

## Retraction

# Retracted: Model Construction of Urban Public Sports Service System under the Background of Information Technology

### Mobile Information Systems

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1].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

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

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

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

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

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

### References

- [1] X. Wang and Z. Zhang, "Model Construction of Urban Public Sports Service System under the Background of Information Technology," *Mobile Information Systems*, vol. 2022, Article ID 5207857, 10 pages, 2022.

## Research Article

# Model Construction of Urban Public Sports Service System under the Background of Information Technology

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The planning and construction of urban public sports are an indispensable guarantee condition for implementing the national fitness plan, further improving the national physique and health status and improving the overall quality of the Chinese nation. With the improvement of Internet technology and various information technologies, urban public sports still publish service information such as consultation and competition through traditional information channels. The distribution channel is relatively single, the degree of informatization is not high, and the level of consulting service is low. In this paper, the model construction of urban public sports service system is studied under the background of information technology. During the period of frequency 30-40, on average, 26.8% of urban residents have participated in various sports training services; during the period of frequency 50-60, 28.6% have received professional fitness guidance services; and during the period of frequency 70-80, 27.5% have participated in professional exercise planning services. Through the model of urban public sports service system built under the background of information technology, the spread range is expanded, and the fixed participants are gradually formed. In this respect, we also enjoy the “technology dividend” of the popularity of network information technology and smart phones, which makes online booking service easier for the audience to use. We should pay attention to the diversified development of public sports service subjects, provide diversified public sports services, actively understand public sports demand, and penetrate the residents’ demand expression mechanism, so as to promote the public sports service system to form a structural state of benign interaction, joint participation, and dynamic communication.

## 1. Introduction

At present, the overall goal and direction of government reform is to establish a service-oriented government and provide efficient and perfect sports public services, which has long become the meaning of building a service-oriented government. Since the 16th CPC National Congress, the government has put forward the objectives and tasks of deepening the reform of administrative system, improving the government’s public service capacity and level, and strengthening the construction of service-oriented government from the perspective of building a well-off society in an all-round way and building a socialist harmonious society [1, 2]. Urban public sports is an important carrier of urban comprehensive functions. It can meet the living needs of residents in sports activities, sports,

and leisure. It is an important function that modern cities must have and improve [3]. The planning and construction of urban public sports are an essential guarantee for the implementation of the national fitness plan, further improving the national physique and health status and improving the overall quality of the Chinese nation [4, 5]. Under the background of the state vigorously promoting the construction of public sports service system, objectively and scientifically solving the imbalance between supply and demand of urban community public sports service and exploring the root causes and factors of the problem are not only the realistic choice for the sustainable development of urban community public sports service system, it is also the internal requirement of the country to “change the mode of sports development, build a sports power, perform service functions and protect

residents' sports rights" [6, 7]. In recent years, sports public service has been paid more and more attention, and the relevant theories of sports public service are constantly improving and developing. However, we have to admit that China's public service is still in its infancy [8]. As a part of social public service system, sports public service system is still in the stage of exploration and cognition. Especially in the context of the construction of a new socialist countryside, how to construct the rural sports public service system in the construction of a new countryside is still unknown [9, 10]. Public sports service is one of the important components of China's public service, which is related to people's physical health and national fitness. The national fitness plan 2016-2020 was signed and released by Premier Li Keqiang in 2016. It points out that national health is the basis for enhancing people's physique and ensuring people's happy life, which is not only related to China's economic and social development but also the display of China's comprehensive strength.

With the improvement of Internet technology and various information technologies, urban public sports still publish service information such as consultation and competition through traditional information channels [11]. The distribution channel is relatively single, the degree of informatization is not high, and the level of consulting service is low. Citizens' information technology literacy is generally high; "Guevara Movement" itself is the first media product in China to build a sports fitness information service platform, with originality and particularity [12]. At the same time, "Guevara Movement," as a private sports fitness information service platform with online booking of venues as its main function, has the attribute of "O2O closed-loop" network communication marketing. The subsections of the case study are divided into LBS technology application, venue resource distribution, activity participation groups, group communication mechanism, media usage, and audience feedback channels to analyze the communication mode of the platform [13]. Under the background of Internet, public sports services break through traditional ways and means and begin to combine Internet information technology to make people's sports life more intelligent, convenient, and modern.

The continuous upgrading of modern information technology and platform communication means also ensure that the masses can receive the necessary sports fitness information in time, make it convenient to book sports venues, meet sports partners, and participate in sports clubs. In addition, they can also provide value-added services, including monitoring and managing personal health and providing professional sports prescriptions [8, 14]. In terms of the current construction process of information technology means and platforms, it is urgent for the government to increase investment, build a service system model, cooperate with the construction of "smart city" in Shanghai, create a "smart sports" model, and reflect the public sports service; give full play to the social strength of enterprises, introduce social resources targeted, adopt BOT operation and management mode, and develop more scientifically and normally. At present, the general means for o2o service providers to solve the problem of user introduction is to strengthen social attributes, and physical fitness is one of the social activities with the lowest social threshold. Through

the model of urban public sports service system constructed under the background of information technology, the scope of communication is expanded, and a fixed group of participants is gradually formed. In this regard, it also enjoys the "technology dividend" of the popularization of network information technology and smart phones, so that online booking services can be more easily used by the audience.

This paper studies and innovates the above problems from the following aspects:

- (1) Put forward the model of urban public sports service system under the background of information technology. Collect the indicators of urban public sports service and establish the model of urban public sports service system. Through model calculation, the scope of public sports services in a city or a certain area is obtained, and the layout of public sports services in cities is evaluated to build a perfect layout system of public sports services. On the one hand, it can improve the information technology supply level of urban public sports, on the other hand, it can provide decision-making basis for the rational planning of urban public sports
- (2) Construction of urban public sports service system under the background of information technology. Urban public sports service is a complex system. From the point of view of system dynamics, there are many elements in the public sports service system under the information technology. All the elements are variables needed in the process of building the model. They can be divided into four categories: state variables, rate variables, auxiliary variables, and constants. Among them, the state variable has strong stability, which changes depending on the change of inflow and outflow variables on the basis of its own initial value. It is the description and representation of the system state, and it is also the core variable that should be paid attention to when building the system dynamics model

The paper is divided into five parts, and the organizational structure is as follows.

The first chapter introduces the research background and present situation of urban public sports and puts forward and summarizes the main tasks of this paper. The second chapter introduces the related work of urban public sports at home and abroad. The third chapter introduces the concept and model of information technology system. The fourth chapter introduces the realization of building the model of urban public sports service system under the background of information technology and compares the performance of the system through experiments. The fifth chapter is the full text summary.

## 2. Related Work

*2.1. Research Status at Home and Abroad.* Zeng put forward the concept of "public service": "any activity that must be regulated and controlled by the government because it is

inseparable from the realization and promotion of social groups is a public service. Only it has the characteristics that it cannot be guaranteed unless it is intervened by the government.” In the late 20th century, with the rapid development of global economy and informatization, the bureaucratic system established by the United States, Britain, and other western countries during the industrial revolution can no longer meet the development needs of today’s informatization, which seriously restricts the development of social economy [13]. Riley et al. put forward that the influencing factors of urban community public sports service system mainly include urban community public sports service content factor, urban community public sports service subject factor, urban community public sports service object factor, urban community public sports resource cost factor, and urban community public sports service system construction factor socio economic and cultural environmental factors [15]. Hordvik et al. proposed that the government can use the spatial analysis technology of GIS to comprehensively analyze the population, environment, and other factors around sports facilities and calculate the comprehensive radiation capacity index of public sports services, so as to provide decision-making basis for reasonable layout and planning of urban public sports service system [16]. Agranoff proposed that urban public sports service is the general name of the government through the establishment of public sports services and the provision of sports activities and services to meet the needs of social public sports fitness. From another perspective, whether urban residents can easily and quickly find public sports services according to their personal interests is an important factor affecting the layout and location of urban public sports [17]. Jiang et al. put forward the new public service theory. The main viewpoints and ideas have been significantly improved compared with the previous ones. After the new public service written by Danhart and his wife entered China, it has gradually attracted the attention of domestic academic circles [18]. Park proposed the evaluation model of urban community public sports service system, which mainly includes the evaluation index system of three primary indicators, nine secondary indicators, and 23 tertiary indicators, including the main body of urban community public sports service, the content of urban community public sports service, and the object of urban community public sports service [19]. Riley et al. put forward the concept that sports public service is similar to urban public service, community public service, and rural public service, but sports does not belong to the same category with cities, communities and villages [15]. Hordvik et al. put forward that if the service area of urban public sports is defined, it can reflect the service radiation ability of public sports service system and become an important index for the government to measure and evaluate public sports [16]. Batem. It is proposed that the construction of public sports service system in urban communities should combine the functions of relevant influencing factors and adapt to local conditions. In addition, the establishment and improvement of the evaluation and supervision system can timely diagnose the state of the public sports service system in urban communities, feedback the system evolution information, and provide guarantee for the healthy and sustain-

able development of the public sports service system in urban communities [20]. He put forward that “public sports service system is the sum total of various public welfare sports institutions and services formed by government leading and social participation to meet people’s sports needs and protect people’s sports rights and interests.” The sports public service system is defined as the general name of the system and system which is provided by the public sector with government departments as the main body and provides public sports products and services to the citizens for the purpose of meeting the basic sports life needs of the citizens [21].

*2.2. Research Status of Urban Public Sports Service System under the Background of Information Technology.* This paper studies the model construction of urban public sports service system under the background of information technology. The research on sports public service is still in the preliminary exploration stage, focusing on the basic theoretical research of sports public service, such as the construction and improvement of sports public service system and the research of sports public service system. As a complex giant system, the audience of urban community public sports service system has many factors, and the relevant influencing factors determine the evolution and development of the state of urban community public sports service system. The indicators of the public sports service system include the type, scale, and supporting services of sports, which mainly reflect the characteristics of the public sports service system. The more types of sports, the more people participate in sports. This can also explain to a certain extent that the diversity of urban residents’ public sports service system model and the factor of spatial distance are no longer a restrictive factor of absolute importance. In addition, the vigorous development of public transport in recent years has also created more convenient conditions for urban residents to travel, which has an impact on the spatial choice of sports activities of urban residents’ public sports services to a certain extent. The first stage of system model design is human activity system analysis. Before that, we should understand the objectives of the organization, the relationship between members in the organization, and the correlation with the outside world and find out the root of the conflict. When we design the system model at the beginning, the system analyst defines the system goal, even if this definition is so vague that it needs to be refined later. We should pay attention to the diversified development of public sports service subjects, provide diversified public sports services, actively understand public sports needs, connect with residents’ demand expression mechanism, and promote the public sports service system to form a structural state of benign interaction, joint participation, and dynamic communication.

### **3. Concept and Model of Information Technology System**

The word information technology system is not invented by modern people, and the systematic thought has long been grasped by the ancients, but it was not until the middle of the century that this spontaneous empirical thinking gradually

changed into conscious scientific thinking. Von Bertalanffy was the earliest, the most comprehensive, and the most profound one in expounding the concept and thinking of system. Bayes put forward the core concepts of open system theory and general system in the early stage, and Bayes defined the system as “a system is a complex of elements in interaction.” At present, with the rapid development of network information technology, new scientific and technological information technology is constantly infiltrating into all fields of society. The arrival of the Internet information age has brought about great changes in people’s lifestyle, changed people’s sports behavior, and provided new technologies and means for government public sports services. There is a certain correlation between different components in the system; multicomponent and correlation create the unity of the system, or unity; based on diversity, relevance, and integration, the integrity of the system is determined. In a word, the key to research and control the system lies in grasping the order, structure, function, and dialectical relationship of the system as a whole. Public sports service is one of the important components of public service in China, which is related to people’s physical health and national fitness. The National Fitness Program 2016-2020 was signed and released by Premier Li Keqiang in 2016, which pointed out that national health is the foundation of enhancing people’s physique and ensuring people’s happy life, which is not only related to China’s economic and social development but also the display of China’s comprehensive strength. The concept is made according to the root definition, not considering the specific details of the system, nor the repetition and description of the actual running system. The root definition describes what the system is, while the conceptual model describes what the system must do. Generally speaking, the function and significance of conceptual model can be illustrated by common facts in reality.

The construction of urban public sports services and other facilities is relatively perfect. Most of the original data of the dynamic model simulation of public sports services system come from the relevant questionnaire survey data of relevant working departments and residents in cities in the middle and lower reaches of the Yangtze River, and some of the data come from the national Bureau of statistics, the Sports Economic Department of the State Administration of sports, and the China Statistical Yearbook of the National Bureau of statistics, another part of the data is obtained from the data classification and sorting in the process of interviewing residents. The simulation of system dynamics model is to simulate and simulate the future development trend, not the calculation of specific data. In this way, the processing of data will not affect the effect of system dynamics simulation analysis too much. The planning department mainly refers to the core decision-makers and macromanagement departments of the government. It is the highest decision-maker of sports public service. The main task is to plan the strategies, levels, principles, and objectives of sports public services according to China’s national conditions and policies, as well as the area, finance, population, and other resources of each administrative region. The model of urban public sports service system is shown in Figure 1.

The model mainly includes the following aspects.

- (1) Environmental planning inside and outside sports public service
- (2) Determine the policies, objectives, and standards of sports public service
- (3) Macroscopically deploy the production and supply arrangement of sports public service products
- (4) Establish and improve sports organizations and departments at all levels
- (5) Establish and improve the performance evaluation and monitoring system of sports public service

In the analysis and modeling of urban public sports services, understand the current situation and demand of existing urban residents engaged in sports activities, establish the matching relationship submodel between sports population distribution and facility services, and dynamically analyze the coverage of urban public sports services with reference to demand points and supply points. The weight of the population engaged in public sports in each region is calculated by the intersection of  $(\omega_1, \omega_2, \omega_3)$  indicators. Record as

$$PN = \sum_{i=1}^3 \omega_i P_i. \quad (1)$$

According to the population number  $(SP_1, SP_2, \dots, SP_n)$  engaged in sports activities in the determined area, compare it with the population number  $(PN_1, PN_2, \dots, PN_n)$  engaged in sports activities, calculate the coincidence percentage, and record it as

$$P_i = \frac{SP_i}{PN_i}. \quad (2)$$

And get the per capita income level in the circle, set the investment in sports activities to account for 5% of the per capita income, and compare the obtained investment value  $(S_1, S_2, \dots, S_n)$  in sports activities with the charging standard  $S$  for sports services, calculate the percentage, and record it as

$$C_i = \frac{S_i}{S}. \quad (3)$$

According to the capability index system, calculate the time  $(t_1, t_2, \dots, t_n)$  between two points, which is compared with the time upper limit  $T$ . Weight  $(\phi_1, \phi_2, \dots, \phi_n)$ . Record as

$$T_i = \phi_i \frac{t_i}{T}. \quad (4)$$

Recalculate the spatial distance between sports services and each network intersection. Record as

$$d_i = R \times P_i \times C_i \times T_i. \quad (5)$$

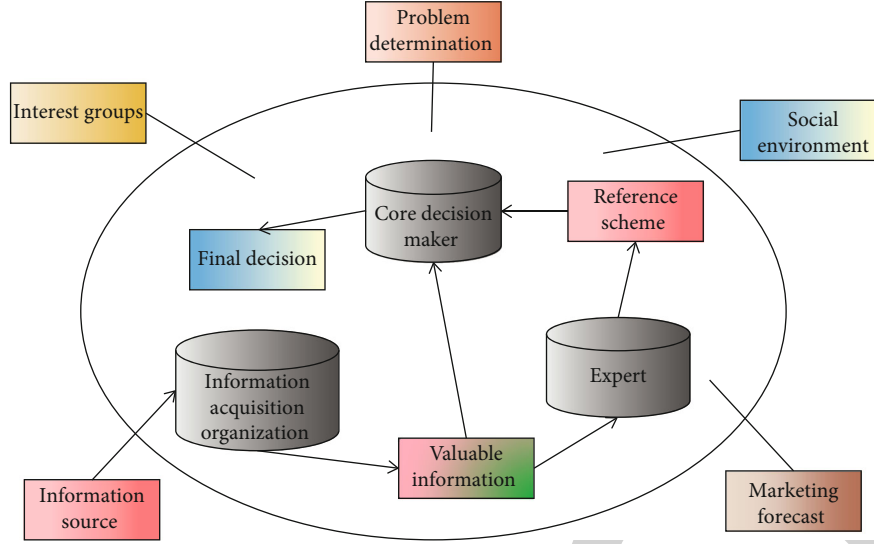


FIGURE 1: Model of urban public sports service system.

According to the spatial distance, the spatial location of the network intersection points is redetermined, and these intersection points are fitted and connected to form the radiation capacity range of sports services. The average value of the spatial distance between sports service and network intersection can be solved as the radiation ability index of sports service. Record as

$$CP = \frac{\sum_{i=1}^n d_i}{n}. \quad (6)$$

The feature vector is  $(w_{t_1}, w_{t_2}, \dots, w_{t_n})$ . TF-IDF is used to define the weight of each feature item as follows

$$w_{t_k} = TF_{t_k} \times IDF_{t_k} = \frac{tf(t_k, p)}{\sum_{i=1}^n tf(t_i, p)} \times \log\left(\frac{N}{n_k}\right). \quad (7)$$

$tf(t_k, p)$  is the frequency of feature  $t_k$  in  $P$ ,  $N$  is all the numbers in the set, and  $n_k$  is the number of  $t_k$ . Because feature  $t_1, t_2, \dots, t_n$  is different from each other, we can regard vector as  $n$ -dimensional space vector. Therefore, the similarity can be expressed by the distance between vectors, and the similarity of document  $d_i, d_j$  can be defined as between feature vectors.

$$\text{sim}(d_i, d_j) = \cos \theta = \frac{\sum_{i=1}^n w_{t_k} \times w_{t_k}}{\sqrt{|\sum_{k=1}^n w_{t_k}^2| |\sum_{i=1}^n w_{t_k}^2|}}. \quad (8)$$

Finally, the query results are output according to the order of similarity.

Therefore, the probability of each visit is the PageRank value, and its calculation formula is as follows

$$PR(A) = (1 - d) + d \times \sum_{i=1}^n \frac{PR(P_i)}{C(P_i)}, \quad (9)$$

where  $PR(A)$  is the page level,  $d$  is the attenuation coefficient bounded by  $(0, 1)$  interval, generally about 0.85,  $P_1, P_2, P_n$  is other sports services pointing to urban public sports  $A$ , and  $C(P_i)$  is the number of links pointed out in sports service  $P_i$ .

Therefore, we can introduce the weighting coefficient  $\lambda$  to represent the weighting parameters of urban public sports in different positions in the system. At this time, the vector space model can be expressed as

$$W_i = \lambda \times tf_i \times \log\left(\frac{N}{n_i} + 0.1\right) + \frac{tf_i}{l_i}, \quad (10)$$

where  $tf_i$  is the characteristic term frequency;  $N$  is the total quantity;  $n_i$  is the number of characteristic items  $W_i$ ;  $l_i$  is the length, and  $tf_i/l_i$  is used to express the ability of the text to represent the content of urban public sports services.

The causality diagram and stock flow diagram of the supply of public sports services under the information technology system, and edit the relevant equations of system dynamics to construct the system dynamics model of the relevant supply content of public sports services in China. For the public sports service system, the supply of public sports equipment and community sports population is the core state variables in the whole system, which reflects the overall state of public sports service. Urban sports public service planning department is the relevant organization of the government administrative department. It undertakes many macro tasks, such as the formulation of standards and objectives of urban sports public service, the planning of environment, and the selection and implementation of working methods and plans. The blood of the effective operation of urban sports public service is related to the key to the establishment and improvement of sports public service. However, whether the funds can play a greater role reasonably and effectively is the focus of the planning department and

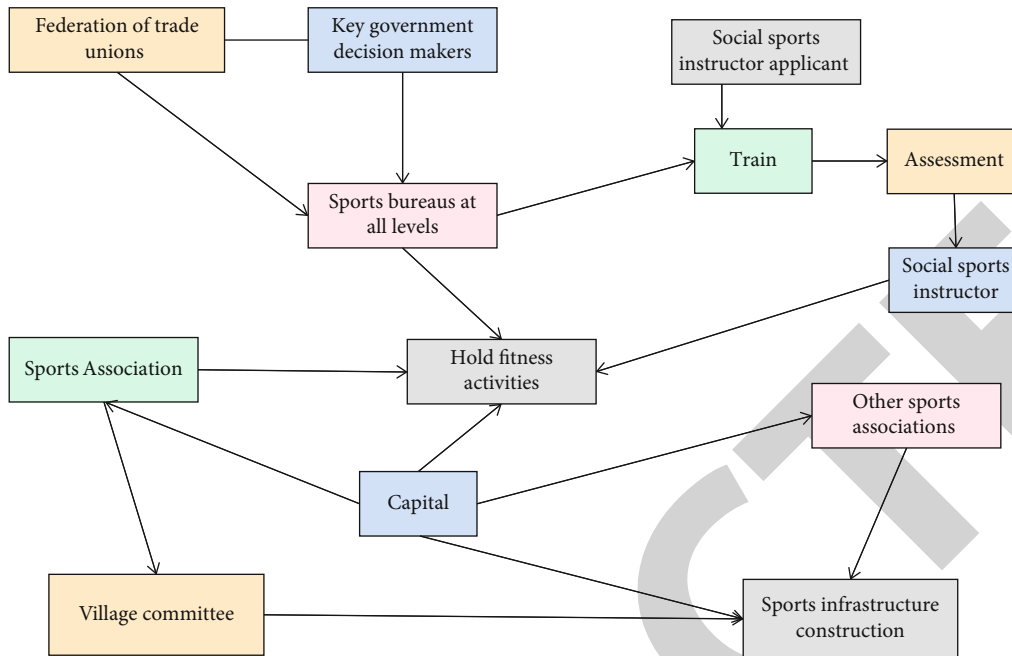


FIGURE 2: Rich map of urban sports public service.

management organization. The rich map of urban sports public service system is shown in Figure 2.

Public sports service is still in its infancy, and relevant institutions and organizations that specialize in receiving feedback information from the people are not yet popular. However, according to the questionnaires fed back to several sports bureaus, most regional sports bureaus have set up departments that specialize in receiving feedback information from the public, and some sports bureaus entrust some relatively idle departments to take care of this business, and the proportion of relevant opinions and complaints is relatively high.

#### 4. Realization of the Model of Urban Public Sports Service System

*4.1. Urban Public Sports Service System under the Background of Information Technology.* The urban community public sports service system includes three subsystems: the main body of urban community public sports service, the content of urban community public sports service, and the object of urban community public sports service, which jointly lead the development and evolution of urban community public sports service system. Community public sports service objects determine the content of public sports services provided by public sports service subjects. On the contrary, the content of public sports services provided by public sports service subjects in urban communities under the background of information technology affects public sports service objects. In terms of the legal system construction of equalization evaluation of sports public services, France explicitly stipulates the cost, personnel composition, and functional organization of equalization evaluation of sports public services, which promotes the standardization

and proceduralization of equalization evaluation of sports public services. The United States government requires that a planning steering committee be set up before social sports policies are formulated to evaluate whether mass sports policies can guarantee most sports public interests. In the layout system of urban public sports services, the government, sports administrative departments, nonprofit sports organizations, and profit-making sports organizations are the main providers of public sports facilities and services, providing sports services and sports events necessary for the market through information technology. Urban residents who enjoy sports rights have a wide range of public sports needs, which can be regarded as the demand objects of urban public sports services. Because western countries have long paid attention to the development of mass sports and long foreseen that public sports services are related to the most basic interests of the masses, it is difficult to meet the sports needs of the masses only by relying on the government's single-channel supply, and it is difficult to guarantee the direction only by giving up the leadership completely and relying on the market operation, so most western countries generally adopt the mode of coordinated operation between the market and the government.

Public sports service is a complex system. From the perspective of system dynamics, there are many elements in the public sports service system under information technology. All elements are the variables needed in the process of constructing the model. They can be divided into four categories: state variables, rate variables, auxiliary variables, and constants. Among them, the state variable has strong stability. On the basis of its own initial value, it changes depending on the changes of inflow and outflow variables. It is not only the description and representation of the system state but also the core variable that should be paid attention

to in the construction of the system dynamics model. Due to the diversification of public sports demand, the supply subject is inevitably required to provide rich public sports services. The rational supply of urban public sports services can be ensured by establishing the layout system of urban public sports services. Collect the indicators of urban public sports service and establish the model of urban public sports service system. Through model calculation, we can get the scope of public sports services in a city or a region, evaluate the layout of urban public sports services, and build a perfect public sports service layout system. On the one hand, improve the supply level of urban public sports information technology, on the other hand, provide decision-making basis for the rational planning of urban public sports. Too much emphasis on the division of authority in the decision-making process of sports and the most common result of the lack of centralization of authority in the decision-making process of sports. If we want to build an efficient decision-making mechanism of sports public service under information technology, we must deal with the division of authority and the definition of functions. The division of decision-making power must determine the objectives, quantify and refine, pay attention to the division of rights with other systems, relevant leaders, and main departments involved in decision-making, and combine vertical decentralization with horizontal decentralization.

**4.2. Experimental Results and Analysis.** This experiment compares the current residents' choice of hotline to reserve sports venues. Because it is convenient and fast, it can save residents a lot of time to reserve sports venues. However, with the progress of science and technology, some mobile phone software for sports venue reservation, mobile phone short message, and mobile phone client are also gradually emerging in the market, and the reservation mode of Internet accounts for 65.6%. With the gradual improvement of the Internet, using the Internet as a means of sports venue reservation will become the mainstream way of sports venue reservation. Therefore, at the level of improving sports venue services, we should also keep up with the pace of science and technology, so as to further meet the sports needs of the public. The experimental results are shown in Table 1.

Residents tend to choose the public welfare opening time of public stadiums and gymnasiums from 6:00 to 10:00 in the evening, of which the choice of the time period from 6:00 to 8:00 accounts for 42.94%, and the choice of the time period from 8:00 to 10:00 accounts for 28.5%. Due to the tight time in the daytime on weekdays, urban residents naturally hope that the public welfare opening time of public stadiums and gymnasiums can be increased in the evening. The demand for public welfare opening hours from 6 a.m. to 8 a.m. is also relatively high, accounting for 39.12%. It can be seen that these two time periods are the peak time periods of residents' exercise. Stadiums and gymnasiums should adopt the price difference management mode in peak time in charge management, so as to balance the flow of residents participating in stadiums and gymnasiums' exercise. The experimental results are shown in Table 2.

In this experiment, the present situation of sports fitness guidance services in public stadiums and gymnasiums was

TABLE 1: Demand of urban residents for reservation methods of public sports venues.

Type	Frequency	Percentage
Hotline	311	100%
Internet	204	65.6%
SMS	35	10.7%
Mobile client	20	6.72%
Other ways	13	3.83%

TABLE 2: Residents' demand for public welfare opening hours of public sports venues.

Period of time	Frequency	Percentage
6: 00 am to 8: 00 am	121	39.12%
10: 00 to 12: 00 a.m.	33	10.91%
12: 00 to 2: 00 p.m.	26	8.64%
4: 00 to 6: 00 p.m.	77	25.2%
6: 00 to 8: 00 p.m.	133	42.94%
8: 00 to 10: 00 p.m.	88	28.5%

compared three times, in which the items were replaced by A, B, C, D, and E; A refers to various sports training services; B refers to professional fitness guidance services; C refers to professional exercise planning services; D refers to sparring services; and E refers to providing sports prescription services. The experimental results are shown in Figures 3–5.

As can be seen from Figures 3–5, in the process of participating in sports activities in public stadiums and gymnasiums, an average of 26.8% of urban residents participated in various sports training services during the frequency of 30–40, an average of 28.6% received professional fitness guidance services during the frequency of 50–60, and an average of 27.5% participated in professional exercise planning services during the frequency of 70–80. Under the background of the continuous advancement of urbanization and the continuous improvement of social living conditions, the residents' awareness of body-building in urban communities has increased significantly, and the demand for public sports is increasing day by day, showing the characteristics of pluralism and diversity. However, the development and supply of community public sports service resources are relatively insufficient, which has always been the shackle of the development of urban community public sports service system.

In this experiment, the residents' demand for sports fitness services in public stadiums and gymnasiums is compared twice. The items are replaced by a, B, C, D, and E. A refers to various sports training services, B refers to professional fitness guidance services, C refers to professional exercise plan formulation services, D refers to training services, and E refers to the provision of sports prescription services. The experimental results are shown in Figures 6 and 7.

As can be seen from Figures 6 to 7, urban residents have a relatively high demand for sports prescription services, accounting for 42.3%. The demand for training services



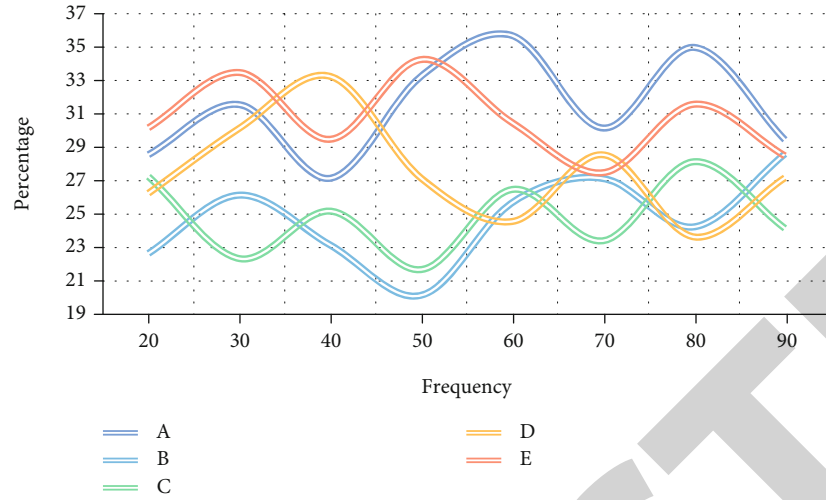


FIGURE 3: Current situation of sports fitness guidance service in public sports venues.

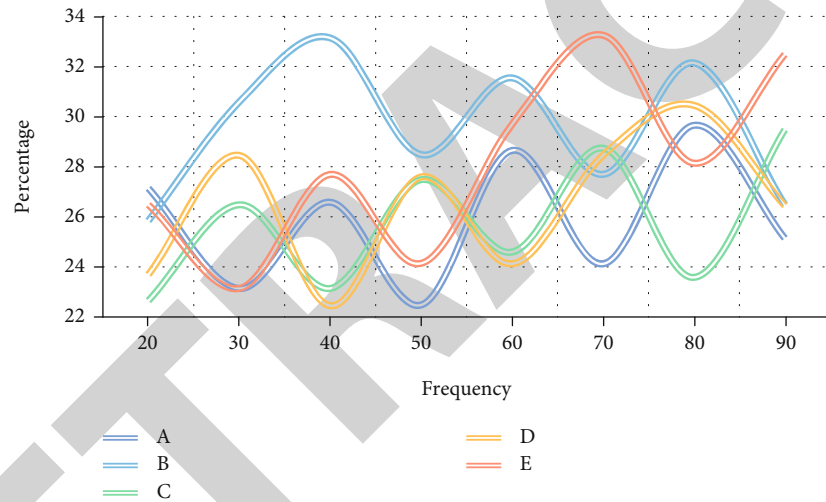


FIGURE 4: Current situation of sports fitness guidance service in public sports venues.

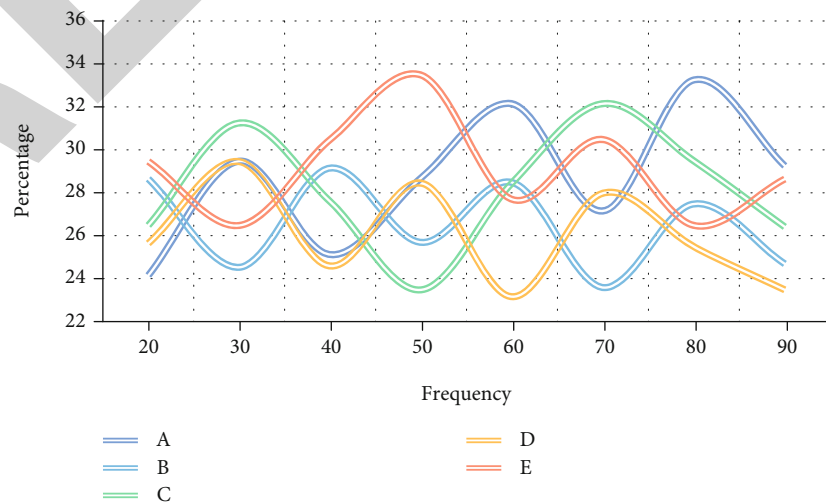


FIGURE 5: Present situation of sports fitness guidance service in public sports venues.

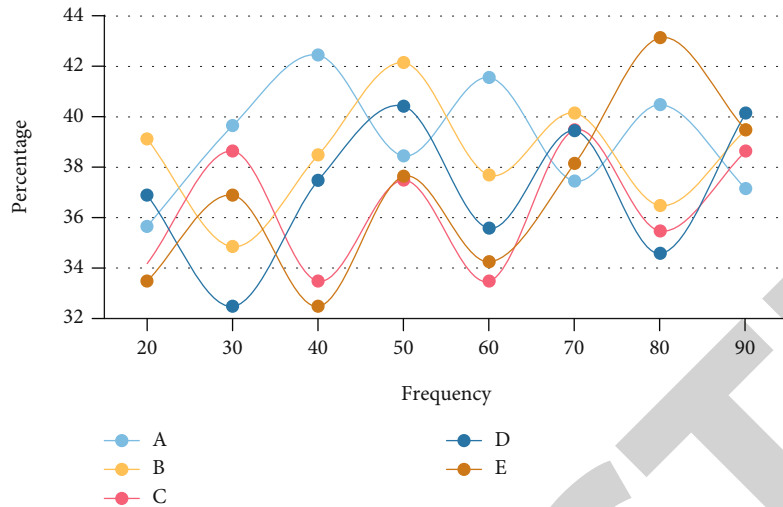


FIGURE 6: Residents' demand for sports fitness services in public stadiums and gymnasiums.

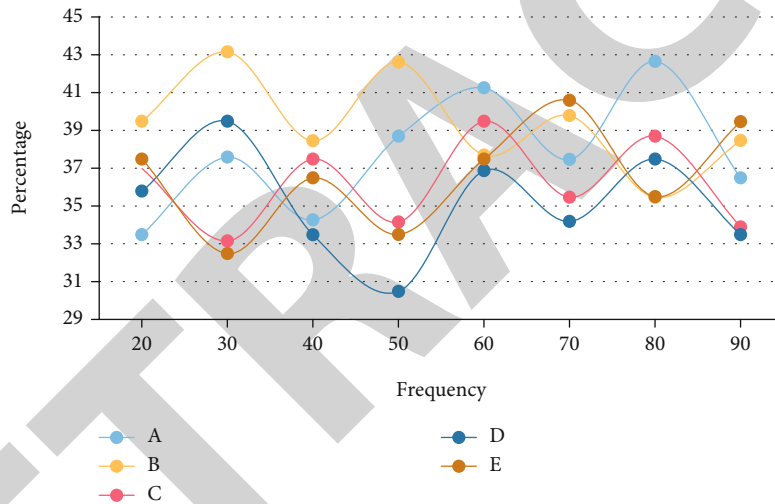


FIGURE 7: Residents' demand for sports fitness services in public stadiums.

accounted for 41.3%. The demand for professional exercise plan making service accounts for 40.3%, the demand for professional fitness guidance service accounts for 39.3%, and the training service for various sports can also reach 37.7%. Among them, the highest proportion is the provision of sports prescription services. The construction of sports public service system model analyzes the process of sports public service, the relationship and interaction between various processes, the participants and influencers of sports public service, and their impact on sports public service. The definition of stakeholders and subsystems of the system is conducive to further improve the sports public service system.

### 5. Conclusions

In the supply of public sports services, under the guidance of the scientific outlook on development of information technology, against the background of the structural reform of

supply measurement, and based on the development status of China's public sports service supply, coordinate and deal with various factors and indicators in the process of public sports service supply, so as to promote the coordinated and sustainable development of China's public sports service supply under information technology. Under the background of the growth of public life, sports supply system with new characteristics has been formed to meet the needs of the people in the new era. To improve the public sports organization system is to change from "unauthorized form" to "authorized service" public sports organizations, so as to improve the service ability of public sports organizations. Through the subjective improvement of information technology to meet the people's sports fitness needs and promote the mass sports fitness consumption. In the process of participating in sports activities in public stadiums and gymnasiums, an average of 26.8% of urban residents have participated in various sports training services during the frequency of 30-40, 28.6% have

obtained professional fitness guidance services during the frequency of 50-60, and 27.5% have participated in professional exercise plan formulation services during the frequency of 70-80. Urban sports public service is still dominated by the leading role of the government, so the established urban sports public service system focuses on the functional role of the government and less on the allocation role of the market. With the increasing maturity of urban sports public service under information technology, the role of market economy will become larger and larger and eventually replace the government's leadership. Therefore, the market-oriented operation of urban sports public service is an important research direction in the future. If we want to build an efficient decision-making mechanism of sports public service under information technology, we must deal with the division of authority and the definition of functions. The division of decision-making power must determine the objectives, quantify and refine, pay attention to the division of rights with other systems, relevant leaders, and main departments involved in decision-making, and combine vertical decentralization with horizontal decentralization.

### Data Availability

The data used to support the findings of this study are included within the article.

### Conflicts of Interest

No competing interests exist concerning this study.

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