

Retraction

Retracted: Precise Dissemination of E-Commerce Information and Behavior of Social Media Users

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

- (1) Discrepancies in scope
- (2) Discrepancies in the description of the research reported
- (3) Discrepancies between the availability of data and the research described
- (4) Inappropriate citations
- (5) Incoherent, meaningless and/or irrelevant content included in the article
- (6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

- [1] Y. Zhang, "Precise Dissemination of E-Commerce Information and Behavior of Social Media Users," *Journal of Control Science and Engineering*, vol. 2022, Article ID 1831581, 8 pages, 2022.

Research Article

Precise Dissemination of E-Commerce Information and Behavior of Social Media Users

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In order to solve the problem that the e-commerce system provides users with more and more choice information, it makes it difficult for users to find the desired products in a large amount of product information, and a research method for accurate dissemination of e-commerce information and behavior of social media users has been proposed. In order to improve the individual sales method of merchants, a method of multiangle analysis of data is proposed by clustering algorithm and classification algorithm. Research shows that there is a big difference between men and women in the use of WeChat, with women accounting for 70%. It can be seen that the respondents were mainly women. People aged 26-40 account for 62.4%, which matches the main consumer group (26-40 years old) in the industry research report. In terms of monthly disposable income, the median and mode are both between 1,000 and 2,000 yuan, which is related to the age distribution of the respondents. The frequency of online shopping 1-6 times/month accounted for 81.5% of the overall sample, and the online shopping experience for more than 1 year accounted for 98.8%, indicating that the respondents generally have the habit of online shopping. Through experimental analysis, the effectiveness of the improved algorithm is verified. In terms of online shopping consumption accounted for the total consumption, the number of people accounted for one-fifth and one-third. It can be seen that online shopping is an indispensable part of people's daily consumption.

1. Introduction

With the advent of the mobile Internet era, our lifestyle and shopping habits have undergone tremendous changes. Netizens' habit of using desktop PC and laptops to surf the Internet in the traditional Internet era has been changed, replacing them with smart terminal devices, such as smart phones and portable tablet computers. Specific processes are shown in Figure 1. The rapid development of e-commerce websites has not only expanded traditional sales channels but also changed people's shopping methods, making online shopping more convenient [1]. According to the "2015 Research Report on China's E-commerce Software Industry," the transaction amount of China's online shopping market reached nearly 3 trillion in 2014, showing a relatively rapid growth trend.

2. Literature Review

We all know that one-stop shopping is not only critical for users but also even more important for managers. Because the flattening of this part of the system process can bring about a great reduction in cost, network traffic will converge from platform-based e-commerce platforms to vertical e-commerce. As Buczak and Guven put forward that, at present, vertical e-commerce is still in a weak position in terms of user traffic and commodity resources compared with platform e-commerce, while comparing the degree of specialization and differentiation, advantages of vertical e-commerce are obvious. At the same time, it is necessary to ensure the user conversion rate, user retention rate, and user stickiness, which are the continuous driving forces for the development of vertical e-commerce [2]. Xu et al. and

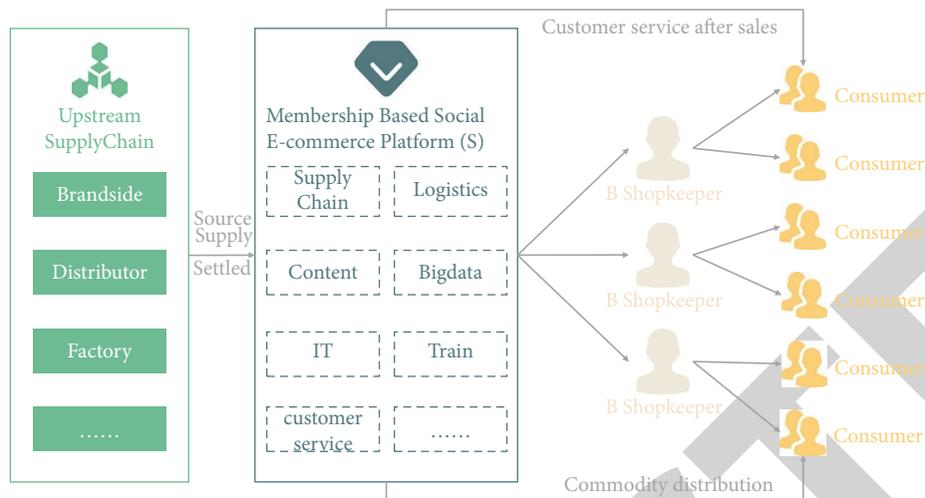


FIGURE 1: WeChat operation flow chart.

others believe that for vertical e-commerce, its unique advantages should be fully played. We must not only grasp the user's conversion rate and retention rate but also grasp the user's stickiness through some operational methods to fully show the strong pertinence in the user-specific analysis by vertical e-commerce [3]. Mazimpaka and Timpf find that the degree of consumers' belief in the reliability and security of e-commerce platforms is their trust in e-commerce platforms [4]. Papalexakis. et al. propose that in the e-commerce transactions, consumers expect that e-commerce platforms will not expose consumers' personal information and be able to show goodwill, ability, and confidence in predictable behavior during their consumption [5]. Martínez-Álvarez. et al. believe that credibility and goodwill are the two most important factors for trust in e-commerce platforms [6]. Chaurasia and Pal propose that trust in e-commerce platforms is that platform merchants can consider the rights and interests of consumers, operate platforms and stores according to consumers' expectations, and perform activities in a way that consumers can predict [7]. In a research on the factors affecting consumer trust in e-commerce, Yan and Zheng and others state that trust has a profound impact on reducing perceived risk and promoting the formation of purchase intentions [8]. According to the study conducted by Garcia et al. and others, consumers' trust in the platform is summarized into four categories, namely, platform reputation and scale; the usefulness, accessibility, and safety of the platform; the willingness to provide customized services to consumers; and personal trust tendency of consumers [9]. Hong et al. state that trust should be classified into four comprehensive categories, including cognitive factors (privacy protection, information quality, system reliability, security protection, etc.); result factors (consumer feedback, reputation, evaluation, third-party certification, word of mouth, reference, etc.); experience factors (e-commerce use experience, Internet use experience, familiarity, etc.); and personal factors (shopping style, trust tendency, etc.). Relationship marketing and channel

management are the main research of marketing research on trust [10]. The research of Aussel et al. shows that distrust can have an important influence on purchasing choices and expectations of future interactions [11]. Zhang et al. and others also find that the development of online shopping faces many difficulties, a large part of which is caused by lack of trust. They also propose that the factors affecting purchase intention include three aspects: usefulness, accessibility, and trust [12].

In review, the previous studies include two aspects: one is the trust in e-commerce platform, and the other is the trust in the merchants settled in e-commerce. These studies have enriched the application fields of the trust model and provided a theoretical basis for the later analysis of consumer trust in the WeChat platform. The hierarchy of needs theory is a mature theory of sustainable behavior, and it has a successful practical foundation to improve the service quality and service effect of the new media platform (as shown in Figure 2).

3. Methods

3.1. Study Overview of WeChat Platform. The existing WeChat public platforms can be divided into four categories: media, brand customer service, public service, and e-commerce. The shortcomings of WeChat marketing are analyzed objectively, for example, corporate brand promotion through WeChat does not meet the needs of consumers and companies. Brand promotion is not unique enough for the WeChat platform. Just a simple push of graphic messages, it is difficult for consumers facing an information explosion to discover the information they need most from the flood of information, and it is also difficult for companies to quickly deliver brand information in place in the way consumers accept [13–15].

From the above study, it can be found that scholars currently mainly conduct qualitative analysis on the marketing model and marketing value of WeChat platform, while there are still relatively few empirical analyses on the

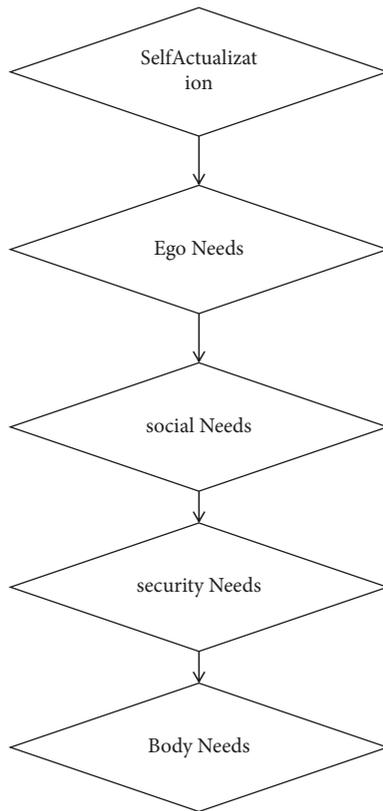


FIGURE 2: Hierarchy of needs theory model.

effect of consumers' trust on WeChat platform on purchase intention [16–18]. Therefore, one of the main contents of this study is to perform quantitative analysis on the WeChat platform based on the qualitative analysis of previous studies, as shown in Figure 3.

3.2. Basic Model. It is found in the study that there is no unified understanding of the relationship between perceived risk and trust. It is summarized that the three models of the two influencing purchase intention are currently the most widely used, including the model of perceived risk and trust singly affecting purchase intention, the model of adjustment relationship, and the model of intermediary relationship [19–21].

The single influence model is a relatively early study mode. But it only considers the situation that affects the purchase intention alone and does not consider the influence of the two coexistences on the purchase intention, so it is not adopted in the study. The model of adjustment relationship is still in the hypothesis stage, and there are not many empirical studies on this relationship. Therefore, combining with the study objectives of this paper, a relatively mature intermediary relationship model is chosen in the study, that is, the intermediary role that perceived risk plays in the influence of consumer trust on purchase intention.

By reviewing the previous literature, and then based on the above analysis, the basic model of this paper is obtained. From the above model (Figure 4), it can be seen that

consumer trust can directly affect consumers' purchase intention, and it can also influence consumers' purchase intention through perceived risk [22, 23].

3.3. The Purchase Intention Model Based on the Trust Dimension on the WeChat Platform. The WeChat platform is different from the Taobao platform, in that it has strong social attributes. Therefore, this paper uses three-dimensional classifications, namely, honesty, ability, and goodwill, to build a trust-based purchase intention model on the WeChat platform.

From the above model (Figure 5), it can be seen that consumer trust and its three dimensions are the independent variables in this model, the purchase intention of WeChat platform consumers is the dependent variable, and the perceived risk is the intermediary variable. Consumers' willingness to purchase on WeChat platform is affected by trust and its dimensions and perceived risks.

4. Study on Data Mining

4.1. The Concept of Data Mining. Data mining is also called knowledge discovery in databases. It is a hot topic in the field of artificial intelligence and database research, referring to the process of revealing hidden and previously unknown data from a large amount of data in the database and discovering valuable information. Data mining is also a multidisciplinary cross-field, which includes many aspects of knowledge, such as machine learning, artificial intelligence, pattern recognition, and visualization. It can deeply analyze enterprise data, conduct data modeling, and dig out hidden valuable information through inductive reasoning [24–26]. This model (Figure 6) can help decision-makers adjust market strategies, reduce risks, and enable them to make correct decision-making judgments.

The emergence of data mining and the rise of big data technology have just met scholars' concerns about the contradiction, which also have been successfully applied to various fields such as the financial industry, retail industry, power industry, medical industry, and government decision-making, with good social and economic benefits. Data mining has broad application prospects.

4.2. The Basic Process of Data Mining. Data mining as a discipline also has its own process: firstly, it needs to collect data according to the task and then transforms the data into the required standard format. Then use data mining algorithms to model, and finally display the analyzed results (as shown in Figure 7). The specific process is as follows:

- (1) First, data collection needs to be carried out. It is necessary to make a planned selection according to the objects to be studied, to ensure that the information to be collected has a positive effect on the analysis work, which can be data of different dimensions or in different formats.
- (2) All the data collected before are saved uniformly, in a database or a text file.

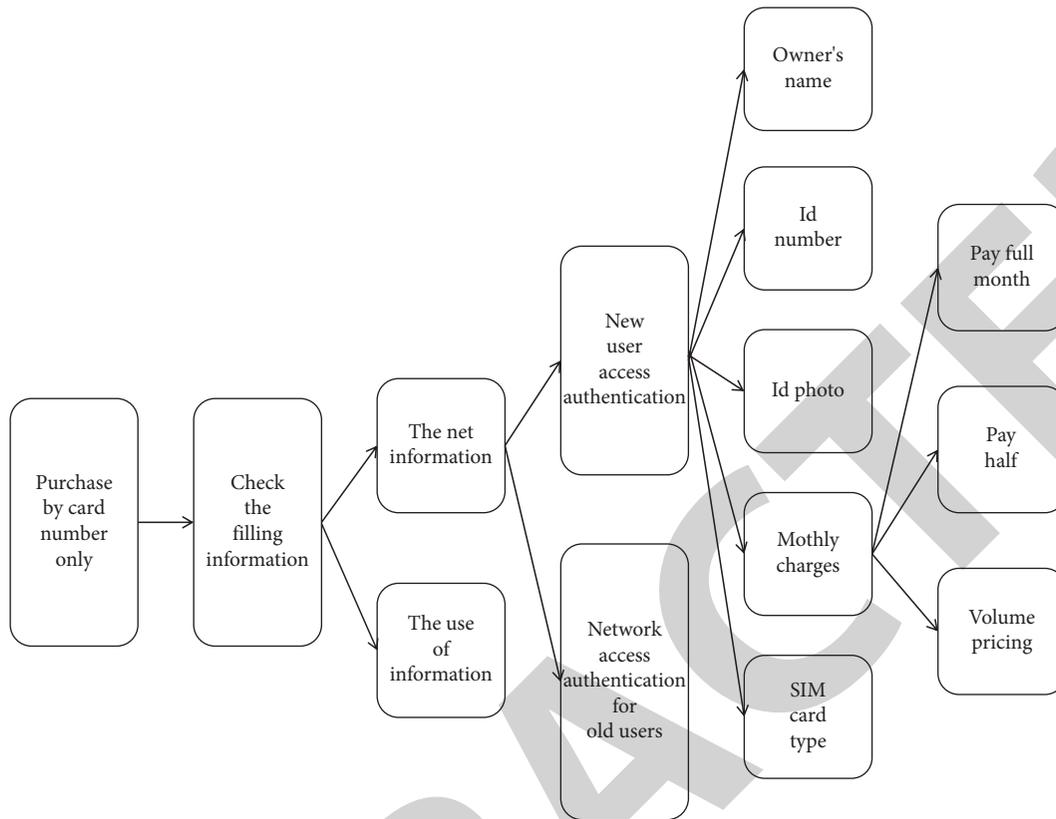


FIGURE 3: Analysis of network user behavior by data mining.

- (3) Among the collected data, there are often a series of information that is meaningless for the mining process. There are two aspects that are meaningless, the first aspect is not related to the problem that needs to be solved, and the other is that when the variance of a certain column of numerical features is zero or very close to zero, this information is of no value. So when these data are removed, it has no effect on the results of data mining with less calculation. This process is also a convention.
- (4) From the perspective of the data center, when saving the data, features may be missing if not filled in, or extra added. These need to be “cleaned up” to ensure the data consistency of data format. Only in this way can success be guaranteed when the data is modeled later [27–29].
- (5) The modeling results have a great relationship with the selection of numerical dimensions. For example, in logistic regression, large differences in data dimensions can directly affect the results of the model. Then, in order to solve this problem, it is necessary to transform the data into a suitable form, such as normalizing the data from 0 to 1, so that the data is in the range of 0-1, and then analyze the data.
- (6) According to the nature of the task, choose an appropriate algorithm to analyze and model the problem. If it is a classification problem, use algorithms such as logistic regression or decision tree. At

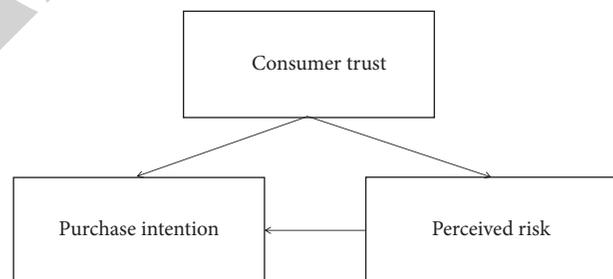


FIGURE 4: Basic model.

a higher level, random forest or lifting methods is suitable. If it is a clustering problem, k-MCAs algorithm or DBSCAN algorithm can be used.

- (7) Re-apply the results of the modeling analysis to practice and to determine whether the model results are in line with reality and have a positive effect. Otherwise, the problem needs to be re-analyzed and modeled again.
- (8) When the final mining results are obtained, the results can be displayed visually if feasible.

4.3. Classification Algorithm. The most classic classification algorithm is the decision tree algorithm ID3. The basic algorithm idea is to start from a single node of a training sample. If the sample classification is all in the same class,

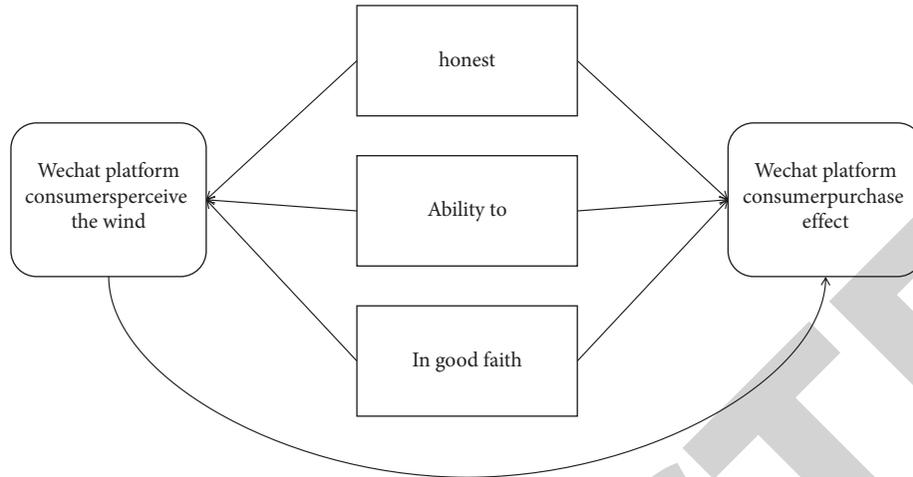


FIGURE 5: Purchase intention model on WeChat platform based on the trust dimension.

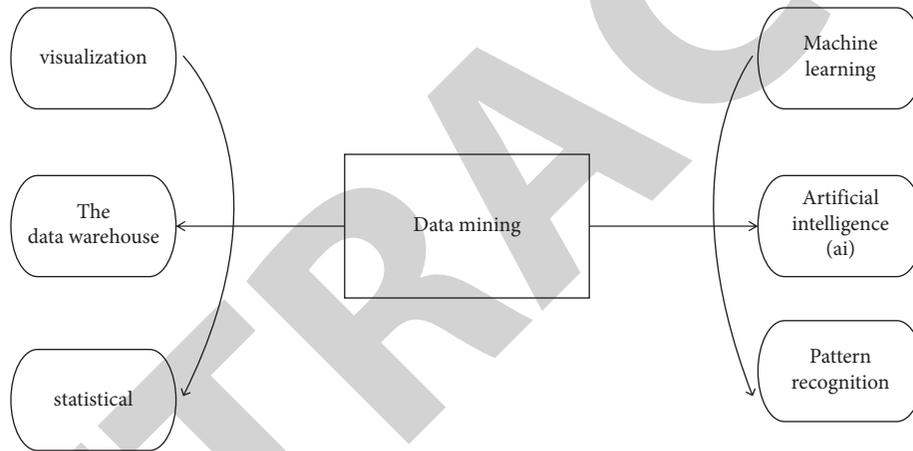


FIGURE 6: Data mining model diagram.

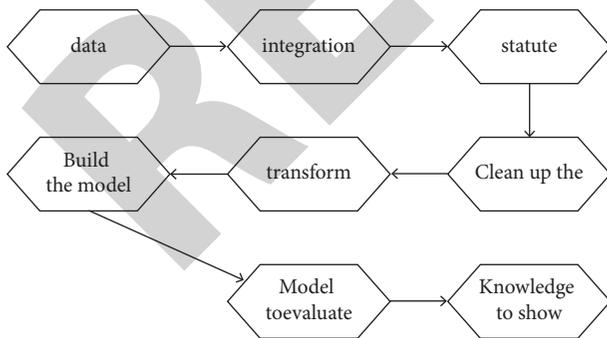


FIGURE 7: Data mining flowchart.

then this node becomes a leaf. On the contrary, the algorithm takes the calculation of the information gain based on the attribute's entropy as the key information and selects the attribute with the highest entropy value to make it the judgment attribute of the node. Then determine each value

of the attribute, create branches, and divide the sample accordingly. Recursively calculate the decision tree for each segmented sample. When an attribute is on a node, there is no need to consider it on the recursion of the node.

The attribute with the largest information gain is used as the judgment attribute of the current node. This method reduces the number of nodes required for classification and can generate nodes more scientifically, forming a simple tree. Suppose S is a set of s instances, the class attribute has m different values, m different classes $C_i (i = 1...m)$ are generated, and s_i is the sample in C_1 . The expected information required for segmentation of a given sample is given by the following formula:

$$I(S_1, S_2, \dots, S_m) = - \sum_{i=1}^m P_i \log_2(p_i), \quad (1)$$

where p_i is the probability that the sample belongs to C_i . Suppose A has v different values $\{a_1...a_v\}$, use the attribute A to divide s into v subsets $\{S_1, S_v\}$. If A becomes a decision

attribute, then these subsets correspond to branches generated by the node including set S . According to the A-cut molecular set, the entropy is given by the following formula:

$$E(A) = \sum_{j=1}^v \frac{S_{1j} + \dots + S_{mj}}{S} I(S_{1j}, \dots, S_{mj}), \quad (2)$$

s_{ij} is the number of samples of class c in subset S .

$$\frac{S_{ij} + \dots + S_{mj}}{S}. \quad (3)$$

The given subset s_j is the weight of the j -th subset. Where,

$$I(S_{1j}, S_{2j}, \dots, S_{mj}) = \sum_{i=1}^m p_{ij} \log_2(p_{ij}), \quad (4)$$

$p_v = S_v / |S_i|$ is the probability that the sample in S_j belongs to c .

The coded information obtained by branching on A is as follows:

$$G_{ain}(A) = I(S_1, S_2, \dots, S_m) - E(As). \quad (5)$$

Calculate the information gain of each attribute, and the attribute with the largest information gain is the priority judgment attribute of the set S , which is priority to be a classification node.

4.4. Clustering Algorithm. Clustering is the division of data tuples into multiple classes or clusters. Tuples of the same type are similar, while tuples of different types will be quite different. The difference between clustering and classification is that the clusters to be divided by clustering are unknown [30]. Clustering has been widely used in many real-life scenarios, the most common pattern recognition, as well as image analysis and financial analysis. In business, clustering can discover different customer groups based on basic customer information for market analysts, and then use purchase patterns to express the characteristics of different types of customer groups.

The main types of clustering analysis are as follows: Figure 8

- (1) Partitioning methods: assuming a data set of N tuples, the partitioning methods will construct s clusters, and each cluster represents a clustering. For a given S ($S < N$), first an initial clustering result is given, and then iteratively optimize the previous clusters. The so-called excellent criterion is as follows: the more concentrated the records in the same cluster, the better the clustering effect, as shown in 5.
- (2) Hierarchical methods: hierarchize a given data set according to certain rules. The hierarchical clustering method is based on distance, density, and connectivity.
- (3) Other methods include density-based, structural model diagram based, and grid unit processing based. The basic idea is the expression of the clustering method from multiple angles.

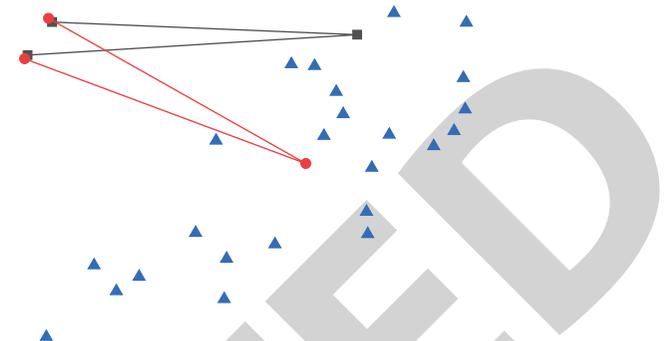


FIGURE 8: Community clustering analysis diagram.

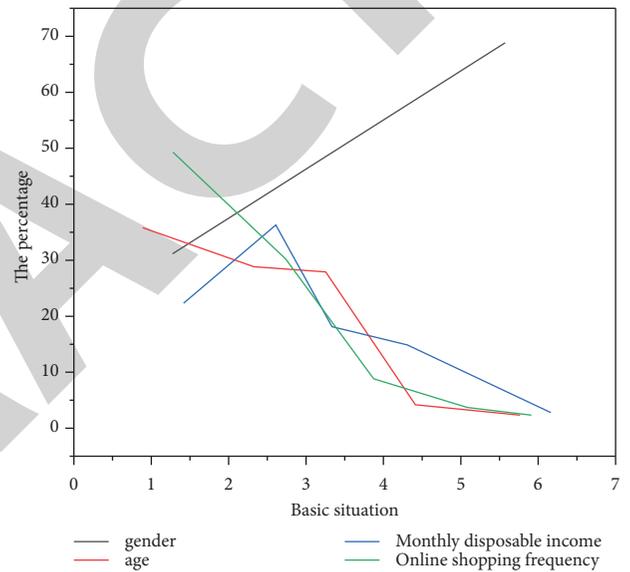


FIGURE 9: Descriptive statistical analysis results of samples.

5. Results

It can be seen from Figure 9 that there is a big gap between men and women in terms of gender, with women accounting for 70%, indicating that the survey subjects are mainly women. The population aged 26-40 accounts for 62.4%, which matches the main consumer group (26-40 years old) in the industry research report. From the perspective of monthly disposable income, the median and mode are both in the range of 1,000-2,000 yuan, which is related to the age distribution of the respondents. The frequency of online shopping 1-6 times/month accounts for 81.5% of the overall sample, and online shopping experience of more than 1 year accounts for 98.8%, indicating that the survey respondents generally have online shopping habits. In terms of online shopping consumption accounted for the total consumption, the number of people accounted for one-fifth and one-third consumption is larger. It can be seen that online shopping is an indispensable part of people's daily consumption.

6. Conclusion

This paper summarizes the development of WeChat e-commerce. The WeChat platform is currently the largest social network platform in China, and there are huge business opportunities hidden in the number of high active users, so this paper uses this platform as an example to conduct an empirical study. In the model construction, the different influencing factors of consumer trust on WeChat platform are analyzed. Three dimensions of consumer trust on the WeChat platform are determined. In the model of the influence of consumer trust on purchase intention, the perceived risk is used as the intermediary variable and the purchase intention is the dependent variable to build a basic model. Clustering algorithm and classification algorithm are used to analyze the needs of WeChat customers from multiple angles so that the merchants can make individual sale methods.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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