

Retraction

Retracted: Long-Term Mechanism and Fitness Impact of Rural Sports Precision Poverty Alleviation Based on Improved Decision Tree

Wireless Communications and Mobile Computing

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1].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.

In addition, our investigation has also shown that one or more of the following human-subject reporting requirements has not been met in this article: ethical approval by an Institutional Review Board (IRB) committee or equivalent, patient/participant consent to participate, and/or agreement to publish patient/participant details (where relevant).

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] Z. Ma and Y. Ma, "Long-Term Mechanism and Fitness Impact of Rural Sports Precision Poverty Alleviation Based on Improved Decision Tree," *Wireless Communications and Mobile Computing*, vol. 2022, Article ID 4570754, 7 pages, 2022.

Research Article

Long-Term Mechanism and Fitness Impact of Rural Sports Precision Poverty Alleviation Based on Improved Decision Tree

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In the process of the development of sports resources, the first step is to strengthen mechanism construction, including the government and the market “- poor areas” tripartite coordination mechanism, the development of sports resource development policy supervision mechanism, sports resource development precision poverty alleviation mechanism, legal protection mechanism, and accountability mechanism. The establishment of the fitness model recommendation model is realized. The fitness pattern recommendation model itself is a multibranch decision tree model. Therefore, as long as it is a variety of fitness methods, according to different classification, in the fitness database to add the corresponding classification, this is helpful to build a multibranch decision tree model.

1. Introduction

According to China's current poverty standard, by 2018, the rural poor population in China was over 16.6 million [1]. After 2020, China will completely eliminate poverty, which is an arduous task in the battle against poverty [2]. In this context, sports-related departments take active actions to help people in poor areas fundamentally get rid of poverty as the goal and continue to explore the mode and development path of targeted poverty alleviation. The “Sports +” targeted poverty alleviation model emerges at the historic moment [3]. The “Opinions on Implementing Sports Poverty Alleviation Projects” issued in 2018 marked that sports poverty alleviation has been officially incorporated into the overall poverty alleviation deployment and work system [4]. In 2019, the General Office of the State Council issued the “Sports Power Construction Plan” to achieve the goal of sports development in the next 15 years in stages and proposed to improve the sports service system, with the general direction of encouraging national fitness, enhancing national physique and improving the quality of life. On the basis of

sports, promote the upgrading of the sports industry and strengthen the construction of sports culture [5, 6].

This paper starts with expounding the key elements and motivations of poverty alleviation and promotion of rural sports development in Anhui Province and uses coordination theory, rural development theory, and sustainable development theory to analyze the logical connotation and theoretical support of precise poverty alleviation in promoting rural sports development in Anhui Province. The theoretical framework of this topic is realized [7, 8] Finally, through the entry, integration, and transformation of multidisciplinary research methods, combined with the results of research and interviews, a long-term mechanism for targeted poverty alleviation and promotion of rural sports development in Anhui Province is constructed, and the selection is scientific and reasonable. Promote the stability, coordination, and sustainability of rural sports in Anhui Province [9, 10].

Taking the long-term mechanism as the breakthrough point, this paper can integrate poverty alleviation resources, cooperate and coordinate with poverty alleviation subjects,

constantly improve the scientific and effective of targeted poverty alleviation to boost the development of rural sports in China, and promote the sustainable development of rural sports in China [11]. With the promotion path as the starting point, it can accurately analyze the environment and conditions required for the development of rural sports in different stages in China, grasp the key points of targeted poverty alleviation, solve the problems of targeted poverty alleviation, and ultimately promote the comprehensive development of rural sports in China [12, 13].

[14] conducted a more in-depth exploration of the implementation of sports poverty alleviation in combination with actual cases, emphasizing that precise poverty alleviation needs to be closely integrated with the actual local conditions and follows the principle of implementing policies tailored to each individual. Taking the Wuling Mountain area as an example, it points out that the development and utilization of sports tourism resources in this area need to combine the characteristics and advantages of the local ethnic sports culture, take the improvement of the traditional sports industry chain of ethnic minorities as the main development direction, and explore and build distinctive ethnic groups [15]. In traditional sports, while strengthening the input of hardware, it is necessary to pay more attention to the input of the spiritual level, so as to realize the “double support of wisdom and wisdom” [16, 17]. When examining and approving relevant projects, it is necessary to pay attention to combining local characteristics and implementing differentiated development strategies. While improving rural infrastructure, we should also focus on integrating multiple resources and cultivating professional operation talents [18, 19]. Therefore, by adding various physical fitness methods in different categories of the physical fitness database, a variety of physical fitness methods in the form of “physical fitness test data + physical fitness database” can be realized. Compared with previous studies, the multibranch decision tree model can better adhere to local policies and develop sports resources with characteristics of poor rural areas.

2. Related Work

The concept of sports poverty alleviation does not exist in foreign countries, and the relevant research focuses on the use of sports means and methods to achieve the goal of “anti-poverty.” The study believes that some members of society can solve the problem of personal and family poverty by participating in various sports events and entering the university gate; however, due to certain defects in lifestyle, development ability, education level, etc., some athletes will return to poverty after retirement [20]. The study believes that the participation of professional clubs in antipoverty responsibility projects is an important part of their social responsibility; at the same time, clubs’ participation in antipoverty responsibility projects can also bring huge social benefits to themselves and provide help for club development [21]. Influenced by welfare economics and new public management theory, foreign academic circles basically discuss the issue of sports participation in “anti-poverty” from the perspective of balanced development. Empirical analysis

of specific regions and groups is the focus of the current research. In recent years, with the continuous increase of immigrants, refugees, and other foreign populations in Western countries, the attention to sports rights of the poor has increased significantly [22–25].

Therefore, the problem of sports poverty in a certain region or group is solved through sports stadium construction, sports equipment supply, and sports skill training. Researchers believe that sports poverty alleviation in China is of great significance, but there are many problems such as single poverty alleviation methods, insufficient measures, insufficient precise poverty alleviation effects, and insufficient social coordination. To achieve the ultimate goal of sports poverty alleviation, it is necessary to raise the awareness of precision, enrich the ways of poverty alleviation, strengthen government responsibility, enhance policy guidance, and strengthen social coordination.

3. Establishment of Fitness Mode Recommendation Model

As of the end of 2020, my country’s national physique monitoring has been successfully carried out five times, and the physique test data of national physique monitoring has nearly 20 years of historical data. In the national physical fitness, it also has a hidden expression of the public’s physical fitness. Therefore, the recommendation of fitness methods based on the information of one’s own physical fitness test is also a manifestation of the hidden emotions of the public. This chapter mainly discusses the process of building a fitness recommendation model using the decision tree algorithm in machine learning.

3.1. Recommended Service Plan for Personalized Fitness Methods in Rural Areas. The fitness recommendation service is shown in Figure 1. The program mainly includes three parts: user basic data collection, personal fitness test data, and interests.

3.2. Analysis of Recommended Functions of Fitness Methods. The fitness method recommendation process is shown in Figure 2; using the physical fitness test data uploaded by after entering the model, the physical fitness test data is classified according to the recommended list which are called through the WebUI module.

3.2.1. Personal Data. “Without the health of the whole people, there will be no comprehensive well-off,” and promoting the further improvement of physical fitness is the main purpose of national fitness. However, as a member of fitness, sometimes, you may be confused by the following two questions: the first is how to know the detailed information of your own physical fitness, and the second is how to choose a reasonable fitness exercise according to your own health condition, to achieve efficient and healthy way to exercise.

3.2.2. The Design of Fitness Mode Database. Based on the personal fitness test data, the most important core step to realize the recommendation of fitness methods is to establish a fitness method recommendation model. However, before

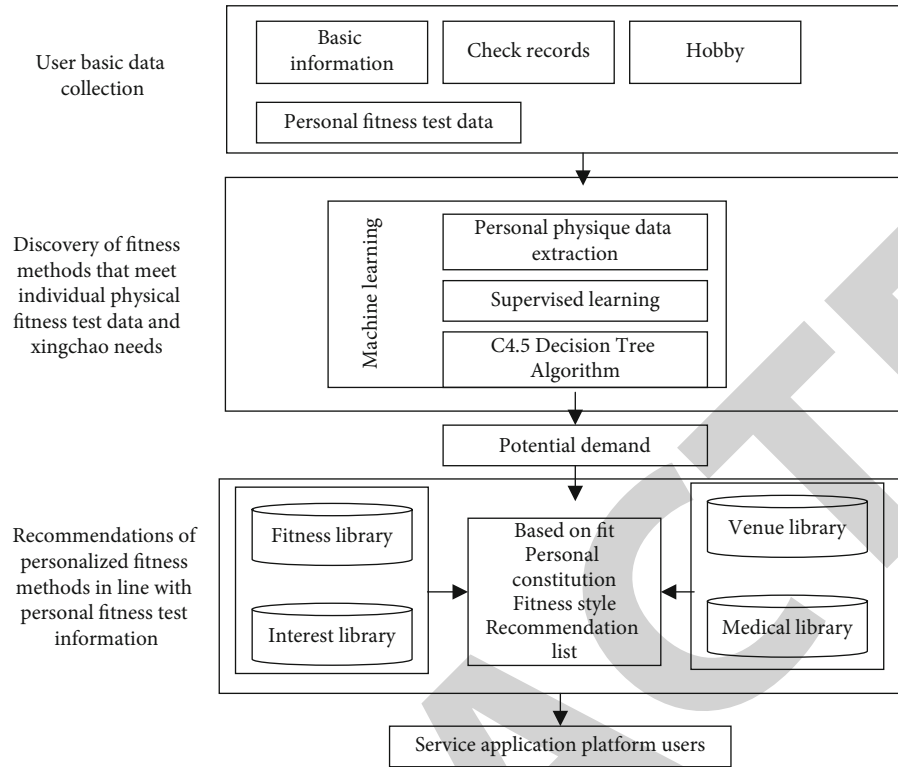


FIGURE 1: Personalized fitness recommendation.

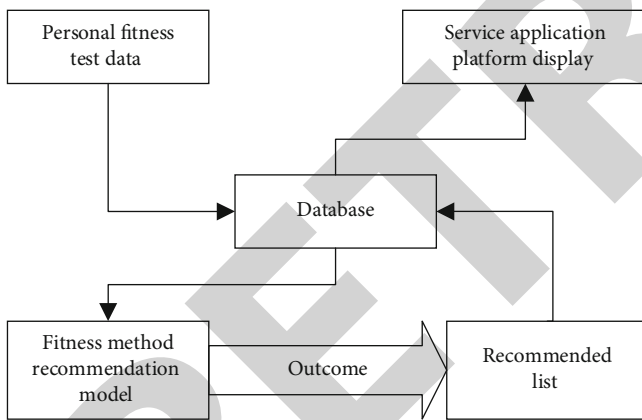


FIGURE 2: Flow chart of fitness method recommendation function.

the establishment of the model, the first task is to collect, organize, and establish a database of fitness methods. In the database, seven training types are designed according to the individual physical fitness test indicators, mainly including upper body strength training, cardiopulmonary function training, flexibility training, lower body strength training, core area strength training, balance training, and aerobic training, and the type contains two attributes: personal interest and personal consumption. The recommended process of fitness methods is shown in Figure 3.

3.3. Implementation of Fitness Recommendation Model. Before starting this subsection, the fitness test data should be preprocessed. In the process of establishing the comprehensive evaluation model of national physique based on

machine learning, this research has realized the collection, analysis, and preprocessing of physique test data, which has laid the foundation for the establishment of the fitness mode recommendation model.

3.3.1. Design of Fitness Mode Recommendation Model Embedding System. Pass the mining results to the web server. Finally, regarding the fitness results of mining, individual users will be able to view them through the browser. The fitness mode recommendation model embedding system is shown in Figure 4. For the design of embedding the fitness recommendation model, the focus is on the operation phase of importing the model into the data mining engine and the background database.

Based on machine learning, the data mining engine mines the physical fitness test sample data; after completion, the mining results to form a recommendation list.

3.3.2. Construction Process of Fitness Mode Recommendation Model. Based on the background of big data, according to the data of the personal physical fitness test, the recommendation of fitness methods is carried out. The way to achieve this is to use the decision tree algorithm in machine learning to complete the establishment of a fitness recommendation model. The decision tree algorithm uses information gain to complete the selection of the data attributes that best represent the physical fitness test data and uses it as the root node of the fitness method recommendation model. The generation process of each node of the fitness mode recommendation model is shown in Figure 5.

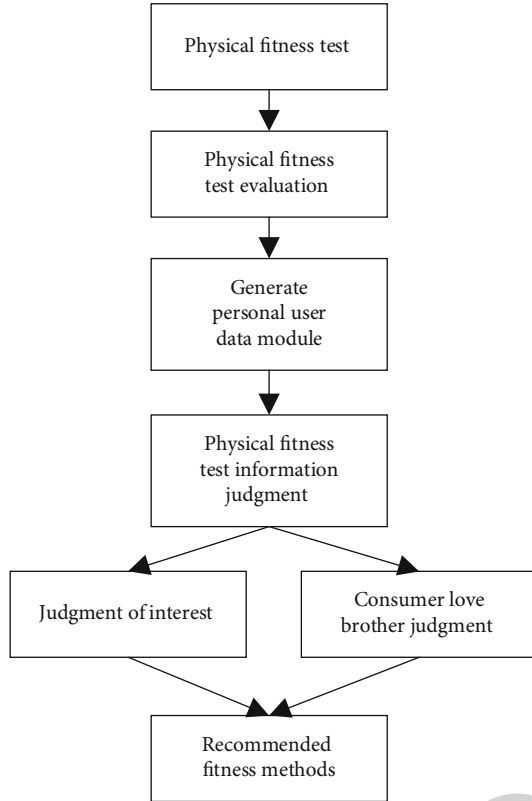


FIGURE 3: Recommended flow chart of fitness methods.

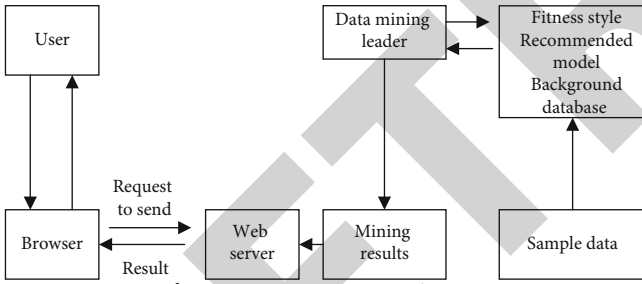


FIGURE 4: Embedding system diagram of the fitness mode recommendation model.

Among them, the V set (y_1, y_2, \dots, y_m) represents the physical fitness test data set of each indicator, the C set $\{c_1, c_2, \dots, c_d\}$ represents each indicator category and fitness method category attribute, and the $T\{(x_1, y_1), (x_2, y_2), \dots, (x_m, y_m)\}$ set represents the fourth national physical fitness monitoring physical fitness test data training set.

4. Effect Analysis

4.1. Effect of Poverty Alleviation. Through the literature and data, the different stages of rural sports development in Anhui Province are linked and compared, the current situation of rural sports development can be accurately judged, and the essence of targeted poverty alleviation to boost rural sports development in Anhui Province is explained. Three

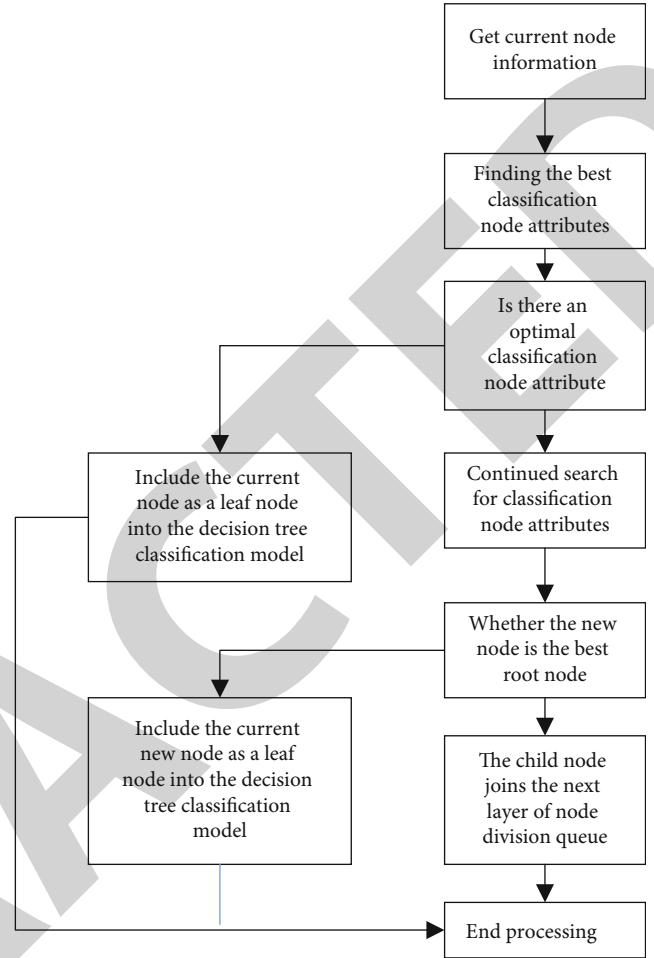


FIGURE 5: Flow chart of the root node generation of fitness mode recommendation model.

regions were randomly selected, 10-20 persons in charge of the government and sports management departments and 200-300 rural poor people were randomly selected from each region as the survey objects, and the actual needs of the current rural sports development in Anhui Province were learned through questionnaires. As shown in Figure 6, typical sports poverty-stricken villages and sports-poor households are selected for field investigation, and through the data collection of mutual contact and direct experience, the universality and authenticity of the subjective feelings and demand expressions of the survey objects are guaranteed to the greatest extent.

From the perspective of long-term mechanism and promotion path, the research on the promotion of rural sports development in Anhui Province by targeted poverty alleviation is a further deepening and refinement of the research on targeted poverty alleviation, and it has strong operability. It can make the research results better serve the practice of rural sports development in my country, promote close cooperation between the political and academic circles, and truly realize the organic integration of targeted poverty alleviation and rural sports development in Anhui Province [17, 26]. As shown in Figure 7, based on precise identification,

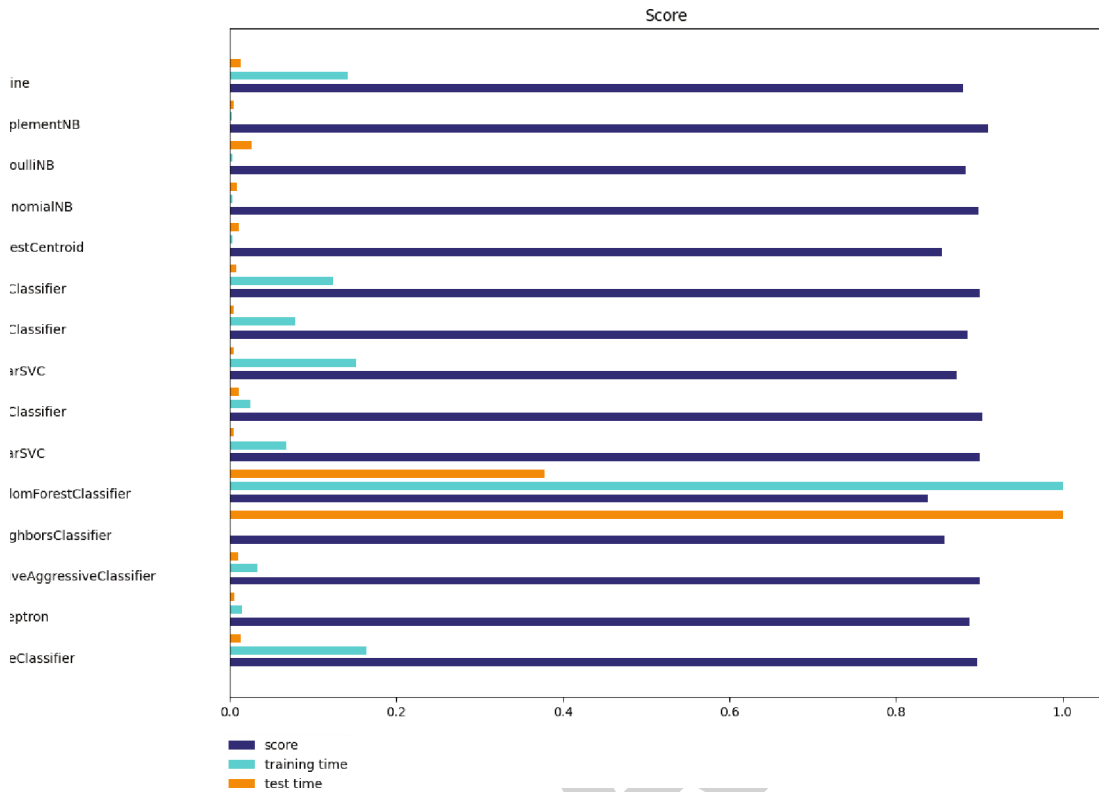


FIGURE 6: The prevalence and authenticity of poverty alleviation through sports.

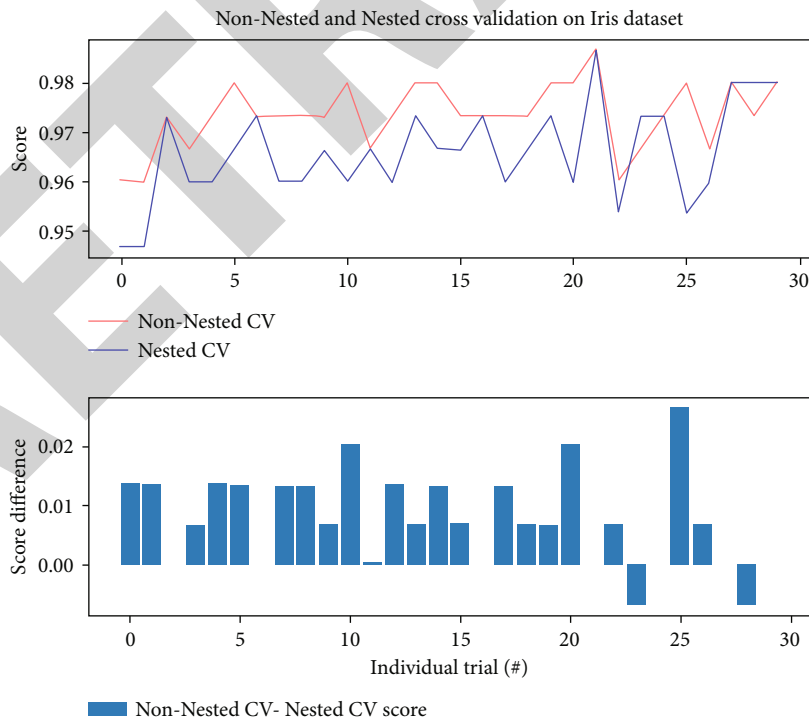


FIGURE 7: The long-term effect of sports poverty alleviation.

precise assistance as the core, precise management as the guarantee, and precise evaluation as the means, a boost to the development of rural sports in Anhui Province is built.

It can grasp the internal relationship between sports poverty alleviation and other types of poverty alleviation; gradually solve the problems of insufficient funds and limited

TABLE 1: Evaluation results.

Name	Unnormalized data	Z-score normalized data
Accuracy	0.9038253362613233	0.9045743343398299
F1	0.8136027493963912	0.7837148551713783
Precision	0.8319074990192642	0.7652894483368345
Recall	0.798824652807581	0.8035385952553477

coverage; and promote the mutual integration, interaction, coordination, and standardization of internal management and external incentives.

4.2. Evaluation of Fitness Mode Recommendation Model. After machine learning, there was a fitness recommendation model. Next, it is necessary to use the physical fitness test sample data to evaluate the model performance. Table 1 shows the comparison results after evaluating the performance of the fitness recommendation model and realizing data standardization.

Accuracy represents the accuracy rate, F1 represents the H -mean value, Precision represents the precision rate, and Recall represents the recall rate. It can be seen from the index values corresponding to the two evaluation indicators before and after (accurate to two decimal places): the accuracy rates are 90.38% and 90.45%; the H -mean values are 81.36% and 78.37%; the accuracy rates are 83.19% and 76.52%; and the recall rate is 79.88% and 80.35%. Therefore, by comparing the evaluation index values, it can be seen that the accuracy value of the evaluation index is more than 90%, the accuracy value is more than 60%, the value of F1 decreases, and the divided error classes will be reduced.

5. Conclusion

In this paper, we use the algorithm proposed in machine learning to implement an adaptive recommendation model, because the adaptive recommendation model itself is a multibranch decision tree model. By comparing the evaluation index values, it can be seen that the accuracy value of the evaluation index is greater than 90%, the accuracy value is greater than 60%, and the lower the value, the lower the error level of the classification. Therefore, by adding various physical fitness methods to different categories of the physical fitness database, a variety of physical fitness methods in the form of “physical fitness test data + physical fitness database” can be realized. Compared with previous studies, the multibranch decision tree model results in a program that can better adhere to local policies and develop sports resources with characteristics in poor rural areas.

Data Availability

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

Conflicts of Interest

The authors declared that they have no conflicts of interest regarding this work.

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