4206	0.969[**]
Changing or Refunding Service	3.2619	0.949[**]
The Security and Convenience of Electronic Payment	3.3056	0.971[**]
Stability of the Web Server	3.5595	0.919[**]
Friendliness of Website Design	3.8214	0.876[**]
Customer Privacy Protection	2.9484	0.910[**]

From Table 5.1.3, it can be seen that among all the twelve three-level indicators, the highest correlation with customer satisfaction is the security and convenience of electronic payment (0.971), indicating that it is the most important factor that influences Tmall's customer satisfaction.

The closer the correlation coefficient is to 1, the greater the degree of interaction between the two variables. Then, response to customer inquiries (0.969), promotion strength (0.966), and package integrity and aesthetics (0.964) are also very important factor affecting Tmall's customer satisfaction. In consequence, Tmall should pay enough attention to these aspects and work on developing.

About average customer satisfaction, the highest mean value of customer satisfaction is diversity of commodity classification (4.0992), which is the only one indicator that reaches 4 points. Then, the average of satisfaction from high to low is friendliness of website design (3.8214), products price (3.6270), which basically reflects the characteristics of B2C e-commerce. The lowest average customer satisfaction is customer privacy protection (2.9484), which is the only one indicator that reaches 2 points. Therefore, it can be clearly seen that consumers are most dissatisfied with the personal privacy protection of Tmall and this aspect must be strengthened in the future. The second lowest indicator of satisfaction is the changing or refunding service (3.2619). It shows that Tmall should strengthen the training of product after-sales service. Package integrity and aesthetics (3.2778), the security and convenience of electronic payment (3.3056), products quality (3.3532), and logistics delivery time (3.3730) scores are also relatively low. It shows that Tmall should shorten the express delivery time while ensuring the integrity of

the goods and strengthen the electronic payment security and product quality checks so that customers do not have to worry about shopping online.

5.2 Recommendation

5.2.1 Customer Privacy Information Should Be Safe and Confidential

From the average satisfaction of customers, we can see that the indicator of customer privacy protection got the lowest score among all third grade indicators, which means it is the worst aspect that Tmall does. In online shopping, customers need to provide some personal privacy information. The important reason why some of people resist online shopping is the fear of theft of personal information. To improve customer satisfaction, businesses are required to ensure the security of customer personal information and credit card information and to strengthen network security protection. According to Pearson's analysis, the positive correlation between the security and convenience of electronic payment and Tmall customer satisfaction is the highest, indicating that the former has the greatest degree of influence on the latter. Therefore, online banking must also improve service quality and eliminate the worries of customers using credit cards online. What's more, Tmall needs to strengthen the protection of privacy in particular and punish those who disclose the privacy of customers.

5.2.2 Enhancement of After-Sales Service

The above survey data show that online consumers' satisfaction with after-sales service is not high, and at a lower level, mainly because customer service such as changing or refunding is not timely and unfriendly. At present, there is no uniform standard for the after-sales service responsibilities on B2C shopping website. The service personnel of Tmall are the after-sale customer service staff of the brand shop. Consumers sometimes confuse website customer service personnel and store customer service personnel. Dissatisfaction with customer service in some stores will be passed on to the website, resulting in dissatisfaction with Tmall website. While Jingdong Mall, B2C Tmall's biggest competitor, is a company that sells self-supporting product. The customer service is equipped with the website itself uniformly. These customer services are professionally trained and studied and the quality is relatively uniform. In this mode, the quality of after-sales service is easier to control. No matter what kind of after-sales method, if that can make consumers satisfied, it is a good service and consumers will patronize again. For Tmall, after-sales service can be included in the paid service system. Star service sellers could be regularly appraised and elected, and store sellers are encouraged to improve after-sales service quality through encouraging methods.

5.2.3 Logistics Distribution Should Be Timely and Complete

According to the survey results, Tmall's indicators scores of logistic delivery time and package integrity are low. Special attention needs to be given to strengthen these two parts. Online shopping ultimately utilizes logistics to make goods reach customers hands. The customer's requirement for logistics is to receive goods that have not been damaged in the shortest possible time. The buyers and sellers of electronic commerce often live far apart from each other. Customers sometimes give up online shopping due to their unbearable long waiting time. Thus, merchants are required to choose the right logistics method for their customers and to choose the logistics company with the same integrity to ensure that the interests of customers are not lost.

5.2.4 Innovation of Network Physical Store

For some products that are not suitable for selling on the website and lack of popularity, Tmall can authorize the brand store name to establish a physical experience shop. Many home furnishing brands on Tmall have physical experience stores. Consumers can visit the stores in person to experience the quality and performance of products. Moreover, place orders on the Internet, customers can also enjoy preferential discounts and door-to-door service. For example, the amount of home furnishings orders is generally large, and consumers are afraid to place orders. The establishment of physical experience stores just solves consumer

concerns. There are also clothes and shoes that are best suited for physical stores to try on. The establishment of physical stores also solves these problems and makes consumers feel more comfortable when they buy personal products that fit their size better.

5.3 Trend

5.3.1 Mix of Virtual and Actual Reality, Online and Offline Integration Has Become the Main Tone of Industrial Development.

The establishment of a network physical store for goods that are suitable for purchase in physical stores not only boosts the visibility of the brand, but also satisfies the needs of customers in this area and expands sales. For online products, Tmall now not only supports introduction and review with photos, but also supports and encourages introduction and comment with videos, which enables consumers to more intuitively and truly understand the various performances of products through the comments of other buyers. In this way, it is simple to understand and save time. The use of online shopping videos in the future will become more and more popular and it will develop to higher technology. For example, buy a lipstick, the system can simulate the effect of the customer's applied lipstick by the buyer's photo. This can perfectly solve the problem that e-commerce can't actually contact with and try out commodities. This is also a problem that consumers are very

concerned about and hope to solve. In the near future, this idea may soon be realized.

5.3.2 Chinese Online Shopping Market Has Entered the Era of Mobile Consumption.

Figure 5.3.2.1 China Mobile Online Shopping Transaction Scale 2012-2017

Source: China e-commerce research center monitoring data

As seen from the figure above, the scale of China Mobile's online shopping transaction reached 4472.6 billion yuan in 2016, while the amount is 2018.4 billion yuan in 2015, an increase of 121.6% year-on-year. Compare with two years, it can be seen that the number of consumers who use mobile terminals for online shopping increases sharply. Chinese online shopping market has entered the era of mobile consumption.

The transfer of usage habits of the user's consumption scene and the characteristics of the mobile terminal itself make the mobile terminal a

popular route for consumer online shopping. There are two main reasons why major e-commerce platforms vigorously promote the development of mobile terminals:

On the one hand, many e-commerce companies are focusing on new user acquisition and category expansion to launch customized e-commerce products for mobile terminals. On the other hand, a large number of emerging e-commerce companies only launch mobile-end services, and mobile terminals has become the main source of new online shopping users.

With the hot market of rural e-commerce, the mobile terminal will occupy an increasingly important position by relying on cheaper equipment and more convenient operation feature than the PC. The transfer of consumers to mobile terminals, the development of emerging e-commerce such as social e-commerce, live broadcasting and the development of rural markets will make the market more competitive.

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Appendix： Questionnaire about Tmall's Customer Satisfaction

Dear Ms / Sir:

Hello!

This is a graduated design questionnaire. It is a study of Tmall's customer satisfaction evaluation. Your answer will play an important role in my research process and results. This questionnaire is for purely academic research. The data provided by you is only for this study. Please fill in the questionnaire trustingly according to your personal practical experience. Thank you for your support!

Part A   Personal Basic Information:

Please select the option according to your actual situation.

1. Your gender is: (   )

A male   B female

2. Your age is: (   )

A 20 years old or younger   B 21-30 years old   C 31-40 years old   D 40 years old or older

3. Your education level is: (   )

A below college degree   B college degree   C undergraduate degree   D master degree or above

Part B Tmall Shopping Satisfaction

The following questions are designed to understand your satisfaction with Tmall e-commerce site where you has ever shopped. Please select the most acceptable number based on your shopping experience on Tmall. "1 to 5" means "very dissatisfied, dissatisfied, general, satisfied, very satisfied."

About Goods	1	2	3	4	5
How do you think the product price of Tmall?					
How do you think goods promotion strength of Tmall?					
How do you think merchandise quality of Tmall and whether it matches the description?					
What is your opinion on the richness of the products on Tmall?					

About Service	1	2	3	4	5
Your assessment of Tmall's logistics delivery time?					
Your assessment of package integrity and aesthetics?					
Your assessment of seller's response to your inquiry?					
How about seller's changing or refunding service?					

About Technology	1	2	3	4	5
What is your opinion on the safety and convenience of electronic payment on this website?					
Your evaluation of the stability of the website server?					
Your evaluation of friendliness of website design?					
Don't worry about the leakage of personal information. What is your evaluation of customer privacy protection?					

Thank you for your cooperation and your valuable time!

Wish you a happy day!