

# *Development Status of Basketball and other Ball Sports Based on Fog Computing*

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**Keywords:** Ball Sports, National Fitness, Basketball, Mass Sports

**Abstract:** Throughout the international basketball arena, the professionalization of basketball has developed rapidly, and the level of competition has been continuously improved. However, there is still a certain gap between China's basketball competition level and the world's basketball powers. The number of outstanding basketball talents is small, the training level of sports teams at all levels is not high, and the contradiction between competition and training is becoming more and more prominent. This paper analyzes and researches the development status of basketball and other ball sports based on fog computing. This paper firstly analyzes the relevant content of full name fitness, and analyzes the development of national fitness in ball sports. Then, the fog computing method is studied, and finally the development of ball games in national fitness is experimentally discussed. The experimental results of this paper show that among the general basketball participants, trade unions and sports associations accounted for 28.27% of the total number of surveys, followed by cultural and sports centers, which accounted for 25.6% of the total number of surveys. Finally, there are the district sports departments and sub-district offices, accounting for 13.99% of the total number of surveys. This paper makes a comprehensive investigation of the development status of public basketball, deeply analyzes the factors affecting the development of public basketball, and puts forward corresponding countermeasures, aiming to provide theoretical basis and practical reference for the healthy development of public basketball.

## **1. Introduction**

In the last 60 years since the founding of the People's Republic of China, China has made great strides in sports [1]. With the strong development of multi-sport activities, the growing number of people participating in sports, the great improvement of physical and mental health, the national fitness industry has been recognized and supported by society, the content and the masses. Sports

activities are more colorful, the fitness conditions of many sports have improved and sports improve the overall quality of an individual and promote social ownership. The culture of the spirit of justice and material culture played an important role [2]. In order to promote the comprehensive development of society, the development of national fitness and competitive sports and the improvement of the national standard of health and quality of life, the first State Council announced an important national decision - the language of the National Conference on Fitness Program in 1995. As part of the development of many ten-year programs, the State Council has laid a solid foundation for a strong sports nation and the physical condition of everyone in the city of China is progressing well [3]. The new era with partner Xi Jinping as the foundation, social development and demand raises the highest demands on national health. On June 23, 2016, the State Council announced the Revolution of the State Council for the Distribution of the National Gymnastics Program (2016-2020) (Five-Year Plan), with the aim of building a prosperous society along the way. , Opening a new home and continuous creation of national fitness programs with everyone. The national development spaces of a prosperous society should be coordinated to understand the sustainable development of national fitness by promoting the culture of sport, managing the construction of stadiums and facilities, developing multiple projects, facilitating exchanges and opening up development and focusing on the development of key groups and key development projects. At present, China's economic construction and social development place new and high demands on the overall quality of people [4]. However, the current state of the national fitness service may not meet the requirements of social renewal. Popular knowledge of fitness is not strong enough, the development of many sports activities is not widespread, the number of people who regularly participate in physical activity is not enough, there are also gyms and facilities already available. after opening to society and meetings The needs of the masses for the exercise of the physical, scientific and technical management and control of the national gym are also backward, and the relevant rules and regulations are not sufficient. The national fitness management system and the operating system, which is good and suitable for the social media market system, are also explored. These problems should be addressed gradually with the development of economic and social activities [4]. In order to further enhance the human physique and meet the needs of China's socialist modernization, effective measures must be taken to implement the national fitness program and the development of the gym [5].

There is a close relationship between the law on mass health and the socialist construction. It is an important chapter for the renewal. National physical condition has become a way of regulating daily life and leisure at this stage, and to some extent, it affects the quality of human life [6-7]. Based on this, a person's knowledge of fitness can be improved. Health professionals have considered health, fitness and other aspects. In some developed countries, the most important point is that many people are beginning to realize that those who exercise regularly in moderation can change their physical strength well, but without this exercise, many will have physical stress. In fact, there is a connection between people and forms of fitness and it sustains modern people, especially their psychology and psychology. Exercise is a type of activity that can improve a person's well-being and be reflected in the population, so fitness also means that a person should be free of it [8]. Enjoying all kinds of activities, human intelligence and cognitive ability can be well developed. At the same time, human and social development and the development of human and nature can be a good predictor [9-10]. In fact, fitness does not exist only as a social activity, but also as a culture. In the new era of social construction, the concept of national fitness will be constantly updated. People have asked more questions about life, that is, people not only ask more questions about material life, but also about life as a whole. That is, they should always improve the quality of

human life with a lot of ingenuity and acceptance of sport around the world. As a way to improve this work [11-12]. The National Fitness Program pursues a brand new and scientific lifestyle, which can significantly improve a person's happiness and quality of life. It is also an important development platform for ensuring the health of the population, but also a sustainable way to improve the physical health of all. Following the launch of the National Fitness Program, public awareness of fitness for all could be further improved and fitness for all could be improved as a new way of life. the development of fitness and the sports industry and sports culture have a positive impact on promoting the development of fitness for all · Improving physical conditions such as gyms and facilities for all makes it possible to develop fitness for all. In addition, as a new profession, social fitness educators provide talented support for the development of the national fitness goal and allow the national fitness goal to evolve into a scientific and lifestyle approach [13-14].

From the previous research review, we can find that basketball is one of the most popular sports among residents in the national fitness activities. The exercise effect and value of basketball have been generally recognized [15-17]. The development of basketball in mass fitness has also received the attention of domestic scholars. Through consulting the relevant literature, we find that there are many studies on the development status of basketball among the masses. Zhang Xiaoping analyzed the development of the mass basketball in Shijiazhuang City in his book *The Present Situation and Development Strategy of the Mass Basketball in Shijiazhuang City* [18]. Shijiazhuang has a good mass base and a large number of people participating in basketball, which is on the rise year by year. Basketball players are mainly male, younger and motivated by exercise and rest [19-21]. But in the study, the disadvantages of the mass basketball sport in Shijiazhuang are also exposed, which are mainly manifested in the imperfect policies and regulations of the administrative departments, the outdated venues, equipment and facilities, etc., which can not meet the needs of residents for basketball fitness exercise. The main factors restricting residents' participation in basketball are cultural background, urban economic development, climatic and geographical conditions, government management system, and people's awareness of participation. Among them, the consciousness of mass participation is the main reason. The countermeasures for the development of mass basketball in Shijiazhuang mainly include strengthening public opinion propaganda through the government and sports management departments, conducting correct guidance, providing good material conditions and forming a good mass basketball atmosphere. Develop the forms of basketball activities and develop diversified recreational competitions. Li Zhenya's "Research on the Present Situation and Influencing Factors of Urban Mass Participation in Basketball in Henan Province--Taking Shangqiu, Luoyang, Xinyang, Jiaozuo and Xuchang as Examples". Taking five cities in Henan Province as subjects of investigation, he analyzed the current situation of urban basketball development in Henan Province, and conducted factor analysis to draw the conclusion of participants, venues and facilities, development environment, weather and climate, external conditions, competition. Media factors and organizational management are the factors influencing the development of Henan mass basketball [22].

Basketball, as a popular sport, has developed well into public fitness activities in recent years. The value of basketball fitness is also recognized by all kinds of fitness teams in the community and popular basketball in some small and medium towns has gradually become popular. By watching basketball games or participating in basketball games, a person can have a real passion for basketball and achieve a position of both fitness and enjoyment. This book explores the current state of development of multiplayer basketball, analyzes in depth the factors that influence its development and presents relevant methodologies, in order to provide a scientific basis and

practical report on the development, the health of basketball too.

## **2. National Fitness and Ball Sports**

### **2.1. Relevant Contents of National Fitness**

#### **(1) The Key Objects of National Fitness**

The National Fitness Program is aimed at the people of the whole country and focuses on adolescents and children.

1) Promoting the health of young people and children in relation to national development and national prosperity. The whole society should be willing to take care of their physical condition and health. Schools of all levels and types should fully implement the Party curriculum policy and try to do a good job in the school curriculum. It is necessary to teach students in physical education in life to develop knowledge, skills and exercise habits. We will continue to do a good job in the physical education driving system for the entrance exams, compile and improve regularly and progress further. Schools for the blind, deaf and mentally handicapped should focus on developing students' sports activities. We need to create conditions that are effective in solving the problems of physical education teachers, funds, spaces and resources.

2) Features, facilities and facilities should enhance professional and professional sports work and perform many, healthy and civilized sports activities and fitness activities for staff and staff according to individual, time and local conditions.

3) Promotion of local sports. Local offices should strengthen the establishment of sports activities, play the full role of resident councils and grassroots organizations and do a better job of local sports activities. Sports management departments should provide support and guidance.

4) Improving the physical and mental health of farmers is an important part of the development of the rural community, fully playing the role of village councils and sports teams of farmers at all levels, and working with cultural centers to do enough good work in the countryside. exercise. We will continue to work on selecting advanced sports in China and promoting the development of rural sports.

#### **(2) The Task and Objectives of National Fitness**

The goal of the National Fitness Program by 2010 is to achieve the collective development of the country's sports and economic and social programs, fully improving the physical condition and state of health of the Chinese nation and basically the creation of a national fitness program with Chinese characteristics. As a matter of questioning the sanctity of the second step of the socialist reform process, we must be passionate about developing national capacity. By the end of this century, the number of people regularly participating in sports will have to increase in many sectors with different levels of economic, social and sporting development. The physical condition of people has increased significantly. The time and ability of people to participate in sports has gradually increased. The environment and conditions of multi-sport fitness activities have been significantly improved. As a matter of establishing a social market economy, the reform of sport should be deepened. At the end of this century, a national fitness management system will be established in line with the socio-economic system, a system of broad participation and development will be established and the basic structure of the fitness system at national, social, scientific, industrial and industrial level will be established. legalization.

#### **(3) Development of National Gymnastics**

First, the national foundations of the first level of socialization in China conclude that the general developmental resources of sport are limited and the contradiction between the national

developmental fitness needs and the relative weakness of the resources provided by the sport by society is also striking.

Secondly, the public sports services provided by the government to the public are not fully developed, public sports contracts are not sufficiently invested, public services are not fully developed and there is a huge gap in the renewal of public sports activities. .

Third, many sports companies do not have a large area, weak organizational capacity, insufficient capacity and insufficient role. The scientific level of many sports needs to be improved.

Fourth, there is also a huge gap between the number of people who regularly engage in physical activity and the number of developed countries. The percentage of people who regularly participate in physical activity is small and the number of young and old workers and employees who participate in physical activity is small. In particular, the exercise of adolescents and children is not enough and they need to be strengthened urgently.

Fifth, the new management system and equipment of many sports are not fully established, the enthusiasm of the social forces to ensure our national ability to play, the performance of the sport fitness product is unmatched and the building of national legislation. fitness should be stronger.

## 2.2. Development of National Fitness in Ball Sports

### (1) The importance of promoting ball sports

Today, with the continuous improvement of society and the development of science and technology, people do not work in heavy physical work, much more brain work, sit at the desk for a long time, although the weekend is over, but most of them would use this. bedtime or stay home.

Few people go out to exercise during the holidays, something that does not help a person's health. To solve this problem, China has set a deadline for national fitness, football matches such as sports play an important role in national fitness.

#### 1) Promoting the development of National Gymnastics

There are different types of football, such as football, handball, basketball, volleyball, badminton, tennis. Basketball can increase metabolism, speed up blood flow and boost the immune system. Studies show that the heart rate of normal adults is 72 beats per minute, the heart rate is 50-60 ml of blood, the heart rate of basketball players is 50-60 beats per minute and the average blood volume is 80. -100 ml. This shows that the heart muscle is strong and resilient and that vitality is also increased to achieve the goal of fitness. People have to organize teams to play basketball, which increases the number of multiple sports, allows more people to participate in the gym and also increases communication between people and promotes the development of the national fitness language.

#### 2) Promoting economic growth

The new pearl ball in soccer matches attracts many popular favorites in society and the number of people participating in pearl soccer is increasing, which makes the demand for pearl soccer more and more, thus increasing the use of the game. For example, in basketball, basketball is often a team game or two teams to compete, in the process will attract many spectators. Basketball sports require a lot of space. A game can attract thousands of audiences. This game not only increases the role of basketball in society, but also increases the popularity of the space in advertising, activities and brands. If the space is square outside a supermarket, the store can benefit from financial benefits. Advertising and marketing in the market will promote further economic growth by improving the visibility of entrepreneurs.

#### 3) Laying the Material Foundation of Ball Sports Culture

Football, like the main thing in football matches, has its own cultural characteristics. As a man-made product, the ball is not a way of life of direct consumption of a material that is greater than traditional or whose value is greater than that of consciousness. The ball, as "bottom-up material", presents the "metaphysical Tao" with rich content and unique meaning. It is almost impossible for a person to consider football as a game: the characteristics of the center of gravity determine its ease of rotation, because it has a regular shape, easy to understand the direction and speed of its level. Eventually, the ball increased its elasticity, which allowed the movement of the ball to change more, thus increasing its impressions and more in line with the requirements as a tool of human play. This coincides with the characteristics of the game: learning unknown things to make them familiar. Repeat things you always know. making as many variations as possible in the iteration process. choosing the most satisfying variations that will be combined repeatedly, which are all for the purpose of the game and the purpose is the game itself. According to Lu Yuanzhen research, "The ball has an unstable system. If it touches, it will change. The ball is also very easy to hold the object, it can change from static to strong in any position. Therefore, it is the most obedient to power, as a game, is unparalleled, in antiquity, people started throwing, throwing, throwing, throwing and other basic activities with stone balls. In the Dingcun Cultural Center in Shanxi Province, people found a stone ball. 100,000 years old Ancient stone balls continued to appear in the cultural sites of the Xujiayao people 40,000 years ago ..., since their predecessor, "balls" were used as funerals for children, including loose balls, slate balls, wooden balls, clay balls and pineapple leaves. These balls were mainly used for throwing sports games During the Middle Ages, paintings on the tombs of Beni and Hassan with cor to play football, two people to ride, two others to pass and catch balls and a series of balls that fly and catch like acrobatics. The rotation reflects the flexibility of the space as a subject, from large to round. from round ball and rugby ball, to chess ball, badminton, ball shape different. With the development of society and the advancement of science and technology, football systems are becoming more and more advanced. From simple stone balls, wooden balls, strong elastic balls to inflatable balls, the ball has made great changes, always according to the requirements of the movement of people with a more balanced lifestyle. The "Flying meteor" football used in the World Cup in Korea and Japan and the "path" of silver and white football in the World Cup in Germany are an example of the constant renewal of football through science and technology. The quality of the design evokes a variety of sports, from indoor sports, water sports to ice sports, from the same competition to networking, rich interiors.

#### 4) Reflect the development level of ball games culture

The history of football matches began when people accepted football as a sport, but the evolution of football matches into competitive matches has gone through a long process. Genius, a famous American genius, once a fan of games, tournaments and competitive games, believes that one of the biggest differences between sports and games and competitions is tactics. Games do not necessarily have rules, games must have rules, but not all games need to be strict. The rules in competitive sports are always strict. Not all games can be turned into sports. The evolution of games into competitive sports shows that the game must have the potential for innovation, sport and appreciation. As a result, today's football matches have become a collection of human and intellectual resources, marking the stage of development of the football sports culture.

### 2.3. Fog Calculation

At the cloud computing level, a network topology diagram consisting of cloud applications is simulated as a non-linear graph and is a computational idea for collaboration between cloud devices.

The Kruskal algorithm of the smaller tree is used to find the smallest tree for unstructured images to reduce communication delay between them. The work was then divided and separated using a limited simulation problem and the Lagrangian multiplier method was used to solve the statistical delay of the cloud space. At the cloud computing level, a balanced transfer method is used to resolve the cloud transfer delay from cloud to cloud server, and a better partition table is achieved, which reduces communication delay between them. Finally, according to the characteristics of the cloud server, the computational maintenance of the cloud computing level is a determining factor. Experimental results show that the maintenance created by a three-tier cloud-cloud network industry model is better than a traditional cloud computing model. The framework of cloud computing is shown in Figure 1:

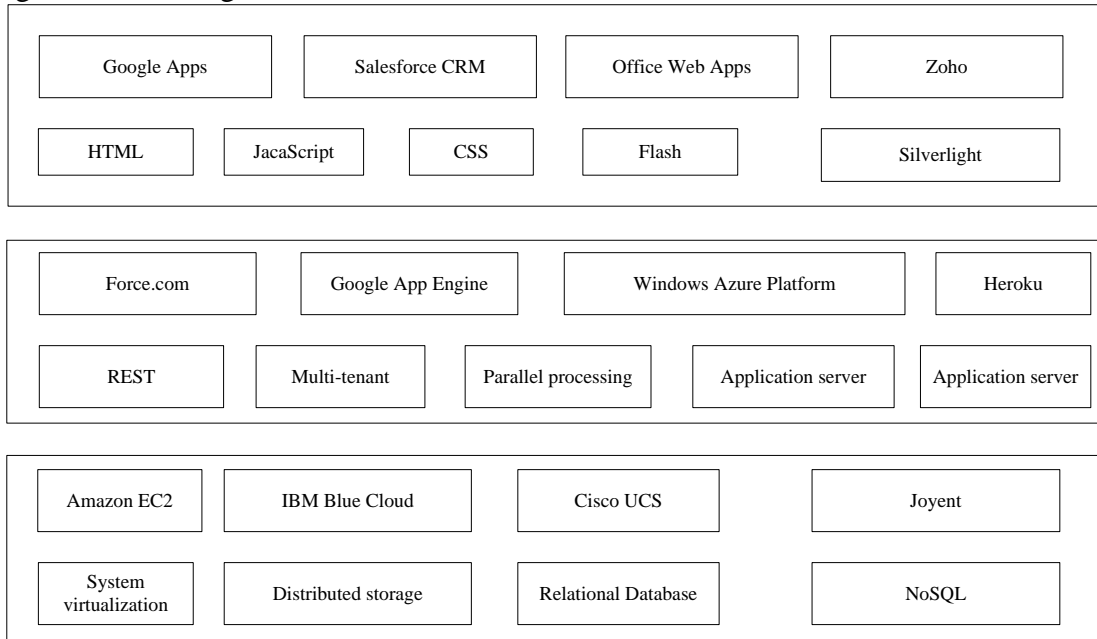


Figure 1. Cloud computing framework

The more the amount of calculation increases, the faster the calculation delay of the fog device increases. So use the following function to describe the calculation delay of fog device  $i$ .

$$D_i^{Fog} = \frac{1}{v_{zi}} a_i x_i^2 \quad (1)$$

Among them,  $v_{zi}$  is the computing power of fog device  $i$ ,  $x_i$  is the amount of tasks handled by fog device  $i$ , and  $a_i$  is a real number between 0-1 set in advance.

Therefore, the calculation delay of  $m$  fog nodes is expressed as follows:

$$D_{Fog}^{com} = \min \sum_{i=1}^m \frac{1}{v_{zi}} a_i x_i^2 \quad (2)$$

$$s.t \begin{cases} \sum_{i=1}^m x_i = X \\ 0 \leq x_i < x_i^{\max} \end{cases} \quad (3)$$

X is the total amount of data that the fog computing layer needs to process.

Fog computing nodes are widely distributed and lack effective physical protection, so they are easily invaded by malicious attackers. As a powerful defense mechanism, intrusion detection system can provide active and dynamic defense for fog computing. However, the computing power of fog computing nodes is limited, and traditional security systems have many limitations in terms of detection capability, response speed, and system scale, which cannot meet the detection requirements in fog environments. Therefore, the establishment of an efficient fog computing intrusion detection system has become an important research direction in the field of intrusion detection. On the basis of considering the detection rate and false alarm rate of the intrusion detection system, a fog computing intrusion detection model based on non-cooperative differential game is proposed, which dynamically adjusts the amount of defense resources according to the business load, and achieves the purpose of saving energy consumption under the premise of ensuring system security.

### 3. The Development of Ball Sports in National Fitness

#### 3.1. Development Status

Football is different from other sports. Other sports, such as skipping rope, can be performed by one person in 10 minutes or less. We need more time for football matches. For example, table tennis requires at least two people to play, so football matches take longer. In today's society, the development of national football in sports has the following characteristics: football matches require a lot of human time, such as basketball, basketball in general must compete, most often for the game is when a person has a lot of time off or in the spring, in some cases, there are so many games, can not motivate a person to participate; Second, define the game. In general, people are spontaneous and there are local councils and community teams, which shows that no football matches are organized. one can not achieve a fitness field in a short time to participate in football matches. Nowadays, people are under a lot of pressure to work and rest on the weekends. Most people play occasionally on weekends. The number of times they participate in football matches is only 1-2 times a week, during work. Time is not exercised, occasional exercise at the weekend will not only achieve the purpose of training, but will also increase the wear and tear of internal organs.

#### 3.2. Factors Restricting the Development of Ball Sports in National Fitness

(1) There is no effective system and control. Effective organization and management is an important step in ensuring the development of football in national fitness and improving the national fitness level. Currently, some local sports offices are lagging behind in the spiritual culture of documents, with inappropriate application, without much sense of football matches, most of them are lovers of time to perform these tasks without professionals. ball training process, can not be effectively regulated and manage football activities. There are no special cards in the area, some of them are retired adults. Most soccer games among the masses are spontaneous, with no professional directors or specific implementation ideas. In the process of organizing football matches, they are



fast and the order of the matches is chaotic. As a result, football matches can not develop well in the national physical condition.

(2) Lack of professional talent. Currently, there is a general shortage of professional sports managers in the national fitness services in China and there is even less professional staff in sports. Lack of knowledge about football matches makes it difficult to organize and organize football matches. There are no professional football organizers and they do not follow the rules of the game, so they face many problems and hinder the development of football matches.

(3) The continuous development of society, the progressive development of science and technology, the growing number of sports facilities in the family and the growing number of commercial sports facilities in society are attracting people. The most popular sports activities among people are cards, chess, mahjong, billiards, etc., which occupy a large part of people's free time. There are also office workers who spend their free time watching TV or playing games on their mobile phones, as well as on weekends, the Internet and other leisure activities. People spend less time playing football. .

### 3.3. The Object of Study in This Paper

The present work investigates and studies the current state of urban mass basketball under the background of national physical condition. In the central stadium with high basketball participation, 100 questionnaires were sampled and 500 questionnaires were distributed, which were completed on the spot. Validity of the content of the questionnaire. In order to judge that the questions included in the questionnaire can effectively reflect the content of this study and to reflect the validity of the content of the questionnaire design, this study developed the questionnaire based on serious learning and drawing lessons from previous research results. and revised the questionnaire three times in consultation with a number of experts, and was eventually formed. In order to check the content validity of the questionnaire, the revised questionnaire was again requested by experts to check the content validity.

In order to study the influence of the number of fog nodes in the fog computing layer on the data processing delay, the value of the data processing delay when the total amount of data  $X$  is 2Gb, 6Gb, 10Gb, 16Gb and 20Gb respectively is solved. Through the simulation experiment, the result is shown in Figure 2.

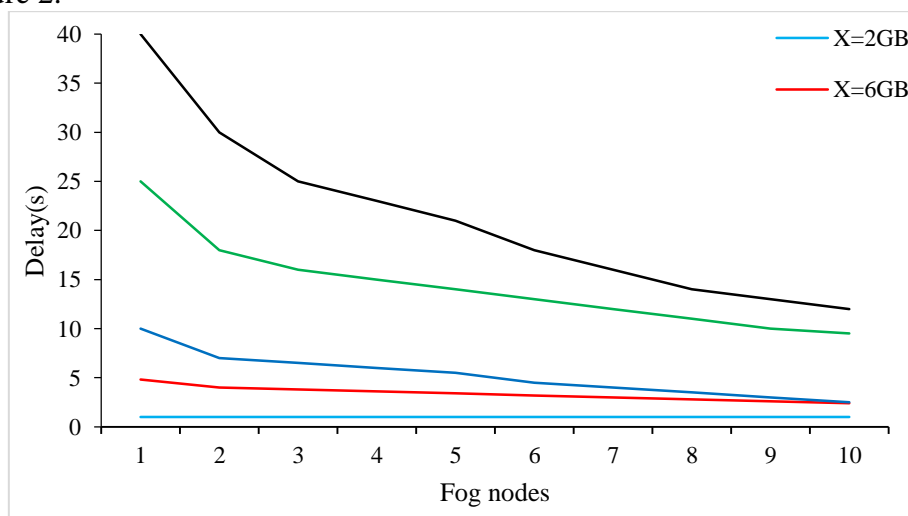


Figure 2. The effect of the number of fog nodes on latency

In order to further verify the effectiveness of the new fog computing architecture in saving energy, we compared the traditional fog computing architecture in terms of caching different data volumes. The results are shown in Table 1:

Table 1. The impact of changes in the total amount of data on the energy consumption of data processing

	10	20	30	40	50	60	70	80	90	100
Tradition	0.4	0.5	0.8	1.1	1.3	1.5	1.7	2.2	2.6	3
Fog computing	0.3	0.4	0.6	0.7	0.8	0.9	1.1	1.3	1.5	1.6

In order to verify the influence of the number of PPoS on the energy consumption of data processing, we selected the influence of the number of PPoS on the energy consumption of data processing when the amount of data buffer is 20Gb, 50Gb and 100Gb. The results are shown in Table 2.

Table 2. The impact of the number of PFoS on the energy consumption of data processing

	2	3	4	5	6	7	8	9
20GB	0.21	0.23	0.27	0.26	0.30	0.32	0.37	0.4
50GB	0.29	0.37	0.39	0.45	0.62	0.71	0.75	0.95
100GB	0.45	0.65	0.82	0.92	1.35	1.42	1.68	1.82

It can be seen that as the number of PFoS increases, the energy consumption of data processing will increase accordingly.

## 4. Discussion

### 4.1. Professional Analysis of the Popular Basketball Participants

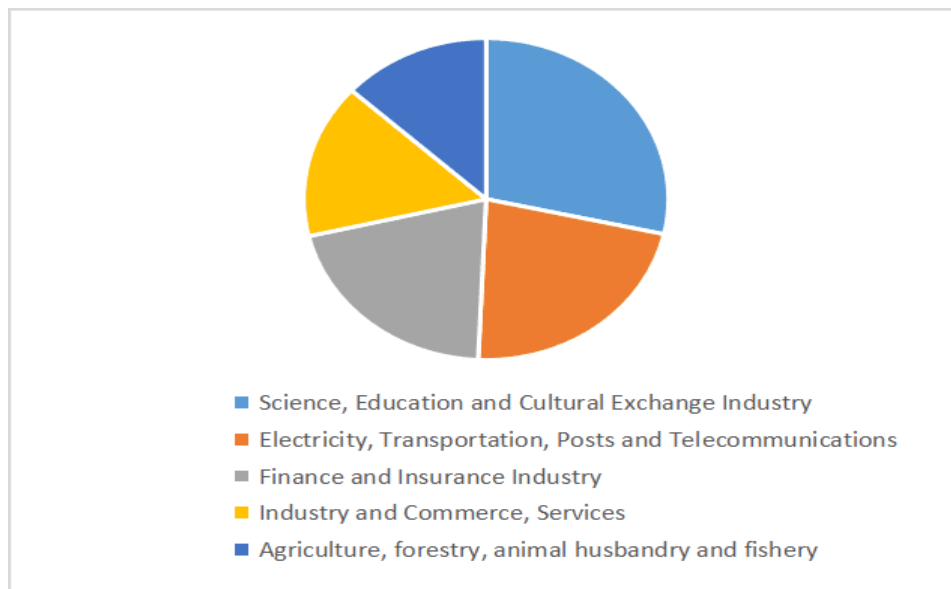


Figure 3. Professional analysis of the public basketball players

Fig. 3 Among the 500 people who participated in basketball in this survey, from the professional

point of view, science, education, culture and remittance industry is the largest, accounting for 28.5% of the total survey, followed by electricity, transportation, post and telecommunications industry, accounting for 22.2% of the total survey, followed by finance, insurance industry (20.6%) and industry, industry and service industry (15.5%), followed by agriculture, forestry, animal husbandry and fishery, accounting for 22.2% of the total survey. The total number of surveys was 13.2%. It can also be seen from the survey that the occupational distribution of the participants is consistent with the overall occupational distribution characteristics.

According to the needs of the research, the survey conducted a survey on the distribution of the items for mastering motor skills. The results are shown in Table 3:

Table 3. Mastery of different ball games

	basketball	volleyball	football	badminton	pingpong	tennis
Number of people	102	29	76	40	37	9
Percentage	34.8%	9.9%	25.9%	13.7%	12.6%	3.1%

Sports events are mainly distributed in the three major balls, of which basketball has the highest proportion, accounting for 34.8% of the total number of people; followed by football, accounting for 25.9% of the total number of people; volleyball has the least proportion of the three balls, accounting for only 9.9%.

#### 4.2. Age Survey of Volkswagen Basketball Participants

Fig. 4. The results of the age survey of the public basketball participants show that the age of 12-26 years old is the highest, accounting for 47.92% of the total number of surveys, followed by 27-40 years old, accounting for 26.49% of the total number of surveys. Then 41-60 years old, accounting for 16.07%, followed by people over 60 years old, accounting for 9.52%. From the age characteristics of the public basketball participants, the number of participants decreases with the increase of age, which is mainly due to the characteristics of the basketball project itself and the different needs of fitness in different age groups. Among the participants aged 12-25, the number of participants and the degree of participation are obviously higher, which is closely related to the physiological characteristics of this age group. This age group is in a vigorous age, more active, like more intense sports, and basketball is in line with such project characteristics.

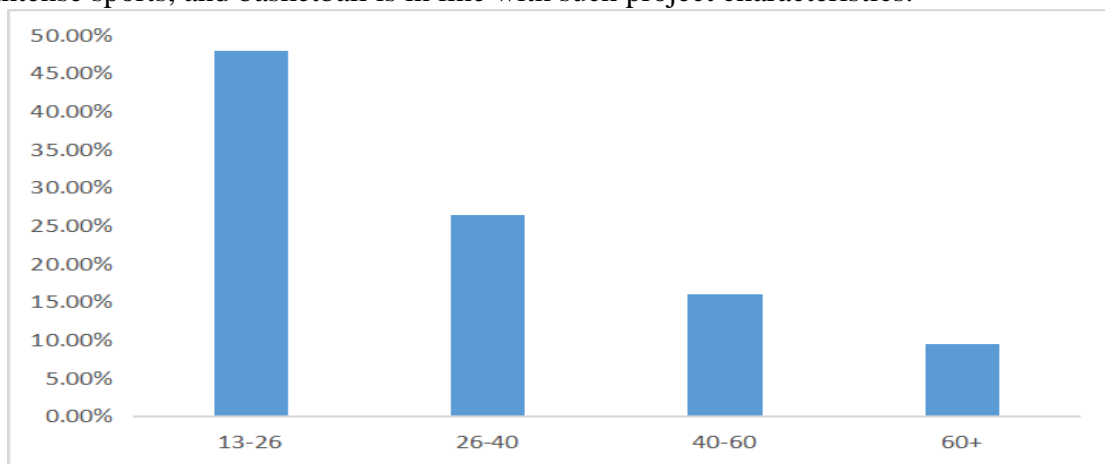


Figure 4. Age analysis of volkswagen basketball participants

Our analysis of the differences in sports emotions, the results are shown in Table 4:

*Table 4. Analysis of sports sentiment differences*

	YES		NO		P
	Mean	Standard deviation	Mean	Standard deviation	
Pleasant mind and body	4.13	0.849	3.14	1.007	0.0079
New feeling	4.11	1.065	3.59	1.035	0.2396
excited	4.1	0.883	3.19	1.049	0.0041
relax	3.95	0.637	3.24	1.114	0.0349
Feel comfortable	4.29	1.159	3.04	0.253	0.005

In order to further understand whether there are ball sports skills to learn the attitude of junior high school students towards physical exercise, the two types of students' time allocation, exercise experience, and exercise enthusiasm for physical exercise are investigated and analyzed, and compared whether there are differences in these aspects. The results are shown in Table 5

*Table 5. Physical exercise attitude*

	YES		NO		P
	Mean	Standard deviation	Mean	Standard deviation	
In favor of exercise	3.93	1.012	3.17	1.085	0.0245
Exercise very well	3.93	0.212	3.04	0.212	0.0035
pride	4.14	1.008	3.04	1.157	0.0035
Active exercise	4.01	1.019	3.19	1.049	0.0117
Is a pleasure	4.12	0.941	3.34	1.049	0.0221

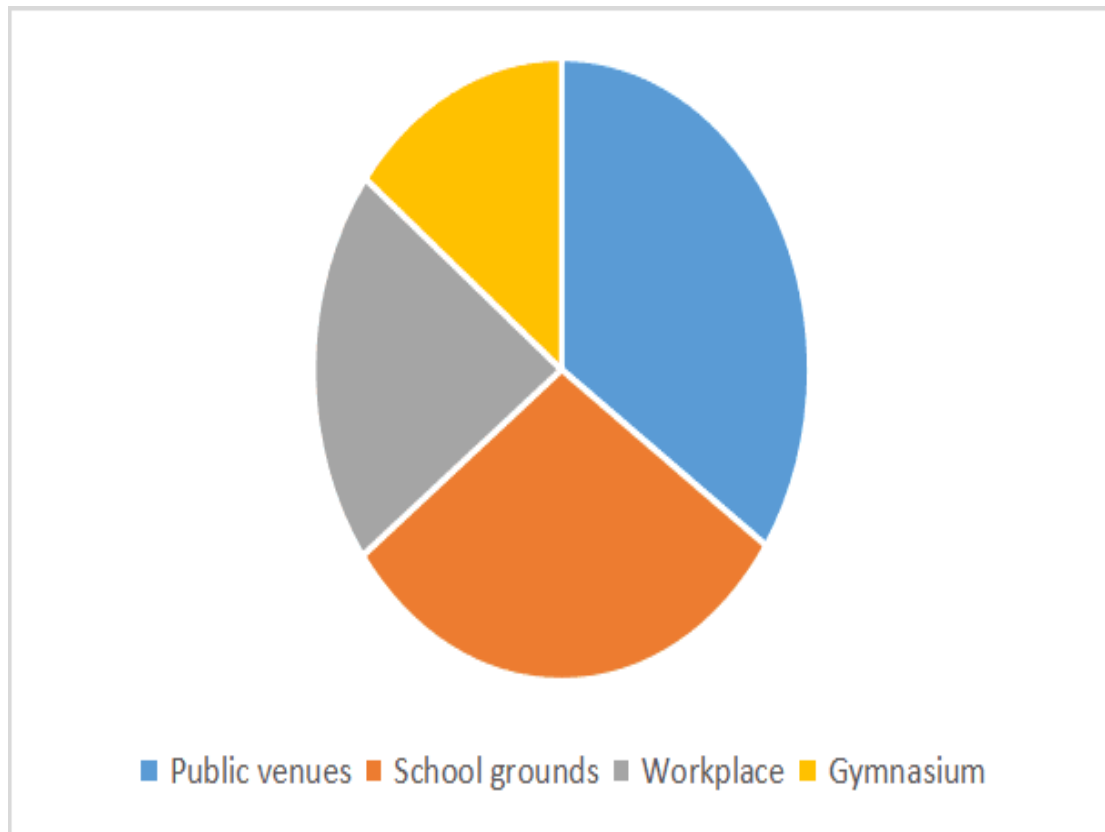
We investigate the duration, intensity and frequency of each physical exercise, and compare and analyze the specific situations of the two types of students. The results are shown in Table 6

*Table 6. Exercise time statistics*

	There are ball exercises		No ball practice	
	Number of people	percentage(%)	Number of people	percentage(%)
<30min	20	7.1	133	45.4
30min-60min	117	39.9	79	27
61min-90min	96	32.8	48	16.4
>90min	59	20.1	33	11.3

It can be seen that the time of a continuous exercise for junior high school students with ball sports skills is mainly concentrated between 30-60 minutes and 61-90 minutes

#### 4.3. Place Analysis of Mass Basketball Participants



*Figure 5. Analysis of place for Volkswagen basketball participants*

Fig. 5. Places where basketball players participate in basketball mainly focus on public venues, accounting for 33.33% of the total number of surveys, followed by school venues, accounting for 29.17% of the total number of surveys, followed by workplace venues, accounting for 19.94% of the total number of surveys, followed by gymnasiums, accounting for 13.99% of the total number of surveys. Public basketball players often choose basketball venues which are relatively concentrated in public and school venues. These venues are open to the outside world, and the venues and facilities are relatively convenient, so the utilization rate of basketball courts is relatively high.

#### 4.4. Form Analysis of Volkswagen Basketball Participants

The results show that trade unions and sports associations account for 28.27% of the total number of surveys, followed by cultural and sports centers, accounting for 25.6% of the total number of surveys, and finally by district sports departments and street offices, accounting for 13.99% of the total number of surveys. From this we can see that the spontaneous mass basketball is the first form of spontaneous basketball, accounting for 30.65% of the total survey, followed by trade unions and associations, reflecting that most basketball fans develop spontaneously.

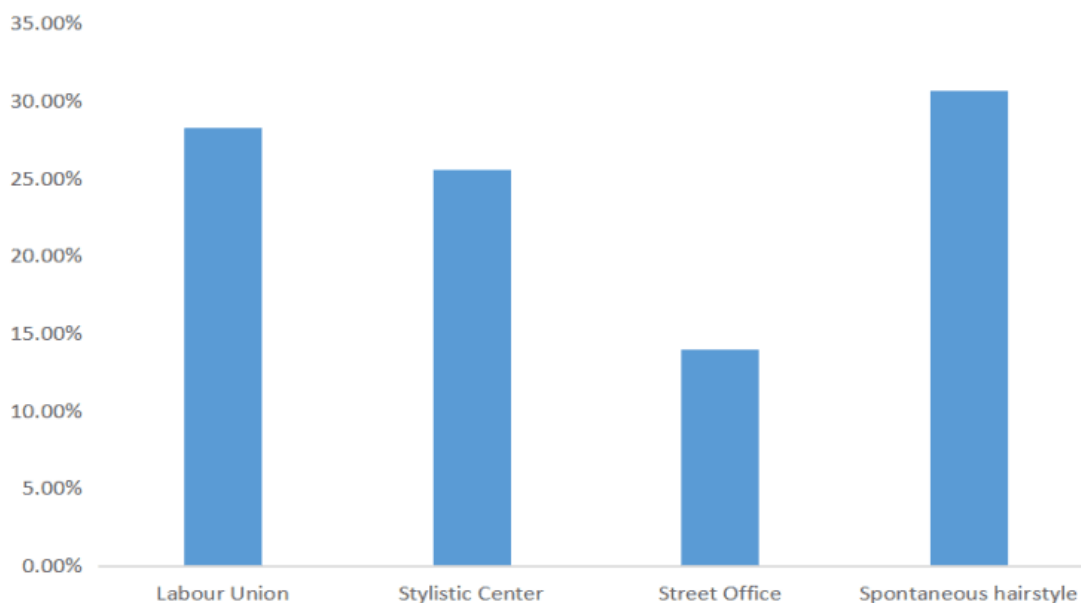


Figure 6. Analysis of the forms of Volkswagen basketball participants

## 5. Conclusion

(1) In the context of national fitness, the main problems in current basketball fitness activities are the following: the total number of participants is not enough, the gender and functional characteristics are very different, it shows the inequality of basketball development very much. ; The majority of basketball venues are public. the direction of a lot of basketball is not enough. the publicity of the basket is insufficient. Famous basketball courts and facilities are not perfect.

(2) The sport of football not only has the characteristics of a sports culture, but also has its own most important characteristics. Football games come from games. It is almost impossible for a person to consider football a game and a sport. The evolution of the ball laid the foundations of the traditional game of football. The development of football in competitive sports shows that it has the potential for innovation, sport and appreciation. As an important event of the Olympic Games and sports with a high level of activity, the football games are a symbol of the level of cultural development. The special features mean that football matches are different from other sports and that they have unique cultural meanings.

(3) Today, when the national physical condition has risen to "national consciousness", the opening of public sports facilities and the acquisition of social sports activities by the government will be strengthened, and therefore the relative low and high quality of the sports gym, which will facilitate public participation in fitness activities, including rural residents. The popularity of national fitness, especially for the rural population, is the enhancement of national productivity, not only to promote the balanced development of national fitness between urban and rural areas and within communities, but also to promote overall development of national sports.

## Funding

This article is not supported by any foundation.

## Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

## Conflict of Interest

The author states that this article has no conflict of interest.

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