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*Research Article*

# The Supply of Rural Public Cultural Services Relying on Data Mining Technology under the Rural Revitalization Strategy

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The rural revitalization policy can be said to be a major change in the party's agricultural policy and rural history. Rural revitalization is the rebirth of rural civilization, which is intimately connected with the growth of soft power. Culture should become a productive force; combined with the driving force of the village, culture should improve the quality of life, improve development conditions, guide civilization, and benefit the villagers. This article takes advantage of the data mining technology under the platform of big data to gather data related to rural public cultural services and presents the existing problems and countermeasures. In the satisfaction survey of existing facilities and venues, the satisfaction rate of the library is 47.36%, the satisfaction rate of the cultural center is 50.12%, and the satisfaction rate of the cultural square and Dabazi is 67.25%.

## 1. Introduction

The driving force of rural development is rural culture. Rural culture is an essential source of traditional Chinese civilization and is an essential element of Chinese culture. The rural culture that has been handed down to this day has been able to withstand inheritance, has been washed over time, and has been removed from the rough and extracted, and the falsehood is preserved. In the absence of community cultural services to ensure the comprehensive and coordinated growth of rural economic and social, it is difficult to make a progressive revolution in the development of agriculture, rural areas, and peasant populations.

There is still a big gap between rural public cultural services and urban areas. Many counties do not have libraries, and many cultural stations in townships do not meet the national standards. The management of cultural stations is chaotic, lacks full-time managers, and lacks financial support. Only temporary management is carried out during inspections. Some townships do not even have cultural stations, and most administrative villages do not have bookstores. Therefore, it is very important to study the supply of rural public cultural services.

For data mining, relevant scientists have done the following research. Buczak and Guven's report presents a survey of the literature focusing on machine learning and data mining approaches for network analysis in favor of compromise inspection. They discuss challenges of applying machine learning and data mining to cybersecurity and provide some recommendations on when to use a particular approach [1]. Jalal proposed a document classification method that can cluster text documents of research papers into meaningful categories containing similar scientific fields. The method he proposes is based on the fundamental focus and scope of target categories, each of which contains many topics. Based on the highest measure of cosine similarity between class weights and document weights, he classifies and clusters documents into major categories [2]. The aim of Kavakiotis et al.'s study is to provide a structured and systematic review of the application of machine learning and data mining skills and tasks in the diabetes research field in order to deepen the understanding of diabetes and to propose new hypotheses for further research [3]. Chaurasia and Pal's aim was to investigate the properties of various techniques for classification. They analyzed data on chest cancer within the UCI Machine Learning Wisconsin dataset with the goal of utilizing data mining techniques to develop

effective breast cancer forecasting tools [4]. Yan and Zheng use self-lifting to assess the effect of data mining on anomalies based on fundamentals. It turns out that many signals of underlying fundamentals are important predictors of stock returns in the cross-section even when data mining is taken into account [5]. Carneiro et al. examine a combination of manual and automated grading, provide insight into the overall development process, and compare different machine learning methods. This research can help researchers and experts design and implement data processing systems to detect fraud or similar problems [6]. The work of Triguero et al. is the third important edition of KEEL. They include tools for implementing data management, various experimental plans, analysis, statistics, and much more. These new features generally enhance KEEL to meet the needs of modern computing [7]. Lei uses advanced data processing and network analysis algorithms to diagnose events. Complex data mining and web analytics algorithms are designed specifically to handle large databases. Computer algorithms are very efficient in identifying groups and identifying properties [8]. Huang et al. propose a rough matrix representation of fuzzy approaches using a Boolean matrix of FDS matrix operators. The experimental results show that the proposed data mining algorithm is much more efficient than the static algorithm and the combination of two incremental benchmark algorithms [9]. Pourghasemi et al. present a simple and comprehensive approach to data exploration and demonstrate the important role of ensemble modelling in consistently constructing accurate and general models. This demonstrates the need to explore combinations of different models. The results of this study can serve as a basis for biophysical design of distributed pools in the study area [10]. Slater et al. discuss some of the tools that have emerged in data mining research and classroom practice and discuss research areas where similar tools are being used in the broader data mining and data science community. The course will provide an overview of the tools for data mining and data analysis that are commonly used in the classroom [11]. Wu and Peng proposed a data mining method consisting of clusters and neural networks to predict short-term wind energy to take into account the learning dynamics of the model and improve the accuracy of the predictions. The simulation results show that this method can achieve higher prediction accuracy compared to other basic and existing methods for short-term wind energy prediction [12]. Mishra et al. provide a comprehensive review of data mining methods and statistical techniques used to predict rainfall from time series data. They also compare in detail various related techniques and propose viable solutions for effective time series data extraction techniques for future algorithms [13]. Marozzo et al. describe the design and implementation of a cloud-based data mining system and present a visual DMCF workflow language, system architecture, and execution mechanism. They also discuss several data mining workflows developed with DMCF and the scalability of these workflows to public cloud services [14]. Rupesh et al. introduced a security system called the intrusion detection and protection system, which detects internal attacks at the SC level through infor-

mation and forensic studies. Experiments show that the security system can effectively prevent internal attacks on the immune system [15]. These methods provide some references for research, but due to the short time and small sample size of the relevant research, this research has not been recognized by the public.

The innovation of this paper lies in the introduction of data mining technology to conduct research on rural public cultural services. This article designs a data mining algorithm based on the big data platform, improves the algorithm, and obtains the improved accuracy and normalized mutual information. This paper uses the improved algorithm to collect data on the degree of love of various public cultural activities in rural areas, farmers' demand for cultural reading materials, and investment in some public cultural activities. By analyzing the data to get the problems faced by the supply of rural public cultural services, this paper proposes corresponding countermeasures.

## 2. Methods of Public Cultural Service Supply

*2.1. Data Mining Technology.* Data mining refers to the process of searching for information hidden in a large amount of data through algorithms. Data mining is generally related to computer science and achieves these goals through a number of methods such as statistics, online analytical processing, intelligence retrieval, machine learning, expert systems (relying on past rules of thumb), and pattern recognition.

Data analysis is a step in seeking information. Data analytics refers to processing algorithms that look for hidden information in large amounts of data. With large amounts of data, big data technology is becoming more popular and big data platform technology has matured. The purpose of data processing is to process sensitive information from big data that helps companies make decisions, although data processing at the big data level is not much different from the previous data processing in terms of mining and algorithms. However, due to the particularity of big data in terms of breadth and measurement, the implementation of big data mining will be somewhat different. The common solution is to redesign the data mining algorithm under the big data platform and realize the expansion of the processing data volume through the dynamic expansion of the cluster.

The type of data can be structured, semistructured, or even heterogeneous. Methods of discovering knowledge can be mathematical, nonmathematical, or inductive. The knowledge that is finally discovered can be used for information management, query optimization, decision support, and maintenance of the data itself. The object of data mining can be any type of data source. It can be a relational database; such a data source contains structured data. It can also be data warehouse, text, multimedia data, spatial data, time series data, and web data. Such data sources contain semistructured data or even heterogeneous data.

Data mining, also known as knowledge discovery in databases, is to extract potentially unknown and valuable data and information from data with large noise, inconsistent rules, large amount of data, and random information

through a series of model calculations. Data mining can process a variety of information; such information data can be roughly divided into the following three categories: unstructured data (such as video and text), structured data (such as information and data stored in relational databases), and unstructured heterogeneous data (such as bioengineering data and information data). Decision makers can discover hidden associations between data through data mining and find out the neglected elements and information. Query optimization, decision support, information query, process control, etc. all need to use the discovered knowledge. It provides great help in predicting and decision-making behavior. Figure 1 shows the structure diagram of the distributed data mining model.

Commonly used precision and normalization information is as follows:

$$\text{UP} = \frac{\sum_{u=1}^{b} \omega(l_u, \text{mip}(r_i))}{b}, \tag{1}$$

$$f_t = \xi(R_f \cdot [g_{t-1}, m_i] + b_f), \tag{2}$$

where $b$ is the number of images in the dataset, $r_u$ is class labels learned with different algorithms, $l_u$ is the class labels provided by the dataset, and UP is the accuracy.

The mutual information measure is as follows:

$$\text{ML}\left(Q, Q'\right) = \sum_{q_u \in Q, q'_v \in Q'} r\left(q_u, q'_v\right) * \frac{r\left(q_u, q'_v\right)}{r(q_u)u\left(q'_v\right)}, \tag{3}$$

$$i_t = \xi(R_i \cdot [g_{t-1}, m_i] + b_i), \tag{4}$$

where $r(q_u)$ is the probability that the image belongs to the cluster $q_u$ and $r(q'_v)$ is the probability that the image belongs to the class cluster $q'_v$.

The normalized mutual information is

$$\text{NML}\left(Q, Q'\right) = \frac{\text{ML}\left(Q, Q'\right)}{\max\left(G(Q), G\left(Q'\right)\right)}, \tag{5}$$

$$\tilde{B}_t = \tan g(R_B \cdot [g_{t-1}, m_t] + b_B). \tag{6}$$

The information entropy of the source is

$$M(\lambda_l) = T(U(\lambda_{il})) = -\sum_{l=1}^{d} o_l \log_2 o_l, \tag{7}$$

$$B_t = f_t * B_{t-1} + i_t * \tilde{B}_t, \tag{8}$$

where $M(\lambda_l)$ is the importance of attributes.
The weight of the attribute is

$$\omega_l = \frac{M(\lambda_l)}{\sum_{j=1}^{d} M(\lambda_l)} \quad (l = 1, 2, \cdots, d), \tag{9}$$

$$p_t = \xi(R_p \cdot [g_{t-1}, m_t] + b_p). \tag{10}$$

The weighted distance between objects is

$$s_{ij} = \sqrt{\sum_{i=1}^{d} \left(m_{il} - m_{jl}\right)^2}, \tag{11}$$

$$g_t = p_t * \tan g(B_t), \tag{12}$$

where $s_{ij}$ is the weighted distance between objects.
The density of an object is defined as

$$\text{density}(\varpi) = \frac{1}{\sum_{o \in N(\varpi, k)} d(\varpi, p)/N(\varpi, k)}, \tag{13}$$

$$j\left(n^{(i)} = p \middle| m^{(i)}; \theta\right) = \frac{e^{\theta_p^T m^{(i)}}}{\sum_{l=1}^{k} e^{\theta_l^T m^{(i)}}}. \tag{14}$$

The value function is

$$M(U, P) = \sum_{i=1}^{c} \sum_{j=1}^{n} u_{ij}^u s_{ij}^2, \tag{15}$$

$$k_i(v+1) = w j_u(v) + c_1 t_1 (p_u(v) - m_u(v)), \tag{16}$$

where $i$ is the membership of the sample, $U$ is the fuzzy membership matrix, $s_{ij}$ is the distance between the data sample and the cluster center, $P$ is the cluster center matrix, and $V$ is the fuzzy index.

The fitness function is

$$f(m_i) = \frac{1}{M(U, P) + 1}, \tag{17}$$

$$m_u(v+1) = m_u(v) + j_u(v+1). \tag{18}$$

The global optimization capability is enhanced using the following formula:

$$\frac{1}{a} \sum_{i=1}^{a} \left(f(m_i) - \frac{1}{a} \sum_{i=1}^{a} f(m_i)\right)^2 < \sigma_a, \tag{19}$$

$$T_n = \sqrt{\sum_{j=1}^{op} \text{FR}_j}, \tag{20}$$

where $\sigma_a$ is the fluctuation threshold and $a$ is the select threshold.

Clustering analysis is among the most significant research policies in data treatment. A fuzzy cluster algorithm is a mathematical method based on bitter math. First, let's briefly introduce fuzzy mathematics. As a revolutionary mathematical subject, fuzzy mathematics has an absolute relationship with classical breakthrough science. It is a mathematical theory and method to study and deal with fuzzy phenomena. Fuzzy clustering algorithms first describe
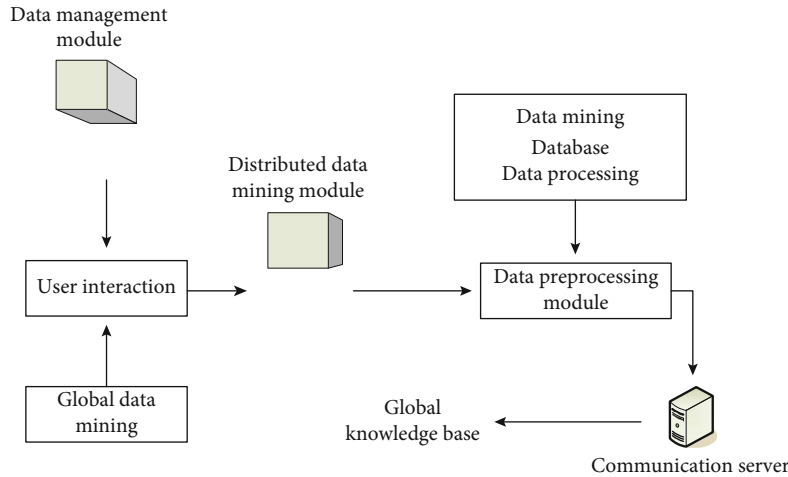
FIGURE 1: Distributed data mining model structure diagram.

the properties of the searched objects through fuzzy tables and create clusters according to the appropriate membership level. Classification is the classification of slightly different data within a category, and the differences between categories must be clear. Figure 2 shows the flow chart of the clustering algorithm.

Data mining is divided into directed data mining and undirected data mining. Guided data mining is the use of available data to build a model, which is a description of a particular property. Undirected data mining is looking for some kind of relationship among all attributes. Specifically, classification, valuation, and prediction belong to directed data mining; association rules and clustering belong to unguided data mining.

(1) Classification: it first selects a training set that has been classified from the data, uses data mining technology on the training set to establish a classification model, and then uses the model to classify unclassified data

(2) Valuation: valuation is similar to classification, but the final output of valuation is a continuous value, and the amount of valuation is not predetermined. Valuation can be used as a preparation for classification

(3) Prediction: it is done by classification or evaluation, and a model is obtained by training of classification or evaluation. If the model has high accuracy for the test sample set, the model can be used to make predictions on unknown variables for new samples

(4) Correlation grouping or association rules: the purpose is to discover which things always happen together

(5) Clustering: it is a method of automatically finding and establishing grouping rules. It divides similar samples into a cluster by judging the similarity between samples

An incremental clustering input algorithm is also a kind of clustering algorithm, and more importantly, it can handle
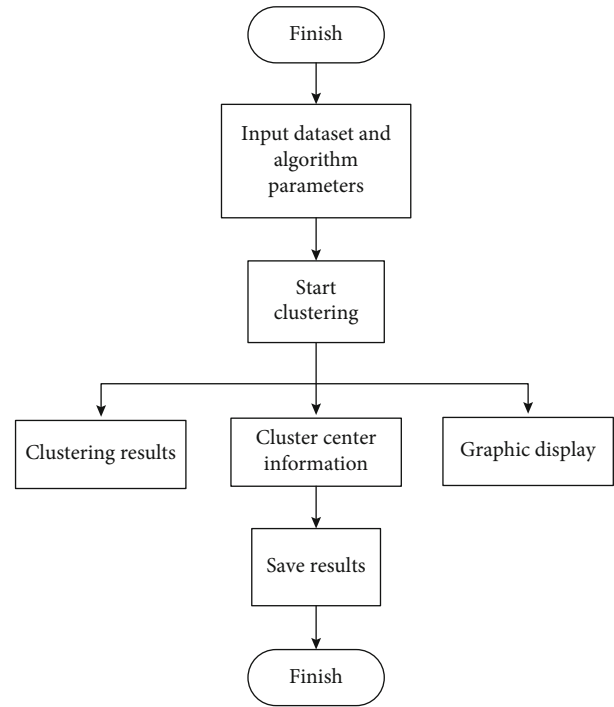


FIGURE 2: Flow chart of the clustering algorithm.

huge volumes of data. The principle of the incremental aggregation method is to partition large data so that the number of small pieces matches the data, thus solving the problem of not being able to read quickly from memory due to the large amount of data. After inputting several small pieces of data, determining the average value of each piece of data, and recalculating the average value of all original data, generally speaking, there are two additional clustering algorithms, depending on the method of processing data blocks. First, the algorithm processes each small data domain, defines its midpoints, and collects all midpoints. Continue to use the clustering algorithm to reach the desired midpoint represented by the OFCMD algorithm. The second algorithm calculates the midpoint of the data block obtained in

the next data block and finds the next midpoint by repeating the operation until the final midpoint is found. As shown in Table 1, the two types of analysis techniques are compared.

The process of mining knowledge from data is an important method of data mining, also known as the process of knowledge discovery in the database, the process of knowledge extraction, and the process of data mining. Therefore, data mining can be understood as the search process based on the database; this search refers to the exploration and arrangement of a large amount of data. The purpose is to find valuable hidden events and information. The process of searching is to use the science and technology of prediction, artificial intelligence, and statistics to conduct in-depth analysis and scientific extraction of data and find out the knowledge in it to discover valuable information. Therefore, enterprises will establish different mining models according to their different development needs, as a reference for providing enterprise decision-making analysis [16]. Figure 3 shows the knowledge discovery process.

## 3. Rural Public Cultural Services

One of the most important tasks of the government is to provide cultural services to the community. Rural cultural public services belong to the category of rural communal provision and have the features of community services, economy and rural society, autonomy, and universality. Therefore, rural public cultural services refer to noncompetitive services operated by state agencies, widely integrated into society, and safeguarding cultural rights and national interests. Rural cultural public services will meet the basic cultural needs of rural communities in the field of rural services and products.

Among the most important features of publicly available cultural services is their promotion or sharing. Cultural sources come from improving public finances and creating value for social goods. Cultural resources provided in this way should be owned and shared by the entire community. On the other hand, the means of rural cultural services must be used multiple times or simultaneously by different people. The state can not only allow villagers to use the public cultural services provided for free but also share the cultural, commercial, or public services provided by NGOs and individuals [17].

Rural public cultural services have the following characteristics: public welfare, fairness, diversity, foundation, and continuity.

(1) Public welfare. For the rural public cultural service system, its focus is to meet the public interests of citizens. In the construction of public cultural services, the following principles are mainly adhered to: first, it is not for profit, but for the public good. The second is to find out and understand the cultural and spiritual needs of the peasants. The third is to provide public goods and services that can meet the needs of farmers

(2) Fairness. Citizens have the right to share social and public cultural resources and services, regardless of whether they have urban or rural household registration and regardless of their gender, ethnicity, age, or their knowledge level. In the construction of the rural public cultural service system, special attention should be paid to maintaining fairness. And take into account the cultural needs of the vast number of farmers of different ethnic groups, different regions, and different cultures

(3) Diversity. The public cultural service is diversified, and it is a service system with many types and various forms. In order to be able to provide satisfactory products and services. It can provide diversified public cultural products and service projects with richer content and more diverse forms according to local conditions and people

(4) Fundamental. As the most important and fundamental principle of rural public cultural construction, one is to provide public cultural products and services. The second is to meet the most basic cultural needs of farmers in their production and life. Its target is the broad masses of peasants. It not only meets the needs of farmers for cultural products in life but also meets the needs of farmers for culture in spirit

(5) Persistence. As a complete and complete systematic project, we should clearly realize that the construction of the rural cultural service system is by no means a phased and sudden task, but a process that requires long-term investment, gradual deepening, and continuous progress. It needs to involve many aspects of work in the process of construction

The essence of rural public cultural services is that the public sector takes social interests as the starting point and participates in various nongovernmental and nonprofit organizations to meet the cultural needs of farmers and exercise their rights. It is a general term for tangible and intangible material services, and it must achieve five aspects: (1) take social benefits as the starting point; (2) understanding the cultural needs and rights of farmers; (3) serving the target groups of all farmers; (4) government and NGOs must participate together; and (5) not only tangible cultural assets but also various intangible intellectual property rights. As shown in Table 2, some selected rural cultural auditorium facility data.

## 4. Experiments on the Supply of Public Cultural Services

The overall requirement of the rural revitalization strategy is to make every effort to build a new socialist countryside with "prosperous industries, livable ecology, civilized rural customs, effective governance, and affluent life". Among them, "township civilization" is not secondary to the goal of economic development, but the original intention and symbol

TABLE 1: Comparison of data mining computing and traditional data analysis techniques.

|  | Traditional data analysis techniques | Data mining technology |
| --- | --- | --- |
| Tool features | Verification, retrospective | Discovery, prediction |
| Analysis features | What has happened | Explain why, predict future knowledge |
| Analysis purpose | Discover customers from recent sales orders | Reduce cost of sales |
| Data size | Data dimension, the number of attributes in the dimension | Dimensional data is huge |
| Technology status | Mature | Mature statistical analysis tools |
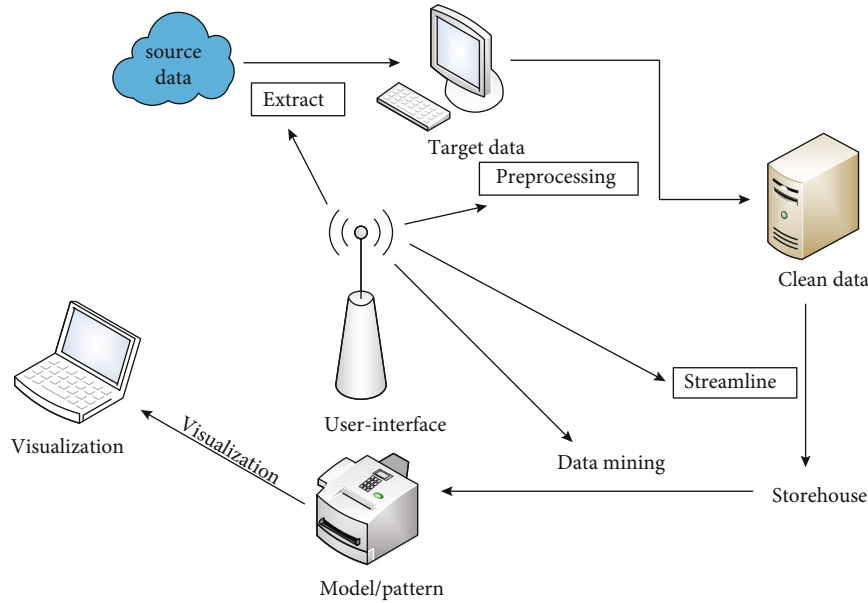


FIGURE 3: Knowledge discovery process.

TABLE 2: Rural cultural auditorium facility data.

| Serial number | Hardware facilities | Floor space | Source of funding | Types and volumes of publications | | |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | Books | Press | Audiovisual |
| 1 | Bookshelves, computers, tables and chairs, fans, etc. | 1000 | Self-raised+government funding | 2800 | 30 | 100 |
| 2 | Bookshelves, tables and chairs, fans, etc. | 800 | Self-raised+government funding | 1800 | 20 | 30 |
| 3 | Bookshelves, tables and chairs, fans, etc. | 400 | Self-raised+government funding | 500 | 20 | 40 |
| 4 | Bookshelves, computers, desks and chairs, air conditioners, etc. | 1000 | Self-raised+government funding | 8000 | 50 | 500 |

of rural construction and revitalization. The role of culture cannot be underestimated. In the discussion on how to realize the strategy of socialist rural revitalization, one of the seven conclusions put forward by the 19th National Congress is as follows: inherit and develop to improve agricultural civilization and take the road of rural cultural prosperity. It can be seen that the importance and significance of the revival of cultural construction are self-evident. On the way forward for the revitalization of rural culture, the supply of rural public cultural services is an important measure, an indispensable step, and a "basic guarantee." By providing public cultural products and services to the rural people, the most basic cultural rights and interests of the peasants are guaranteed.

To implement the rural revitalization strategy, we must adhere to the party's management of rural work, adhere to the priority development of agriculture and rural areas, adhere to the dominant position of farmers, adhere to comprehensive rural revitalization, adhere to the integrated development of urban and rural areas, adhere to the harmonious coexistence of man and nature, adhere to local conditions, and adhere to gradual progress. Consolidate and improve the basic rural management system, and keep the land contract relationship stable and unchanged for a long

time. After the second round of land contract expires, it will be extended for another 30 years. To ensure national food security, take the Chinese people's rice bowl firmly in their own hands. Strengthen the basic work at the grassroots level in rural areas, and cultivate a "three rural" work team that understands agriculture, loves the countryside, and loves farmers.

A village is a regional complex with natural, social, and economic characteristics and has multiple functions such as production, living, ecology, and culture. It and towns promote each other, coexist and coexist, and together constitute the main space for human activities. The prosperity of the countryside leads to the prosperity of the country, and the decline of the countryside leads to the decline of the country. The contradiction between the Chinese people's growing need for a better life and unbalanced and inadequate development is most prominent in the countryside. China is still in and will be in the primary stage of socialism for a long time, and its characteristics are largely manifested in the countryside. To build a moderately prosperous society in an all-round way and build a great modern socialist country in an all-round way, the most arduous tasks lie in the rural areas, the broadest and deepest foundations are in the rural areas, and the greatest potential and stamina are also in the rural areas. Implementing the rural revitalization strategy is an inevitable requirement for solving the main social contradictions in our country in the new era, realizing the "two centenary goals" and the Chinese dream of the great rejuvenation of the Chinese nation. It has great practical significance and far-reaching historical significance.

The design concept of the data mining system is based on HDFS management, which is based on an online service system, supports key technologies such as algorithm library and visual analysis, and provides users with online storage, processing, and analysis [18]. Figure 4 shows the topology of the big data analysis platform.

The data mining analysis framework includes four stages: "proposing research questions," "data preparation," "data mining," and "model analysis." From big data, analyze and explore data in an automatic way to discover potentially valuable information, carry out a series of exploration and repetition processes, and continuously circulate, correct, and draw conclusions. Firstly, starting from the proposed research question, according to the framework and assumptions of the question, decide the content and form of data preparation. In the data preparation stage, the characteristics of the data are first summarized; then, the research results are deduced by using the built mining model, and finally, the deduction results are analyzed to test the validity of data mining [19]. Figure 5 shows the data mining analysis framework.

This paper will select the $K$-means algorithm to study the supply of rural public cultural services. The algorithm is improved, its reliability is improved, and the parallel calculation of the algorithm is realized. An overview of the quantity set is shown in Table 3.

We conduct 10 independent experiments on each dataset. The number of clusters $k$ in each dataset is set to the label category given by the database. The average of the precision and normalized mutual information of 10 experiments is taken as the experimental result. The accuracy and normalized mutual information of the experimental results are shown in Figure 6.

As can be seen from Figure 6, the MK-means algorithm is comparable in performance to the maximum and minimum algorithms but only needs to traverse the data once in the center point selection. It shows better performance when dealing with large-scale data.

Data mining is carried out on the current situation of rural public cultural service supply under the big data platform. At present, the number of works focusing on rural areas and farmers is increasing year by year, but different farmers have different cultural needs. Figure 7 shows the survey data of rural leisure time activities.

Watching TV is still the main form of entertainment for farmers. However, it should be noted that in the choice of TV program content, farmers often focus on killing time and pure entertainment, but they are not interested in current affairs news and science and education programs.

Data mining is carried out on the cultural activities that rural residents can choose and their participation status, and the degree of preference for various public cultural activities in rural areas is investigated. The results are shown in Figure 8.

As can be seen from Figure 8, 38.39% of farmers chose to be able to participate in free activities when choosing the public cultural events they would like to attend. It shows that farmers are not very active in cultural consumption, but it is convenient to meet needs and participate in conditions; they account for 22.8% and 26.52%, respectively. From these two points, we can see that when farmers participate in public cultural activities, they are more focused on their own needs and less demanding of activities. The activities are interesting and get fair treatment below 15%, and farmers have low expectations for the activities themselves.

From Figure 9, it can be seen that farmers are more interested in books closely related to their agricultural production and life. Farmers are eager to get rid of poverty and economic outlook, but they do not realize their need for diversification of cultural life. Figure 9 shows farmers' demand for cultural reading materials and some public cultural activity input.

The cultural needs of rural residents are differentiated and diversified, and the government, as the main body of rural public cultural construction, has the shortcomings of single, small quantity and low quality in the supply of cultural products. As shown in Figure 10, the villagers' understanding of the cultural activities in their villages is shown.

As shown in Table 4, the demand for cultural event facilities and venues and the satisfaction with existing facilities and venues are shown.

Many rural cultural public places are now fully covered, and each urban administrative village has at least one folk village cultural center and bookstore, all of which are open to farmers and free of charge. But when it comes to the use of cultural tools, the use of cultural materials is mostly not very good. Although the facility area follows the rules, it is empty. The lack of cultural immanence results in idle waste
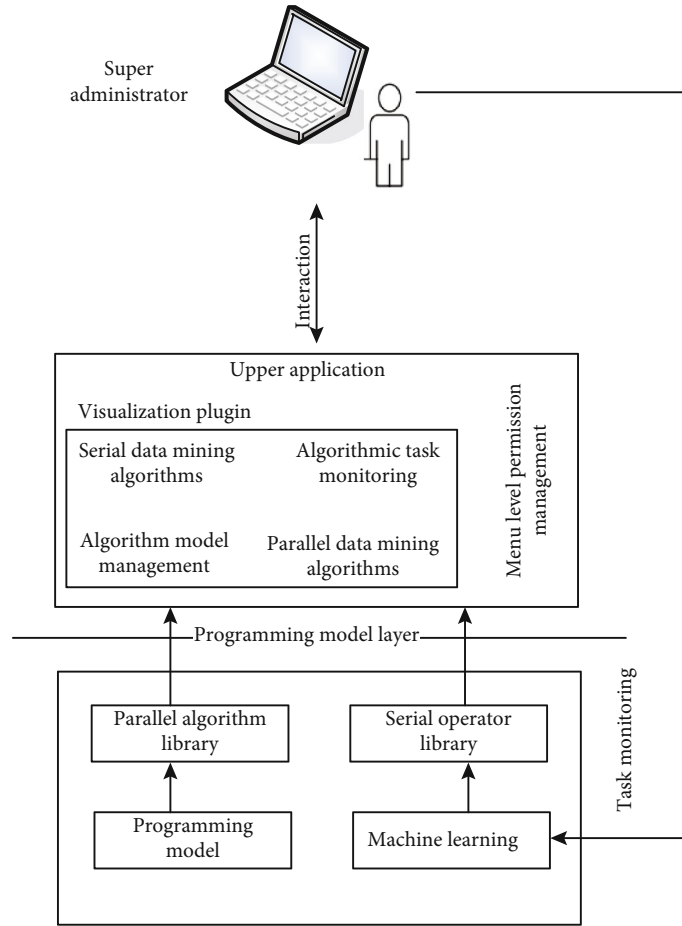
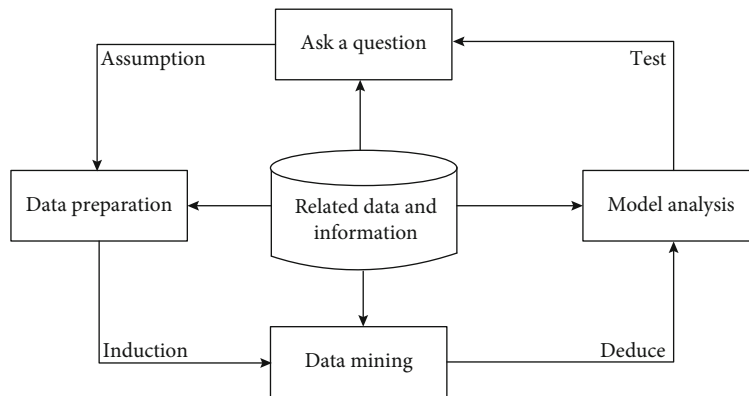Figure 4: Topology architecture of the big data analysis platform.



Figure 5: Data mining analysis framework.

Table 3: Quantity set overview.

| Quantity set | Size | Dimension | Number of categories |
|---|---|---|---|
| OPL | 400 | 1025 | 40 |
| Yfal | 155 | 1064 | 15 |
| Cpli | 6700 | 1375 | 80 |
| Uapa | 9892 | 256 | 10 |
| Mnusy | 10000 | 784 | 20 |

of facilities and fails to play the maximum role of cultural facilities.

By observing the current situation of rural bookstores, although the number of books to be edited meets the standard, there are not many types and contents. It turns out that in many villages, there are too many duplicate books in the village bookstore, most of which cannot meet the actual needs of the villagers, and the things on the bookshelf are ignored for a long time. It was learned through the
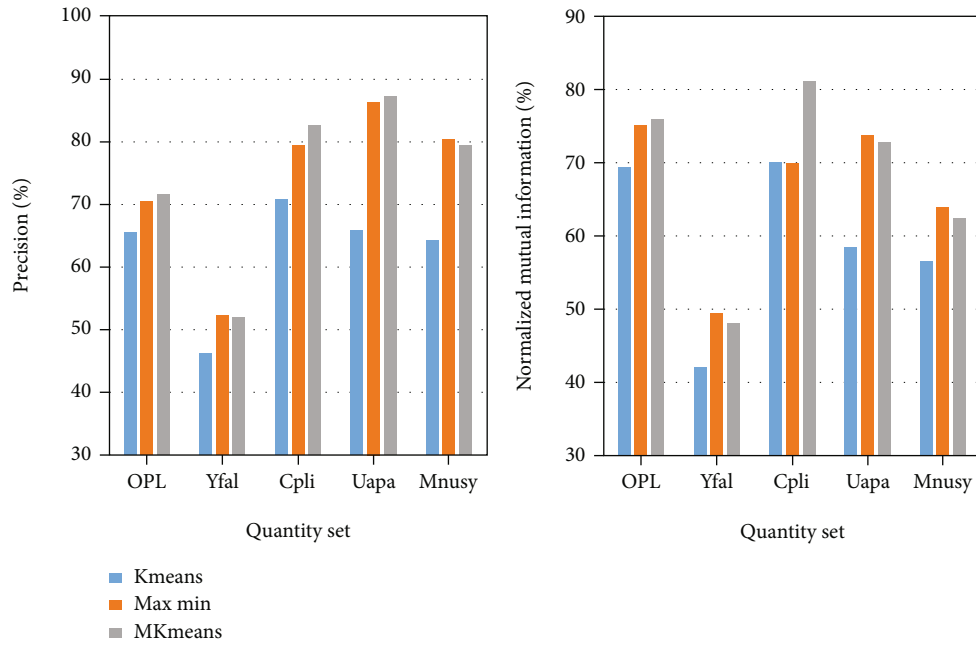
FIGURE 6: Accuracy and normalized mutual information of experimental results.
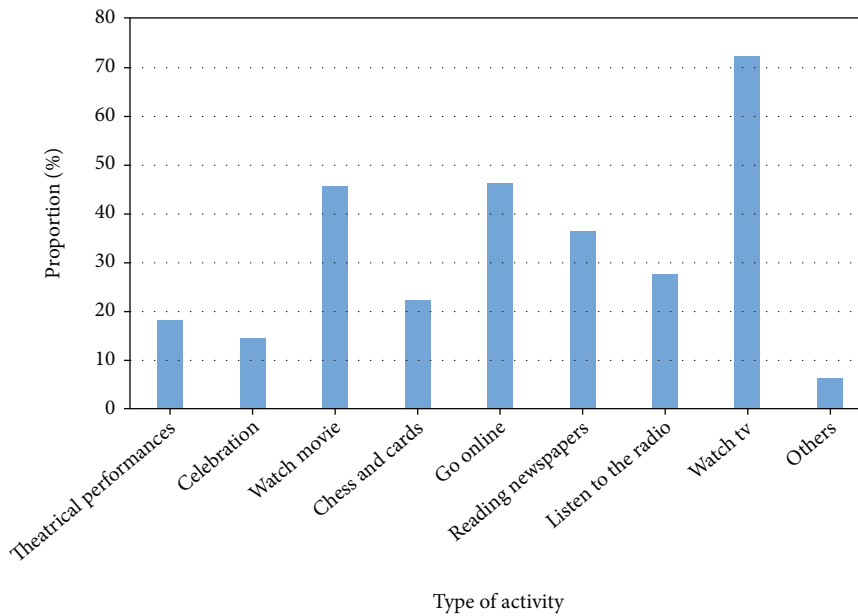


FIGURE 7: Survey data on rural leisure time activities.

village secretary that some books are borrowed and are common in bookstores in the town. Almost all the bookstores in the village have become places of leisure. Supply facilities such as rural bookstores have not yet met the cultural needs of rural communities.

In the field of network development, many rural areas have not yet established the foundation of the Internet. Although it can be installed in some villages, only a few villagers use and install it due to economic problems. Many people visit public places in the city to use free Wi-Fi. Many villages have a new generation of communication networks, but some remote mountain villages do not have modern telecommunications networks, and the people here are very closed. In some villages, even only a few residents have telephones in their homes [20].

When it comes to building cultural centers, there are many types of cultural centers, and there are various kinds of help. Many cultural centers are equipped with sports equipment and some chess sets suitable for the elderly, but the details are often forgotten. In rural areas, the elderly generally bring their children and provide children with cultural equipment such as swings, which can effectively meet their cultural needs.

The evaluation of public cultural services should be based on the influence of farmers and improve the quality
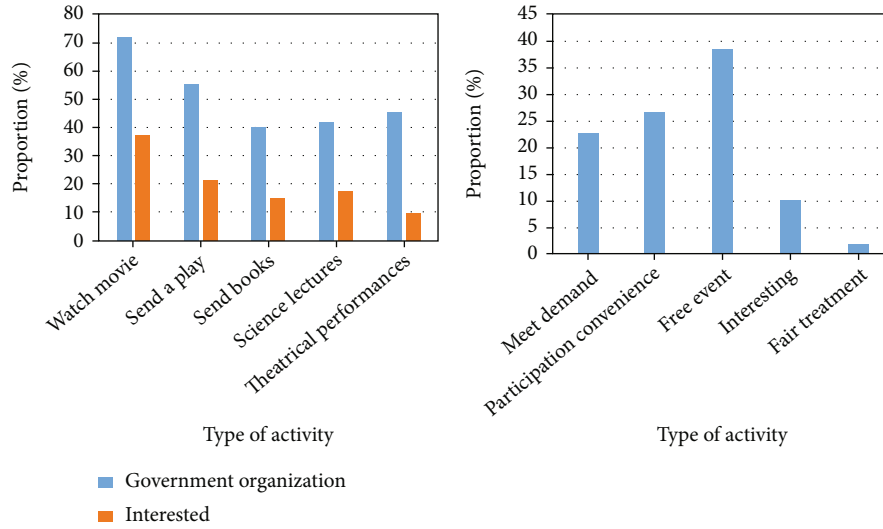
FIGURE 8: Data on public cultural movements.

of agricultural culture. Simple hard estimates of the number of cultural events held, and the number of participants should not be made. While such statistics are very valuable as a reference, they do not really play a significant role in supporting the development of cultural activities and ameliorating the lack of innovation. In recent years, many cultural activities in rural areas have met the requirements of performance appraisal. However, due to the shortage of funds in rural areas, the lack of facilities and resources, and the lack of cultural professionalism, many cultural services have not been implemented in place. It all exists in a traditional way. At present, farmers' demand for culture is gradually increasing, and the development of rural public cultural services is still a sustainable cultural and sports activity that helps villagers reduce boredom. The cultural activities of the community are not limited to singing and dancing, exhibitions, etc., but should also be raised to a higher level to gradually improve the information quality of farmers.

In view of the situation, based on the rural revitalization strategy, we propose the following countermeasures.

Promote the inclination of financial funds to community culture, promote the development of rural cultural products, improve the quality of rural cultural centers, and promote the development of rural public cultural projects. The opening up of social security cultural units has been increased. First, the reform of public media for rural cultural services has been promoted, and the materials, methods, and times of public cultural services have been regularly provided to the public to promote free and desirable public cultural services. The second is to continuously improve service levels and service quality, and establish a transparent operating system that is compatible with different financial debt systems. The third is to further strengthen the construction of a free and open emergency system to promote free and open access.

In accordance with the principle of putting people first and improving quality and skills, it is necessary to restore traditional skills, continuously improve education, improve the quality of education, and extend the quality of professional development. Use rural culture to develop a talent pool with strong leadership skills, strong performance skills, community relations, and leadership with the aim of improving ethical and professional skills. The first is to strengthen basic education in rural cultural communities and improve cultural quality. Second, hold writing and art competitions to learn more about traditional talent. Ultimately, a job change system will be introduced so that employees in every cultural organization can work, expand knowledge through job changes, encourage environmental adaptation, etc.

The sustainable development of any industry has its own laws and must also have external forces. The localization of new culture in rural areas is a force for the sustainable development of rural new culture services. As a resource allocation management system, the rural cultural public service system should form a market system with resource allocation and cultural production as the forces. The construction of a new rural culture should focus on educating the local community on customary affairs, understanding the principles of cultural development, social research, and the prosperity of the new rural culture as the basis of the market economy.

## 5. Discussion

The rural revitalization strategy is the strategy proposed by Comrade Xi Jinping in the report of the 19th National Congress of the Communist Party of China on October 18, 2017. The report of the 19th National Congress of the Communist Party of China pointed out that the problem of farmers in agriculture and rural areas is a fundamental problem related to the national economy and people's livelihood. We must always take the solution of the "three rural" issues as the top priority of the whole party's work and implement the rural revitalization strategy.

The state should increase the growth rate of investment in culture and divide the total financial expenditure. As a
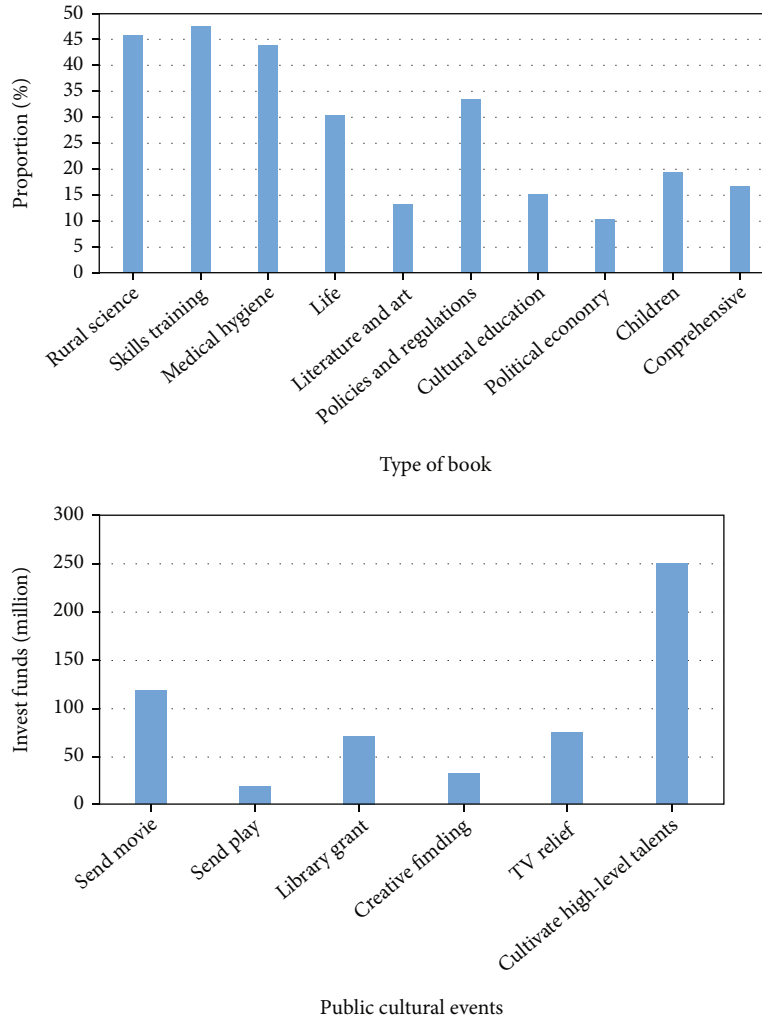
FIGURE 9: Farmers' demand for cultural readings.

major investor in rural public cultural services, the state has invested heavily in developing rural public service systems, which promotes the development of public service systems in rural areas by increasing investment. In the process of increasing investment, the government should not only increase the total amount of funds but also continuously increase the proportion of the funds invested in the rural public cultural service system in the national fiscal expenditure. Through the implementation of major cultural projects and other measures, the rural cultural resources will be enriched and the cultural quality of farmers will be improved.

Strengthen the management of capital expenditures: with the support of sufficient funds for the construction of the rural public cultural service system, measures should be actively taken to ensure that the funds are in place. All links from the expenditure of funds to the investment of funds in the construction should be strictly managed, and the entire operation of the funds should be tracked to ensure that the funds are timely and fully implemented in the construction of the rural public cultural service system.

In terms of capital investment, government funds are the leading role, and social funds are also driven. County-level and township-level governments have limited financial resources. It can be considered to obtain economic benefits from the construction process, revitalize funds, and obtain more funds for infrastructure construction. For example, some land incentives can be given to builders to guide them to build infrastructure. Secondly, it is necessary to strengthen the supervision of the construction of cultural facilities. The government can set up a professional supervision and management team to understand the capital investment of the project and the progress of the specific project construction in detail and strictly check to ensure the quality of the project construction. Strengthen the postmaintenance of the completed facilities: the infrastructure should not only be well constructed but also be well maintained in the postphase. Therefore, its investment must be sustainable, and the annual maintenance and repair costs of the facility must be guaranteed.

The direct beneficiaries of rural public cultural services are the rural masses. As the beneficiaries, farmers can also assume the role of supplying cultural products. Every region and every village and town has its own unique culture. The treatment of grassroots cultural workers is generally not high. In addition, grassroots cultural workers often have to
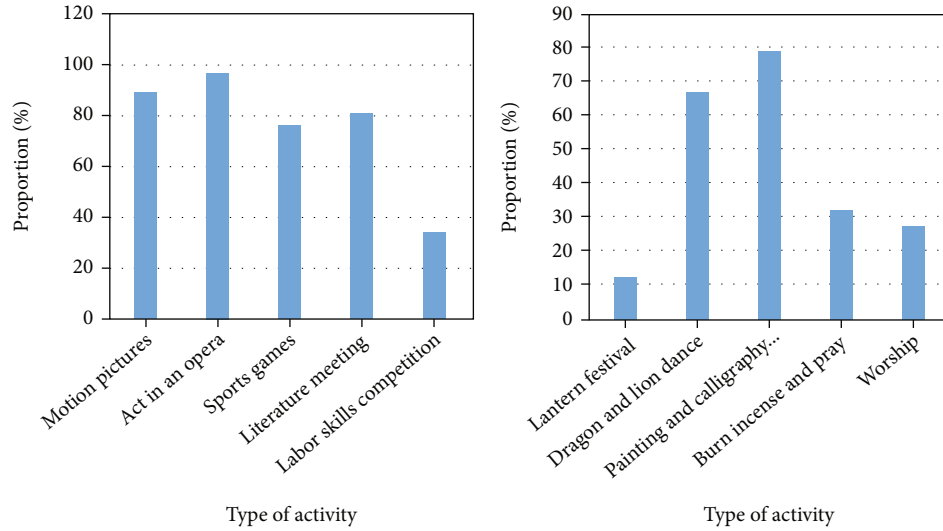
FIGURE 10: How well the villagers know about the cultural activities in the villages where they live.

TABLE 4: Satisfaction with existing facilities and venues.

|                            | Satisfaction | Demand | Usage frequency |
|----------------------------|--------------|--------|-----------------|
| Library (rural bookstore)  | 47.36%       | 53.47% | 33.45%          |
| Cultural center            | 50.12%       | 48.12% | 25.98%          |
| Cultural square and Damazi | 67.25%       | 55.43% | 61.58%          |
| Cinema                     | 48.54%       | 42.97% | 42.87%          |
| Network supply site        | 37.48%       | 21.55% | 34.66%          |

work in villages and communities, which inevitably increases additional expenses, such as transportation costs. Therefore, there is a common phenomenon of "unable to retain" among grassroots staff. In response to this phenomenon, the government should first appropriately improve the welfare benefits of grassroots cultural workers, such as increasing transportation subsidies and lunch subsidies. The second is to implement a performance appraisal mechanism and to give appropriate subsidies to units and individuals that have performed well. Cultural undertakings also develop with the times. If the knowledge of the staff cannot be updated in time, cultural work cannot be innovative. Therefore, it is particularly important to strengthen the training of cultural professionals. For those who have just engaged in cultural work and those whose professional skills do not match, they should focus on training, not only prejob training but also special training for special work. It is necessary to train not only general cultural staff but also the backbone of literature and art. Through comprehensive training and related policy care, cultural staff will be more interested in grassroots cultural work.

To promote the level of rural cultural service construction, the first thing is to have talents, and the construction of talent team should be the basis and support for promoting rural public culture, improving self-development ability, and enhancing cultural creativity. Secondly, we should innovate the mechanism, actively create conditions, continuously optimize the talent development environment, encourage college graduates and volunteers to engage in rural cultural services, and establish an effective reward mechanism. Select and commend outstanding folk artists to promote the growth of rural cultural talents. Carry out professional title evaluation and publicity for rural cultural service workers, increase their economic income, and increase the enthusiasm of rural cultural talents.

## 6. Conclusion

At present, promoting and improving the rural public cultural service system in the critical period of new rural construction has not only a profound domestic historical background but also a realistic requirement for the economic and social development of new rural areas. This paper conducts 10 independent experiments on each dataset to obtain the accuracy and normalized mutual information of the experimental results. In this paper, the preliminary prediction research is carried out. In view of the limited data sources and academic level, there are inevitably some omissions in the research. The analysis of the status quo analysis stage is not thorough enough; it only shows the changes of relevant indicators and lacks internal judgment analysis. In the stage of theoretical research, this thesis does not grasp the theory deeply enough. In the future work, the author will further optimize the system from the aspects of data warehouse support and mining algorithm support.

## Data Availability

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

## Conflicts of Interest

The author declares no conflicts of interest.

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