

Research on the Symbiotic Mechanism and Promotion Strategy of High-Quality Development of China's Sports Industry and Corporate Social Responsibility Fulfillment under Carbon Peaking and Carbon Neutrality Goals

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Abstract

Under the guidance of carbon peaking and carbon neutrality goals, this paper discusses the symbiotic mechanism of high-quality development of China's sports industry and corporate social responsibility fulfillment. As an important component of the national economy, the high-quality development of the sports industry plays a crucial role in promoting green and low-carbon development and realizing the carbon peaking and carbon neutrality goals. This study firstly clarified the connotation and requirements of high-quality development of the sports industry, and analyzed the symbiotic relationship between corporate social responsibility fulfillment and high-quality development of the sports industry. Based on the existing problems China's sports industry has encountered to achieve the carbon peaking and carbon neutrality goals, corresponding development strategies were then proposed including improving the institutional mechanisms of the sports industry, strengthening the awareness of corporate social responsibility fulfillment, enhancing technological innovation in sports industry, and promoting green transformation of the sports industry. Finally, it was concluded that under the background of carbon peaking and carbon neutrality goals, China's sports industry should actively fulfill corporate social responsibility while achieving high-quality development goals, and contribute to the green and low-carbon transformation of China's economy and society.

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Keywords

Carbon Peaking and Carbon Neutrality Goals, Sports Industry, High-Quality Development, Corporate Social Responsibility

1. Introduction

With the increasingly severe global climate change, reducing greenhouse gas emissions and achieving goals of carbon peaking as well as carbon neutrality have become the consensus and action guidelines of the international community (Evro, Oni, & Tomomewo, 2024; Chen et al., 2024; Wang et al., 2022; Xu et al., 2022). It was against this backdrop that China proposed the carbon peaking and carbon neutrality goals, showing that China is moving towards a new era of green and low-carbon development in an all-round way (Zhu & Jiang, 2023). As an important component of the national economy and a vital support for people's healthy life, the sports industry also needs to respond positively in this trend of the times and achieve high-quality development (Li, 2021). The high-quality development of the sports industry is not only related to its own prosperity, but is also of great significance in stimulating economic growth, promoting social progress, and enhancing people's physical fitness (Fu, Hu, & Hou, 2023). However, the traditional development model of the sports industry is often accompanied by high resource consumption and huge environmental damage, which contradicts the requirements of the carbon peaking and carbon neutrality goals. Therefore, how to promote environmental protection and social responsibility fulfillment while achieving the high-quality development of the sports industry has become a major issue for the current sports industry.

Corporate Social Responsibility (CSR), as the responsibility and obligation that enterprises undertake towards society, the environment, and stakeholders while pursuing economic benefits, has become an important symbol of modern enterprise development (Tang & Ma, 2024). Under the carbon peaking and carbon neutrality goals, the high-quality development of the sports industry and the fulfillment of corporate social responsibility present a symbiotic relationship. For one thing, the high-quality development of the sports industry requires sports enterprises to actively fulfill their social responsibilities, reduce their impacts on the environment, and promote the green transformation of the sports industry by adopting environmentally friendly materials, promoting green sports, and improving resource utilization efficiency. For another, the fulfillment of social responsibility by enterprises also helps to enhance the brand image and credibility of the sports industry, strengthen consumers' sense of identity and loyalty, and further promote the high-quality development of the sports industry.

This paper aims to explore in depth the symbiotic relationship between the high-quality development of China's sports industry and corporate social responsibility fulfillment under the carbon peaking and carbon neutrality targets, and to

analyze and reveal the inherent logic of mutual promotion and common development between them and put forward corresponding promotion strategies. These strategies and suggestions will focus on policy guidance, technological innovation, industry self-discipline as well as publicity and education so as to provide theoretical support and practical guidance for the green transformation and sustainable development of China's sports industry.

2. The Connotation and Relationship between the High-Quality Development of China's Sports Industry and Corporate Social Responsibility Fulfillment under the Carbon Peaking and Carbon Neutrality Goals

2.1. Corporate Social Responsibility of Sports Enterprises

Corporate Social Responsibility (CSR) means that while pursuing economic benefits, companies also need to take into consideration their responsibilities and impacts on society, the environment, and all stakeholders. CSR is not only an ethical responsibility, but also the core driving force for enterprises to achieve long-term and sustainable development. With the carbon peaking and carbon neutrality goals gradually becoming a major strategic decision at the national level and a consensus in society, more and more enterprises have begun to promote CSR to the core position of corporate strategy, and are actively exploring and practicing new modes of sustainable development in response to the call of the times and future challenges.

Although sports enterprises play an increasingly important role in social development, there are few relevant studies on the social responsibility of sports enterprises. [Liu and Cui \(2021\)](#) systematically reviewed researches on the social responsibility of sports enterprises in China and summarized them into three stages including exploring, improving and reforming. It was also found that these studies mainly discussed CSR practices within the sports industry, providing valuable reference to deeply understand and evaluate the role and contribution of sports enterprises in fulfilling their social responsibilities. In addition, after an in-depth analysis, [Sun \(2021\)](#) pointed out that although most sports enterprises in China have assumed corporate social responsibility to varying degrees and achieved relevant results, they are still faced with a number of challenges in fulfilling corporate social responsibility. To begin with, there is still insufficient understanding of social responsibility, with many companies failing to fully grasp its deep meaning. Additionally, there is no complete and clearly structured framework for the fulfillment of social responsibility, resulting in a lack of systematic and coherent implementation in practice. Moreover, the assessment system of sports enterprises mainly focuses on economic benefits with less coverage of social responsibility evaluation, which may cause enterprises to neglect their contribution to society while pursuing profits. Last but not least, obstacles in the external social environment, such as imperfect policy environment and competitive pressures in the market environment, also pose challenges for companies to fulfill their social

responsibilities. Undoubtedly, if these issues are not effectively addressed, enterprises may neglect the fulfillment of social responsibilities when seeking economic benefits, which in turn will adversely affect their sustainable development.

Under the guidance of the carbon peaking and carbon neutrality goals, the high-quality development of China's sports industry is closely linked to the corporate social responsibility fulfillment. Sports enterprises should actively respond to the national strategic call for carbon peaking and carbon neutrality and take on the responsibility of reducing carbon emissions to promote the green development of the sports industry (Zhao & Zhang, 2023). The fulfillment of this social responsibility is not only a solid foundation for the long-term sound and sustainable development of sports enterprises, but also an important driving force for developing the sports industry in a greener, healthier and more sustainable way, injecting strong impetus into the high-quality development of China's sports industry.

2.2. High-Quality Development of the Sports Industry under the Carbon Peaking and Carbon Neutrality Goals

“To build a modern socialist country in all respects, we must, first and foremost, pursue high-quality development,” General Secretary Xi Jinping said in a report at the opening session of the 20th National Congress of the Communist Party of China (Han & Ma, 2023). While the general factors that affect the development of China's sports industry are complex and intricate, mainly including the support and guidance of policies and regulations, the impact of uneven regional economic development on industrial layout, the rapid changes of market demand and consumer sports concepts, the degree of standardization of the sports market and regulatory mechanism, the rationality and collaborative development ability of the internal structure of the sports industry, the effectiveness of the training and introduction mechanism of professional talents, and the depth and breadth of international sports exchanges and cooperation (Shi, Song, & Li, 2024; Wang et al., 2018). These factors interact with each other, jointly shaping the development environment of China's sports industry and profoundly influencing its future development. The high-quality development of the sports industry, guided by the carbon peaking and carbon neutrality goals, is gradually achieving a significant leap in total factor productivity through in-depth quality transformation, efficiency improvement, and power conversion, which has not only driven the growth of sports services and supplies in terms of quantity, but also achieved a major improvement in quality. At the same time, the continuous optimization and upgrading of the sports industry structure ensures the harmonious coexistence and common growth of economic benefits and social benefits. More importantly, the high-quality development of the sports industry continuously meets people's growing needs for a better life, providing a more diverse range of choices for people's healthy living (Shen & Lv, 2020). Under the carbon peaking and carbon neutrality goals, the high-quality development of the sports industry is no longer just pursuing the growth in quantity, but also in quality and efficiency.

The high-quality development of the sports industry has far-reaching and positive impacts on the economic and social development. Firstly, as an important component of economic and social development, the high-quality development of the sports industry can not only effectively drive the coordinated development of related industries, but also actively promote the optimization and upgrading of the economic structure, providing new growth points and strong impetus for economic growth. Secondly, the sports industry plays a crucial role in meeting people's growing demand for a better life, and its high-quality development can significantly improve people's quality of life and sense of well-being, so that more people can enjoy the health and happiness brought by sports. Thirdly, the high-quality development of the sports industry is also one of the important driving forces to achieve the goals of carbon peaking and carbon neutrality. By actively promoting the green transformation of the sports industry and reducing energy consumption as well as carbon emissions, the sports industry will contribute significantly to the construction of ecological civilization and further promote sustainable development.

Thereby, it is vital to attach great significance to the high-quality development of the sports industry, and strengthen policy guidance and support to promote its green, healthy, and sustainable development under the carbon peaking and carbon neutrality goals. At the same time, sports enterprises ought to actively respond to the call, take the initiative to assume social responsibility, promote industrial innovation and green transition, and contribute to the realization of the high-quality development of the sports industry.

2.3. The Symbiotic Relationship between Corporate Social Responsibility Fulfillment and High-Quality Development of the Sports Industry under the Carbon Peaking and Carbon Neutrality Goals

2.3.1. Promotion of Corporate Social Responsibility Fulfillment through the High-Quality Development of the Sports Industry

Under the guidance of carbon peaking and carbon neutrality goals, the high-quality development of the sports industry requires enterprises to achieve green and low-carbon transformation, improve energy utilization efficiency, and reduce greenhouse gas emissions. This transformation is not only beneficial for the sustainable development of enterprises, but also prompts them to pay more attention to environmental protection and social responsibility.

To start with, promote green transition. Guided by the carbon peaking and carbon neutrality targets, the sports industry is accelerating its green transformation towards low-carbon and environmentally friendly development. And in this process, sports enterprises, as the main participants in the industry, need to actively respond to the targets and take on the responsibility of reducing carbon emissions. By promoting the intelligent transformation of sports venues, green transformation of sports events, and low-carbon sports manufacturing and construction, sports enterprises can promote the green transition of the industry while meeting market demand.

Additionally, encourage technological innovation. The high-quality development of the sports industry requires enterprises to continuously enhance their technological innovation capabilities to meet consumers' demands for high-quality, green, and healthy products. Therefore, technological innovation can not only enhance the competitiveness of sports enterprises, but also conduces to promoting the technological progress and green transformation of the entire industry. For instance, sports enterprises can increase investment in production equipment to enhance production efficiency, reduce energy consumption and carbon emissions.

Finally, enhance the brand image. When fulfilling social responsibilities, sports enterprises can enhance their brand image and reputation by actively participating in environmental protection, public welfare and charity activities, which helps to increase consumer trust and loyalty, thereby promoting the long-term development of enterprises. The active fulfillment of social responsibility by sports enterprises is helpful to shape a good corporate image, and serves as a powerful driving force for the entire society to move towards green and low-carbon development.

2.3.2. Feed-Back Effect of Corporate Social Responsibility Fulfillment on the High-Quality Development of the Sports Industry

The fulfillment of social responsibility by sports enterprises not only helps to enhance their brand image and credibility, but also provides strong support for the high-quality development of the sports industry.

First and foremost, in the process of fulfilling corporate social responsibilities, sports enterprises can enhance the public's concern and awareness of environmental issues by promoting the concept of environmental protection and advocating a green and low-carbon lifestyle, which helps to create a positive social atmosphere and stimulate market demand, thus providing strong support for the green transition of the sports industry.

Moreover, sports enterprises can establish cooperative relationship with the government, other enterprises and social organizations to jointly promote the green transformation and high-quality development of the sports industry. As an illustration, companies can collaborate with the government to promote the smart transformation of sports venues, and cooperate with other companies to develop green sports products as this kind of resource integration and sharing can do good to enhancing the competitiveness and innovation capabilities of the entire industry.

Finally, with the deepening practice of sports enterprises to fulfill their social responsibilities, a set of social responsibility standards in line with the characteristics of the industry can gradually be formed. This is not only helpful to regulate the behavior of enterprises and improve their sense of responsibility, but also provides guidance and support for the green transformation and high-quality development of the entire industry.

To sum up, there is a close symbiotic relationship between the high-quality development of China's sports industry and corporate social responsibility fulfillment

under the goals of carbon peaking and carbon neutrality. The high-quality development of the sports industry improves the enthusiasm and ability of enterprises to fulfill corporate social responsibility, while the fulfillment of corporate social responsibility can in turn feed back and promote the high-quality development of the sports industry. This symbiotic relationship contributes to the green transformation and sustainable development of the sports industry, and can enhance the environmental awareness and sense of responsibility of the entire society. The details are shown in **Figure 1**.

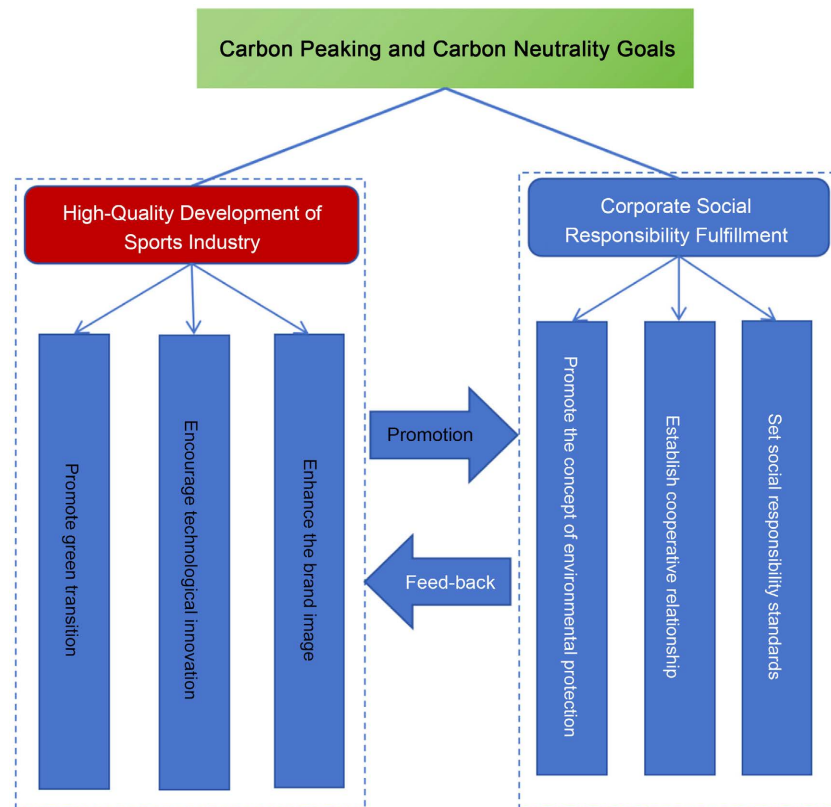


Figure 1. The symbiotic relationship between high-quality development of the sports industry and corporate social responsibility fulfillment under the carbon peaking and carbon neutrality goals.

In addition, in the pursuit of harmonious symbiosis of high-quality development and corporate social responsibility fulfillment in the sports industry under the guidance of the carbon peaking and carbon neutrality goals, the full integration and support of regional resources are particularly crucial (Huang & Dang, 2024). To be specific, the economic support provided by local governments through fiscal and economic policies is indispensable. And technical departments, such as universities and research institutes, provide necessary technological innovation and guidance for industrial development. Financial institutions including banks and various investment companies can also inject valuable financial vitality into projects. As for intermediary agencies such as distribution networks and industry associations, they build bridges between the market and industry with

professional services. Ultimately, the active participation and recognition of consumers ensured the realization of the market value of sports products. It can't be denied that all these parties jointly weave a collaborative and symbiotic development network. Accordingly, this study constructed an ecosystem model for the high-quality development of the sports industry and corporate social responsibility fulfillment in implementing the targets of carbon peaking and carbon neutrality that can be shown in **Figure 2**. It is believed that with the continuous improvement of policies and the market, this symbiotic relationship will be even closer and promote the development of the sports industry in a more green, healthy and sustainable way.

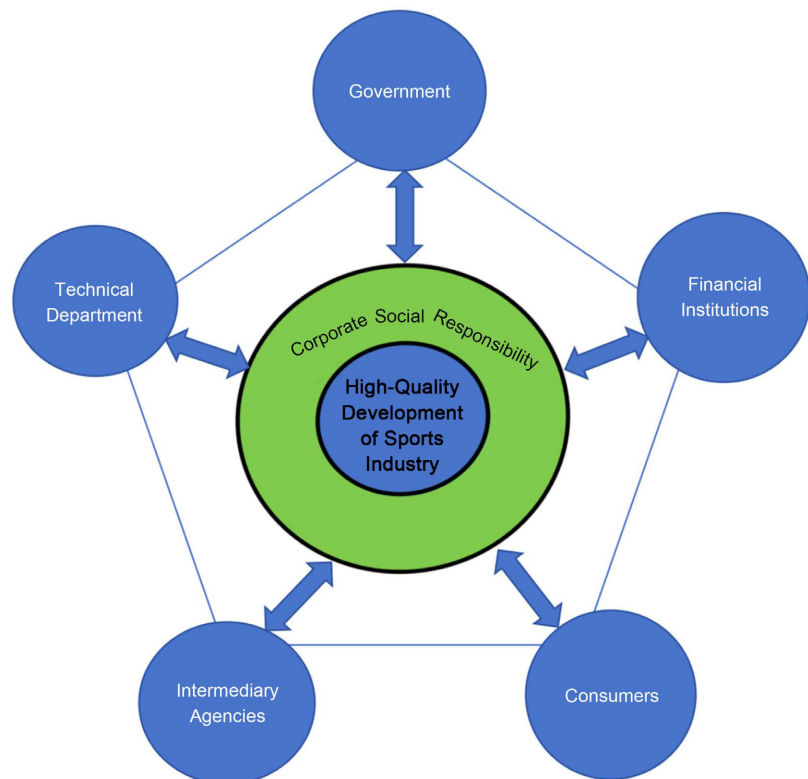


Figure 2. An ecosystem model for the high-quality development of the sports industry and corporate social responsibility fulfillment under the carbon peaking and carbon neutrality goals.

3. The Current Situation of Low-Carbon Development of China's Sports Industry under the Background of Carbon Peaking and Carbon Neutrality Goals

3.1. The Regulatory System for the Low-Carbon Development of the Sports Industry Has Yet to Be Perfected

As an important part of China's national economy, the low-carbon development of the sports industry is particularly significant under the carbon peaking and carbon neutrality goals (Ren & Huang, 2022). However, it should be noted that there are still many deficiencies in the current regulatory system for low-carbon

development of the sports industry, which need to be improved urgently.

First of all, there is a lack of specific legal and regulatory support. Although China has issued a series of laws and regulations on environmental protection, energy conservation and emission reduction, specific laws and regulations on the low-carbon development of the sports industry are not yet perfect, leading to a lack of clear legal guidance and norms in the process of low-carbon development for the sports industry and the difficulty to form an effective regulatory mechanism. Additionally, the regulatory mechanism is not sound. The sports industry involves multiple fields and sectors including manufacturing, service industry and sports events, and requires coordinated supervision across departments. However, it should be noted that the current regulatory mechanism for the low-carbon development of the sports industry has not yet been formed, the division of responsibilities between various departments is unclear, and the coordination is not close enough, resulting in ineffective regulation. What's worse, the regulatory standards are not uniform. Due to the complexity and diversity of the sports industry, it is difficult to unify the regulatory standards for its low-carbon development. There are differences in regulatory standards among different regions, fields and enterprises, leading to unfairness and incomparability in regulatory results, which affects the motivation of enterprises and reduces the authority and effectiveness of regulation. Last but not least, the regulatory measures are single. The current regulatory measures for low-carbon development in the sports industry mainly rely on administrative means such as policy guidance and regulatory constraints that lack flexibility and specificity, making it difficult to meet the diverse needs of low-carbon development in the sports industry (Pan & Shen, 2022). At the same time, the role of social supervision and public participation has not yet been given full play, resulting in ineffective regulation.

Consequently, there is a need to strengthen regulatory and enforcement efforts to ensure that sports enterprises truly implement the requirements of low-carbon development. However, it is worth noting that improving the regulatory system for low-carbon development of sports enterprises is a complex and important task that requires joint efforts from the government, enterprises, and the society to promote its continuous improvement and development.

3.2. The Sense of Responsibility for Low-Carbon Development in the Sports Industry Is Relatively Weak

Under the guidance of carbon peaking and carbon neutrality targets, the sports industry, as an important component of social development, should actively fulfill its social responsibility and promote low-carbon development. However, the sense of responsibility for low-carbon development in the sports industry is relatively weak with insufficient motivation and urgency, which undoubtedly becomes an obstacle to its progress towards green transformation.

Firstly, some sports enterprises regard low-carbon transition as a burden while ignoring its long-term social and environmental benefits. They focus more on

immediate economic benefits and fail to deeply understand the significance of low-carbon transformation for the sustainable development of the sports industry. Such short-sighted behaviour hinders the low-carbon development of the sports industry, and may also damage the long-term competitiveness of the enterprises. Secondly, some sports companies have insufficient consideration for low-carbon transition in their pursuit of economic benefits, and may not hesitate to maximize profits at the expense of the environment and society. Specifically, they tend to adopt production methods with high energy consumption and high emissions, which exacerbates resource waste and brings about environmental pollution. All these behaviors violate the principle of low-carbon development, and seriously damage the social image and reputation of the enterprise. Lastly, investment in the research and development of low-carbon technologies needs to be increased. The research and application of low-carbon technologies are the keys to achieving low-carbon transition in the sports industry. Nevertheless, due to limitations in funding, technology and other aspects, some enterprises have seriously insufficient investment in the research and development of low-carbon technologies, leading to a shortage of effective technological support in the low-carbon transformation process, thus making it difficult for them to successfully achieve the goal of low-carbon development.

Accordingly, in order to promote the low-carbon transformation of the sports industry, sports enterprises are supposed to strengthen their sense of responsibility for low-carbon development, increase investment in the research and development of low-carbon technologies, change the production mode of high energy consumption and high emissions, and assume the responsibility of protecting the environment and conserving resources. In the meantime, it is the joint effort from the government and all sectors of society that helps promote the low-carbon, green, and sustainable development of the sports industry.

3.3. The Production Technology Empowerment of Low-Carbon Development in the Sports Industry Is Relatively Low

In the pursuit of low-carbon development of the sports industry, production technology is undoubtedly the core driving force. However, currently the sports industry is struggling to meet the increasingly urgent demand for low-carbon transformation in terms of empowering production technology for low-carbon development.

To begin with, the lack of technological innovation capability has become a bottleneck restricting the low-carbon transformation of the sports industry. The sports industry in China nowadays lags behind in the research and development and application of low-carbon technologies, lacking core technologies with independent intellectual property rights and strong technical support and innovative solutions for the sports industry in the process of low-carbon transformation. This not only affects the low-carbon transition process of the industry, but also limits its competitiveness in the global low-carbon industry competition. Moreover, the insufficient utilization of clean energy is another challenge for the low-carbon

transformation of the sports industry. Traditional production methods of high energy consumption and high emissions still dominate, with a relatively low degree of utilization of clean energy and renewable resources. This excessive reliance on traditional energy in production not only increases the energy costs of enterprises, but also causes great pressure on the environment. With increasingly scarce resources and constantly increasing environmental pressure, the sports industry should accelerate the pace of clean energy utilization and promote the low-carbon transformation of production methods. Finally, the insufficient level of digitization and intelligence has also constrained the process of low-carbon transformation in the sports industry. With the rapid development of information technology, digitization and intelligence have become increasingly important forces in industrial transformation and upgrading. However, the application level of digitization and intelligence in the sports industry is relatively low, failing to make full use of modern information technology to promote low-carbon transformation (Wang & Liu, 2022). This leads to the low efficiency of the sports industry in terms of resource utilization, energy management and production processes, making it difficult to achieve the goal of low-carbon development.

As a result, in order to promote the low-carbon transition of the sports industry, the low production technology empowerment of sports enterprises for low-carbon development is an issue of concern. By increasing investment in technology research and innovation, promoting digital and intelligent transformation, strengthening green design concepts, and strictly implementing low-carbon production standards, the production technology empowerment level of sports enterprises for low-carbon development can gradually be improved (Wang & Li, 2022).

3.4. The Green Transformation Process of Low-Carbon Development in the Sports Industry Is Slow

Under the carbon peaking and carbon neutrality goals, the current situation of low-carbon transformation in sports enterprises remains severe.

First and foremost, from the national level to the enterprise level, the understanding of low-carbon development has yet to be deepened. Specifically, the supply of green and low-carbon products such as clothing, shoes, and hats in the sports manufacturing industry is still insufficient. The development of low-carbon sports architecture is still in infancy. And the sports venue service industry is also lagging behind in integrating the concept of low-carbon and environmental protection. Besides, limited awareness and weak willingness of low-carbon sports consumption and a lack of physical, ornamental, and participatory low-carbon sports products in the market further suppress the demand for low-carbon sports consumption (Ren, 2023). In addition, the current financial and tax pricing policies, green finance, and investment guidance mechanisms for low-carbon development in the sports industry are not yet perfect. For instance, insufficient financial support from the government for low-carbon development of sports enterprises, as well as limited incentive effects of tax and pricing policies on low-carbon sports

products and services have, to certain extent, hindered the green transformation process of sports enterprises. At last, the green sports finance standard system that has not been established and the imperfect green finance policy for low-carbon development have brought about difficulties to sports enterprises in financing and green product development, further restricting the promotion of green transition.

Therefore, it is necessary for the government, enterprises and other sectors of the society to make joint efforts to promote the green transformation of low-carbon development for sports enterprises. The government should increase policy guidance and financial support, encourage technological research and development, and provide strong support for the green and low-carbon development of the sports industry. At the same time, sports enterprises also need to respond positively by increasing investment in research and development of green products to promote the green transformation of the sports industry. There is also a need to raise public awareness of low-carbon sports consumption as well as willingness to purchase low-carbon sports production, so as to jointly promote the sustainable development of the sports industry.

To summarize, there are still some problems in fulfilling social responsibility and promoting low-carbon development while implementing the carbon peaking and carbon neutrality goals. To better promote the low-carbon development of the sports industry, it is necessary to further strengthen and improve the operational mechanism, regulatory system, sense of responsibility, production technology and innovation empowerment, structural optimization and green transformation. And in order to achieve high-quality development of the sports industry, the government, sports enterprises, and the public need to work together to promote the low-carbon transformation and sustainable high-quality development of the sports industry.

4. Strategies for Promoting the High-Quality Development of China's Sports Industry under the Background of Carbon Peaking and Carbon Neutrality Goals

4.1. Improve the Institutional Mechanism for the Development of Sports Enterprises

To realize high-quality development of the sports industry, we should first improve its institutional mechanisms for development (Wang, Zhang, & Shen, 2023). On the one hand, we need to deepen the reform of the sports industry management system, optimize resource allocation, break down industry barriers, and promote the deep integration of the sports industry with other industries. By introducing market mechanisms, we can stimulate the vitality and creativity of sports enterprises, and form a diversified and competitive market pattern.

On the other hand, it is necessary to strengthen the legal and regulatory construction of the sports industry and improve the policy system of the sports industry (Ren & Huang, 2024). The legal system of the sports industry serves as an important basis for the healthy and orderly development of the sports industry. A

sound legal system can help provide solid legal protection for the development of the sports industry, promote fair competition in the sports market, and protect the legitimate rights and interests of all parties involved (Yue & Li, 2024). By formulating scientifically reasonable industrial policies, we can provide powerful policy support and guarantee for sports enterprises, thus reducing enterprise operating costs, and enhancing market competitiveness. At the same time, it is suggested to strengthen industry supervision, regulate market order, crack down on unfair competition and illegal activities, and create a favorable market environment for the healthy development of the sports industry.

4.2. Strengthen the Sense of Corporate Social Responsibility in Sports Industry

Under the carbon peaking and carbon neutrality goals, the sports industry is supposed to strengthen the sense of responsibility fulfillment (Zhang, 2023). For one thing, sports enterprises should fully recognize the significance of low-carbon transformation, integrate environmental protection concepts into development strategies of enterprises, and reduce carbon emissions and resource consumption during operations through technological and management innovations. For another, it is vital for sports enterprises to actively fulfill their social responsibilities and pay attention to social welfare and environmental protection (Yang et al., 2024; Ma et al., 2022). By participating in public welfare activities, donating funds and other means, sports enterprises can give back to the society and establish a positive corporate image. At the same time, it is advised that sports enterprises strengthen communication and cooperation with all sectors of society to jointly promote the sustainable development of the sports industry.

4.3. Strengthen Technological Innovation in the Development of Sports Industry

Technological innovation is the key driving force to promote the high-quality development of the sports industry (Webb, Cloutier, & Brouard, 2023). Globalization has brought broader market space and more international cooperation opportunities, and has promoted the rapid development and upgrading of China's sports industry. The overall scale of sports equipment exports continues to expand, and the total export volume grows rapidly. However, this also requires China's sports industry to continuously enhance its competitiveness and innovation capabilities (Wang & Liang, 2024; Yu, Medvid, & Le, 2021). It is necessary to increase investment in technological innovation in the sports industry, and encourage enterprises to introduce advanced technology and management experience so as to improve product quality and performance. In the meantime, it is suggested to strengthen the cooperation among industries, universities and research institutes, promote the transformation and industrial application of scientific and technological achievements, and form core technologies with independent intellectual property rights. In addition, the digital transformation and intelligent upgrading of the sports industry should be promoted (Ren, 2022; Shen, Zeng, Dong,

Mou, & Lv, 2021). We can enhance the intelligence level of the sports industry, and improve operational efficiency and service quality by introducing advanced technologies such as the Internet of Things, big data, and artificial intelligence. It is also advised to strengthen information security protection to ensure the security and reliability of sports industry data.

4.4. Promote the Green Transformation of Sports Industry

Generally speaking, to realize green transformation, it is necessary to strengthen the formulation and implementation of green policies and regulations, promote the research and application of green and low-carbon technologies, promote the adoption of environmentally friendly materials and clean energy by enterprises to reduce energy consumption and emissions, and strengthen environmental protection education and enhance public awareness of green issues. In addition, optimizing the industrial structure, phasing out high polluting industries, and developing green and low-carbon industries are also essential measures to achieve green transformation. To achieve the goals of carbon peaking and carbon neutrality, the sports industry must accelerate the pace of green transformation (Tao & Zhang, 2023). Firstly, it is suggested that the sports industry optimize the industrial structure and promote the production and consumption of green and low-carbon products. By developing low-carbon and environmentally friendly sports equipment, sports gear and other products, the overall energy consumption and emissions of the sports industry can be reduced. Secondly, the use of clean energy should be enhanced. The use of clean energy, such as solar and wind energy, should be promoted in stadiums and sports facilities, so as to reduce the consumption of fossil energy and carbon emissions (Li & Yue, 2024). At the same time, energy management is advised to be strengthened to improve the efficiency of energy use and reduce operating costs. Finally, it is significant to promote the green development of the sports industry. Through the formulation of green standards and the promotion of green certification, sports enterprises will be guided to strengthen their environmental management and improve their environmental awareness and capacity. Strengthening environmental supervision and law enforcement is also essential to ensuring the implementation of green development in the sports industry.

5. Conclusion

Under the background of carbon peaking and carbon neutrality goals, this paper explored the symbiotic relationship between the high-quality development of China's sports industry and the fulfillment of corporate social responsibility. It was concluded that the high-quality development of the sports industry and the corporate social responsibility fulfillment are inseparable and mutually reinforcing, and the fulfillment of corporate social responsibility promotes the green and sustainable development of the sports industry.

Therefore, combined with the current situation of the development of China's

sports industry, this study put forward the low-carbon development promotion strategy of the sports industry. Firstly, a sound institutional mechanism for the development of the sports industry is the key to the symbiotic promotion. It is vital that the government should introduce corresponding policies to encourage enterprises to increase investment in environmental protection, promote green technologies, and strengthen supervision to ensure the effective fulfillment of social responsibilities.

Secondly, it is crucial to establish a sense of responsibility for the scientific development of the sports industry, and the government should establish corresponding incentive mechanisms to encourage enterprises to more actively fulfill their social responsibilities.

Thirdly, it is advised to strengthen the cooperation between industry, academia and research institutes to promote technological innovation as technological innovation is the core driving force for the high-quality development of the sports industry. Through cooperation among industries, universities and research institutes, we can promote the application of green technology and low-carbon technology in the sports industry, strengthen the digital and intelligent upgrading of the sports industry, and improve the quality of services.

Finally, it is suggested to promote the green transformation of the sports industry and build a green and low-carbon industrial chain. To achieve the carbon peaking and carbon neutrality goals, the sports industry should accelerate the pace of green transformation and achieve high-quality development in harmony with the ecological environment.

In conclusion, the symbiotic promotion strategy of high-quality development of China's sports industry and corporate social responsibility fulfillment under the carbon peaking and carbon neutrality targets is a systematic project that requires joint efforts from the government, enterprises, and all sectors of society. It is hoped that through policy guidance, technological innovation, industrial upgrading and social participation, we can promote the development of the sports industry in a greener, low-carbon and sustainable way, and contribute to the realization of the carbon peaking and carbon neutrality goals.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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