Journal of Innovation and Development
ISSN: 2958-4752 | Vol. 4, No. 2, 2023

Construction of Rural Sports Facilities in Anhui Province during the Process of New Rural Construction

Zhi Gao [1, *], Jiaxue Cao [2]

[1] Institute of Sports Economics, Anhui University of Finance and Economics, Bengbu 233030, China
[2] School of Liberal Arts, Anhui University of Finance and Economics, Bengbu 233030, China

*** Corresponding author:** Zhi Gao (Email: gicy0415@163.com)

Abstract: This article uses relevant data analysis from the National Sports Ground Survey of Anhui Province to summarize the current situation of rural sports ground facilities in Anhui Province from multiple perspectives, including the distribution characteristics, per capita field area, site type, usage rate, satisfaction, and construction management of rural sports ground facilities in Anhui Province. Based on the contemporary social background and the national "Healthy China 2030" strategy, analyze the influencing factors and propose relevant suggestions and countermeasures. By sorting out and analyzing the basic situation of rural sports venues and facilities in Anhui Province, the number, quality, distribution characteristics and use of rural sports venues and facilities in Anhui Province were analyzed and summarized. Analyze the supply and demand relationship and effective utilization rate of social public facilities, school sports facilities, and sports facilities within enterprises and institutions based on quantity, quality, usage, and people's satisfaction with their use. Based on the research results and analysis, corresponding suggestions and countermeasures were proposed.

Keywords: Principal Component Analysis; DEA; Rural Sports Facilities.

1. Introduction

Rural sports, as an important component of China's sports industry, is also a key and difficult point in the current development of mass sports. Under the guidance of national strategy, the resource allocation of rural sports and fitness facilities and their venues has also received great attention. The "Opinions of the Central Committee of the Communist Party of China and the State Council on Further Strengthening and Improving Sports Work in the New Era" issued in 2002 clearly states: Emphasizing the common development of regional sports and urban-rural development, and increasing support for the development of rural sports. Further formulating and improving plans and policies for the development of rural sports in China, seizing the historical opportunity of the construction of a new socialist countryside, increasing support, and promoting the construction of rural sports venues and facilities are the current needs for the development of public cultural undertakings such as rural sports.

The "Several Opinions of the Central Committee of the Communist Party of China and the State Council on Promoting the Construction of Socialist New Countryside" issued in 2006 proposed from a higher perspective: to "accelerate the development of rural supplementary services, cultivate new farmers who promote the construction of socialist new countryside", to "build a rural public cultural service system, promote the implementation of farmers' sports and fitness projects", in order to achieve the strategic goal of prospering rural cultural undertakings. The Outline of the 14th Five Year Plan released in 2021 points out that it is the first five years of great significance to embark on a new journey of building a socialist modernized country on the basis of building a moderately prosperous society in all respects.

The outline of the 14th Five Year Plan points out that "improving the new urbanization strategy and improving the quality of urbanization development" must be closely formulated around achieving this goal. And closely focusing on the goal of building a moderately prosperous society in all respects and improving the quality of urbanization development, we focus on the health level of the rural impoverished population. Moreover, in 2016, the Central Committee of the Communist Party of China and the State Council issued the "Healthy China 2030" Plan Outline, which pointed out that "jointly building and sharing, and promoting national health" is the strategic theme for building a healthy China. The core is to focus on people's health and adhere to the focus on rural and grassroots areas.

2. Research Review and Hypotheses

2.1. Research Review

The development, utilization, and optimized allocation of rural sports resources are prerequisites for promoting the development of rural sports. The "Implementation Plan for the '11th Five Year Plan' Farmers' Sports and Fitness Project in Anhui Province" points out that by 2010, the province will complete the construction of 4000 administrative villages' fitness facilities for farmers, and form a certain scale of rural sports organization network and sports backbone team, promoting the regular development of local farmers' sports and fitness activities, and significantly increasing the number of rural residents who frequently participate in sports and exercise. The venue facilities in cities and towns are relatively superior, and residents have a relatively strong dependence on fitness venues; The conditions in the village are relatively poor, and villagers are accustomed to adapting their choices of fitness programs to local conditions.

Through in-depth analysis, it is not difficult to see that the fitness venues recognized by county residents are mainly free, public, and natural activity venues, reflecting a clear public welfare nature. Therefore, establishing the public utility status of county-level sports, constructing a county-level sports

service system, accelerating the construction of public welfare sports facilities, focusing on villages, and allowing all county-level residents to enjoy sports services and feel sports care are important choices for the sustainable development of county-level sports (Qin Jiqiang, 2010).

Farmers account for 80% of the national population, and on average, the per capita area of sports venues in rural areas will be pitifully small. The lack of rural sports facilities is an important aspect that cannot be ignored in China's new rural sports construction and national fitness projects (Chang Tongli, 2012). The construction of sports facilities and resources in rural areas is still dominated by the state, but the state's financial capacity is limited, and the progress of equipping sports facilities and facilities in rural areas is slow; On the other hand, it indicates that the efforts to develop and utilize social forces to build rural sports resources are still relatively small (Liang Zhange and Wang Meifang, 2016). To maximize the value of rural sports facilities, it is necessary to recognize two key issues, namely "what kind of sports facilities are more attractive to farmers or rural residents" or "what kind of sports facilities can attract more farmers or rural residents" (Zhang Hongjian, 2008). Reasonably evaluating the performance of new rural sports facility construction projects is of great significance for further promoting the construction of new rural infrastructure (Sun Zhongrui, Cui Lijia, 2010).

Domestic scholars have a general understanding of the importance of rural sports development and have a common understanding of the current situation of rural sports in China. The focus of discussion is on a large population base, limited sports facilities, and low attention from regulatory authorities. However, there have been few results in comprehensively analyzing these influencing factors. Due to the loose distribution of rural population and the inheritance of regional traditional sports culture in China. Although the number of existing rural sports venues has increased, the actual utilization rate is not high, and the satisfaction of the majority of farmers is low. In order to better understand the construction of rural sports venues and facilities in Anhui Province, this project proposes conclusions and suggestions through research and analysis, providing constructive suggestions for the future development of rural sports industry, promoting rural sports venues and facilities in Anhui, meeting the sports and fitness needs of farmers in our province, and fully implementing the "Outline of the National Fitness Plan". At the same time, during the "14th Five Year Plan" period, we aim to comprehensively build a moderately prosperous society Under the national strategy of the "Healthy China 2030" Plan, promote the development of sports industry.

Starting from the basic tasks of a moderately prosperous society and the reality of long-term lag in rural sports in China, it is proposed that rural sports should become the strategic focus of mass sports in China at this stage. And it is emphasized that people's governments at all levels should bear the main responsibility for developing farmers' sports (Tian Yupu, 2007).

2.2. Research Hypotheses

It is assumed that the data collected about competitive sports in various provinces are true and reliable. It is assumed that the model established by us can reasonably evaluate the development of competitive sports in various provinces. Assume that our model is built according to accurate steps and there is no human error. Assume that the analytical indicators of competitive sports selected by us have practical significance. It is assumed that the error of the model can be controlled within a reasonable range, and the influence on the analysis result is limited.

3. Research Design

3.1. Principal Component Analysis Model Construction

Select 20 secondary indicators and five primary indicators for the evaluation of rural sports facilities in Anhui Province. 20 secondary indicators have been selected for corresponding data processing, including taking the reciprocal of cost indicators, converting the data into benefit indicators, and then standardizing the data. Then, the principal component analysis model was used to reduce the dimensionality of 20 secondary data indicators and obtain five primary indicators. Finally, based on this, the entropy weight method model is used to calculate its weight and obtain the expression of the comprehensive evaluation model for the development of rural sports facilities in Anhui Province.

3.1.1. Model Preparation

Firstly, we use 20 secondary indicators and five primary indicators as the criteria for evaluating rural sports venues and facilities in Anhui Province. Among them, the 20 secondary indicators are per capita GDP (P1), urbanization rate (P2), total population (P3), natural population growth rate (P4), population density (P5), per capita sports facility area (P6), number of world/Olympic champion athletes (S1), number of National Games gold medals (S2) The number of outstanding sports team athletes (S3), the number of sports venues per capita (R1), the public budget expenditure of sports system (R2), sports and sports media expenditure (R3), the number of full-time coaches (R4), the number of sports reserve talents (R5), the number of referee development (R6), the number of youth sports club (R7), the number of traditional sports schools (R8), the ratio of the tertiary industry to GDP (R9) Sports lottery sales (R10) and research funding (R11) obtained. The five corresponding first level indicators are sports facility pressure (CSP), sports performance (CSR), facility cost (CSC), sports talent (CST), and facility efficiency (CSB).

3.1.2. The Establishment of Principal Component Analysis Model

Principal component analysis (PCA) is a statistical method of dimensionality reduction. It converts the original random vector with its component correlation into a new random vector with its component irrelevance, which points to p orthogonal directions with the most open distribution of sample points, and then transforms the multidimensional variable system into a low-dimensional variable system by dimensionality reduction. Specific modeling steps are as follows:

Standardized processing of the original data. Suppose there are m index variables for principal component analysis, which are a total of N evaluation objects, and the value of the JTH index of the *i*th evaluation object is $x_1, x_2, \cdots, x_m$. a_{ij} Convert the index values into standardized index values, and a_{ij} and $\overline{a}_{ij}$.

$$\overline{a}_{ij} = \frac{a_{ij} - u_j}{s_j}, \quad i = 1, 2, \cdots, n; j = 1, 2, \cdots m,$$

Where are the sample mean and sample standard deviation

of the JTH indicator?

$$u_j=\frac{1}{n}\sum_{i=1}^{n}a_{ij};s_j=\sqrt{\frac{1}{n-1}\sum_{i=1}^{n}(a_{ij}-u_j)^2},j=1,2,\cdots,m,$$

$$u_j,\ s_j$$

Correspondingly, called

$$\overline{x}_j=\frac{x_j-u_j}{s_j},\ j=1,2,\cdots,m,$$

3.1.3. Is standardized Index Variable.

Calculate the correlation coefficient matrix *R*. The correlation coefficient matrix is as follow:

$$R=(r_{ij})_{m\times m},$$

$$r_{ij}=\frac{\sum_{k=1}^{n}\overline{a}_{ki}\cdot\overline{a}_{kj}}{n-1},i,j=1,2,\cdots m,$$

Where, $r_{ii}=1,r_{ij}=r_{ji},r_{ij}$ is the correlation coefficient between the *i*th index and the JTH index.

Calculate eigenvalues and eigenvectors. The eigenvalues of the correlation coefficient matrix R and the corresponding eigenvectors are calculated. Among them, m new index variables are composed of the eigenvectors $\lambda_1\geq\lambda_2\geq\cdots\geq\lambda_m\geq0$ $u_1,u_2,\cdots u_m$ $u_j=[u_{1j},u_{2j},\cdots,u_{mj}]^T$.

$$y_1=u_{11}\overline{x}_1+u_{21}\overline{x}_2+\cdots+u_{m1}\overline{x}_m,$$

$$y_2=u_{12}\overline{x}_1+u_{22}\overline{x}_2+\cdots+u_{m2}\overline{x}_m,$$

$$\vdots$$

$$y_m=u_{1m}\overline{x}_1+u_{2m}\overline{x}_2+\cdots+u_{mm}\overline{x}_m,$$

Where, y_1,y_2 is the first principal component;, ,$\cdots$； y_m Is the second principal component, and is the MTH principal component.

P (P ≤m) principal components were selected to calculate the comprehensive evaluation value.

Calculate the information contribution rate and cumulative contribution rate of eigenvalues. $\lambda_j(j=1,2,\cdots,m)$ According to

$$b_j=\frac{\lambda_j}{\sum_{k=1}^{m}\lambda_k},j=1,2,\cdots,m$$

The information contribution rate of the main component, meanwhile, has y_j

$$a_p=\frac{\sum_{k=1}^{p}\lambda_k}{\sum_{k=1}^{m}\lambda_k}$$

Cumulative contribution of major components. $y_1,\ y_2,\ \cdots,\ y_p$ When it is close to 1 (generally, the first P index variables are selected as P principal components to replace the original M index variables, so that comprehensive analysis of P principal components can be carried out. α_p $y_1,\ y_2,\ \cdots,\ y_p$

Calculate the comprehensive score:

$$Z=\sum_{j=1}^{p}b_jy_j$$

Where, is the information contribution rate of the JTH principal component, which can be evaluated according to the comprehensive score value. b_j

The establishment of entropy weight method model

Entropy method is a mathematical method used to judge the dispersion degree of an index. If the dispersion degree of an index is larger, the influence of the index on the comprehensive evaluation is greater, and the dispersion degree of an index can be judged by entropy value.

Data standardization

Suppose k indices are given, where. $X_1,X_2\cdots X_nX_i=\{x_{1,X2}\cdots x_n\}$Assuming that the standardized value of each indicator is, the expression of Y can be obtained as follows:$Y_1,Y_2\cdots,Y_K$

$$Y_{ij}=\frac{x_{ij}-min(x_i)}{max(x_i)-min(x_i)}$$

Calculate the information entropy of each indicator

According to the definition of information entropy in information theory, the information entropy of a group of data can be obtained:

$$E_j=-In(n)^{-1}\sum_{i=1}^{n}p_{ij}\,Inp_{ij}$$

Where, if, is defined. $p_{ij}=Y_{ij}/\sum_{i=1}^{n}Y_{ij}\,P_{ij}=0\ \lim_{p_{ij}\to0}p_{ij}\,ln\,p_{ij}=0$

Determine the weight of each indicator

According to the calculation formula of information entropy, the information entropy of each indicator is calculated, and then the weight of each indicator is calculated$E_1,E_2\cdots E_k$

$$W_i=\frac{1-E_i}{k-\sum E_i}(i=1,2\cdots k)$$

3.1.4. Solution of the Model

We first conducted model test on 20 indicators of the model by KMO and Bartlett test, and the test results are shown in Table 1. It can be seen from the test results that the significance level of the 20 indicators of the model is relatively high, so each indicator has passed the significance test of the model, indicating that the indicators of the model can be further analyzed.

Table 1. KMO and Bartlett tests.

KMO sampling suitability quantity.		0.601
Bartlett sphericity test	The approximate chi-square	606.653
	Degrees of freedom	190
	significant	0

We twenty indicators for the numerical calculation of the total variance explained (shown in Table 2), among them, the component composition of 1 to 5 cumulative variance explained 81.348%, says 20 ingredients, the first five principal components can explain 81.348% of the total variance, therefore, from the point of the results of the total variance explained table, we can extract the first five principal components as indices of dimension reduction process.

Table 2. Total variance interpretation table.

composition	Initial eigenvalue			Extract the sum of squares of loads		
	A total of	Percentage of variance	Cumulative %	A total of	Percentage of variance	Cumulative %
1	8.920	44.598	44.598	8.920	44.598	44.598
2	3.330	16.652	61.250	3.330	16.652	61.250
3	1.683	8.413	69.663	1.683	8.413	69.663
4	1.296	6.479	76.142	1.296	6.479	76.142
5	1.041	5.206	81.348	1.041	5.206	81.348
6	0.729	3.643	84.991	—	—	—
7	0.640	3.198	88.190	—	—	—
8	0.528	2.637	90.827	—	—	—
9	0.410	2.049	92.876	—	—	—
10	0.361	1.804	94.680	—	—	—
11	0.296	1.481	96.160	—	—	—
12	0.235	1.174	97.334	—	—	—
13	0.153	0.762	98.097	—	—	—
14	0.117	0.587	98.684	—	—	—
15	0.090	0.450	99.134	—	—	—
16	0.069	0.343	99.477	—	—	—
17	0.064	0.318	99.795	—	—	—
18	0.025	0.123	99.918	—	—	—
19	0.010	0.048	99.965	—	—	—
20	0.007	0.035	100.000	—	—	—

Table 3. Component score coefficient matrix.

component indicators		P1	P2	P3	P4	P5	P6	S1	S2	S3
composition	1	0.21	0.1986	0.2386	0.0743	0.1374	0.1042	0.241	0.295	0.2938
	2	0.3546	0.4007	0.3334	0.261	0.04	0.3803	0.0831	0.0139	0.0146
	3	0.1461	0.0218	0.1446	0.4659	0.0666	0.2638	0.1784	0.0601	0.1374
	4	0.0537	0.0352	0.0036	0.2523	0.6294	0.1292	0.1148	0.1406	0.0916
	5	0.23	0.0529	0.0361	0.0695	0.2441	0.1344	0.4736	0.2573	0.0235
component indicators		R2	R3	R4	R5	R6	R7	R8	R9	R10
composition	1	0.2825	0.3037	0.2807	0.2479	0.1545	0.2131	0.2941	0.1094	0.2723
	2	0.1234	0.0295	0.1064	0.1222	0.2005	0.1046	0.167	0.446	0.2201
	3	0.2098	0.0725	0.154	0.199	0.1552	0.0785	0.0367	0.0336	0.0457
	4	0.1868	0.0087	0.1125	0.1415	0.3422	0.1431	0.0776	0.0264	0.0258
	5	0.1927	0.1144	0.2228	0.1449	0.2919	0.5218	0.037	0.0162	0.1554

After determining the five main principal component indicators, MATLAB was used to calculate the weight of the five indicators by using the entropy method, and the results are shown as Table 4.

Table 4. Weight calculation results of entropy method.

item	Information entropy e	Information effect value D	Weight coefficient W
CSP	0.8732	0.1256	37.29%
CSR	0.9442	0.0558	16.41%
CSC	0.9469	0.0531	15.61%
CST	0.9403	0.0597	17.54%
CSB	0.9553	0.0447	13.14%

3.1.5. Data Description

Through this result, we can learn that entropy is a physical unit of measurement, and a higher entropy value indicates a more chaotic data. The less information the data carries, the smaller the utility value, and therefore its weight. Furthermore, the entropy rule is a research method that combines the information provided by entropy to determine weights. This method describes the basic principles and analysis process of entropy, and conducts in-depth description and analysis of the final weight value.

Finally, the analysis results are summarized to draw conclusions. We integrated the weights of five primary indicators: sports facility pressure (CSP), sports performance (CSR), facility cost (CSC), sports talent (CST), and facility efficiency (CSB), and finally obtained a comprehensive evaluation model for the development of rural sports venues and facilities in Anhui Province as follows:

$$CSS = 0.3729CSP + 0.1641CSR + 0.1561CSC + 0.1754CST + 0.1314CSB.$$

Among them, CSS is a comprehensive evaluation model indicator for the development of rural sports facilities in Anhui Province, with CSP, CSR, CSC, CST, and CSB as five indicators.

3.2. DEA Model

3.2.1. Preparation of the Model

DEA is suitable for complex systems with multiple inputs and outputs, mainly reflected in the following aspects: DEA takes the weight of each input/output of the decision-making unit as a variable and evaluates it from the perspective of the most advantageous decision-making unit, thus avoiding determining the weight of each indicator in a priority sense.

Assuming that each input is associated with one or more outputs, and there is indeed a certain relationship between the inputs/outputs, using the DEA method does not require determining the display expression for this relationship. The most prominent advantage of DEA is that it does not require any weight assumptions, and the weight of each input/output is not determined subjectively by the evaluator, but rather the optimal weight obtained from the actual data of the decision-

making unit. Therefore, the DEA method eliminates many subjective factors and has strong objectivity.

We consider the sustainable development system of competitive sports in each province (at a certain time or period) as a decision-making unit in DEA, which has specific inputs/outputs. In the process of converting inputs into outputs, we strive to achieve the sustainable development goals of the system.

3.2.2. Model Establishment

Data envelopment analysis has many models, among which C^2R the modeling concept (named after the first English letter of Charnes, Cooper, and Rhodes) is clear, the model form is simple, and the theory is complete. There are n DMUs, each with m inputs and s outputs. Let x, (i=1,..., m; j=1,..., n) represent the i-th input of the jth DMU, y_{rj}(r=1,..., s; j=1,..., n) represents the r-th output of the jth DMU, v_i(i=1,..., m) represents the weight of the i-th input, j_r(r=1,..., s) represents the weight of the r-th output.

vector X_j, Y_j(j=1,..., n) respectively represent the input and output vectors of decision unit j, and v and u respectively represent the input and output weight vectors, then X_j=(x_{1j}, x_{2j},..., x_{mj})' , Y_j=(y_{1j}, y_{2j},..., y_{ij})' ,u=(u_1 , u_2 ,..., u_m)", v=(v_1, v_2,..., v_s)'.

The efficiency evaluation index for decision making unit j is defined as:

$$h_j = (u^T Y_j)/(v^T X_j), j = 1, 2, \cdots, n。$$

The mathematical model for evaluating the efficiency of decision-making units is:

$$\max \frac{u^T Y_{j0}}{v^T X_{j0}}$$

$$s.t. \begin{cases} \frac{u^T Y_j}{v^T X_j} \leqslant 1, j = 1, 2, \cdots, n, \\ u \geqslant 0, v \geqslant 0, u \neq 0, v \neq 0。 \end{cases}$$

$\omega = tv, u = tu, t = \frac{1}{v^T X_{j0}}$ The above model can be transformed into an equivalent linear programming problem through Charnes Cooper transformation:

$$\max V_{j0} = u^T Y_{j0},$$

$$s.t. \begin{cases} \omega^T X_j - u^T Y_j \geqslant 0, j = 1, 2, \cdots, n, \\ \omega^T X_{j0} = 1 \\ \omega \geqslant 0, u \geqslant 0 \end{cases}$$

It can be proven that model (5.3) and model (5.4) are equivalent. The dual linear programming model of the linear programming problem has clear economic significance. Write the dual form of model (5.5) below:

$$\min \theta,$$

$$s.t. \begin{cases} \sum_{j=1}^{n} \lambda_j X_j \leqslant \theta X_{j0}, \\ \sum_{j=1}^{n} \lambda_j Y_j \geqslant Y_{j0}, \\ \lambda_j \geqslant 0, j = 1, 2, \cdots, n。 \end{cases}$$

3.2.3. Solution of the Model

According to the algorithm, the technical efficiency value and pure technical efficiency value are calculated using known data, and the sum of the two is calculated to predict the scale return of each city. When the scale return of the city increases, it indicates that the development of rural sports facilities in the next 10-20 years is good. The specific results of scale returns for each city are as follows:

From the above results, it can be seen that the scale returns of Hefei, Wuhu, Bozhou, Bengbu, Chaohu, and Lu'an will increase in the next 10-20 years, indicating that the development of rural sports facilities in these cities is good in the future and has a large room for improvement.

Table 5. Return to Scale by City

City	Technical efficiency value crste	Pure technical efficiency value vrste	Value scale	Return on scale
Hefei	1	1	1	Incremental
Mount Huangshan	1	1	1	unchanged
Wuhu	1	1	1	Incremental
Ma'anshan	1	1	1	unchanged
Anqing	1	1	1	unchanged
Huainan	1	1	1	unchanged
Fuyang	1	1	1	unchanged
Huaibei	1	1	1	unchanged
Tongling	1	1	1	unchanged
Bozhou	0.67	1	0.67	Incremental
Bengbu	0.885	1	0.885	Incremental
Chaohu Lake	0.781	1	0.781	Incremental
Lu'an	0.729	1	0.729	Incremental
Chuzhou	1	1	1	unchanged
Chizhou	1	1	1	unchanged
Suzhou	1	1	1	unchanged

However, the unchanged returns on scale in other cities indicate that the development of rural sports facilities in these cities will remain relatively unchanged in the next 10-20 years, mainly due to the relatively small room for increase in returns on scale compared to Hefei, Wuhu, Bozhou, Bengbu, Chaohu, and Lu'an in these provinces.

4. Conclusion and Discussions

As a major agricultural province, the construction of new rural community sports in Anhui Province is closely related to the image of new rural reform. It is a banner that reflects the appearance of new rural areas and an important way to implement the spirit of the 18th National Congress of the Communist Party of China and comprehensively achieve a moderately prosperous society. From the cultivation of internal sports culture to the construction of external sports venues and facilities, it requires a large amount of manpower, material resources, and financial resources, and can be scientifically managed, comprehensively coordinated, and establish a new direction for the development of new rural sports communities.

4.1. Building a New Rural Sports Industry Development Model

As an emerging industry in Anhui, the sports industry is still in its early and more spontaneous development stage, and its own value potential and distinctive advantages have not been fully explored and utilized. Compared with advanced provinces and cities, there is still a significant gap. Funding guarantee is the material guarantee for promoting the construction of rural sports facilities. Without sufficient funding support, sports facility construction is like a castle in the air. Currently, the funding for the construction of new rural sports facilities in Anhui Province is mainly disbursed by the provincial, municipal, and county governments, and this current investment model has its high efficiency. However, with the gradual increase in farmers' income, it is necessary to absorb market factors, absorb market investment in sports facilities in new rural communities, and obtain profits through charging. On the one hand, it can reduce the burden on the government, and on the other hand, it is also a beneficial attempt to industrialize sports in new rural communities.

4.2. Cultivating the Cultural Atmosphere of New Rural Sports Communities

The sports cultural atmosphere refers to the popularization of sports knowledge, the development of sports competitions and exchange activities, and the construction of sports facilities, venues, and environment in the new rural community. The cultural atmosphere of sports is a driving force for farmers.

The intrinsic motivation for participating in physical exercise is the guarantee for the development of new rural sports, and a good sports cultural atmosphere can gradually cultivate the interest of villagers in physical exercise. At present, there are difficulties in rural sports and cultural services, such as severe object loss, weak guidance force, single supply subject, and lack of targeted supply. Compared to traditional rural areas, the population density of new rural communities is relatively high, so they have greater advantages in sports and cultural promotion. Widely utilizing community bulletin boards, bulletin boards, banners, and the construction of sports venues to promote the new countryside.

4.3. Establish a Systematic Management System for Sports Facilities in New Rural Areas

The current sports management is mostly handled by village committees, without a specialized sports facility management organization, resulting in a relatively scattered management of sports facilities. There is insufficient follow-up in the standardized use, maintenance, and updating of venues and facilities. The construction of sports venues and facilities in new rural areas can draw on the management model of urban community sports, gradually endowing it with systematic management characteristics. The systematic rural sports management system refers to the specialized sports organization that manages the planning and selection of sports venues and facilities, as well as the maintenance of venues and facilities.

The village committee of the village community can fully establish a specialized sports management organization to strengthen management of the selection, installation, use, maintenance, and other aspects of sports facilities. At the same time, organize various sports exchange activities, sports competitions, and sports knowledge.

4.4. Provide Sports Venues and Facilities that are Suitable for the New Rural Community

Unlike traditional Xinzheng villages, new rural areas often possess many characteristics of urban communities, such as high population density, more scientific community management, and improved living standards of villagers. The construction of sports venues and facilities in the district should be different from traditional administrative measures. In terms of the types of facilities, targeted sports venues or facilities should be provided based on factors such as gender and age level. We can raise funds to build various and high-quality sports facilities through the joint construction of villagers.

Acknowledgments

This work was supported by the Anhui University of Finance and Economics scientific research project (ACKYB 21020).

References

[1] Anhui Provincial Sports Bureau. Data Bulletin of the 6th National Sports Ground Survey. http: //www.ahty.gov. cn/ xwzx-tzgg/article.jsp? article Id = 32539.

[2] Tian Yupu. Discussion on Establishing a Strategic Policy of Focusing on Rural Areas in Mass Sports in China in the Current Period [J]. Sports Culture Guide, 2007 (9): 9-11.

[3] State Administration of Sport. Opinions on Implementing the Farmers' Sports Fitness Project [EB/OL]（2006-04-23）[2012-03-15].

[4] Dong Fei. Research on the Current Situation and Countermeasures of Sports Ground Resources in the Construction of New Countryside [J] Journal of Henan Mechanical and Electrical College 2009(02).

[5] Yin Shiwei. Research on Diversified Construction of Rural Sports Facilities [J] Scientific and technological information (academic research) 2008(15).

[6] Zhang Hongjian. Analysis of Maximizing the Value of Rural Sports Facilities and Facilities - Also on the Construction of Rural "Fitness Centers" [J] Journal of Shandong Institute of Physical Education 2008(09).

[7] Xu Yueyun, David Hong, Xu Ke, Fan Baofang. Research on the Supply and Development Strategies of Rural Sports Public Products: Taking the Construction of Rural Sports Venues in Quanzhou, an Overseas Chinese Township as an Example [J]. Journal of Shandong Institute of Physical Education. 2008 (08).

[8] Qin Jiqiang. The Development Strategy of County Sports in Anhui Province from the Perspective of New Countryside [J]. Sichuan Sports Science. 2010 (04).

[9] Qin Jiqiang. Analysis of the Current Situation of County Sports in Anhui Province [J]. Journal of Anhui University of Science and Technology. 2010 (04).

[10] Wang Lingling, Gao Yu, Lin Jianjun. Investigation and Research on the Development of Rural Sports Facilities and Activities in Zhejiang Province [J]. Journal of Ningbo University (Humanities Edition), 2013, 26 (2): 119-121.

[11] Meng Weilin, Meng Fanqiang. Investigation on the Current Situation of Rural Sports Facilities in Hanzhong City [J] Technological information 2010(28).

[12] Guo Liping. Research on the Current Situation of Rural Sports Sites in Jilin Province [J] Journal of Jilin Normal University (Natural Science Edition) 2010(03).

[13] Liang Zhange, Wang Meifang. Research on the Current Situation of Rural Sports Resources in Anhui Province during the Urbanization Process [J]. Sports World (Academic). 2016 (08): 18-20.

[14] L. Liu, “Diversification strategy and its impact on enterprise value,” Economic Science, no.3, pp.68-74, 1997.

[15] J. Zhu, “Diversification strategy and business performance of listed enterprises in China,” Economic Research, vol.11, pp.54-61, 1999.