

Study on the Characteristics and Group Differences of Sports Consumption Structure among Residents in Lanzhou City

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Abstract: This study, based on the 2020 sports consumption survey data of Lanzhou City, uses descriptive statistics and comparative analysis methods to systematically explore the internal structure of sports consumption and consumption differences among different social demographic groups in Lanzhou is 1,725.58 Chinese Yuan, accounting for 7.35% of total per capita consumption expenditure, indicating a solid market foundation. The consumption structure exhibits typical characteristics of “product-oriented consumption dominating, service-oriented consumption in its initial development, and spectator-oriented consumption lagging behind,” with sports goods consumption accounting for over half (53.61%) of the total. In terms of group differences, residents with moderate income (50,000–100,000 Chinese Yuan), high education level (undergraduate or above), young and middle-aged adults (18–59 years), and female residents make up the core driving force of sports consumption. Based on these findings, this paper proposes strategies to optimize the supply structure, implement targeted marketing, and strengthen policy guidance, aiming to provide theoretical references and decision-making support for unlocking the sports consumption potential in Lanzhou City and promoting the high-quality development of the sports industry.

Keywords: Lanzhou City; Sports consumption; Consumption structure; Group differences; Sports industry

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1. Introduction

In the current macro context of constructing a new development pattern of “dual circulation” and implementing the “expanding domestic demand” strategy, sports consumption has emerged as an important new driving force for promoting green and healthy lifestyles and economic growth. Its importance has risen to the level of national strategy ^[1]. In recent years, driven by the “Outline for Building a Strong Sports Nation” and a series of policies promoting sports consumption, China’s sports industry has continuously expanded in scale, and the demand for sports consumption has accelerated, presenting a complex picture of upgrading from basic material

consumption to service, experiential, and digital consumption ^[2]. However, this development process is not balanced, as on developed cities in the eastern coastal regions, while empirical studies on the central cities of the western regions, which are currently in the key phase of policy benefits release and consumption structure transformation, remain insufficient.

Improving the quality and efficiency of sports consumption is a multidimensional, systematic process. Existing literature indicates that its driving path has evolved from simple policy stimulation to a complex system of supply innovation, demand activation, and environmental optimization working in synergy ^[3]. On the supply side, innovation in consumption scenarios through spatial generalization, technological integration, and business model integration has become a key path to unlocking consumption potential ^[2]. Meanwhile, the deep integration of digital technology is reshaping sports consumption business models and user experiences with unprecedented power ^[4,5]. On the demand side, residents' consumption behavior is influenced by complex factors, including income levels, community environment, consumption emotions, and even social psychology ^[6-9]. In this context, the implementation of national sports consumption pilot city policies provides a natural "policy laboratory" to observe and understand this systemic transformation. The spatial spillover effects and entrepreneurial incentive effects have been preliminarily verified ^[10-13].

As an important central city in the northwest and one of the first "national sports consumption pilot cities," Lanzhou City's sports consumption market is both typical of the western region and pioneering as a pilot city. Under the promotion of pilot policies, the city's sports consumption has shown tremendous vitality. However, it also faces common challenges, such as structural imbalances in the quality of supply, underdeveloped service consumption, and unfulfilled consumption potential. Therefore, at this critical point when the pilot policy enters its deepening phase, one core question needs further exploration: Under the dual drive of new consumption concepts and pilot policies, what are the internal structural characteristics of sports consumption among Lanzhou residents? What systematic differences exist in consumption behavior across different social groups?

Based on the 2021 sports consumption survey data from Lanzhou residents, this study seeks to systematically address these questions. Through empirical analysis of the overall scale of consumption, its internal structure, this study aims to:

- (1) Accurately depict the micro reality of sports consumption in central cities of the western region, providing regional empirical evidence to assess the initial implementation effects of pilot policies in western areas;
- (2) From the perspective of consumption structure transformation and group differentiation, to reveal the deep contradictions that hinder the full release of sports consumption potential, providing a western sample for understanding the diverse paths and complex mechanisms of sports consumption development in China;
- (3) Provide scientific data support and decision-making references for local governments to formulate more adaptable and precise industrial policies, as well as for relevant market entities to effectively segment the market and make strategic plans.

2. Methodology

This study focuses on the sports consumption behavior of permanent residents in Lanzhou. To comprehensively and accurately obtain primary data, a random sampling method was used to distribute questionnaires to residents across different administrative regions, age groups, genders, occupations, and income levels in the

city. A total of 1,000 questionnaires were distributed, with 878 valid responses collected, yielding an effective response rate of 87.8%. The sample covers major, mathematical statistics, and comparative analysis methods. The literature review method is used to organize and summarize theories related to sports consumption; Mathematical statistics are applied to organize, calculate, and analyze the survey data, revealing the scale and structural characteristics of sports consumption; Comparative analysis method is used to compare and contrast the consumption differences among groups with different income levels, ages, genders, and educational backgrounds, both horizontally and vertically, in order to explore the underlying patterns in the data.

3. Results and discussion

3.1. Analysis of sports consumption scale and structural characteristics in Lanzhou

3.1.1. Analysis of sports consumption scale

According to the survey data, the per capita sports consumption expenditure of Lanzhou residents in 2020 was 1,725.58 Chinese Yuan. This figure is considered moderate when compared to other cities in the country during the same period, indicating that Lanzhou's sports consumption market is quite active. Notably, the per capita sports consumption expenditure accounts for as much as 7.35% of the per capita consumption expenditure of residents, meaning that sports consumption has become an important choice for Lanzhou residents beyond the basic needs of "clothing, food, housing, and transportation." This reflects their pursuit of a healthy, high-quality lifestyle and provides a solid market foundation for the continuous development of Lanzhou's sports industry.

3.1.2. Analysis of consumption structure characteristics

Physical-goods consumption continues to dominate Lanzhou's sports market, accounting for 53.61% of total spending, indicating that local sports consumption remains in a development stage centered on tangible products. Nonetheless, the internal structure shows a clear trend toward consumption upgrading. Sportswear and footwear represent the largest expenditure category (51.84%), reflecting the rise of a "sports lifestyle" in which product functionality increasingly aligns with daily wear needs. The steady share of fitness equipment and devices (24.21%) demonstrates the normalization of home-based fitness in the post-pandemic era and signals residents' long-term commitment to health investment. Meanwhile, smart sports equipment (11.95%) and outdoor gear (11.99%) have emerged as new growth drivers. These categories respectively illustrate the intelligent and data-driven transformation of sports consumption and the growing inclination toward specialized, experience-oriented outdoor activities. Together, these shifts indicate that Lanzhou's sports consumption is evolving from basic product demand toward specialization and intelligence, offering pathways for innovative industry development.

Service-oriented consumption has begun to take shape, accounting for 18.31% of total spending, and reflects a transition from product-centered consumption to experience-driven participation. This shift plays an important role in optimizing the structure of the sports industry. Its expansion is supported by national pilot policies that stimulate market vitality, diversified fitness-service supply embedded in commercial districts and public spaces, and improved community sports facilities that reduce participation barriers. Currently, consumer demand is upgrading from basic equipment access to personalized training, group classes, online fitness, and integrated health-management services, prompting service providers to shift from venue operators to comprehensive health-lifestyle solution providers.

Spectator and derivative consumption remains relatively underdeveloped, with spectator spending

accounting for only 2.32% of total consumption. This stagnation is primarily due to the limited presence of high-quality event IPs, the absence of strong local professional leagues, insufficient event-operation capabilities, and serious product homogenization, alongside inadequate digital viewing experiences. By contrast, sports tourism (6.60%) and sports education and training (5.93%) exhibit stronger growth momentum, driven by the integration of sports with cultural tourism and by families' increasing emphasis on physical education. However, both areas still face challenges, including service homogenization and insufficient professionalization. Overall, unlocking the potential of spectator and derivative consumption will require advances in high-quality event content, distinctive brand development, and enhanced digital engagement.

3.2. Analysis of group differences in sports consumption in Lanzhou

3.2.1. Differences based on income levels: The middle-income group as the core engine

Data shows that sports consumption in Lanzhou exhibits a unique “middle peak” pattern in relation to income. The per capita sports consumption of the middle-income group with an annual income between 50,000 to 100,000 Chinese Yuan is the highest, reaching 2,270.74 Chinese Yuan, with their consumption enthusiasm significantly higher than that of low- and high-income groups. This phenomenon supports the marginal propensity to consume theory in consumer economics, which suggests that middle-income groups, after meeting basic living needs, have the strongest marginal willingness to improve their quality of life and possess stable purchasing power. As a result, they become the most active and core “ballast” of the sports consumption market.

In contrast, the sports consumption potential of high-income groups (income over 100,000 Chinese Yuan), at 1,671.32 Chinese Yuan, has not been fully tapped, highlighting a current shortfall in the supply structure of the market. The possible reason lies in the insufficient supply in areas such as high-end sports services, personalized courses, and rare sports events, which have not precisely matched the consumption preferences of high-income groups, leading to their consumption demand spilling over or shifting to other sectors. Therefore, the key to stimulating consumption in high-income groups lies in promoting supply-side structural reforms to meet their upgrading demands with high-quality services.

3.2.2. Differences based on age and occupation: Young adults and students as consumption pioneers

In terms of age, young adults (18–59 years old), as the backbone of social production, have an average consumption of 1,801.41 Chinese Yuan, with their health concerns and social needs jointly driving the core of sports consumption. Notably, the per capita consumption of the 3–17 age group, primarily minors, reaches 1,740.38 Chinese Yuan, creating a unique “intergenerational family sports consumption” model. This is not children's independent consumption, but an important reflection of Chinese family capital invested in the holistic development of girls, viewing sports education as a long-term investment in the future.

In terms of occupation, students (1,892.72 Chinese Yuan) and government or public institution employees (1,936.77 Chinese Yuan) lead the city's consumption levels. The high consumption among students is driven by both family economic support and the influence of campus sports culture, with a high acceptance of emerging and trendy sports products and services. Meanwhile, employees in the public sector demonstrate strong and stable consumption abilities due to job stability, comprehensive health insurance, and frequent work-related recreational activities. These two groups serve as the “barometer” and “stabilizer” of the sports consumption market.

3.2.3. Differences based on gender and education level: The rise of the “She Economy” and high education leading consumption

In terms of gender, women’s per capita sports consumption (1,799.24 Chinese Yuan) exceeds that of men, marking the dominance of the “She Economy” in the sports consumption sector. This reflects modern women’s comprehensive pursuit of physical health, body aesthetics, and social life. Their consumption behavior is not only focused on fashionable sports apparel but also widely extends into activities such as yoga, Pilates, and dance, which emphasize physical and mental balance as well as community connection, displaying clear characteristics of aesthetic-driven, experience-focused, and socially empowering consumption.

In terms of education level, there is a strict hierarchy, where from high school and below to postgraduate and above, per capita sports consumption increases accordingly. Higher-educated groups tend to have a deeper understanding of the value of healthy human capital and recognize the multifaceted benefits of sports (such as stress relief, socialization, and self-actualization). At the same time, their human capital often translates into higher economic capital, collectively shaping their advanced sports consumption mindset and ability.

3.2.4. Differences based on urban and rural areas: Small gap, promising potential in rural markets

The urban-rural sports consumption gap is less than 4%, which is a highly positive signal. This is due to the continuous promotion of the national rural revitalization strategy and urban-rural integration development policies, which are deeply transforming rural residents’ income levels and consumption concepts. The small gap indicates that the rural sports consumption market has a solid foundation for growth and is a “potential market” yet to be refined. This provides the sports industry with ample opportunities to penetrate the rural market. By developing products and services that meet the needs of rural residents, new growth areas are expected to emerge.

4. Conclusion and suggestions

4.1. Conclusion

Lanzhou’s sports consumption market has grown into a sizeable and active sector, exceeding 6.2 billion Chinese Yuan with per capita spending surpassing 1,700 Chinese Yuan, and now accounts for 7.35% of total household expenditure. This reflects its transition from a discretionary to a routine consumption category and highlights its role in driving domestic demand. Nonetheless, current growth is still driven primarily by scale expansion, signaling the need for a shift toward quality- and efficiency-oriented development. The market structure remains imbalanced, with physical-goods consumption dominating while service- and spectator-oriented segments lag behind, constraining the industry’s progression toward higher-value activities. Future upgrading will therefore rely on accelerating the shift from product-centric consumption to experience- and service-based consumption. In addition, notable differentiation across income, age, gender, and education groups underscores the necessity of refined, targeted policy and market strategies. The relatively small urban-rural divide further suggests that rural markets may emerge as an important source of new growth. Overall, Lanzhou’s sports consumption has a strong foundation, but unlocking its next stage of development requires structural optimization, demand refinement, and a strategic focus on quality-driven growth.

4.2. Suggestions

4.2.1. Implement precise innovation on the supply side to drive upgrading of consumption structure

To strengthen service-oriented consumption and establish a new growth pole for the experience economy,

it is essential to move beyond traditional fitness concepts and promote the development of modern fitness services characterized by personalization, social interaction, and digital integration. Priority should be given to expanding specialized service sectors such as sports rehabilitation, health management, and customized sports tourism. In particular, the sports tourism industry should leverage Lanzhou's distinctive resources, including Yellow River cultural heritage, mountainous terrain, and rural characteristics, to design immersive and thematic routes such as "Yellow River Canyon Hiking," "Mountain Biking Off-Road," and "Rural Sports Festivals." Such initiatives would shift the focus from passive scenic viewing to active participation in sports, thereby fostering deeper consumer engagement and enhancing the overall experiential value of the industry.

4.2.2. Address the shortcomings in spectator sports and cultivate local sports culture IP

In the short term, attracting attention can be achieved by bidding for high-level commercial events. In the medium to long term, it is necessary to focus on developing local professional sports clubs or characteristic mass event IPs (such as the "Lanzhou Yellow River Cup" series). Drawing from the "village competitions" experience, strengthen the regional cultural narratives and community emotional connections of these events, and use new media platforms to promote them, making the events the "new business card" of the city. This approach will fundamentally address the scarcity of spectator sports consumption. Elevate physical products, extending the industrial chain to both ends of the "smile curve", moving towards intelligent, fashionable, and personalized designs. For example, develop "national style" sportswear combining Dunhuang culture and Silk Road elements, or design specialized equipment for outdoor sports in the Northwest, shifting from OEM manufacturing to brand creation, thus increasing product value.

4.2.3. Implement precise demand-side management to unlock full consumption potential

To anchor core consumer groups and deepen market value, it is necessary to develop "quality + experience" products tailored to the preferences of middle-income youth, women, and highly educated populations. For women, integrated spaces that combine sports, social interaction, and aesthetic design can enhance participation and loyalty, while data-driven scientific training programs and high-end sports community services can better meet the expectations of highly educated consumers. At the same time, long-term market planning should focus on cultivating both the elderly and the youth, as these groups will be decisive for the future scale of sports consumption. Schools should strengthen the integration of sports training with after-school services, whereas communities should promote low-intensity, socially engaging "silver-age sports" such as health care, Tai Chi, and recreational walking, supported by professional health and fitness guidance. Furthermore, expanding the rural market is essential for building an integrated urban-rural sports consumption ecosystem. Beyond constructing sports venues, the emphasis should be placed on delivering services and activities, such as organizing "Rural Revitalization Sports Games" and deploying sports instructors to rural areas, to stimulate rural demand and activate new consumption potential.

4.2.4. Build a synergistic support system to foster a thriving and healthy consumption ecosystem

Policy incentives should be refined to enhance precision and guidance, shifting from broad, universal measures, such as general consumption vouchers, to targeted incentives that promote service-oriented sports consumption and support specific demographic groups, including recent graduates and new families. Greater tax and fee reductions should be directed toward enterprises that develop innovative or digital sports services, thereby channeling resources into the most critical stages of industry upgrading. At the same time, the construction

of sports facilities should move toward systematic networking and digitization through the development of a four-tier national fitness system spanning cities, districts, streets (or townships), and communities (or villages). Existing venues should undergo smart transformation by incorporating online reservation systems, unmanned management technologies, and data-driven service functions to improve efficiency and user experience. In addition, fostering a social and cultural environment that values sports is essential for sustaining long-term consumption growth. Collaboration among media, schools, and communities can help cultivate the public perception of sports as a modern and healthy lifestyle. Highlighting local athletes, fitness role models, and high-quality grassroots events will further establish Lanzhou as a “vibrant city,” thereby strengthening the cultural foundation that supports expanded sports participation and consumption.

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References

- [1] Cai P, Wang J, 2025, Realization Mechanism and Practical Approaches for Expanding Domestic Sports Consumption: A Study from the Perspective of Synergy Between Supply-Side Structural Reform and Demand-Side Management. *Journal of Beijing Sport University*, 48(2): 50–66.
- [2] Chen Y, Chen L, Zhou C, et al., 2025, Consumption Scenario Innovation for Unleashing Sports Consumption Potentials: Mechanism, Pathways and Strategies. *Journal of Shanghai University of Sport*, 49(10): 13–26.
- [3] Zhou C, Chen Y, Liang J, et al., 2025, Construction of Theoretical Model for Enhancing Quality and Efficiency of Sports Consumption: A Grounded Theory Analysis Based on 90 Policy Texts. *Journal of Wuhan Sports University*, 59(4): 49–56.
- [4] Li M, Gong H, Guo Z, 2025, Boosting Digital Sports Consumption from the Perspective of Ecosystem Theory. *Sports Culture Guide*, 2025(10): 15–21.
- [5] Liu C, Xu J, Lu J, et al., 2025, Strategies of Digital Transformation to Promote Sports Consumption Upgrading. *Journal of Tianjin University of Sport*, 40(2): 188–194.
- [6] Xu Y, Chen X, 2025, Research on the Influence and Mechanism of Household Income on Sports Consumption among Chinese Residents. *Sport & Science*, 45(6): 3–12.
- [7] Qin Z, Xie K, Mao Z, et al., 2025, Consumption Upgrading Effect of Community Sports Facilities: An Empirical Analysis Based on Household Sports Consumption. *Journal of Shanghai University of Sport*, 49(10): 40–53.
- [8] Li L, Chen X, 2025, Revealing the Factors Influencing Consumers’ Emotional Feedback in Sports Consumption Scenarios-Analysis Based on Facial Expression Recognition. *Sports & Science*, 46(3): 23–32.
- [9] Guo X, Mei Y, Zhou S, 2025, Research on the Impact of Appearance Anxiety on College Students Health-Oriented Sports Consumption-Mediating Effect Based on Compensatory Consumption. *Sport & Science*, 46(4): 41–52.

- [10] Shao H, Huang H, 2025, Sports Consumption Pilot Cities Policy and its Spatial Spillover Effects Take Shanghai City as an Example. *China Sport Science and Technology*, 61(9): 62–72.
- [11] Ge B, Liu G, 2025, A Study on the Influence of the Policies of Pilot Cities for Sports Consumption on the Release of Residents' Consumption Potential and Their Spatial Spillover Effects. *China Sport Science and Technology*, 61(2): 85–97.
- [12] Liu S, Wu Z, Wu Y, et al., 2025, Research on Entrepreneurial Effect of National Sports Consumption Pilot City Policy-Empirical Analysis Based on DID Method. *Sports & Science*, 46(3): 12–22.
- [13] Yu Z, Chen G, Guo Z, et al., 2025, Configuration Effect of Sports Consumption Pilot City Policy Affecting Entrepreneurial Activity in Urban Sports and Countermeasure Thinking. *Journal of Tianjin University of Sport*, 40(2): 195–202.

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