



Research on the Digital Transformation of Chinese Household Sports Consumption Under the Background of Digital Economy Development

Liwen Kang¹(✉) and Sheng Zhao²

¹ School of Sports Training, Tianjin University of Sport, Tianjin 301617, China
15050240216@xs.hnrit.edu.cn

² Department of Physical Education, School of Sport Science and Technology College, Wuhan Sports University, Wuhan 30079, China

Abstract. With the deepening of national industrial transformation as well as the rapid growth in digital technology-related fields, the digital economy has been developed at high speed and accelerated the integration of sports consumption and digital economy development. This study adopts textual analysis and comparative research to examine the current situation and challenges facing the development of household sports consumption in the digital economy and to elaborate on the potential development trend of Chinese household sports consumption in the future. With the advent of the tide of digital economy and technology, it is indispensable for the digital economy to integrate into household sports consumption, both in the wake of the epidemic and in the future course of sports development. The digital economy can significantly improve the driving force of Chinese household sports consumption, stimulate the renewal and transformation of related sports industry productivity, and ultimately achieve the purpose of serving household sports consumers.

Keywords: Digital Economy · Household Sports Consumption · Sports Industry · Sports Consumption Transformation

1 Introduction

The implementation of the strategy of sports power in China has promoted the rapid growth of the sports consumption market, and the demands of household sports consumption have become more and more diversified. Since 2010, the application of cutting-edge technologies such as cloud computing, big data, and artificial intelligence has provided strong support for the sustainable development of the digital economy. According to the data from China's authoritative statistics agency, the total number of enterprises in the sports technology industry is over 19,000. In 2021, there will be an increase of 500 enterprises in this industry, among which the growth rate of new enterprises will be as high as

L. Kang and S. Zhao—Contributed equally.

© The Author(s) 2024

S. Tehseen et al. (Eds.): ICEDBC 2023, AEBMR 258, pp. 275–284, 2024.

https://doi.org/10.2991/978-94-6463-246-0_34

17.7%, indicating that future digital sports consumption will become a primary development direction of China's commercial sports industry and related consumer goods circuit. On July 5, 2022, the General Administration of Sport of China issued the Work Plan on Sports to Help Stabilize the Economy and Promote Consumption and Activation in order to promote economic and social development, implement various policies and measures, deepen the supply-side structural reform of sports, constantly enrich sports products and services, stimulate the vitality of sports consumption, as well as promote the high-quality development of sports. To meet the challenges posed by the COVID-19 pandemic. The digital economy is a new economic form with data as the vital factor of production and digital technology as the core driving force to accelerate the reconstruction of economic development and governance model [1]. In terms of the practical application of relevant concepts of the digital economy, the Beijing Winter Olympics has become a landmark sporting event for the integration of technology and sports. The large-scale commercial use of 5G in the Winter Olympics has effectively integrated 5G technology with research and development achievements in big data, artificial intelligence, cloud computing, blockchain, and other new scientific and technological fields. It indicates that under the development of modern sports policies, the trend of the digital economy integrating into sports development is gradually evident. The normalization of the epidemic situation indicates that the development direction of traditional sports will also be impacted. The digital economy is changing the development and operation form of the sports industry and promoting the innovative development of the sports industry with industrial digitalization. Based on the research of relevant scholars, this study integrates the literature and conducts a systematic analysis and research on the trends and motives of the digital economy in promoting household sports consumption, related problems, and solutions.

Through textual analysis and comparative research methods, this study will first elaborate on the development status of Chinese household sports consumption in the digital economy. Next, this study will focus on analyzing the reasons for the difficulties of digital transformation of Chinese household sports consumption at present and try to put forward the transformation methods and related potential opportunities suitable and applicable for the future development path of the digital economy.

2 Reasons for the Transformation of Chinese Household Sports Consumption in the Digital Economy

In recent years, China's digital economy has made fantastic progress with the rapid rise of the sports consumption market. Digital technology has brought a strong impetus to economic and social development. The government has actively promoted it, the people's living standards have been continuously improved, and science and technology have constantly been advanced, which has fully released the potential of sports consumption. With the continuous development of digital technology, its integration with traditional sports has become a critical factor in promoting the country to realize the dream of becoming a sports power and meet the people's demand for diversified fitness, as well as a significant way to achieve this goal. With the update, development, and improvement of technology, sports enthusiasts can adopt more modern training methods

to meet their sport's needs. In addition, with new scientific and technological training aids, people's physical training level can obtain greater output returns with less investment. Accompanied by scientific and technical progress, the digital economy has also achieved relatively remarkable achievements. Recently, China's digital economy has made fantastic progress, and the sports consumption market has risen rapidly. Digital technology has brought a strong impetus to economic and social development. The government has actively promoted it, the people's living standards have been continuously improved, and science and technology have been continuously advanced, which has fully released the potential of sports consumption. With the continuous development of digital technology, its integration with traditional sports has become a critical factor in promoting the country to realize the dream of becoming a sports power and meet the people's demand for diversified fitness, as well as an essential way to achieve this goal.

On the national level, the successful preparation and holding of the 2022 Beijing Winter Olympic Games is a sports event that perfectly combines digital technology and physical competition. The widespread application of 5G technology, combined with cutting-edge science and technology such as big data, artificial intelligence, cloud computing, and blockchain, will bring unprecedented changes. After the Winter Olympic Games, Chinese people's demand for sports also reached a relatively high level. Therefore, due to the development of the overall sports economy, household sports consumption has ushered in a higher level of consumption. In addition to the mental boost associated with the games, the transformation of sports consumption reflects several factors.

2.1 Explosive Growth in Demand for Home Fitness After Covid-19

According to the data illustrated by the World Health Organization, the global prevalence of anxiety and depression increased by more than 25 percent in the first year of the COVID-19 pandemic [2]. "Psychological epidemic prevention" has become another battlefield in the fight against the epidemic. The exercise prescription for depression is a continuous aerobic exercise with large muscle groups, such as jogging and swimming. However, in order to ensure the safety of people's lives during the epidemic, China adopted the policy of closure of risk areas. As a result, people are unable to exercise outdoors. Some people choose to exercise at home to improve their immunity. After the national lockdown, people have been used to regular exercise training. But because of the risk of infection to the human body, the stay-at-home movement has become mainstream and gained high popularity online. Some online celebrities have joined the live streaming team of online sports apps, and people can exercise with professional fitness bloggers at home. In the economic aspect, due to the common control of the epidemic and the occasional small-scale outbreak, the national offline fitness industry and all kinds of physical sports services have been severely impacted, forcing the rise and eruption of the online fitness industry. The change in people's fitness methods has brought a magnificent opportunity to the fitness industry. The transformation from offline to online, various online fitness apps, and indoor sports and fitness equipment all promote the consumption of home fitness.

2.2 “Double Reduction Education” Policy for Household Sports

The “double reduction policy” is a brand-new initiative in the education sector in China. The schoolwork burden of students in compulsory education can be eased by reducing the learning tasks of students in a certain age (generally between the first grade of primary school and the first grade of senior high school) and severely limiting the frequency of after-class remedial lessons for students at this stage [3]. By doing this, students do have relatively more free time to do other activities besides study. Under the background of the double reduction policy, the linkage between community and family is gradually improved. The awareness of health is promoted under the procedure so that people understand that sports activities can not only be carried out in schools but also household sports consumption are an integral part of youth sports [4]. As a result, when the burden of schoolwork is significantly reduced, many parents will choose to take advantage of the extra time to lead their children to participate in various forms of physical exercise to achieve the purpose of physical fitness. It is a new trend for family members to do physical training together. For example, parents and children can meet to play badminton or table tennis. It is not only enhances the parent-child relationship but also promotes family harmony. In many cases, after the double reduction, children do not need to learn other knowledge in school or after-school tutoring classes. On the contrary, parents pay more attention to quality education and spiritual education, and sports are a crucial part of quality education. When demand rises significantly, the proportion of consumption associated with it increases. Therefore, with the assistance of the double reduction policy, household sports consumption will also reach a relatively higher level.

2.3 The Emergence and Popularization of New Digital Technologies

In 2022, online fitness activities proliferated with the popularity of Douyin (TikTok) live fitness broadcasts. According to the data of the Online Sports and Fitness Research Report, the exercise environment plays a vital role in users' health status. 70% of users prefer to exercise indoors, and 45.3% of respondents prefer to exercise at home. In addition, with the popularity of intelligent fitness equipment and devices, home fitness has become more scientific and technological, such as Switch fitness ring, VR glasses as well as fitness glasses, which are presented in the way of games, injecting new vitality into cloud fitness. As the epidemic continues, home fitness has become the first choice of many people. Through various channels and methods of publicity and promotion, remarkable results have been achieved, significantly improving the physical fitness of people at home. At present, many sports and fitness brands and related platforms in China are actively promoting such at-home exercise classes to help people maintain their physical fitness. FITURE, for example, is a well-known intelligent fitness brand in China. It improves people's health level and exercise methods through exploration and practice. And the mirror is the carrier to solve the family to buy large fitness equipment needs to cover an area. Moreover, it launched a series of courses and launched game functions, which triggered the all-age exercise craze [5].

3 The Challenge of Household Sports Consumption in the Development of the Digital Economy

The development of the digital economy has, in one way, indeed significantly contributed to the sound development of the related sports industry. Consumers can enjoy the convenience of life brought about by technological progress and economic transformation. However, on the other hand, the rapid development of the digital economy has also brought some negative effects on Chinese household sports consumption. There are significant differences in the types and levels of household sports consumption. Some families lack an understanding of sports consumption or are restricted by economic factors and cannot enjoy relevant services. In addition, some families misunderstand sports consumption, thinking that sports consumption is just the meaningless consumption of money, unable to bring tangible benefits and benefits. Therefore, to better promote the development of household sports consumption, it is necessary to conduct in-depth research on the current situation of household sports consumption. The following is the relatively obvious problem of Chinese household sports consumption in the stage of digital transformation.

3.1 The Non-Ease-of-Use Nature of Digital Carriers

The gradual integration of the digital economy into sports consumption has led to an upgrade of sports products with more diverse functions and an increasing variety of product types. However, along with the functional diversification of consumer sports products, their content is inevitably becoming more complex and challenging to understand and learn. For example, during the 2014 FIFA World Cup in Brazil, due to technological limitations, most spectators chose to watch the match on cable TV. For spectators merely need to turn on the TV and adjust it to the appropriate channel. However, in the Qatar World Cup eight years later, due to the update and iteration of digital technology, more broadcasting means were used in the broadcast of the event. TVs, computers, tablets, cell phones, and even smart glasses can all be used to watch matches. However, these technological innovations increase the audience's learning cost and economic cost invisibly. Due to different channel owners, consumers often must repeatedly pay in order to enjoy the games on different platforms. Secondly, a series of difficulties arise for some remote rural areas and the elderly population. The average living standard in remote areas is generally low, the level of Internet technology has not been popularized, and people in these areas do not understand the new digital sports, plus the high price of these products, people in these areas cannot generally and effectively use and own such digital sports products. The elderly population adopts typically the concept of simple and affordable consumption, and the multifunctional complexity of digital sports equipment makes the elderly population unable to adapt to it well. The elder has simple exercise methods, but complex scientific and technological sports cannot be favored by older people.

3.2 Low Awareness of Household Sports Consumption

With the continuous progress of society, many families believe that proper physical exercise can not only strengthen the body but also relieve the pressure of life. However,

from the perspective of each family member, teenagers live in an environment that attaches more importance to learning, and proper physical exercise is also carried out in physical education classes at school [6]. Although middle-aged people have a high recognition of the idea of sports participation, they tend to occupy the time for physical exercise because of work or housework. The elderly people think that sports consumption is superfluous and that their physical state is not enough to support vigorous sports. Therefore, the popularization of household sports consumption in China is relatively limited, and the resulting weak sports consumption is relatively apparent.

3.3 Low Level of Household Sports Consumption Investment

Sports are part of the entertainment industry by nature of commercialization. However, in the composition of people's regular life, entertainment needs are considered only after having relatively high material satisfaction. Thinking from all angles, students spend more time in the state of learning. Adults, because of their busy work schedules and other experiences in their children's lives, usually choose not to exercise or train at home and have trouble sticking to it. And mass sports hardly need consumption, such as running, rope skipping, square dancing, and tai chi. And families with fitness equipment at home do not need to go to paid venues to train. Currently, there are a lot of sports courses on the market, but children's schoolwork is heavy, and many parents have no time to accompany them. The working pressure of adults also leads to their lack of time to devote to sports [7]. In addition, regarding the audience depth and participation degree of commercial sports events in China, taking the Chinese Super League and CBA for example, although every game has total seats, it is only a tiny part of the audience. Other fans prefer to watch it at home on apps like MIGU Video [8]. If a recharge VIP to watch the match is typically needed, most of the audience would prefer to watch the free broadcast on TV [9]. Thus, Chinese household sports consumption investment is relatively at a low level.

4 Opportunities for the Development of Chinese Household Sports Consumption in the Digital Economy

At the national level, the Chinese government hopes to complete the construction of a modern sports power by 2035. Therefore, the digital transformation of sports industry content is an indispensable step [10]. In the process of sports digitization, sports consumption in China, whether at the public level or at the household level, is rapidly moving online and virtual. With the help of objective consumption digitization and macro-level national policies, China's household sports consumption has ushered in a relatively straightforward development of household sports consumption opportunities. Based on the existing research conclusions, this study tries to put forward the following methods to promote the growth and popularization of consumption, as well as the development opportunities of sports consumption at the macro level.

4.1 The Upgrade Under the Concept of “Sports+”

With the rapid development of the digital economy, people's production and lifestyle have undergone tremendous changes. Zhejiang government service network released a document that will continue to promote the “sports brain” technology and management specifications to land, “sports brain” is based on the province's integrated intelligent public data platform, with the help of cloud computing and other digital technologies, to promote the regional, municipal and county-level sports information data interconnection and sharing and platform system integration, to accelerate the convergence of The province's venue facilities, sports events, training and preparation, sports industry, sports talent and other elements of data, to create a digital sports collaborative governance capacity center. And deepen the intelligent module, optimizing the available “brain,” increasing the index release, enhancing the early warning analysis capability, and implementing the disposal of the closed loop to make a contribution to the creation of the Zhejiang digital sports Golden Card. On this basis, it can be seen that the “sports+” model has become a new direction for the transformation and upgrading of the current sports industry. And this new direction also applies to the household sports consumption field.

4.2 Diversification of Sports Consumer Groups

Driven by the digital economy, the limitations of sports consumer groups are lifted, and suitable products are recommended according to different consumption needs. With the change in public consumption concepts and life thoughts, the comfort, convenience, and health of sports products are paid more attention to. The post-70s and 80s in the family have become the main force of consumption and led to the core of sports consumption. Young people born after 1990 and 2000 pay more attention to the technological and social nature of sports products. With the development of The Times, the elderly are increasingly pursuing a healthy life, and the digital economy is becoming an important way for them to achieve this goal [11]. Since 2016, The State Council and other relevant departments have issued the Guiding Opinions on Accelerating the Development of Fitness and Leisure Industry, emphasizing the need to strengthen support for residents' sports and health, promote sports projects and fitness methods for various groups, and actively develop sports products and services to meet the needs of all sectors of society, so as to promote the sustainable growth of the healthy body. And it can improve the user experience through digital means. With the development of digital technology, sports consumption enterprises can provide a better user experience by developing applications and establishing online social media platforms. Through these platforms, family members can easily find sports venues, organize activities, share sports experiences, and more. Family physical activities not only promote interaction and communication among family members but also foster connections with the surrounding community. By establishing sports communities and carrying out community sports activities, sports consumption enterprises can increase the opportunities for community members to participate in sports activities, improve the enthusiasm for household sports consumption, and provide a new path for the sports industry.

4.3 Cultivating Consumer Talent on Digital Sports

According to the survey data, the sports habits and consumption level of Chinese residents are still far lower than the advanced international level, and the potential of sports consumption has not been stimulated, especially in household sports consumption-related sports consumption. The government performs the cultural function, on the one hand, carries forward the Olympic spirit, and shapes the sports spirit of our country. On the other hand, the organization and development of sports undertakings. Through the organization of sports activities for all, the nation's physical fitness and sports skills are improved to promote the health of the whole country. Reorganize and encourage the development of sports. With the support of the government, the residents' awareness of sports will be significantly enhanced. Sports-related undertakings will also flourish, and more and more sports jobs will be created. Now sports development in China should strengthen the three-way linkage between the government, enterprises, and universities, support from the government and development of enterprises, and input of universities into sports-related majors to cultivate more high-quality talents in sports and contribute critical human resources to the development of digital sports [11]. With the comprehensive investment of government, society, and various college resources, sports consumption will become one of the core driving forces of China's economic development. In addition, as an essential part of the social productivity unit, household sports consumption will also make relatively straightforward progress under the overall economic growth.

5 Conclusion

In this study, the reasons for the transition from sports to the digital economy, the challenges of household sports consumption in the digital economy, and the opportunities of sports consumption in China under the background of the digital economy constitute three parts of the main content. It is a significant trend for digital content to be integrated into the sports industry and sports goods in the future. The support of relevant government policies, the demand of the whole people for sports after the epidemic, and the research and development of intelligent technology all provide the necessary conditions for integrating the digital economy into sports. With the development of society, people pay more and more attention to health, and the role of the digital economy becomes more and more apparent. Through the application of digital platforms, content, marketing, management, and technology, home sports consumers can obtain a more convenient and efficient service experience, which also brings unprecedented opportunities and challenges for the development of the home sports industry. Both home sports consumers and industrial enterprises need to actively embrace digital transformation and make use of digital technology innovation and application to achieve sustainable development of home sports consumption.

The purpose of this study is to analyze and expound on the various development, problems, and opportunities of sports consumption under the digital wave. Apart from the relevant research content, this study also has certain limitations. In this paper, relatively little data are used to clearly describe the development path, and there is a lack of collection and analysis of family members' honest thoughts on sports consumption. Therefore,

for future research, this paper suggests that quantitative content can be included in the analysis process, and the following research on sports consumption can be carried out through data collection and sample collection.

References

1. China Academy of Information and Communications Technology. White Paper on the Development of China's Digital Economy. Beijing: China Academy of Information and Communications Technology, (2021).
2. Jiang M. W. Development Trend and Path Selection of residents' sports consumption in the post-epidemic era - Based on the perspective of digital sports. *Contemporary Sports Science and Technology*, 12(28), 114-118 (2022). <https://doi.org/10.16655/j.carolcarrollnki.2095-2813.2203-1579-3519>.
3. Yang Zude. Optimizing the Strategy of Home-School Co-education under the Background of "Double Reduction" Education. *Connecting Beijing and Tianjin - Essays on Basic Education in the New Era*. Ed., 231-234 (2022).
4. Zhao Shunzheng, Yao Jiwei. Research on the Joint Development of School, Family, and Community Sports under the Background of the "Double Reduction" Policy. *Liaoning Sports Science and Technology*, (01), 11-14 (2023). <https://doi.org/10.13940/j.carolcarrollnkiIntykj.2023.01.026>.
5. Ai-based Personal trainer for Family Fitness. *Industrial Design*, (04), 21 (2022).
6. Ren Bo. The Internal Mechanism and Upgrading Strategy of the Interaction between China's Sports Industry and Sports Consumption in the Era of Digital Economy. *Journal of Shandong Sports Institute*, 38(03), 25-34 (2022). <https://doi.org/10.14104/j.carolcarrollnki.1006-2076.2022.03.004>.
7. Dong Xiaobing, Huang Xin. Discussion on Sports Consumption of Chinese Urban Families. *Journal of Consumer Economics*, 26(05), 21-24 (2010).
8. Jian Jie. Migu Broadcast of Beijing Winter Olympics: New Audio-visual of 5G Enabled Sports Events. *Audio-visual*, (4), 7-9 (2022). <https://doi.org/10.19395/j.carolcarrollnki.1674-246-x.2022.04.013>.
9. Yuan Feng, Sheng Zhiyin, Yang Hao, Pan Wei. Intelligent Home Fitness - Migu AI Fitness. *Journal of Broadcasting and Television Network*, 30(02), 39-42 (2023). <https://doi.org/10.16045/j.carolcarrollnkiatvtec.2023.02.013>.
10. Ren Baoping, Li Jingyu. Number Assigned to the Modernization of the Sports Industry in Our Country Economic Logic and Path. *Sports Science Research*, 1-11 (2023). <https://doi.org/10.15877/j.carolcarrollnkinsic.20230221.001>.
11. Ren Bo. Digital Transformation of Chinese Sports Consumption in the Era of Digital Economy: New Driving Forces, New Characteristics and new Trends. *Journal of Physical Education*, 38 (05), 1-8, (2022). <https://doi.org/10.16419/j.carolcarrollnki/g8.2022.05.00542-1684>.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

