

## Retraction

# Retracted: High-Concurrency Big Data Precision Marketing and Advertising Recommendation under 5G Wireless Communication Network Environment

### Journal of Sensors

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1].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) Manipulated or compromised peer review

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] X. Chen, "High-Concurrency Big Data Precision Marketing and Advertising Recommendation under 5G Wireless Communication Network Environment," *Journal of Sensors*, vol. 2022, Article ID 7609555, 10 pages, 2022.

## Research Article

# High-Concurrency Big Data Precision Marketing and Advertising Recommendation under 5G Wireless Communication Network Environment

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With the rise of 5G wireless communication networks, information technology has challenged the traditional practice of marketing. The impact of enterprise precision marketing theory on traditional marketing theory was brought by massive user data in the era of big data. With the sudden rise and rapid development of mobile Internet and its derived big data, in the fierce market competition of new media and we-media, how to provide accurate information push for users has become the primary subject of research. The design of advertising precision marketing system mainly uses 5G network as the basic tool and makes precise positioning of consumer demand through high-concurrency big data analysis system. *K*-means clustering algorithm improves the data analysis system to provide personalized demand customization and deeply excavates the segmentation of the consumer market and the real demand of consumers. The results show that the model effectively enhances its adaptability. When *S* value is between 0.01 and 0.05, the variable has a high significance, and precision marketing improves the accuracy of recommendation.

## 1. Introduction

With the continuous development of network technology means, big data technology plays a key role in changing the consumption structure and creating consumer demand and is the core element of improving market competitiveness. Analyze the economic model through the thinking mode of big data. In the era of big data, the most important characteristics are big data storage and big data analysis, and advertising marketing based on these two points is a brand-new way and means and an advertising marketing model with a relatively cultural development with big data [1]. Advertising marketing in the era of big data is in the form of “Internet + advertising.” Based on big data, Internet advertising subdivides the consumer market and excavates the real needs of consumers and systematically analyzes the market demand status and the preferences of the masses, which is a way to predict in advance. This method can be

effectively applied in a small range of markets, because the overall market share is relatively low, and the cost and capital investment can be really reduced through forecasting. In the era of big data, after the products are circulated in the market, the market is used to monitor the products, understand the popularity of different products and other factors, and systematically analyze the data to understand the different conditions of different products and make production plans [2]. The era of big data can effectively change the traditional advertising marketing model, which has positive significance for the accurate development of advertising. The Internet marketing market is undergoing complex changes under the influence of diversified consumer demands. However, without big data analysis, products will be unsalable and there will be other problems. This will not only increase the cost input of consumption products but also fail to improve economic benefits. Improving economic benefits can reduce losses and avoid cost and waste

of funds through dumping. The use of the network for product sales relatively will reduce a certain cost of sales, for some low sales of products to expand the market.

5G (5th-generation mobile networks) will meet people's application requirements of ultrahigh service throughput, ultrahigh connection number density, ultrahigh mobile speed, and ultrareliable and low delay; greatly improve and enhance the spectral efficiency, energy efficiency, and cost efficiency of communication network; and expand the development space of mobile communication industry. 5G technology is crucial for the future development of operators. In order to give full play to the potential of 5G technology, innovation in communication technology and marketing strategy is needed to promote the popularization and application of 5G technology. However, 5G technology allows users to access the network and obtain certain business experience under a high user density [3]. In the development of market economy, in order to occupy effective advantages and strengthen the attractiveness to consumers, it is necessary to strengthen the research on products and enhance the attributes and characteristics of products, so as to meet the needs of target consumer groups. In this regard, it is necessary to carry out the market positioning of the product, understand the advantages and characteristics of the product, and set up reasonable advertising, so as to stand out in the market economy. Advertising and marketing mode and means of change will cause the change of target consumption group, after understanding market position must be through scientific way to understand the target consumer groups, and in different regions have different characteristics of consumer groups, by way of big data using data information to target the precise positioning of the masses. The product information that can meet consumer needs is pushed to consumers through the channels that consumers are accustomed to, and personalized and accurate services are fed back to consumers. In order to achieve precise marketing of mobile Internet advertising, it is necessary to reasonably apply various mobile network technologies and public platforms. In the advertising industry, based on the traditional advertising marketing data, reasonable application of big data analysis means accurate Internet advertising push can promote the exhibition of advertising marketing and then truly achieve accurate positioning and marketing.

## 2. Related Work

With the in-depth development of economic globalization and the opening of the Internet of Things brought by the 5G era, there will be more data between people and things and between things. Big data technology will enter more operations with 5G. Only when data is combined with operations can the greater value of big data be brought into play. 5G will help big data technology be applied in more different operations and application scenarios. In the future, with the opening of 5G, the operation of big data in the business environment will be more and more extensive. In the future, with the opening of the era, the marketing of big data will be more and more extensive. These enterprises have also achieved corresponding results through the implementation

of precision marketing for certain customers. In order to improve the efficiency of marketing activities and promote the achievement of marketing and sales objectives, it is necessary to provide services or information to target customers to influence their purchase intention and decision and at the same time reflect the "correct" and "suitable" two elements among the four elements of channel, time, target customers, and information to achieve this goal. Ahmed et al. provide customers with accurate data and information according to the appropriate time and channel and at the same time effectively influence their needs and decision-making customers, so as to achieve the marketing goal of the enterprise [4]. Xu et al. studied precise marketing from customer source segmentation and precise targeting. The latter also emphasizes the importance of information technology in the correct marketing communication service system and describes the role of information technology in reducing costs [5]. The core of accurate marketing based on database and Internet or third-party platform by Sankaranarayanan et al. is database marketing itself. Accurate marketing strategy and marketing channel selection must be achieved through analysis and prediction [6]. Zhan's paper proposes a method of product development based on large data to push the customer to participate in, through the background data collection, data integration, data analysis, data application, the internal and external data collected from their respective product development database, the integration of mergers, and transformation, ultimately for the company product development, precise marketing, and customer relationship management (CRM) [7]. Scholars have conducted in-depth and systematic studies on precision marketing strategies, including the concept, methods, and channels of precision marketing. Now, precision marketing strategy has been applied in multiple industries and fields, and enterprises pay more attention to improve marketing efficiency through the formulation of precision marketing strategy so as to obtain greater benefits.

Fierce market competition and the development of social economy make marketing more refined and precise. Research by scholars at home and abroad on precision marketing and clothing marketing strategy research is very extensive, based on the Internet marketing strategy research. Zheng et al. use Internet technology to carry out activities, and apparel online marketing, as a new marketing method and marketing concept, is gradually gaining recognition [8]. Djedouboum et al. make online marketing tools and methods more systematic, which can analyze consumers' behaviours online and make real-time and dynamic adjustments according to the environment, so as to comprehensively coordinate various online marketing activities of channels, promote the unified goal and image of enterprises, and finally achieve two-way interaction with consumers [9]. He et al. can promote their products on a large scale at a low cost, and the company can quickly understand consumers' feedback on the product through the Internet, so as to take it as a target, adjust its development strategy, and improve product quality [10]. The theoretical system of precision marketing proposed by Yu et al. is highly representative. They believe that precision marketing is to establish a

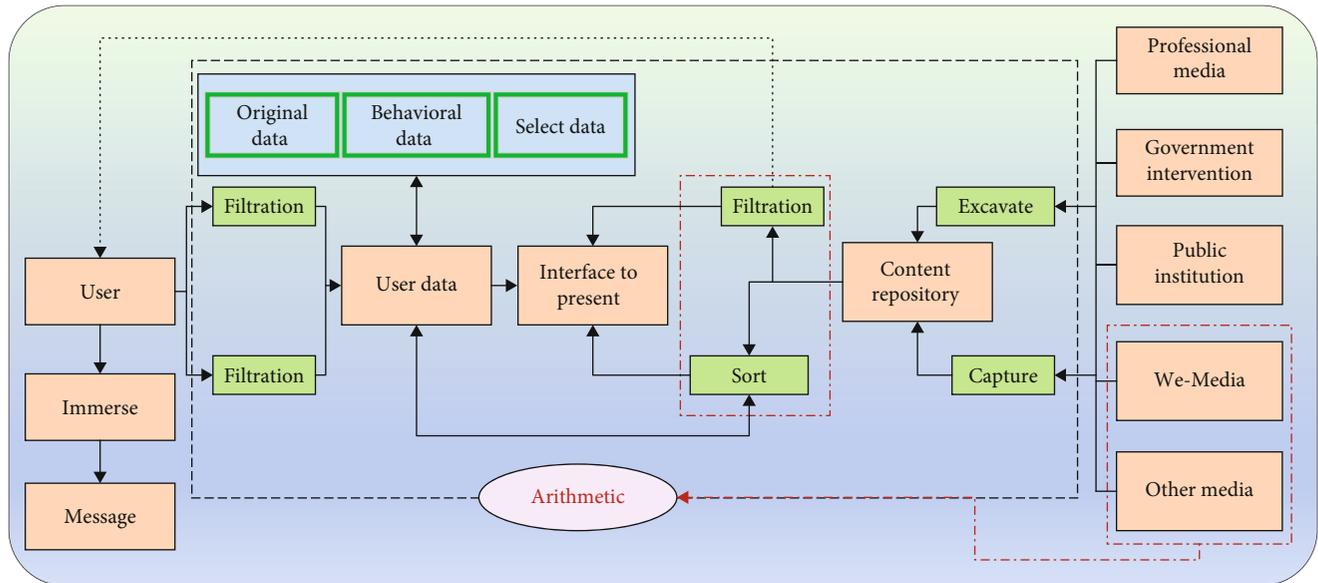


FIGURE 1: Accurate positioning recommendation flow chart.

personalized customer communication service system on the basis of precise positioning, so as to achieve measurable low-cost expansion of enterprises [3]. Precision marketing is to accurately segment the market by combining quantitative and qualitative methods, predict the consumer needs of different groups, and then achieve effective marketing communication with high investment returns. To sum up, it can be concluded that certain studies have been carried out on enterprise precision marketing from different perspectives at home and abroad, which provides reference significance for the formulation of enterprise precision marketing strategies. Few scholars have studied precision marketing strategies in the 5G communication network environment, so in-depth analysis of big data technology to help precision marketing has become a research hotspot.

### 3. Precision Marketing Based on High Concurrency Big Data Technology

**3.1. Accurate Positioning of Big Data Based on 5G Wireless Communication Network Environment.** In order to achieve accurate marketing user positioning, then it requires further market segmentation. In this paper, the accurate differentiation of the market as a premise is discussed and then in the functional characteristics of the product up and down. Enterprises in various fields are facing a competitive environment, and there are many competitors. In such a competitive market environment, enterprises are always faced with the risk of being defeated by peers despite competition [11]. Therefore, if an enterprise wants to gain a foothold in the competitive market, it must have its own corporate brand and products, which have a very high reputation among target users. Therefore, the enterprise must establish a unique and strong market positioning, which should show its distinctive personality characteristics with other competitors, stand out from numerous competitive enterprises, and attract the interest and love of potential users. The market

positioning is to provide young users with a variety of personalized news and videos. The company's precision marketing is to further strengthen the in-depth integration of information based on the database and the Internet, so that precision is more accurate. The company's positioning tool is its unique algorithm, including data mining, user mining, and personalized recommendation three parts. The entire recommendation process is shown in Figure 1.

In the process of big data technology application, comprehensive collection and systematic analysis of relevant data information can accurately position customers. In the process of 5G communication network technology application, the antenna data and interference data in the communication network are collected effectively through big data collection technology, and the information is processed in a timely manner. The interference of signal is reduced in the process, and the antenna data and network data are analyzed and decided scientifically by the integration of big data analysis technology and GPS 3D ray tracing technology. GPS technology can accurately locate customers' locations and promote the optimized development of 5G communication network technology [12]. The application of technology can effectively store the information and interference information of each base station as well as the data of business flow. Although these data types are complex and diverse, the processing speed is relatively fast in the process of technical application, which can improve the processing speed of cloud data flow in 5G communication network. 5G communication network belongs to the cloud network, which can connect different types of clouds to the 5G communication network, so as to effectively perceive various types of cloud data, and conduct comprehensive analysis of basic data and user data changes through big data technology. Existing configuration information can be quickly processed. In addition, information modification functions can be used to redeploy different types of cloud access locations to optimize the network environment. In the process of relevant

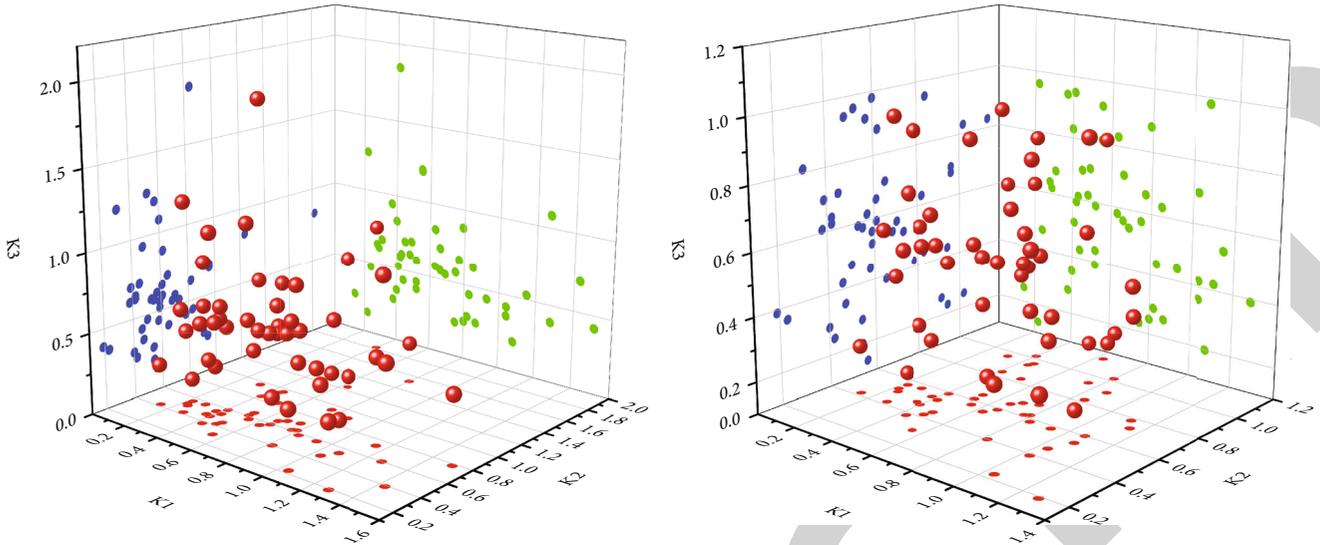


FIGURE 2: Clustering centroid distribution diagram before and after optimization.

technology application, the storage form is relatively advanced, which can ensure the security and stability of data information application. In the process of big data technology application, the data value in 5G communication network can be deeply mined. The intelligent processing level of communication network can be improved through intelligent inference and training. In the application of big data mining technology, a training model can be obtained by forward calculation. In the process of model application, data information can be updated and processed according to the feedback of the application. In addition, the routing table can be updated to optimize and improve the application form of the existing network structure [13].

**3.2. K-Means Clustering Algorithm Recommended Framework.** Cluster analysis divides the sample data set to be analyzed into several different groups according to a certain principle, which makes the similarity of each data point in the group as large as possible and the similarity of sample data points between different groups as small as possible [14]. K-means algorithm is used in the process of cluster analysis. Each sample data point is divided into different groups by repeated iteration, and the distance between the sample data point and the centroid of the group is compared, so that the distance between each sample point in the same group and the distance between the sample data point in different groups are the smallest [15]. In the K-means clustering algorithm, Euclidean distance is generally adopted to measure the distance between data sample points. The calculation formula of Euclidean distance is shown in the following formula:

$$D(x, y) = \sqrt{\sum_{i=1}^n (x_i - y_i)^2}, \quad (1)$$

where  $x_i$  represents the  $i$ th variable value of data point  $x$  and  $y_i$  represents the  $i$ th variable value of data point  $y$ .

The K-means clustering algorithm divides the sample data points into  $K$  groups, and each group represents a different group category. Determine the initial centers for the different groups. The initial center of each group was determined according to the principle of minimum Euclidean distance between sample data points. The new group classification before and after optimization is shown in Figure 2. In the upper left part of the figure, the Euclidean distance between all data points and data points is the smallest, so the sample data point is the initial center of the group.

After the initial center of different groups is determined, continuous optimization is needed to ensure that the initial center is more reasonable and reliable. The Euclidean distance between sample data points is calculated, and the new centroid is determined by the mean of Euclidean distance [16]. The new centroid of the group continuously moved to the dense distribution area of the group, and the edges between the groups changed, reflecting the gradual optimization of K-means clustering results. After repeated iterative operation, the centroid of all groups and the edge boundary between groups do not change significantly, indicating that the results of the K-means clustering analysis process have tended to a relatively stable state; that is, the clustering analysis process is completed and the final clustering result is achieved.

**3.3. High Concurrency Big Data Mining Model.** The company's customized news algorithm recommendation system is actually a function fitting users' satisfaction with content, which needs to input variables of three dimensions. The form of news content is very diversified, and features of different contents are also different. This variable needs to consider how to extract features for further recommendation. The focus is how to extract the unique characteristics of users and pay attention to the different information preferences of users in different scenarios. Combined with the dimensions mentioned above, the recommendation model

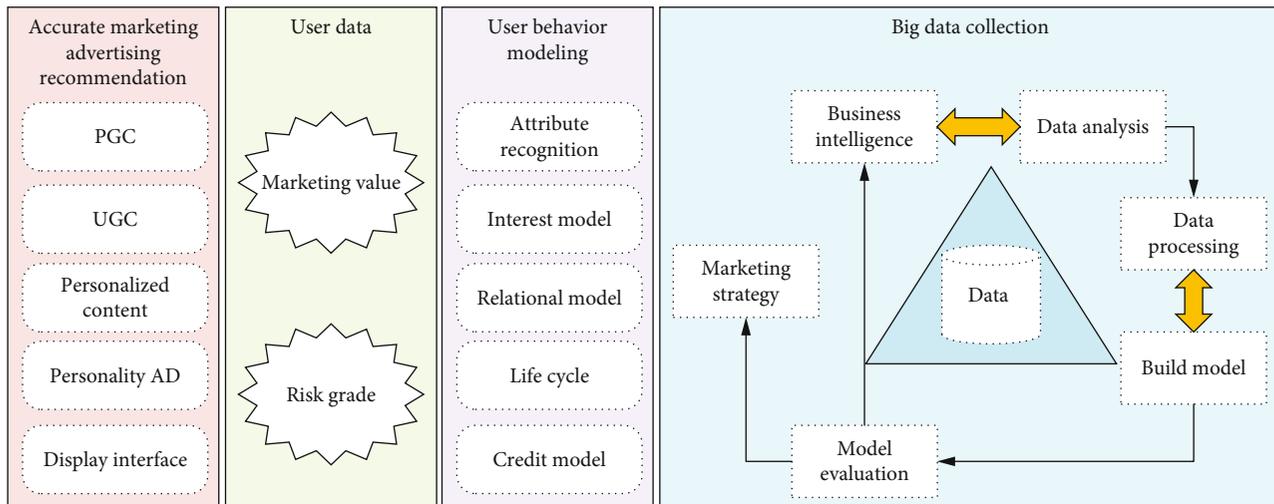


FIGURE 3: Advertising recommendation process of precision marketing.

will predict and predict whether the push in this scenario can meet the needs of users. At present, the modeling of big data mining is mainly based on the standard process of data mining. To start from the application, data mining must understand the project requirements and ultimate goals from the perspective of application and convert these requirements and goals into the definition and goals in data mining [17]. Data understanding sieve starts with data collection, goes to familiarity with the data, and then evaluates and filters the availability of the data. The original data is processed into the data required for the final modeling, and the modeling is carried out using data mining model technology. Different modeling methods are adopted according to different business requirements in the modeling stage of this link, for the established model to judge whether the model has reached the established business objectives, whether there is room for improvement, etc. To make data mining more accurate, it is not the ultimate goal of data mining, nor does it mean the end of the mining process. It is necessary to recycle between each other, and the way of circulation will be different depending on the business background. In general, data mining is a circular process, that is, through continuous optimization, trying to obtain the best application [18].

The whole market is divided into several effective submarkets, in which “effective” means that the group needs of each submarket are obviously different, and the consumers in each submarket have highly similar needs. The purpose of market segmentation is for enterprises to find the right target market, and the premise is that there are differences in demand for products among consumers in the market. The traditional market segmentation methods of enterprises are based on the common segmentation variables such as geographic location, gender, and age as the basis of market segmentation by market researchers. According to these segmentation variables, effective market segmentation cannot be achieved. In the era of big data, massive consumer behaviour data enable enterprises to better segment the market according to consumers’ behaviour habits and group

those with the same behaviour characteristics together through classification methods in big data mining. The selection of features can be unidimensional or multidimensional. Therefore, the combination of traditional market research wisdom and the great power of big data can make a more in-depth analysis of consumers and the market, which is conducive to enterprises to develop targeted marketing strategies, improve marketing efficiency, and improve corporate profits.

#### 3.4. High and Big Data Advertising Recommendation Process.

This design applies data mining technology to help the App obtain user information and analyze user’s interests and hobbies. Categorizing and labelling each user are a two-step process that allows the company to learn more about its users. Then, the company will use machine learning to match customer characteristics, information characteristics, and environment characteristics and then make personalized recommendation to users. Personalized recommendation is the result of the company’s implementation of precision marketing. The specific advertising recommendation process is shown in Figure 3 below.

Data mining is the foundation of precision marketing. With the development of 5G wireless communication and big data, enterprises apply data mining technology to the analysis of user information, widely apply data mining technology to all aspects of their apps, and obtain through algorithms [19]. Precision marketing advertising recommendation data mining modeling is mainly based on the data mining standard process as the mainstream, which consists of six stages, namely, business understanding, data understanding, data preparation, modeling, evaluation, and application. The sequence of the six stages is not fixed, and it is necessary to recycle each other. Different business backgrounds lead to different circulation modes. In general, data mining is a circular process, that is, through continuous optimization, trying to get the best application. It builds its own big data processing platform based on tens of billions of daily display data and realizes real-time calculation and

real-time storage of streaming events. Data extraction technology completes the establishment of offline data warehouse and provides effective data for data mining. Companies automatically extract hidden useful information from data sets and apply it to push models. The process of automatic extraction can be likened to insight in data analysis. In terms of user search term segmentation, the tool is mainly used, and the word segmentation system is finally selected. The keyword extraction part mainly uses the keyword extraction algorithm based on, and the keyword extraction is supplemented. The combination effect of the two is remarkable. Data mining and statistical analysis are closely combined. To some extent, data mining is the extension and development of statistical technology. In practice, statistical analysis and data mining are often combined without deliberately distinguishing between them [20]. The data mining samples are divided into training sets and test sets, and the new data in another time window are used to test. Modeling uses one part of the data to train the model and another part to validate the effect.

#### 4. Precision Marketing Strategy Based on Big Data Mining

A company is a large consumer brand platform company, mainly engaged in brand management, supply chain management, and marketing network management. The company is a large apparel company whose business includes the management of branded apparel as well as the production and sale of high-end apparel and specialty apparel. Based on the “brand + platform” business model, the company establishes strategic alliances in the industrial chain. Through the direct management of franchise stores, to achieve unified management and rapid expansion of stores, and through the integration of garment industry resources with a win-win concept, to promote the efficient circulation of the whole industry chain, all parties in the industry chain bear limited risks, effectively deal with business risks, and create value to the greatest extent. At present, the company has formed the unique competitive advantage of “head office brand management-manufacturing outsourcing-integrated logistics chain sales” mode and achieved sustainable development in the background of the general downturn in the industry. Nowadays, the competition is more and more fierce, and the innovation of marketing strategy is undoubtedly the key to the success of the company. Therefore, ensure the implementation of the company’s marketing strategy, in order to achieve the company’s overall strategic goals.

*4.1. Online Advertising Recommendation Sensitivity.* According to the classification of Internet advertisements, traditional Internet PC advertising marketing mainly includes three types, namely, display advertising, search advertising, and channel advertising. Display ads mainly take the form of pictures, which generally appear on video website clients or portal websites’ home pages and also include advertisements updated in real time on social application platforms. This form of advertising is the most common and common

form of advertising display in Internet advertising, which is characterized by real and intuitive, distinct themes, wide coverage, and stimulating user needs through visual stimulation. The characteristics of channel advertising is that the user needs clearer and to master the method and geographical location to meet their needs. For example, the application of navigation software or click Baidu to search a keyword will find the corresponding website. Through the search keywords combined with database technology and enterprise advertising information matching test, the ads appear in the search results of the page, and at the same time, advertisers can control the order of the search results to buy the corresponding ranking, so as to improve the click rate and attention. Along with the process of the whole system reform, it will also promote Baidu to further change its business model to a certain extent. In fact, no matter from which angle or in what form, the essence and function of Internet advertising cannot be changed, which is to deliver the marketing information of advertisers and brands to users and potential consumers, so as to attract and make full use of the attention value of users. According to different market stages, appropriate marketing strategies and objectives should be selected, and user habits should be actively observed and grasped. The sensitivity of different forms of online advertising recommendation industry is shown in Figure 4.

According to the market structure of Internet advertising, the top three Internet advertising years are 2019, 2020, and 2021, accounting for 33.8%, 34.1%, and 34.5%, respectively. Mobile Internet’s largest features are that people with “the net” make it become the most popular with companies and advertisers advertising channels, moving the popularity, and the wireless network at the area to expand development provides a favorable environment for mobile Internet advertising; advertising presents the explosive growth, thanks in large part to the rise that further boosts the Internet advertising market scale. The marketing potential is huge. Compared with Internet advertising which relies on huge coverage to the marketing effect, the limitation of the mobile Internet advertising can be according to user’s real-time situations to directly push to the advertising information to smartphones based on a mobile device, to maximize the degree of enhance the advertisement of immediacy and interactivity, and to achieve the vision of precise transmission.

*4.2. Analysis of Mobile Internet User Characteristics.* The latest statistics report released by the Internet Network Information Center shows that more than 90% of netizens choose to access the Internet through mobile phones, thanks to the popularity of smart phones and the increasingly perfect construction of mobile Internet communication infrastructure, which to a large extent urges netizens to switch to mobile phones for Internet access devices. Mobile smart phones are getting deeper and deeper into every consumer’s daily life, becoming the main factor driving the continuous expansion of China’s Internet users. Mobile Internet users will operate more mobile phone functions and are not limited to the mobile phone built-in programs, more are paid

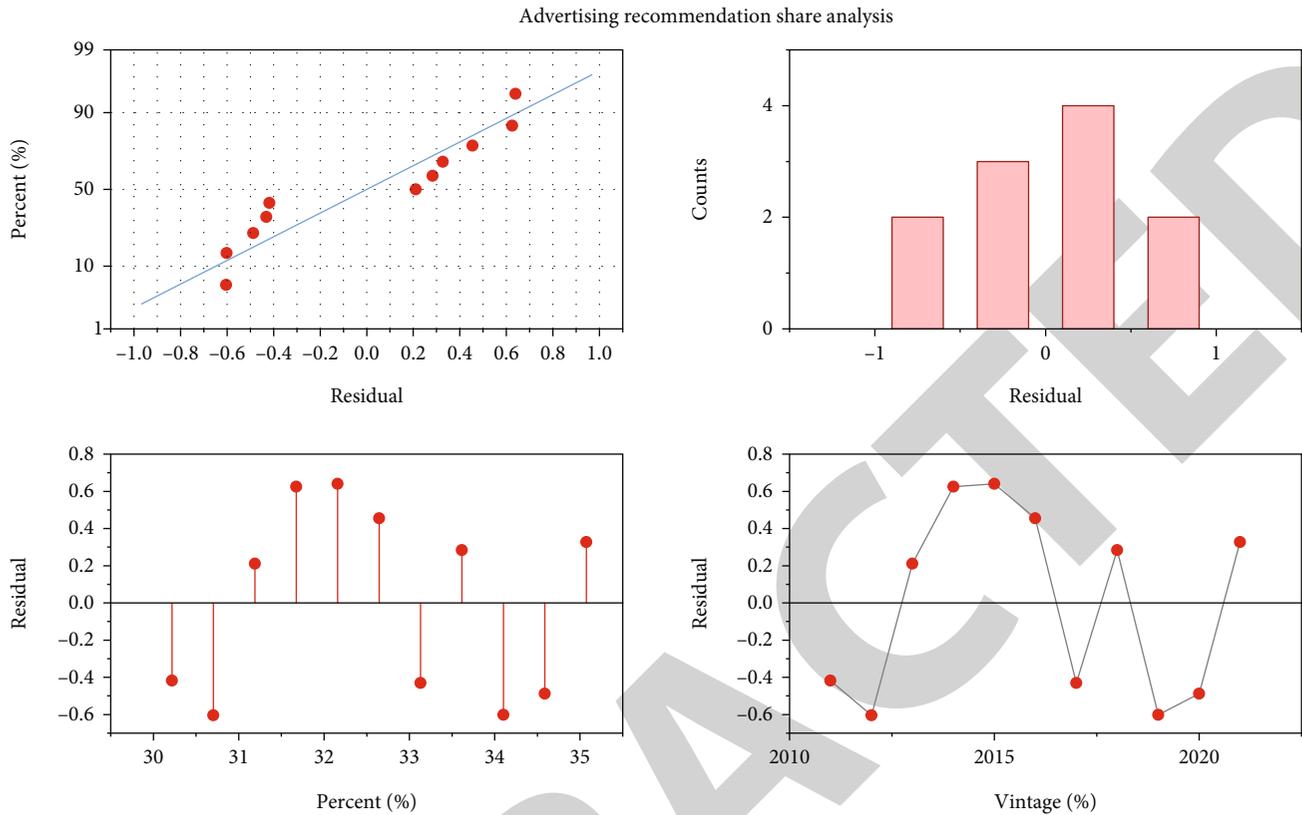


FIGURE 4: Different forms of online advertising recommendation industry share statistics chart.

or free download apps through the app store, and their network access is mostly 4G and 5G Wi-Fi wireless Internet. Relatively advanced and stable network environment makes them exposed to the vast majority or even all forms of mobile Internet advertising. The number of mobile terminal users and the number of devices tend to be saturated, and the overall scale of mobile devices slows down significantly. From the perspective of the gender ratio of mobile intelligent terminal users, the structural characteristics of netizens are shown in Figure 5.

In terms of the age structure of Internet users, the age range of Internet users is 10-39 years old, accounting for 75.1% of the total number of Internet users. In this range, the netizens aged 20-29 have the largest scale, accounting for as much as one-third. The netizens aged less than 10 years old and older than 40 years old have expanded, which also intuitively reflects the influence of the increase of Internet penetration rate and the age extension range of mobile smart terminal users. The figure shows that the proportion of those with bachelor's degree or above has increased, indicating that these people have certain knowledge content and economic strength. They have a strong ability to accept and use mobile Internet and also a strong support among consumer groups. Therefore, the growth of smart mobile terminal users has been inclined to those with a college degree or above, and large-screen smart phones occupy a dominant position in mobile terminals. The distribution of income structure reflects the composition of occupation to some extent. Middle school students on the Internet account for

the largest group, which has a strong consumption potential and willingness. Freelancers and employees account for 15.2% in total, and these white-collar workers have stronger purchasing power and economic foundation. The relatively stable share of these three groups has also become the main object and potential consumers of mobile Internet advertising marketing. Mobile Internet advertising to a certain extent affects the user experience; with the development of mobile application of third-party applications, the app advertising gradually becomes popular; mobile Internet users are more interested in and contact most forms of advertising, in contrast with 30 seconds in length advisable mobile video advertising prospect broader, but because the current is limited by flow rates, only nearly 30% of mobile Internet users are willing to click and pay attention to video ads in the Wi-Fi environment, which to a large extent restricts the development of mobile video ads.

**4.3. Model Clustering Effect.** Before establishing the model, a total of 21083 data were extracted from the system, and the data were simply screened. Among them, 312 accounts have been cancelled, 569 missing data of some key information, 141 cards that have not had any business within half a year and have been suspended from the counter, and 61 cards that have been used by new card users for less than a month and have zero balance in the card. Since it is difficult to distinguish the contribution degree of occupation in the index quantification, the

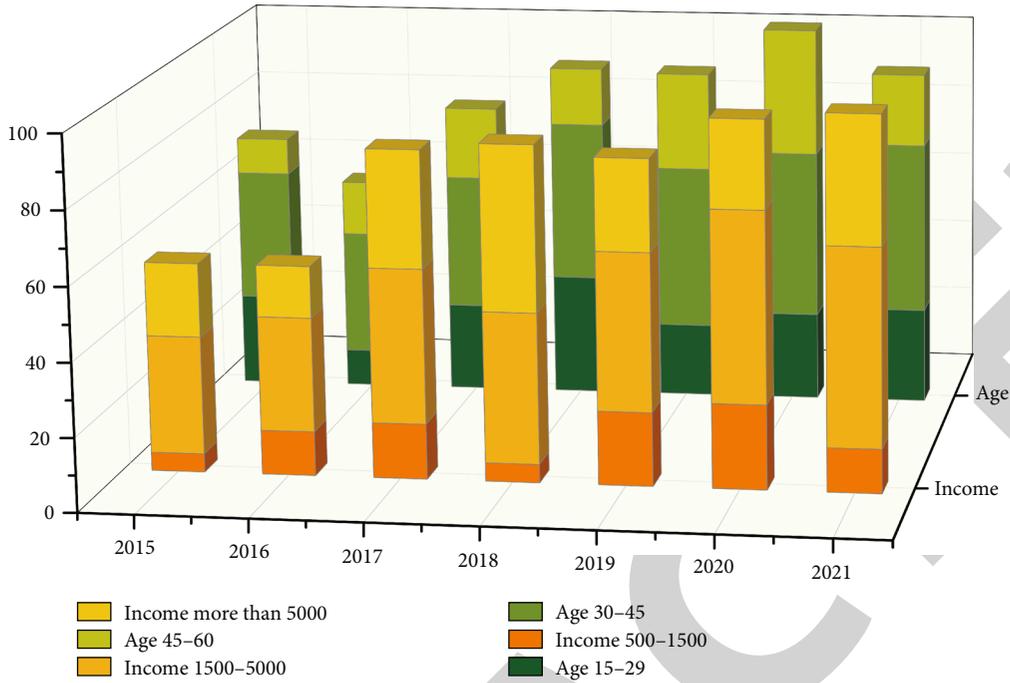


FIGURE 5: Statistical chart of user's structure characteristics.

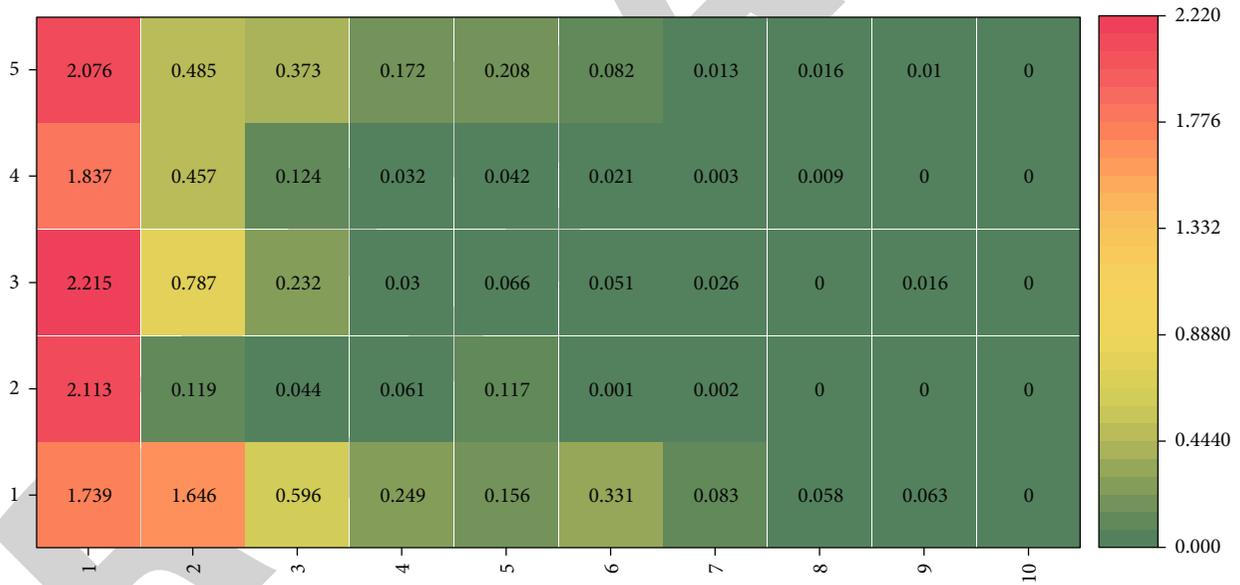


FIGURE 6: Cluster analysis of hidden node activation values.

contribution of each occupation type to the network is nearly parallel, so the occupation factor is removed in the operation analysis. In order to analyze the data operation, each indicator is quantified accordingly. Now, the unified standard is assigned with the meaning. One is the basic number, and the larger the number is, the higher the customer's contribution to the branch is, and such customers are more able to bring profits to the bank. Among them, quantitative information of various specific indicators in occupational factor classification is shown in Figure 6. As a clustering method, *K*-means will put

the similar data into a class, select the clustering centers randomly, calculate *K* class centers as the starting point, and divide the data points into the nearest class.

The clustering has been iterated for 10 times, and the clustering center has reached convergence and stopped iterating. Among them, customers of clustering 1, 3, and 5 iterated for 10 times, and those of clustering 2 and 4 iterated for 7 times. The characteristic values of customer attributes of categories 1, 3, and 5 were more concentrated and obvious, while those of customers of categories 2 and 4 were relatively discrete, and there were differences between the obtained

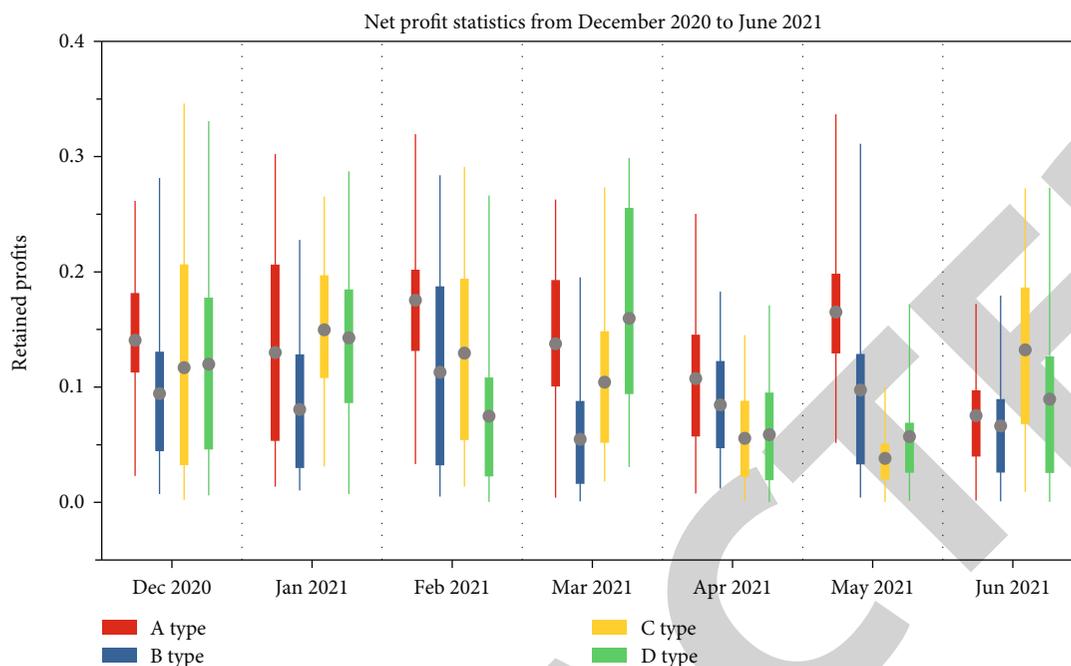


FIGURE 7: Operating profit statistics chart.

data. Through the above, it can be concluded that the final is divided into five classes of customer division that has its own average, eventually forming the clustering center and the initial formation of the clustering center, compared to a certain change of mass center, and clustering results are obvious; under the different variables of customer data, to achieve the effective segmentation is the single factor analysis of variance of variables that reflect whether the clustering effect has significant characteristics. The closer the  $F$  value is to 1, it indicates that the corresponding variable has no obvious effect on clustering. If the value is larger, it indicates that the variable has more influence on clustering effect. When Sig (significant level) value is less than 0.01, it indicates that the variable has high significance; when Sig value is between 0.01 and 0.05, it indicates that the variable has high significance; if Sig value is greater than 0.05, it indicates that the significance of the variable is not obvious. The significant features of  $K$ -means clustering in customer feature segmentation are more favorable for companies to conduct precise marketing with the help of data.

**4.4. Comparison of Marketing Profit and Revenue of a Company.** With the wide application of big data platform, it has indeed brought substantial economic profits to enterprises. In 2020, the big data platform of a certain company was officially put into use, and its operating profit increased significantly in that year, as shown in Figure 7.

In January 2021, the year-on-year growth rate reached 17.83%, while in March 2021, the growth rate reached 30.19%. The total profit also increased significantly, the business scale is further expanded, and the advance payment increases significantly, which shows the application value of big data platform. Through real-time monitoring, timely find and solve the problems in the marketing process; when

the marketing effect does not reach the expected, timely analysis is conducted to find the cause and then targeted adjustment and optimization, until the satisfactory marketing effect is achieved. The precision marketing of online media advertising is a process in which each link is gradually accurate. Through data collection and analysis, the product preferences and personality characteristics of consumers are carefully and meticulously depicted. The more accurate the advertising, the better the advertising effect. In the era of big data, all effect evaluation methods can be integrated to improve the convenience and accuracy of advertising effect evaluation, so that the entire advertising effect can be seen.

## 5. Conclusion

The rapid development of mobile Internet makes people's life more dependent on the convenience brought by the Internet, but at the same time, they also face the problem of information explosion and lax data management. In this paper, big data technology is used to effectively realize precision marketing, and this marketing concept is included in advertising recommendation. Mobile Internet advertising precision marketing has been upgraded from a concept to a market practice with strong operability. Through data collection and analysis, the personality characteristics of consumers are carefully depicted. The more accurate the advertising, the better the advertising effect. Advertisers provide accurate delivery based on user needs, and the whole public and data-oriented delivery process is conducive to real-time monitoring of advertising information clicks. The system will realize the serial sharing of user data, which is conducive to the collection and storage of user personal data, laying a solid foundation for the orientation and precision of

mobile Internet advertising marketing based on big data technology. However, due to the limitation of research conditions, the amount of data selected in this analysis and research is not large enough. The selection of data research methods can be further deepened. Future research work will strengthen the differentiation of customer relationship management in order to have more comprehensive and accurate data mining research.

### 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 known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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