

# Study on Enhancing Accessibility of Rural Fitness Public Services in Changsha County through Digitalization

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**Abstract:** The accessibility of the "last mile" for China's public fitness services has attracted significant attention from the state, society. Rural fitness public services are an integral part of the overall public fitness service sector. In the context of enhancing the accessibility of rural fitness public services, digital construction of supply-demand platforms for such services plays a critical role. This study conducted a questionnaire survey among rural residents near Changsha County, focusing on the local rural population as the research subject. It analyzed the current situation of accessibility to rural fitness public services and the factors influencing the accessibility of fitness public services due to digitalization. The study reached conclusions regarding the impact of digitalization on the accessibility of rural fitness public services in Changsha County and provided corresponding recommendations based on these findings.

**Keywords:** Digitalization; Rural Areas; Fitness Public Services; Accessibility

## 1. Introduction

With the promotion and application of networking, informatization, and digitalization in the field of public services, the deep integration of fitness public services with digital technology is not only an effective measure for innovating and broadening the supply model of fitness public services, but also a crucial support for achieving high-quality provision of rural fitness public services [1]. Digitalization, as a transformation of technology, cognition, and thinking, is an innovative mode that enables effective sharing of information and resources, becoming an important driving force for reducing the supply costs of rural fitness public services and aligning them with urban fitness public services in terms of inclusiveness. It significantly influences various aspects of fitness

public services accessibility, including demand-supply matching, carrier construction, and conditions for intelligent development. Digital empowerment highlights unique values and functions in response to rural modernization and digital countryside construction [2], following the goal orientation of balanced and full development between urban and rural areas and shared prosperity, focusing on the value pursuit of holistic governance and high-quality livelihood.

## 2. Research Object and Methods

### 2.1 Research Object

The study focused on rural fitness public services in Changsha County, targeting 250 residents living in rural areas of Changsha County as subjects for investigation.

### 2.2 Research Methods

#### 2.2.1 Literature review method

Based on the research purpose and content, the study retrieved literature from major databases such as CNKI, excellent doctoral and master's thesis full-text databases, and various academic websites, with Wanfang Data serving as the main source. Through literature review, the recent status of rural fitness public services and the effects of digitalization on the accessibility of public services were understood, and extensive reading was done on basic theories of public services, logical connotations and evaluation indicators of accessibility, and related papers on digitalization assisting public services accessibility.

#### 2.2.2 Questionnaire survey method

A questionnaire titled "Study on the Accessibility of Rural Fitness Public Services in Changsha County Assisted by Digitalization and Its Restraining Factors" was designed, covering questions related to digitalization assisting accessibility of rural fitness public services. The questionnaire included details about the basic

circumstances of rural residents in Changsha County, such as age, gender, occupation, education level, monthly income, health status; their participation in sports activities, including types of fitness activities, exercise purposes, duration, venues, annual sports consumption expenditure; basic situations of digital accessibility to fitness public services for rural residents in Changsha County, and factors affecting accessibility of fitness public services assisted by digitalization.

The formal survey was launched in four towns of Changsha County: Huangxing Town, Jiangbei Town, Huanghua Town, and Chunhua Town. Two villages were selected in each town, with 35 questionnaires distributed in each village. A multi-stage sampling method was used to conduct surveys among rural residents of Changsha County at locations such as town recreational squares, residential communities, and activity centers. To ensure the effectiveness and quality of the questionnaires, 280 questionnaires were distributed, and 261 were returned, of which 250 were valid, resulting in an effective recovery rate of 89.3%. This laid a solid foundation for the article's data. Due to some rural residents not filling out the questionnaires according to actual circumstances or making logical errors, 11 invalid questionnaires were excluded during the final review, leaving 250 valid questionnaires.

### 2.2.3 Expert interview method

Expert interviews were conducted with professionals in public services, sports fitness fields, as well as heads of sports associations and fitness organizations. The interviews covered topics related to accessibility of rural fitness public services, fitness public services in Changsha County, and digital assistance for rural fitness public services. Face-to-face interviews were conducted on-site to gather their views and suggestions, accumulating relevant materials and summarizing them to obtain valuable information.

## 3. Results and Analysis

### 3.1 Physical Activity Status of Rural Residents in Changsha County

From Table 1, it can be seen that the basic information of rural residents in Changsha County is that the majority of elderly people are aged 51-60 and above, accounting for 23.2% and 22.8%, respectively. Residents under the age of

20 rank third, accounting for 18.8%. The remaining 21-30 years old, 41-50 years old, and 51-60 years old account for a relatively small proportion, accounting for 10.0%, 10.4%, and 14.8% respectively. Through on-site interviews, it was found that this is because the majority of young and middle-aged rural residents go out to work, leaving behind the elderly and children in the countryside; In terms of education, the majority of rural residents have junior high school and high school education, accounting for 30.8% and 34.8% respectively, with undergraduate education accounting for the top three, accounting for 18.0%. Primary school education and master's degree are relatively low, accounting for 11.6% and 4.8% respectively; In terms of health status, 66.0% of rural residents believe that their bodies are relatively healthy and very healthy, while only 16.4% of rural residents believe that they are not very healthy or very unhealthy.

From Table 2, we can observe basic information about the physical exercise habits of rural residents in Changsha County: The primary fitness activity engaged in is walking/jogging, accounting for 35.8% of the total. Following closely are square dancing/kicking shuttlecock and badminton/table tennis, with percentages of 19.6% and 14.0%, respectively. Swimming/fishing, tai chi/eight section brocade, and basketball/football/volleyball are the least popular activities, with participation rates of 9.0%, 5.0%, and 9.2%, respectively. Most of the fitness activities undertaken by rural residents in Changsha County do not require specialized equipment or facilities, primarily consisting of simple exercises that can be performed spontaneously. This is mainly due to the fact that fitness activities in rural areas tend to emphasize convenience and simplicity, allowing for exercise to be carried out anytime, without being restricted by location, time, number of participants, or equipment [3].

**Table 1. Demographic Profile of Rural Residents in Changsha County (N=250)**

Resident Information	Specific Conditions	Count	Percentage
Age	Under 20	47	18.8%
	21-30	25	10.0%
	31-40	26	10.4%
	41-50	37	14.8%
	51-60	58	23.2%
	Over 60	57	22.8%

Education Level	Elementary School	29	11.6%
	Junior High School	77	30.8%
	Senior High School	87	34.8%
	Bachelor's Degree	45	18.0%
	Master's Degree+	12	4.8%
Health Status	Very Unhealthy	5	2.0%
	Somewhat Unhealthy	36	14.4%
	Average	44	17.6%
	Fairly Healthy	115	46.0%
	Very Healthy	50	20.0%

**Table 2. Statistics on Fitness Activities Participated in by Rural Residents in Changsha County (N=500)**

	Count	Percentage
Walking/Jogging	179	35.8%
Swimming/Fishing	45	9.0%
Tai Chi/Eight Section Brocade	25	5.0%
Basketball/Football/Volleyball	46	9.2%
Badminton/Table Tennis	70	14.0%
Square Dancing/Kicking Shuttlecock	98	19.6%
Others	37	7.4%

From Table 3, we can observe the motivations for physical exercise among rural residents in Changsha County. A significant 35.8% of the residents exercise primarily to improve their physical health, while 19.4% participate in sports due to a specific interest in certain athletic activities. Additionally, 22.0% engage in exercise for entertainment, 10.6% for weight loss, and 5.4% to socialize and make friends. The primary reason for these motivations is that a large portion of the rural population in Changsha County consists of older adults, who prioritize their health above all else. Engaging in physical activity is seen as a crucial means to enhance personal health and fitness.

**Table 3. Fitness Motivation of Rural Residents in Changsha County (N=500)**

	Count	Percentage
Interest in Sports	97	19.4%
Physical Fitness	179	35.8%
Entertainment	110	22.0%
Making Friends	34	6.8%
Weight Loss	53	10.6%
Others	27	5.4%

From Table 4, we can see that the most common weekly exercise duration for rural residents is 61-120 minutes, accounting for 44.0%. This is followed by durations of 31-60 minutes and less than 30 minutes, which represent 21.6% and 18.4% respectively. Exercise times of 121-180 minutes and over 180 minutes together make up 14.4%. Only 1.6% do not participate in exercise at all. This suggests that rural residents in Changsha County place value on fitness and have ample leisure time, demonstrating a strong awareness of the need for physical exercise and a demand for sports activities. Regarding travel time to fitness venues, 83.6% of residents can reach a venue within 20 minutes. Only 10.4% and 6.0% require 21-30 minutes or more than 30 minutes respectively. This is largely due to the dispersed nature of housing in rural areas, where most residents do not have to spend much time traveling to reach a fitness venue, although a small number of residents in remote corners of villages or with poor transportation may face longer travel times.

Table 5 shows that the majority of rural residents in Changsha County prefer to spend less than 500 yuan per year on fitness, accounting for 49.6%. This is followed by expenditures of 501-1000 yuan and 1001-1500 yuan, representing 21.6% and 18.4% respectively. Those who do not spend anything and those who spend over 1500 yuan make up 9.6% and 0.8% respectively. This indicates that while most residents recognize and accept the need to spend money on fitness, they are willing to pay only a small amount, or even nothing at all. This might be related to the demographic structure of rural residents in Changsha County, where the majority are elderly and have lower spending power compared to younger adults.

**Table 4. Weekly Exercise Time and Travel Time to Fitness Venues of Rural Residents in Changsha County (N=250)**

	Time	Count	Percentage
Weekly Exercise Duration	No participation	4	1.6%
	Less than 30 minutes	46	18.4%
	31-60 minutes	54	21.6%
	61-120 minutes	110	44.0%
	121-180 minutes	23	9.2%
	More than 180 minutes	13	5.2%
Travel Time to	Within 10 minutes	130	52.0%

<b>Fitness Venue</b>	11-20 minutes	79	31.6%
	21-30 minutes	26	10.4%
	Over 30 minutes	15	6.0%

**Table 5. Annual Fitness Expenditure of Rural Residents in Changsha County (N=250)**

	Count	Percentage
No expenditure	24	9.6%
Less than 500 yuan	124	49.6%
501-1000 yuan	54	21.6%
1001-1500 yuan	46	18.4%
Over 1500 yuan	2	0.8%

### 3.2 Current Status of Accessibility to Rural Fitness Public Services in Changsha County

#### 3.2.1 Current status of availability of rural fitness public services in changsha county

The availability of rural fitness public services refers to the various fitness facilities and services provided in rural areas, including but not limited to fitness equipment, venues, courses, and associated health consultations.

From Table 6, it can be observed that rural residents in Changsha County have a high level of access to fitness public services. In terms of fitness courses, 54.2% of rural residents believe that the courses are very abundant or abundant, while 27.6% think that the richness of the courses is average, not providing significant assistance to their fitness lifestyle. Only 14.4% of rural residents feel that the fitness courses in Changsha County are not very abundant or extremely insufficient. Each year, 17.2% of rural residents seek sports information 1-3 times, 38.8% seek it 4-6 times, 21.2% seek it 7-9 times, and 14.0% seek it more than 10 times. Rural residents in Changsha County use public sports facilities over 5 times a week, accounting for a total of 51.6%; 26.0% use fitness venues 3-4 times a week, 18.8% use them 1-2 times a week, and 3.6% have never used the fitness venues. Through conversations with rural residents, it is known that apart from busy farming seasons, they have considerable leisure time to pursue a lifestyle that emphasizes physical and mental health, happiness, and comfort.

**Table 6. Statistics on Availability of Fitness Public Services in Changsha County (N=250)**

		Count	Percentage
<b>Fitness Courses</b>	Very Abundant	34	13.4%
	Abundant	102	40.8%
	Average	69	27.6%
	Not Very	35	14.0%

<b>Fitness Consultations</b>	Abundant		
	Very Insufficient	10	0.4%
	None	22	8.8%
	1-3 Times Per Year	43	17.2%
	4-6 Times Per Year	97	38.8%
	7-9 Times Per Year	53	21.2%
<b>Use of Fitness Facilities</b>	Over 10 Times Per Year	35	14.0%
	Never Used	9	3.6%
	1-2 Times Per Week	47	18.8%
	3-4 Times Per Week	65	26.0%
	5-6 Times Per Week	74	29.6%
	Over 7 Times Per Week	55	22.0%

It can be seen that the overall fitness demands of rural residents in Changsha County are quite strong. Most rural residents have an awareness of exercise and hope to strengthen their constitution, adjust their mindset, and reduce the impact of diseases through physical activity [4]. The overall availability of fitness public services is high, but there are still some residents who cannot easily access these services. It is necessary to utilize digitalization to enhance the availability of fitness public services.

#### 3.2.2 Proximity status of rural fitness public services in changsha county

Proximity to rural fitness public services refers to the ability of rural residents to conveniently access and utilize fitness public services. This includes factors such as the distribution, quantity, type of fitness facilities, and whether they are easy to reach. In rural areas, the proximity to fitness public services can be influenced by geographical environment and population density differences.

According to Table 7, 83.6% of rural residents can reach a fitness venue within 20 minutes, with a remarkable 52.0% able to arrive within 10 minutes. This indicates that fitness facilities in rural Changsha County are located in convenient traffic areas or central village locations, making it easy for villagers to access and use fitness public services. Only 10.4% and 6.0% of residents need 21-30 minutes or over 30 minutes to reach a fitness venue, respectively. The most

common number of nearby fitness venues is 3-4, accounting for 58.0%, followed by 5-6 venues at 20.8%, and 7 or more at 8.4%. Venues with 1-2 facilities account for 12.8%. The availability of basic fitness facilities in rural Changsha County is sufficient to meet daily fitness needs. Park squares and community activity centers are the most frequented fitness venues by rural residents in Changsha County, with percentages of 37.6% and 26.0% respectively. Fewer residents exercise at home or in schools, with percentages of 14.4% and 14.0% respectively. Through conversations with residents, it is learned that public squares and community activity centers, as open and inclusive public spaces, satisfy residents' social, cultural, and entertainment needs, thus becoming the primary venues for fitness activities among rural residents in Changsha County.

It can be seen that the proximity to rural fitness public services in Changsha County is very high, with a variety in the types, numbers, and distances of fitness venues. However, there are still some residents who need to spend more time getting to fitness venues, and some venues fail to meet personalized fitness demands of the residents. Digitalization can help enhance the proximity of rural residents to fitness public services [5].

**Table 7. Statistics on Proximity to Fitness Public Services in Changsha County (N=250)**

		Count	Percentage
<b>Travel Time to Fitness Venue</b>	Within 10 minutes	130	52.0%
	11-20 minutes	79	31.6%
	21-30 minutes	26	10.4%
	Over 30 minutes	15	6.0%
<b>Number of Nearby Fitness Venues</b>	1-2	32	12.8%
	3-4	145	58.0%
	5-6	52	20.8%
	7 or more	21	8.4%
	Park Squares	94	37.6%
<b>Commonly Visited Fitness Venues</b>	Community Activity Centers	65	26.0%
	Home	36	14.4%
	Schools	35	14.0%
	Other Venues	20	8.0%

3.2.3 Affordability status of rural fitness public services in changsha county

Affordability of rural fitness public services refers to the degree to which rural residents can afford and accept fitness public services. This

3.2.4 Acceptance status of rural fitness public services in changsha county

encompasses expenses related to the construction, maintenance, and management of fitness facilities, as well as costs for organizing fitness activities and services. According to Table 8, the average monthly income of rural residents in Changsha County is below 3,000 RMB for 22.4%, between 3,001-6,000 RMB for 53.6%, between 6,001-9,000 RMB for 13.6%, between 9,001-12,000 RMB for 6.0%, and over 12,000 RMB for 4.4%. This demonstrates that the majority of rural residents in Changsha County have the capacity to bear sports-related expenses, albeit not in significant proportions. In terms of sports expenditure, 9.6% of rural residents choose not to spend anything, 49.4% spend less than 500 RMB annually, 21.6% spend between 501-1,000 RMB, 18.4% spend between 1,001-1,500 RMB, and 0.8% spend over 1,500 RMB. Regarding health status, 66.0% of rural residents perceive themselves as relatively healthy or very healthy, while only 16.4% view themselves as somewhat unhealthy or very unhealthy. The data from Table 8 indicates that the majority of rural residents in Changsha County can accept sports expenses and bear the load of physical activities. However, a small minority cannot afford sports expenses and cannot withstand corresponding physical exertion. Digitalization can assist in enhancing the affordability of rural fitness public services in Changsha County.

**Table 8. Affordability Statistics of Rural Fitness Public Services in Changsha County (N=250)**

		Count	Percentage
<b>Average Monthly Income</b>	Below 3,000 RMB	56	22.4%
	3,001-6,000 RMB	134	53.6%
	6,001-9,000 RMB	34	13.6%
	9,001-12,000 RMB	15	6.0%
	Above 12,000 RMB	11	4.4%
<b>Annual Sports Expenditure</b>	None	24	9.6%
	Below 500 RMB	124	49.6%
	501-1,000 RMB	54	21.6%
	1,001-1,500 RMB	46	18.4%
	Over 1,500 RMB	2	0.8%
<b>Health Status</b>	Very Unhealthy	5	2.0%
	Somewhat Unhealthy	36	14.4%
	Average	44	17.6%
	Relatively Healthy	115	46.0%
	Very Healthy	50	20.0%

The acceptance of rural fitness public services culture pertains to whether digital fitness

services, fitness activities, and culture are embraced by local residents, and whether there are misconceptions or biases towards fitness activities among rural residents in Changsha County.

**Table 9. Acceptance Statistics of Rural Fitness Public Services in Changsha County (N=250)**

		Count	Percentage
<b>Digital Fitness Services</b>	Willing, Easier Online	77	30.8%
	Neutral, Both Online and Offline	134	53.6%
	Unwilling, Prefer Offline	39	15.6%
<b>Fitness Activities</b>	Very Willing	48	19.2%
	Quite Willing	87	34.8%
	Neutral	75	30.0%
	Somewhat Unwilling	34	13.6%
	Very Unwilling	6	2.4%

The data from Table 9 reveals that 30.8% of rural residents are very willing to obtain fitness public services online, and 53.6% of rural residents believe that both online and offline services should be equally available. However, 15.6% of rural residents stubbornly think that obtaining fitness public services offline is more convenient. A total of 84.4% of rural residents are willing to accept the online delivery of digital fitness services, which is inseparable from the rapid development of the digital era. The remaining 15.6% of rural residents who are unwilling to accept the digitalization of fitness services are less receptive to obtaining fitness services online and prefer to obtain them offline. Among rural residents in Changsha County, 84.0% are willing to participate in fitness activities, with 19.2% being very willing, 34.8% quite willing, and 30.0% generally willing. Apart from this, only 16.0% of rural residents are unwilling to participate in fitness activities, among whom 13.6% are somewhat unwilling and 2.4% are very unwilling. It is evident that the acceptability of rural fitness public services in Changsha County is not yet fully achieved. Digitalization is needed to enhance the acceptability of rural fitness public services in Changsha County.

### 3.3 Factors Influencing the Accessibility of Rural Fitness Public Services in Changsha

#### County Enhanced by Digitalization

The critical factors contributing to the enhancement of accessibility to rural fitness public services in Changsha County through digitalization include: digital acquisition of physical condition monitoring information; enjoying fitness guidance services provided by online professionals; digital reservation platforms for fitness venues and facilities; conducting sports lectures and online video training via network platforms to acquire sports-related knowledge; and the push notifications for sports events and activities [6].

##### 3.3.1 Fitness venues and facilities

As shown in Table 10, the results reveal that among the digital services for sports venues and facilities that rural residents in Changsha County anticipate the most, 45.0% desire accurate and effective information on idle venues and facilities; 17.4% want a complete customer service system for venues; 12.8% wish for more free sports equipment; and 13.2% look for more government-subsidized free opening hours for venues. Residents hope that the platform for booking fitness venues and facilities can collaborate with more sports venues, provide a variety of equipment for different sports needs, and promptly update information on facility availability, focusing on timeliness and accuracy.

**Table 10. Statistics on Digital Fitness Venue and Facility Services Desired by Rural Residents in Changsha County (N=500)**

	Count	Percentage
Accurate Idle Venue Information	225	45.0%
Comprehensive Customer Service System	87	17.4%
Provision of More Free Sports Equipment	64	12.8%
Increased Government-Subsidized Open Hours	66	13.2%
Others	25	5.0%

##### 3.3.2 Physical condition monitoring

The best treatment is not curing after illness strikes, but preventing it before it occurs. Physical condition monitoring is a critical service for evaluating the effectiveness of fitness public services, and digitalized physical condition monitoring supplements traditional methods. As shown in Table 11, the results indicate that the highest demand among rural

residents in Changsha County for digital physical condition monitoring services is for pre-, during-, and post-exercise physical condition checks, accounting for 43.8%. Establishing individual physical health records and regular follow-up services such as physical condition tracking and intervention are close behind, with percentages of 24.2% and 21.2% respectively. 8.0% of rural residents require regular publication of physical condition monitoring reports.

**Table 11. Statistics on Digital Physical Condition Monitoring Services Desired by Rural Residents in Changsha County (N=500)**

	Count	Percentage
Pre-, During-, Post-Exercise Physical Condition Checks	219	43.8%
Establishment of Individual Physical Health Records	121	24.2%
Regular Follow-up Services Such as Physical Condition Tracking and Intervention	106	21.2%
Regular Publication of Physical Condition Monitoring Reports	40	8.0%
Others	14	2.8%

### 3.3.3 Construction of fitness information service platforms

A national fitness information service platform is an online platform developed by the National General Administration of Sport's Information Center and Research Institute, in collaboration with the National Wisdom Sports Technology Innovation Center. Its purpose is to serve various levels of government and the general public. According to the results in Table 12, the digital fitness information service platform most anticipated by rural residents in Changsha County is the provincial and municipal WeChat and Weibo platforms, with a share of 43.4%. The provincial full-scale fitness website accounts for 31.4%, while lifestyle and sports apps take up only 18.2%. Residents pay more attention to fitness information pushed via platforms like WeChat and Weibo.

**Table 12. Statistics on Digital Fitness Service Platforms Desired by Rural Residents in Changsha County (N=500)**

	Count	Percentage
Provincial Full-Scale Fitness Website	157	31.4%
Provincial/Municipal WeChat, Weibo Platforms	217	43.4%

Lifestyle, Sports Apps	91	18.2%
Others	35	7.0%

### 3.3.4 Fitness guidance

Traditional fitness guidance services are usually delivered face-to-face by social sports instructors or personal trainers. However, due to the relatively underdeveloped economic conditions in rural areas, there is a lack of social sports instructors, resulting in fewer instances of traditional fitness guidance services. Without social sports instructors to educate residents about the importance of physical exercise, the awareness of fitness tends to be weak. Residents often devote their time and energy to making a living and handling daily household chores, neglecting the significance of fitness. Table 13 indicates that when it comes to digital fitness guidance services, personalized exercise plans and injury prevention advice are in high demand, accounting for 29.6% and 28.8% respectively. The aspects of digital fitness guidance with lower personal demand are nutritional advice, which represents only 18.4%, and rehabilitation guidance, at 16.8%.

**Table 13. Statistics on Digital Fitness Guidance Services Desired by Rural Residents in Changsha County (N=500)**

	Count	Percentage
Personalized Exercise Plan	148	29.6%
Nutritional Advice	92	18.4%
Injury Prevention	144	28.8%
Rehabilitation Guidance	84	16.8%
Others	32	6.4%

## 4. Conclusion

(1) The physical exercise activities chosen by rural residents in Changsha County exhibit diversity, primarily focusing on activities that do not require sports equipment or involve the use of small exercise equipment, such as walking, jogging, square dancing, and shuttlecock kicking. Rural residents spend less time traveling to fitness venues and engage in more weekly exercise, indicating that further development is needed for fitness guidance services and the level of sports expenditure.

(2) Imbalance and inadequacy are the main issues currently affecting the accessibility of rural fitness public services in Changsha County. While the availability and proximity of fitness public services to rural residents are relatively good, their affordability and acceptability are relatively low. This is particularly evident in

terms of acceptability, where there is a clear mismatch between the demands of rural residents and the provision of fitness public services. The scarcity of services tailored to the characteristics of rural residents leads to the inability of fitness public services to meet the multi-level, diverse needs of rural residents.

(3) Digitalization in areas such as venues and facilities, fitness guidance, fitness service platforms, and physical condition monitoring has a significantly positive impact on various aspects of the accessibility of fitness public services. There are considerable disparities in the accessibility of fitness public services among different villages in Changsha County. As a transformative force in technology, cognition, and thinking, digitalization is an innovative model that enables the effective sharing of information and resources. It can address the personalized needs of rural residents in Changsha County, serving as a crucial driving force for reducing the supply costs of rural fitness public services and achieving their accessibility.

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### References

[1] Wang Li, Meng Yazheng, Huang Yaling, et

al. Study on the Composition and Standardization of the Public Service System for National Fitness. *Journal of Beijing University of Physical Education*, 2015, 38(03): 1-7.

[2] Wang Song, Yu Yi, Cui Jiaqi, et al. Study on the Differential Pattern of Rural Public Fitness Service Supply, "Fragmentation" Problems, and Holistic Governance. *Journal of Shandong University of Physical Education*, 2019, 35(06): 26-31.

[3] Wang Yu, Zhang Fengbiao. Equalization of Public Services for National Fitness in China: Value Connotations, Realistic Foundations, and Path Selection. *Guide to Sports Culture*, 2023, (04): 56-63.

[4] Zhang Jie, Hu Yanhong. Digital Empowerment of High-Quality Development of Rural Public Fitness Services: Practice Landscape, Realistic Constraints, and Optimization Strategies. *Bulletin of Sports Science and Technology*, 2023, 31(09): 114-117+125.

[5] Wang Shu. Research on the Digitization of Governance for Public Service Supply in National Fitness Driven by Demand. Shanghai: East China University of Science and Technology, 2021.

[6] Gao Mengzhen, Wang Zhiwen, Shi Zhenguo. Digital Empowerment of Precision Supply of Public Services for National Fitness: Mechanisms and Implementation Strategies. *Guide to Sports Culture*, 2023, (02): 21-26+33.