

## Research Article

# User Experience Evaluation of B2C E-Commerce Websites Based on Fuzzy Information

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With the popularization of personal computers and the development of the Internet, the number of netizens is increasing. The emerging B2C e-commerce platform shows the fierce competition in the e-commerce market. B2C e-commerce distribution is faced with the problems of high distribution cost, long time, and poor quality, which leads to the poor user experience of B2C online shopping and the lack of trust in e-commerce enterprises. This research mainly discusses the user experience evaluation of B2C e-commerce websites based on fuzzy information. First, the AHP analytic hierarchy process is used to construct a hierarchical evaluation system, and then, the two-by-two judgment matrix is compared to the index factors at all levels, and experts are invited to score the method to determine the weight of each index to test whether it meets the consistency requirements. Finally, the fuzzy comprehensive evaluation method is used to perform fuzzy conversion of the original weight, and the membership degree set of the user experience evaluation factors is given, and the fuzzy comprehensive calculation result of the B2C website performance level is calculated. By combining in-depth interviews with website users and questionnaire surveys to analyze the behavioral characteristics of user information navigation, summarize the demand list for product search, product selection, product comparison, and product detail page browsing, and provide a reference for the design and development of information navigation. Calculating the decision model, mainly using fuzzy calculation, calculate the foreground value under each attribute and get the comprehensive foreground value. By comparing with the decision-making behavior model constructed by expected utility theory, it is found that the behavioral decision-making model constructed in this paper based on prospect theory can be closer to the actual situation. In this study, the satisfaction with the function provided reached 68 points, the emotional response 66 points, the aesthetic response 70 points, and the information construction 64 points. Through empirical research, the key factors affecting user satisfaction of B2C e-commerce logistics distribution are summarized, and a B2C e-commerce logistics distribution evaluation system based on user experience is established. This research will provide methods and ideas for the research on user experience design of e-commerce websites and the research and development of related network products. The article helps to draw out the countermeasures and suggestions for the development of the current B2C e-commerce logistics distribution.

## 1. Introduction

E-commerce is affecting every corner of the world; it has changed the current business system and profoundly changed the way people trade and consume. With the rapid development of information technology, economy, and society, e-commerce has become an important retail format, and online shopping has become an important way for people to shop. The biggest difference between e-commerce and online shopping and physical sales is that the products can only reach

the consumer terminal, namely, the customer, through the ways that can be presented online (text, sound, image, etc.), and the intuitive perception and trial of the products are greatly restricted.

E-commerce simplifies trade processes, improves logistics systems, reduces transaction costs, increases trade opportunities, and promotes business restructuring and economic restructuring of enterprises, which will greatly increase productivity, completely change the nature of trade activities, and form a new set of trade activity framework.

The level of e-commerce development will directly affect the competitiveness of future international trade. In online shopping transactions, all physical products need logistics and distribution services to be realized. Such a huge amount of online shopping has great temptation for the logistics and distribution industry, which is increasingly competitive.

With the gradual maturity of online shopping service model in the online shopping market is heating up and tends to mainstream, its user scale continues to grow. The level of e-commerce in China is still in the early stage, and its function is mainly used for information exchange. The mutual promotion relationship between e-commerce and logistics cannot be recognized by most enterprises. A meta-analysis by Kim and Peterson examined the role of online trust in business-to-consumer e-commerce. An analysis of 16 pairs of relationships from 150 empirical studies involving online trust shows that online trust exhibits significant relationships with selected antecausals (e.g., perceived privacy and perceived quality of service) and consequences (e.g., loyalty and willingness to repeat purchases). Even so, additional analysis showed that methodological characteristics such as study design, type of site, and type of project used to measure trust structure modulated some online trust relationships. The relationship between online trust and its respective antecedents and consequences is also more specific, complex, and nuanced than previously thought. He discusses the impact of analysis on theory, practice, and future research [1]. Mero provides methods and systems for analyzing information about the online actions of multiple users. His analytical methods and systems allow the creation of new online and offline business approaches based on online consumer behavior. His method and system can include information about multiple users online action of the input data set, the input data set into a common file format data file, and each data file corresponding to a user in multiple users and include the user identifier and the multiple associated with the user's online operation uniform resource location (URL), access online information related to search terms and web pages and identify one or more metrics of user behavior, including "vertical" metrics and "search term" metrics [2]. Sullivan and Kim enhance the existing literature on online trust by integrating consumer product evaluation models and technology adoption models in the e-commerce environment. They investigated how perceived value affects online buyers' perceptions of online trust and their willingness to repurchase from the same site. They came up with a research model. Perceived quality is affected by competitive price and website reputation perception and then affects perceived value. Perceived value, website reputation, and perceived risk affect online trust and then repurchase intention [3]. Lal believes that the growth of social media has changed the online commerce landscape for organizations and customers. The introduction of social commerce sites has changed consumers' purchasing decisions from personal shopping to social shopping. His research is aimed at determining the factors that influence individuals' decisions to use social commerce sites in the Indian environment. It identifies six factors that influence individuals' intentions to use social commerce and divides them into three categories: social factors (information support and commu-

nity commitment), trust (to members and community), and site quality (ease of use and quality of service). The structural equation model is used to verify the research model. All six factors are positively correlated with individuals' intentions to use social commerce sites. In addition, his research found that information support is the most important factor affecting individuals' intention to use social commerce sites, followed by trust in members, service equality, trust in community, convenience of navigation, and community commitment [4]. Gs et al. consider e-commerce to be the purchase and provision of goods or management through electronic media, such as the Internet and other PC systems. It is largely called e-commerce transaction and business capability. Since the broad base of the Internet, the level of exchange led electronically has grown tremendously. A wide variety of exchanges are conducted through e-commerce, including electronic asset transfer (EFT), supply chain management, online promotions, search vehicle displays, online exchange preparation, electronic information trade, and inventory management frameworks. These basic terms of e-commerce are essential to secure business behavior on the network. In addition to the key adage of e-commerce, vendors must guard against a number of different external security threats, most notably denial of service (DOS) [5]. Pansari and Kumar highlighted the need for customer engagement (CE) and developed a framework by reviewing marketing literature and analyzing popular news articles. By understanding the evolution of customer management, they believe partners care about each other when a relationship is satisfying and emotionally connected. Therefore, the components of customer involvement include both direct and indirect contributions from CE. Based on theoretical support, we propose a framework that illustrates the components of CE as well as its antecedents (satisfaction and emotion) and consequences (tangible and intangible outcomes). They also discuss how convenience, company nature (B2B vs. B2C), industry type (service vs. product), brand value (high vs. low), and degree of participation (high vs. low) mediate the connection between satisfaction and direct contribution, as well as the connection between CE's mood and indirect contribution [6]. Berne-Manero and Marzo-Navarro believe that although online social media shoppers' channel choice behavior has a significant impact on purchasing decisions in online and online markets, it has been neglected. The aim of his study was to examine the effects of transactive memory system (TMS) factors (specialization, trustworthiness, and coordination), knowledge sharing (KS), and communication quality on online social media channel selection for shopping activities. Partial least squares (PLS) analysis was used for structural equation modeling (SEM) to examine the measurement model and structural model of reflection structure. A total of 336 online questionnaires were collected from users of collaborative projects, social networking sites, blogs, content communities, virtual gaming worlds, and virtual social worlds. TMS factors, KS, and communication quality have positive influence on online channel selection [7]. In addition, specialization, credibility, and coordination contribute statistically to TMS as a second-order structure [8]. The security of B2C website includes the website's credit system, payment system, and security system. This subindicator will

be better and truly experienced in the actual operation and use process of users. E-commerce is a new thing that only appeared at the end of 90s. Due to the short time, coupled with this is a very rapid development of the field, the industry's understanding of e-commerce has yet to be further developed and improved in practice; therefore, there is no unified definition of e-commerce.

Fuzzy information, as a new description tool for uncertain decision-making information, has broad application prospects in real multiattribute decision-making problems. This article will use extension theory to explore a method to solve the quantitative evaluation of B2C e-commerce logistics services based on related theories such as service quality and logistics service quality, combined with the status quo and characteristics of B2C e-commerce logistics services. In the fuzzy comprehensive evaluation, it is necessary to calculate a fuzzy relationship matrix of each index to the comment level. According to the above description, the comment level is divided into five levels: very satisfied, satisfied, fair, not satisfied, and dissatisfied. The article studies how to build a semantic database reflecting different characteristics, and select appropriate classification mining technology to classify the content of the online word-of-mouth text; through sentiment analysis and statistics to reflect the evaluation preferences of online groups.

## 2. B2C E-Commerce Website User Experience Evaluation Research Methods

*2.1. Selection of Website Evaluation Indicators.* When establishing the website evaluation index, this article chooses the index from two aspects. From the perspective of website construction, we selected four indicators: website traffic ranking, number of visitors per million people, average daily IP volume (there is the concept of traffic here, which is the number of visitors to a website in a day) in the past month, access speed, and backlinks. At the same time, taking into account the user's attractiveness to the website, two indicators have been added: the average number of pages viewed by each visitor and the page dwell time. Considering the promotion and construction of the website, another indicator has been added: website link. Website links can effectively guide consumers to browse products [9]. Browse the product evaluation index as shown in Table 1.

The factor loading is recorded as the sum of squares of the elements in each column of matrix  $A$  as [10]:

$$q = \chi_{ij} \sum_{i=1} a^2. \quad (1)$$

$\chi_{ij}$  represents the total influence of the  $j$ th factor on all components, that is, the contribution of the  $j$ th factor to  $X$ . This is a measure of the relative importance of the  $j$ th factor [11].

*2.2. Measurement Model of Logistics Service Quality.* How to effectively measure and evaluate logistics service quality is the focus of scholars. From the perspective of enterprises and customers, the established logistics service quality

evaluation system is different. Based on the perspective of the enterprise, the representative method is to use the 7Rs theory mentioned above to analyze the accuracy of goods, the goodness of goods, accurate product information, delivery on time rate, delivery accuracy, and timeliness in the logistics service process. 7 factors such as price and price are measured and evaluated.

Therefore, the established logistics service quality measurement model considers the influencing factors of physical service quality and customer service quality and is divided into two extremes of ordering and receiving, focusing on the following 9 factors: personnel communication quality, error handling, goods integrity, quality of goods, accuracy of goods, timeliness, order release quality, ordering process, and information quality.

Whether the logistics services provided by B2C e-commerce merchants can satisfy customers needs to be comprehensively considered from the six aspects of economics, transparency, completeness, timeliness, reliability, and empathy of logistics services, which is the index system. This article will use the theory of extenics to determine the weight of each index and establish a mathematical model for comprehensive evaluation, so as to evaluate the satisfaction of B2C e-commerce logistics service quality. The construction of a B2C e-commerce website is shown in Figure 1.

*2.3. User Experience Evaluation.* In order to collect user navigation experience information and to obtain user demographic data, as well as the user's online shopping habits and information navigation needs, therefore, this article mainly uses interviews, questionnaires, field observations, and other forms to collect user demand information and summarize the design focus. Interviews and questionnaire surveys are typical methods to understand users' subjective feelings and impressions of the product, especially when it comes to understanding the objectively difficult amounts, questions related to user subjective satisfaction, and possible worries. They are very useful in many and have a wide range of applications in the field and research. In the field of usability engineering, they can help us collect data and information about users' awareness, attitudes, usage, problems encountered in the use of the product, and expectations of the product [12].

*2.4. Determine the Evaluation Criteria for Performance Indicators.* Commonly used corporate performance evaluation standards mainly include the following three: corporate budget as the standard, corporate historical performance as the standard, and benchmark corporate operating data as the standard. In the research of this article, we combined the above three methods, that is, the financial indicators of website performance can use budget standards; the indicators of website operation can use historical standards; the indicators of website design and customer satisfaction can be selected in the industry. For benchmarking companies, evaluate the benchmarking companies and make necessary adjustments based on the actual situation of website development [13]. "Benchmarking enterprise" refers to an enterprise that has achieved remarkable results in



coefficient (i.e., alpha reliability coefficient) method is currently used more frequently, which can clearly illustrate the inherent consistency of the scales of various item items. The formula is as follows [16]:

$$\alpha = \frac{k}{k-1} \left( 1 - \frac{\sum Q}{Q} \right). \quad (2)$$

Among them,  $K$  is the number of questions in a certain level of the questionnaire, and  $Q$  is the variance of the  $i$ th item [17].

Refer to the fuzzy comprehensive evaluation principle, select the appropriate synthesis operator, and determine the comprehensive evaluation vector  $ZP$  [18]:

$$Z = W * \begin{pmatrix} R_{11} & \cdots & R_{1M} \\ \cdots & \cdots & \cdots \\ R_{P1} & \cdots & R_{PM} \end{pmatrix}. \quad (3)$$

To determine the comment set, the comment level should be assigned when using fuzzy comprehensive evaluation. Collecting consumers' possible judgments on logistics services under B2C e-commerce forms a comment level. The information of the degree of membership of the logistics service quality to the review level is reflected by the fuzzy vector. Usually, the number of reviews is between 4 and 9, and the number should not be too much or too little. Too many comment levels are not suitable for people to understand, and customers may misinterpret them when they understand, which will affect the evaluation results. Too few comment levels cannot reflect consumers' actual evaluation of B2C e-commerce logistics service quality. Therefore, the five comment levels are convenient for consumers to judge (very satisfied, satisfied, average, not satisfied, and dissatisfied).

Search design points:

- (1) The design of the search category box is generally not easy to be too often. According to the longest sentence length of the secondary classification, it will generally not exceed 16 characters in length. The search category is generally displayed in the form of a drop-down menu list. It is collapsed in the default state. When expanding, pay attention to the corresponding color or action response when the mouse touches each tag category. If there are too many secondary categories, it should design the sidebar pull-bar or drop-down button, not all categories can be displayed together; otherwise, the expanded form is too long to be easy to read and takes up space on the page. In addition, the interval of each category is either a blank interval or a horizontal line interval, so that users can clearly distinguish each category
- (2) Search input box and search button design. The input box and search button are often placed together, so they are analyzed together. Both need to pay attention to the width and length. The input

box is the most important visual and function in the search design. Its size and shape determine the shape and size of the entire search area. The search button needs to be unified with the input box, and the button needs to have clear outlines and bright colors. Let users know and click at a glance

**2.6. Data Reliability.** For the objective indicators in the data, the article uses a variety of network monitoring tools and network statistics methods, such as Alexa, 360 website evaluation, price comparison websites, Gtmetrix, and webmaster tools. The final data is determined by the method, which guarantees the validity of the data.

B2C website can be said to be the website with the most complex information structure in interactive advertising. In the process of creating a better user experience, the visual design of the soft interface interaction mechanism is very important. Through its research, it can improve the perceptual interactivity of the interface and the website, thereby improving the actual interactivity of users and enabling consumers to experience online shopping more easily and happily. This positively affects consumers' attitudes towards the website, brand attitudes, and purchase intentions. It is hoped that the research on this basis can give reference and help to other websites and software and other soft interface design, so that the soft interface interaction mechanism of interactive advertising can better serve consumers and make users more beautiful. Experience natural was interaction without a sense of interaction. At the same time, it helps to improve the operation and long-term development of B2C websites and more effectively improves user experience. Make the interactive communication mechanism effective circulation. In this way, the corporate brand can grow well and healthily and establish a long-lasting and beautiful image. Standardize variables in the data that have large differences in dimensions or levels of data [19, 20]:

$$Z = \frac{X - \bar{X}}{\beta}. \quad (4)$$

$\bar{X}$  is the average value.

The integrated optimization mathematical model of forward and reverse logistics of B2C distribution system with fuzzy random demand is as follows [21]:

$$(Q, r, x, y)_{\min} = \sum_{j=1}^m Fy + \sum_{j=1}^m \left\{ \frac{Fy}{Q} + C \left[ \frac{Q}{2} + xr - (1 - e\lambda)LD \right] \right\} y. \quad (5)$$

The constraint conditions of the repair rate  $\chi$  and the scrap rate  $\vartheta$  are as follows [22]:

$$\chi = \sum_{i=1}^m \frac{\phi D(1 - e\gamma)C}{Q}, \quad (6)$$

$$\vartheta = \sum_{i=1}^m (\lambda BD + \eta dC). \quad (7)$$

### 3. E-Commerce Website User Experience Evaluation Results

It can be seen that the eigenvalues of the first two common factors are 3.695 and 2.083, respectively, which are both greater than 1, and the cumulative contribution rate of the two reached 82.534%, which summarizes the vast majority of the total variance; according to the evaluation of the B2C e-commerce website if necessary, these two common factors can be used to replace the original 5 variable indicators, and the characteristic root contribution rates of these two common factors can be obtained directly according to the chart as 52.783% and 29.751%. The contribution rate of SPSS characteristic root is shown in Table 2.

The results of this questionnaire survey involve a wide range of people, and the comprehensive results show that they can basically reflect the situation of online shopping or are familiar with online shopping, and the basic statistics of the questionnaire are shown in Table 3.

There are 14 websites with an average value of 6.0490969 or more, namely, Taobao, Tmall, JD.com, Alibaba, Suning.com, eBay, Dangdang, Gome, Amazon, Paipai, No.1 shop, Vancl Eslite, Dream Bazaar, and China Flower Network; in order to describe the overall comparison level of the website more intuitively and concisely, the value of the passing line is set to 6.0000, and there are 15 websites with a passing score, including 14 on the average score line and Lefeng.com. The comprehensive levels of Taobao and Tmall are significantly higher than those of other websites. The evaluation of different searches is shown in Figure 2.

Through the summary, it can be found that Baidu's word-of-mouth data is basically the service quality evaluation of the direct-operated B2C e-commerce platform published by online consumers. The data collected by the Sina Weibo platform is classified into three different types: industry or corporate news, product promotion and promotion essays, and customer-published evaluation information on the service quality of e-commerce platform companies. There are many types of information and more evaluation objects. It is complicated, and a large amount of data does not meet the requirements of the follow-up research of this article. After data screening, 1528 online reputations of each platform are retained, including 551 in Jingdong Mall, 504 in No. 1 Store, and 473 in Dangdang, providing data support for subsequent classification and sentiment analysis research. After data screening, the number of word-of-mouth of each platform mall is shown in Table 4.

In the B2C online shopping market in 2019, JD.com has a market share of 18.6%, Dangdang has a market share of 1.3%, and Vipshop has a market share of 2.9%. The market share is shown in Figure 3.

When the important parameters of each individual cost in the system change from -50% to 50%, that is, when the rate of change reaches 100%, the impact on the total cost is shown in Figure 4. The total cost increases with the increase

TABLE 2: SPSS feature root contribution rate.

Element	Initial eigenvalue		Total
	Variance	Accumulation%	
1	52.783	52.783	3.695
2	29.751	82.534	2.083
3	13.455	95.988	0.0942
4	3.650	99.638	0.255
5	0.360	99.998	0.0025

TABLE 3: Basic statistics of the questionnaire.

Basic situation	Classification	Quantity	Ratio
Gender	Male	70	43.75%
	Female	90	56.25%
	18 or less	3	1.88%
Age	18-25	97	60.63%
	26-35	44	27.50%
	35 or more	16	10.00%

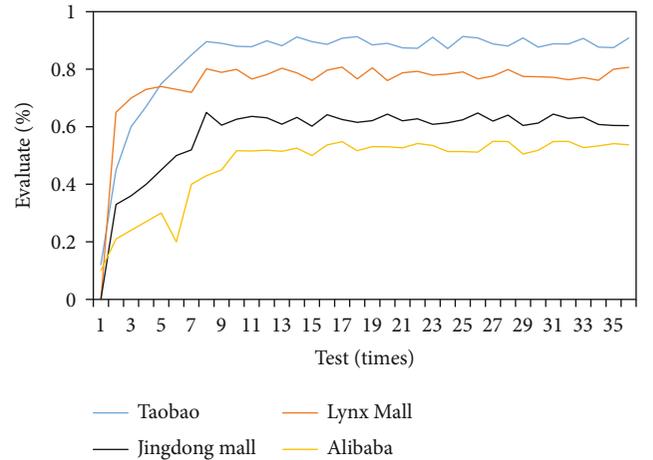


FIGURE 2: Evaluation of different searches.

of the individual cost parameters, vice versa. When the site selection cost changes, the total cost changes range of 36.16%; when the unit inventory holding cost changes, the total cost changes range of 6.96%; when the unit transportation cost changes, the total cost changes range of 46.60%; when the unit return processing cost changes, the total cost varies within 3.42%. It can be seen that changes in location costs, unit inventory holding costs, unit transportation costs, and unit return processing costs will all have an impact on the total cost.

Purpose of shopping: 67% of users browse shopping websites with a clear shopping goal. 21% of users will pay attention to some shopping platforms that they usually visit when they are idle and bored. Will drive oneself to buy two situations. 12% of users will pay attention to website

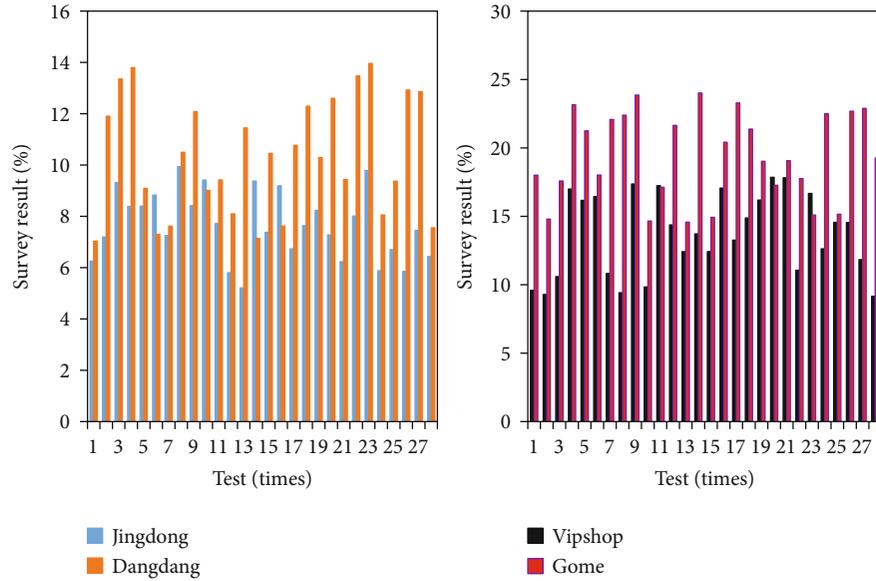


FIGURE 3: Market share.

promotion information. The purpose of shopping is shown in Figure 5.

On the whole, users have generally completed the task of product search, product selection and comparison, and selection of shopping products for purchase. It is found that the overall usability problems of the current design scheme and the number of pain points of experience have been significantly reduced, and the satisfaction with the provided functions reached 68 points, the emotional response 66 points, the aesthetic response 70 points, and the information construction 64 points. However, some users said that some functions are not perfect enough, and these existing problems and deficiencies need to be improved. The user experience evaluation is shown in Figure 6.

#### 4. Discussion

With the rapid development of B2C e-commerce, the impact of logistics circulation on e-commerce has become more and more significant. Efficient, fast, and low-cost logistics circulation system plays an important role in promoting the formation and maintenance of B2C enterprises' core competitiveness and has become a hot issue in current research [23].

Using the basic principles of the fuzzy possible mean method, the fuzzy random expected value method, and the fuzzy random simulation method, the clarification transformation method of the fuzzy random CLRIP model is constructed, and the improved genetic algorithm based on the adaptive selection mechanism and the TS- and SA-based methods are designed. Methods such as the two-stage hybrid heuristic algorithm to solve the clarification model effectively solve the problem of solving the complex fuzzy random CLRIP model [24].

Regarding the further investigation of logistics service quality, from the perspective of two studies, there is a certain difference between logistics service quality customers and

TABLE 4: After data screening, the number of word-of-mouth in each platform mall.

Directly operated B2C mall	Number of Weibo word-of-mouth screening	The number of Baidu word-of-mouth screening	Summary
Jingdong mall	302	249	551
Dangdang	351	112	473
Shop number 1	367	137	504
Total	1020	498	1528

logistics service providers. Logistics service providers should start from the subjective factors of the logistics provider, what type of logistics services they provide to customers, pay more attention to their own quantitative value, and create value for customers. The important thing in the service industry is the understanding of customer service quality. Therefore, more and more scholars began to discuss the meaning of logistics service quality from the perspective of customers [25].

User experience refers to the user's psychological feelings on the readability, ease of operation, and interactivity of the website's interface, functions, and related information during the process of visiting the website. Whether it is a design researcher, interaction designer, and high-level corporate decision-maker, user experience is also a problem they care about and strive to solve reasonably and with high quality [26].

Although B2C e-commerce has developed rapidly, the accompanying problems need to be solved urgently. E-commerce has grown up with the rapid development of the Internet. After customers purchase products online,

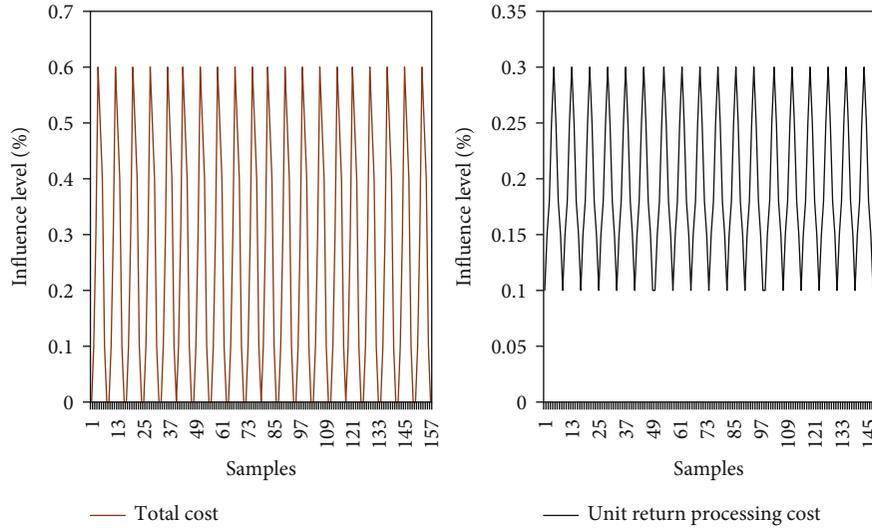


FIGURE 4: Impact on total cost.

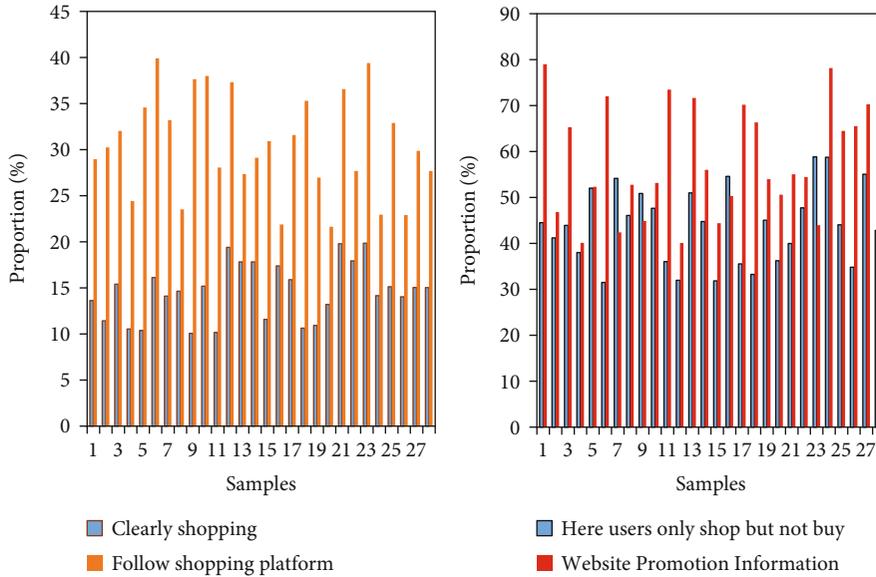


FIGURE 5: Purpose of shopping.

merchants distribute the products, which involves three aspects: online payment, network security, and logistics. The problems in these three aspects hinder the development of e-commerce to some extent. With the continuous progress of network technology, network security and payment issues have been greatly improved, but the quality of e-commerce enterprise logistics services has not been significantly improved.

Especially with the improvement of people's living standards, the products purchased by customers are no longer daily necessities, but more electronic products and entertainment products. Traditional B2C commercial logistics services are not just pure physical sports, but based on traditional logistics, pursuing short-time flexible services, and high-value-added services. Therefore, the quality of

logistics services plays an increasingly important role in the development of B2C e-commerce [27].

At present, some B2C e-commerce companies are using third-party logistics, and some have established their own logistics. Different models have different distribution ranges and capacities. Generally speaking, the service quality of China's B2C e-commerce logistics providers is low, especially the information services have big defects, which hinder the development of e-commerce enterprises. Therefore, it is imperative to judge the service quality of B2C e-commerce logistics, find out the defects of development, and improve the service quality.

With the rapid development of Internet technology and information technology, advertising operators are changing their promotion methods and forms from traditional media

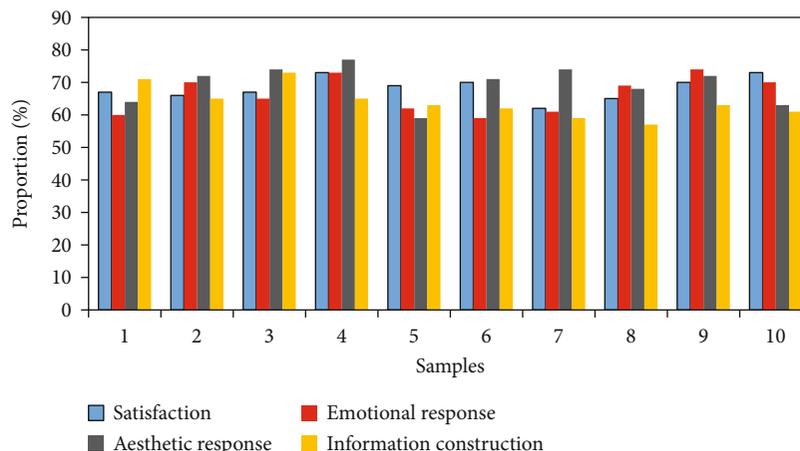


FIGURE 6: User experience evaluation.

to networks, mobile terminals, digital television, and other carriers. With the development of information technology and digital interactive media, with the emergence of new advertising forms such as text link advertising, web page advertising, search advertising, and mobile SMS advertising, the advertising forms have also undergone great changes. The public and advertising have more communication and interaction. Consumers have more control and speaking opportunities [28].

This article focuses on how to achieve a good interaction and experience through visual design in the search mechanism, control mechanism, user registration mechanism, and product browsing mechanism in the soft interface interaction mechanism of the B2C website. Based on a good user experience-centered design thinking, visual-related elements are designed, including fonts, colors, input boxes, buttons, and layouts. Reflect experience design and aesthetic design. In the process of visual design, integrated design is carried out through universal aesthetic principles, cognitive theories, and design principles. Use scientific usability testing to verify the design. Based on the above-mentioned research, the key points of visual design in the soft interface interaction mechanism that are in line with a good user experience are studied, and the consideration criteria that should be considered for excellent design are summarized. Enhance the user experience of the entire B2C website [29].

## 5. Conclusion

The research objects of this article are highly pertinent and based on the problems in the context. In-depth research can be conducted through extensive collection of comment data under multiple cultural backgrounds and comparative analysis, and there may be richer research findings; the research objects can also ask various forms of e-commerce such as C2C and B2B are expanded to improve the relevant theories of online reviews. In the measurement and calculation of objective indicators of the website, this article adopts the method of combining quantitative calculation of indicators and scoring by experts to analyze and evaluate all levels of indicators. Based on prospect theory as the theoretical

basis, this paper analyzes the behavior patterns of consumers in the process of B2C e-commerce services with B2C enterprises as the research object and uses fuzzy mathematics to establish a consumer behavior decision model that conforms to this process. Through the mining of Internet word-of-mouth, and successively through classification, clustering, sentiment analysis, and other methods, the decision-making model is quantified.

## Data Availability

No data were used to support this study.

## Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this article.

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