

Research on the Sharing Path of Sports Resources between Universities and Communities under the Dual Drive of Supply and Demand

Mingchang Liu*

Department of Physical Education, Huazhong Agricultural University, Wuhan, 430070, Hubei, China

*Corresponding author

Abstract: In order to solve the supply-demand imbalance dilemma of idle sports resources in universities and shortage of community sports resources, improve the efficiency of sports resource allocation, and assist in the implementation of the Healthy China strategy, this study is based on the dual driving perspective of supply and demand, and takes the sharing of sports resources between universities and communities as the research object. This article adopts literature research method, questionnaire survey method, and interview method to systematically sort out the current situation of sports resource supply in universities and the characteristics of community sports resource demand. Based on this, following the core principles of precise matching of supply and demand, mutual benefit and win-win, a "four in one" core sharing path system covering staggered construction of venues and facilities, two-way empowerment of human resources, integration and sharing of courses and events, and precise docking of information resources is constructed. Differentiated sharing paths are proposed for different types of universities and communities. The research results indicate that the bidirectional driving logic of supply and demand can effectively enhance the adaptability and feasibility of school community sports resource sharing, and the constructed path system can provide a systematic solution for the efficient integration of school community sports resources. This study enriches the theoretical system of sports resource sharing and provides practical reference for improving the quality of sports public services and promoting equalization of sports public services between urban and rural areas.

Keywords: bidirectional driving of supply and demand; university sports resources; community sports resources

1. Introduction

Under the background of promoting the Healthy China strategy, the equalization and high-quality development of sports public services pose higher requirements for optimizing the allocation of sports resources. Currently, the supply-demand contradiction between idle sports resources (venues, faculty, courses, etc.) in universities during non-teaching hours and insufficient supply of community sports resources, which are difficult to meet the diverse fitness needs of residents, is becoming increasingly prominent. Promoting the sharing of school community sports resources has become a key lever to improve resource allocation efficiency.

The academic community at home and abroad has conducted relevant research on the sharing of school community sports resources. The mature practical models formed abroad and the sharing ideas proposed by the domestic academic community provide a basic reference [1]. However, existing research has significant limitations: it focuses on the supply side or demand side, lacks deep integration of the dual driving logic of supply and demand, and leads to insufficient targeted sharing paths; Lack of attention to differentiated needs and evaluation of sharing effects, making it difficult to develop scalable solutions.

Based on this, this study is based on the dual driving perspective of supply and demand. This study sorts out the current supply and demand situation of school and community sports resources, diagnoses their matching contradictions, constructs a differentiated sharing path system that takes into account the demands of both parties, and puts forward corresponding safeguard measures. The research aims to enrich the theoretical system of sports resource sharing, improve the application scenarios of supply and demand driven theory, and provide practical references for the efficient integration of school and community sports resources, the improvement of sports public service quality, and the implementation

of the Healthy China strategy. It has important theoretical and practical value.

2. Definition of core concepts and theoretical basis

2.1 Definition of core concepts

University sports resources refer to the collection of various tangible and intangible resources owned or controlled by universities to ensure physical education teaching, training, competitions, and campus sports activities [2]. Specifically, they include venue and facility resources (such as sports halls, track and field fields, specialized sports venues, etc.), human resources (sports teachers, coaches, referees, and sports students, etc.), curriculum resources (public sports courses, specialized skills training courses, etc.), event resources (campus sports event IP, event organization and operation capabilities, etc.), and equipment resources. Its core features are strong professionalism and high concentration of resources, but it has the attribute of being idle during usage periods.

Community sports resources refer to the total amount of various resources that rely on community space to meet the needs of community residents for fitness exercise, sports socialization, and skill improvement, including community owned sports facilities, community sports instructors, folk sports clubs, and external sports resources that can be introduced [3]. Its core features are public welfare and inclusiveness, with diverse and fragmented demands.

The bidirectional driving of supply and demand refers to a dynamic adjustment mechanism in the process of sharing sports resources between universities and communities, based on the supply capacity of university resources and guided by the sports needs of community residents. Through precise matching of supply and demand information and bidirectional matching of interests, it forms a collaborative driving force to promote efficient implementation of resource sharing. It is different from the one-way driving mode of single supply side or demand side.

The sharing of sports resources between universities and communities refers to the rational flow and optimized allocation of sports resources across subjects and spaces through institutionalized arrangements based on the principle of mutual benefit and win-win results. The core goal is to improve resource utilization efficiency, make up for the shortcomings of community sports resources, and expand the social service value of university sports resources.

2.2 Theoretical basis

The resource dependence theory is the core supporting theory for the sharing of sports resources in schools and communities. This theory holds that the interaction between organizations originates from resource dependency relationships. Universities need to expand their social service functions through resource sharing, while communities need to rely on university resources to compensate for supply shortages. Both parties form a mutually dependent cooperative relationship based on resource complementarity, which provides a theoretical logic for the formation and maintenance of school community sharing cooperation.

The theory of supply-demand equilibrium provides core guidance for the construction of shared paths. This theory emphasizes the dynamic balance of market supply and demand, and the essence of school community sports resource sharing is to achieve precise matching between resource supply and demand. Based on this theory, it is necessary to accurately analyze the current supply and demand situation, diagnose supply and demand contradictions, and construct a shared path that adapts to demand, in order to maximize resource allocation efficiency.

The theory of collaborative governance provides a theoretical basis for improving the sharing mechanism. The sharing of school and community sports resources involves multiple parties such as universities, communities, and governments. The theory of collaborative governance emphasizes that multiple parties can achieve efficient governance of public affairs through collaborative cooperation, division of rights and responsibilities, and coordination of interests, which can provide ideas for building a shared guarantee mechanism for multi-party collaborative participation.

The theory of public goods provides theoretical support for the division of shared responsibility. Universities and community sports resources have both public and quasi-public product attributes. Based on this theory, the responsibility boundaries of the government, universities, and communities in resource sharing can be clarified, and the scope of public welfare sharing and paid services can be reasonably

defined to ensure the sustainability of sharing.

3. Analysis of the current situation of sports resource sharing between universities and communities under the dual drive of supply and demand

3.1 Analysis of the current situation of sports resource supply in colleges and universities

As the intensive carrier of sports resources, universities' supply capacity and characteristics directly determine the feasibility and adaptability of school community resource sharing. Analyzing from the three core dimensions of supply scale, supply structure, and supply willingness can comprehensively clarify the current supply status of sports resources in universities. At the level of supply scale, the supply of sports resources in Chinese universities shows a significant intensification feature. Most undergraduate colleges have built a core facility system covering basic venues such as track and field fields, sports halls, swimming pools, etc. Some sports colleges or comprehensive strong schools are also equipped with specialized sports venues (such as ball halls, gymnastics halls, ice and snow sports halls, etc.) and professional training equipment. According to relevant research data, the average sports venue area of ordinary undergraduate colleges can reach over 100000 square meters, with a student teacher ratio of about 200:1 for sports majors. At the same time, they reserve abundant course and event resources, forming a four in one resource supply system of "venue teacher course event", providing a solid material and human foundation for school community sharing.

At the level of supply structure, the supply of sports resources in universities presents a guiding characteristic of "emphasizing teaching and training over social services". Among the venue resources, teaching dedicated venues account for over 60%, and the idle rate is relatively high during non teaching periods, especially on weekends, holidays, and evenings, with an idle rate of over 45%; In human resources, the focus of physical education teachers' work is on on on campus teaching and training, and their time and energy to participate in community service are limited; The course resources are mainly based on on on campus credit courses, and there is a shortage of inclusive and targeted courses for community residents; The competition resources are mainly focused on internal campus events, and there are relatively few event IPs and organizational services open to the community. At the level of supply willingness, universities exhibit a more passive response than active promotion towards the sharing of sports resources. Most universities recognize the social value of resource sharing, but due to concerns about campus management safety, venue maintenance costs, and teaching order guarantees, the willingness to actively engage in sharing cooperation is not strong. Existing sharing practices are mostly phased behaviors in response to government policy calls and lack long-term supply mechanisms.

3.2 Analysis of the current demand for community sports resources

With the deepening of the Healthy China strategy, the sports demand of community residents has shifted from traditional "basic fitness" to "diversification, specialization, and personalization". Combining research data and practical observation, the current situation of community sports resource demand can be clarified from three dimensions: demand scale, demand structure, and demand willingness. At the level of demand scale, the participation rate of community residents in sports continues to increase. According to the "Report on the Development of Mass Sports in China", the proportion of community residents who regularly participate in sports exercise has reached 37.2%, and it is showing a trend of youthfulness and normalization. The core fitness population is concentrated in the age group of 18-65, among which the three core demand groups of youth sports skills improvement, middle-aged and young fitness shaping, and elderly health and fitness have formed, driving the continuous growth of the total demand for community sports resources.

At the level of demand structure, the sports needs of community residents exhibit a characteristic of "coexistence of basic guarantee and quality improvement". The basic demand is concentrated on venue resources, especially nearby fitness venues (such as venues within a 15 minute walk of the fitness circle), and the demand for public fitness venues such as badminton halls, table tennis halls, and fitness paths is the most urgent; The quality requirements focus on professional service resources, including sports professional guidance (such as sports injury prevention, scientific fitness guidance), specialized skills courses (such as yoga, Pilates, ball skills training), and special events and activities. In addition, there are significant differences in the needs of different types of communities: old communities focus on filling the gaps in basic facilities, while new communities focus on improving the quality of professional services; The demand for urban core communities tends to be diversified, while the demand for suburban

communities is mainly focused on basic fitness. At the level of demand willingness, community residents have a high acceptance and willingness to participate in the sharing of university sports resources. More than 60% of the survey respondents expressed their willingness to participate in activities such as university venue opening and course sharing, but at the same time, there are concerns about safety guarantees, fee standards, and appointment convenience, which directly affect the transformation of demand into actual participation behavior.

3.3 Diagnosis of contradiction between supply and demand matching

Based on the comparative analysis of the current situation of university sports resource supply and community sports resource demand, it can be found that there are four core contradictions in the two-way matching process between the two, which restrict the efficient promotion of school community sports resource sharing. Firstly, there is a contradiction in structural matching. The sports resources provided by universities are mainly professional teaching resources (such as specialized sports venues and professional event resources), while the core demand of communities is universal resources (such as basic fitness venues and popular fitness courses). The mismatch between supply and demand resource types leads to the dilemma of "difficulty in sharing resources among universities and unmet needs in communities". At the same time, the professional advantages of university faculty resources are concentrated in competitive sports and professional teaching, which deviates from the professional adaptation of public fitness guidance and health and fitness services needed by community residents.

Secondly, there is a contradiction in matching time periods. The idle time periods of university sports resources are concentrated during weekdays (non-teaching hours), weekends, and holidays, while the core fitness time periods for community residents are weekday evenings (18:00-21:00) and weekend mornings. The overlap between the two time periods is less than 30%, which makes it difficult for university idle resources to accurately meet the peak demand of the community and improve resource utilization efficiency. Thirdly, there is a contradiction in information matching. The current lack of a normalized information docking mechanism for the sharing of school and community sports resources has resulted in the failure of timely and comprehensive transmission of resource supply information from universities, such as idle periods, open areas, and appointment methods, to the community; The demand information of the community (such as demand type, demand scale, and time preference) cannot be effectively fed back to universities, and information asymmetry leads to high cost and low efficiency of integration between supply and demand, and even ineffective sharing of "supply and demand mismatch".

Fourthly, there is a contradiction in power matching. The shared power source of universities is due to policy pressure and the need to enhance social image, lacking endogenous interest drive; The motivation for community participation comes from residents' fitness needs, but due to safety concerns, service experience, and other factors, the enthusiasm for participation is difficult to sustain. The lack of synergy in the driving mechanisms of both parties leads to short-term and superficial sharing cooperation, making it difficult to form a long-term and stable sharing model. The four major contradictions mentioned above are intertwined, constituting the core obstacle to the sharing of school and community sports resources, and also providing precise targeting for the construction of subsequent sharing paths.

4. Construction of the path for sharing sports resources between universities and communities driven by both supply and demand

4.1 Core principles of path construction

From the perspective of the dual driving force of supply and demand, the construction of the sharing path of sports resources between universities and communities needs to adhere to four core principles, providing direction and logical guidance for sharing practices. Firstly, the principle of precise matching between supply and demand. Guided by the diversified sports needs of community residents and combined with the supply capacity of sports resources in universities, precise docking is carried out to avoid the one-way deviation of "heavy supply and light demand" or "heavy demand and light supply". Through preliminary demand research and supply evaluation, accurate matching of resource types, service periods, and professional adaptability is achieved, and the utilization efficiency of shared resources is improved. Secondly, the principle of mutual benefit and win-win outcomes. Balancing the core interests and demands of both universities and communities, it is necessary to ensure that the teaching and training order of universities is not disrupted, while also meeting the fitness service needs of community residents; At the same time, universities can expand their social service functions through

resource sharing practices, improve the quality of community sports public services, and form a virtuous cycle of “mutual benefit and coordinated development between schools and communities”. Thirdly, the principle of gradual progress. Based on the differences in the foundation of school – community cooperation, this study starts with easy-to-operate and low-risk resource types (such as the staggered opening of venues), gradually expands to the in-depth sharing of human resources, curriculum resources, and event resources, and dynamically optimizes path design based on feedback from sharing practices to avoid cooperation imbalance caused by rash implementation. Fourthly, the principle of diverse collaboration. The boundaries of rights and responsibilities among universities, communities, governments, social organizations and other entities should be clarified. A diversified collaborative mechanism should be promoted, featuring government policy guidance, university resource supply, community organization and coordination, and social organization participation, so as to gather joint forces and ensure the implementation of the proposed path.

4.2 Core path system for resource sharing

Based on the matching needs of supply and demand and the characteristics of school and social resources, a "four in one" core sharing path system is constructed to achieve efficient flow and optimized allocation of various resources. One is the staggered construction and sharing path of venue facilities and resources. On the one hand, an information ledger for school and community venue resources should be established to accurately sort out the idle periods of university venues and the peak demand periods of the community, and promote the “time- and area-based” opening mode. For example, universities open basic venues such as track and field fields and ball halls to the community on weekday evenings, weekends, and holidays, while communities open their own fitness paths and other complementary resources during the peak teaching periods of universities; On the other hand, in areas with significant resource gaps, we will promote joint planning and construction of sports facilities by schools and communities. We will adopt a "government subsidy+school community co construction" model to build composite venues that cater to both university teaching and community fitness needs, clarifying the usage rights and maintenance responsibilities of both parties. The second is the two-way empowerment and sharing path of human resources. A sports talent exchange platform between schools and communities should be established. Universities can select physical education teachers and outstanding student volunteers to provide services such as scientific fitness guidance, sports injury prevention lectures, and sports skills training. Meanwhile, outstanding sports backbones and folk sports experts from communities can enter universities to participate in the organization of campus sports activities and assist as referees for mass sports events, thus achieving complementary advantages in talent resources. At the same time, a joint training mechanism for school community sports talents will be established, with universities providing professional skills training for community sports instructors and communities providing practical platforms for college sports majors to enhance their professional competence and service capabilities. The third is the path of integrating and sharing course and event resources. Universities are opening up high-quality physical education course resources to communities, offering inclusive specialized skills courses for community residents (such as yoga, tai chi, and ball skills), and adopting a combination of online and offline models to enhance course coverage; The joint efforts of the school and the community aim to create a distinctive sports event brand, integrate the organizational resources of university events with the community base, hold school and community sports events such as joint sports games and neighborhood sports festivals, share event IP, referee resources, and venue resources, and create a sports culture atmosphere. The fourth is the precise docking path of information resources. A school-community sports resource sharing information platform should be built to integrate university resource supply information (venue opening hours, course arrangements, faculty information) and community demand information (demand types, number of participants, time preferences), and realize functions such as real-time information updates, online reservations, and demand feedback. A regular school-community coordination mechanism should be established, with monthly coordination meetings held to report and share progress, solve problems in supply and demand coordination, and ensure smooth information flow.

The third is the path of integrating and sharing course and event resources. Universities select high-quality physical education course resources and open them to the community, offering universal specialized skills courses (such as yoga, tai chi, and ball skills), adopting a mixed mode of "online live streaming+offline practical operation", reducing the threshold for community residents to participate, and improving course coverage and accessibility. At the same time, the school and community jointly create distinctive sports event brands, integrate the advantages of university event organization and operation with the community's mass base, jointly hold school community linkage sports games,

neighborhood sports festivals, special sports challenges and other activities, share event IP, referee resources and venue resources, enrich community sports and cultural life, and provide scenes for university sports event practice. The fourth is the precise docking path of information resources. A digital information platform for school-community sports resource sharing should be built to integrate university resource supply information (venue opening hours, course arrangements, faculty qualifications) with community demand information (demand types, number of participants, time preferences), realize full-process functions including real-time information updates, online appointments, demand feedback and service evaluation, and address the problem of information asymmetry. A regular school-community coordination mechanism should be established; monthly coordination meetings can be held to report sharing progress, collect demand feedback, dynamically optimize sharing plans, and ensure the accuracy and efficiency of supply – demand coordination.

4.3 Differentiated sharing paths between different types of universities and communities

Considering the differences in resource endowment and demand characteristics of the school community, it is necessary to construct differentiated sharing paths to enhance path adaptability. For comprehensive universities and mature communities, relying on the diversified advantages of university resources and the well-established organizational system of the community, we will promote a comprehensive and deep sharing path, achieve the full integration of venues, faculty, courses, and event resources, and create a "school community integration" sports service model, focusing on deep cooperation such as school community joint events and the construction of high-quality courses. For sports universities and communities with strong demand for sports, we will leverage the advantages of professional resources in universities, promote specialized and precise sharing paths, focus on providing professional sports skills training, high-level coach guidance, professional event cooperation and other services, create a professional sports service brand, and meet the high-quality sports needs of community residents. For science and engineering universities and newly built communities, leveraging the technological advantages of universities and the spatial advantages of community planning, we will promote the path of "resource co construction+smart sharing", jointly build smart sports venues (such as smart fitness trails and IoT fitness equipment), develop shared information management systems, achieve intelligent resource management and precise docking, and fill the gap in sports resources in newly built communities. For old communities and surrounding small and medium-sized universities, based on the reality of limited resources, we will promote a basic guarantee type shared path, prioritize the opening of basic venue facilities (such as track and field fields, fitness paths), carry out low-cost and universal fitness guidance services, and solve the basic fitness needs of residents in old communities with a "small but refined" sharing model, gradually improving the level of sharing.

5. Conclusion

This study is based on the dual driving perspective of supply and demand, systematically exploring the core proposition of sharing sports resources between universities and communities. Through research and analysis of the current supply and demand situation, accurate diagnosis of matching contradictions, and construction of sharing paths, the following core conclusions are formed: firstly, there is a significant imbalance in the supply and demand of sports resources between universities and communities. Universities have the advantage of "strong professionalism and high concentration" in resource supply, but the idle rate of non-teaching resources is high, and the supply structure is biased towards teaching and training; The demand for community sports presents the characteristics of "diversification and inclusiveness", with core demands concentrated on basic venues and professional services. However, the shortage of resource supply is prominent, and the contradiction between supply and demand has become a core obstacle to the promotion of shared practice. Secondly, there are four core contradictions in the matching of supply and demand of sports resources between universities and communities, namely the mismatch of resource structure, mismatch of usage periods, poor information integration, and insufficient coordination between the two parties. These four contradictions are intertwined and together constitute the practical dilemma of school community resource sharing, and also clarify the target direction of path construction. Thirdly, the path construction needs to adhere to the four core principles of precise matching of supply and demand, mutual benefit and win-win, gradual progress, and diversified collaboration. Based on this, a "four in one" core shared path system should be constructed, covering staggered co construction of venue facilities, two-way empowerment of human resources, integration and sharing of courses and competitions, and precise docking of information resources, to achieve efficient flow and optimized allocation of various resources. Fourthly, there are significant differences

in the resource endowment and demand characteristics of different types of universities and communities. It is necessary to construct targeted differentiated sharing paths, and improve the adaptability and feasibility of path implementation through four modes: comprehensive and deep sharing, specialized and precise sharing, intelligent co construction and sharing, and basic guarantee based sharing.

The development of this study further validates the adaptability of the bidirectional driving logic of supply and demand in the sharing of school community sports resources. By taking into account the demands of both supply and demand, a sharing path system is constructed, which not only fills the limitations of single supply side or demand side oriented research, but also provides a systematic solution to solve the dilemma of school community resource sharing. At the same time, it enriches the theoretical system of sports resource sharing and provides practical support for improving the quality and efficiency of sports public services under the background of the Healthy China strategy.

Acknowledgements

This work was supported by the Community Education Innovation Project of the Ministry of Education (No. SCRJ20250501014).

References

- [1] Zhong M, Li C Q. *Research on the Mechanism and Path of Sports Resource Shared by Schools and Society [J]. Bulletin of Sport Science & Technology, 2021,29 (6):33-39.*
- [2] Duan Y Q. *The path of promoting the development of public sports services through sports resources in Anhui Province's universities [J]. Journal of Changchun Normal University, 2025,44 (8):116-120.*
- [3] Yang D P, He J T. *Research on the Innovation and Upgrading of Smart Models for Community Sports Resources [J]. Journal of Nanjing Sports Institute, 2024,33 (10):31-35.*