

Research on the Coupling Mechanism of Sports Events Empowering Urban Economic Transformation and Image Upgrading

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Abstract: This paper focuses on the mechanism of sports events as a new engine of urban development and explores their coupling path in economic transformation and urban image upgrading. By constructing the analytical framework of “event-driven—industry linkage—image shaping,” it compares the changes in economic structure and the evolution of city brand in different types of cities before and after the introduction of events. The study finds that sports events achieve economic structure optimization and coordinated upgrading of urban image through industry chain extension, stimulation of consumption demand, and amplification effect of media dissemination; government policy guidance, social capital participation, and urban cultural characteristics are key variables affecting the coupling effect. This study provides a theoretical reference for the integration of sports economy and urban renewal, and also offers practical paths for local governments to make decisions on event introduction and brand strategy.

1. Introduction

1.1. Research Background

In the context of globalization and increasingly intense urban competition, sports events have become an important expression of urban comprehensive strength and a strategic tool. As a comprehensive social event integrating sports, economy, culture, and communication, sports events can not only drive regional investment and promote industrial structure upgrading but also significantly improve the international visibility and image recognition of cities through media dissemination and cultural symbol shaping. Internationally, large comprehensive events such as the Olympic Games and the World Cup have long become important engines of urban economic growth and brand dissemination. Cities such as Tokyo, London, and Paris have used the opportunity of events to achieve infrastructure optimization, industrial upgrading, and image reconstruction. At the same time, emerging regional events, city marathons, and e-sports events also show strong momentum in stimulating consumption potential and promoting the integration of urban culture and tourism. For China, with the advancement of the “Strong Sports Nation” strategy and the “Healthy China 2030” plan, urban economy is at a key stage of transformation from factor-driven to innovation-driven, and from manufacturing-oriented to service-oriented. How to achieve the dual leap of economic structure optimization and urban image upgrading through sports events has become an important issue in urban governance and high-quality development.

1.2. Research Significance

From the dual perspective of economics and urban communication, systematically studying the comprehensive effect of sports events on urban economic transformation and image upgrading has significant theoretical and practical significance. At the theoretical level, this study helps enrich the research system in the intersection of sports economy and urban renewal, deepens the understanding of the three-dimensional interaction of “events—industry—image,” and expands the academic explanation of urban development driving mechanisms. At the policy level, the research results can provide empirical basis for local governments to guide the allocation of sports event resources

scientifically and to develop event-driven urban development strategies, promoting the sustainable practice of the “event + city” model. At the same time, the in-depth study of event effects will also promote the transformation of urban brand building from “hard power construction” to “soft value shaping”, and help cities form a unique cultural expression and identification mechanism in the global communication network, so as to achieve the coordination of high-quality economic development and comprehensive social value enhancement.

1.3. Research Purpose

This study aims to systematically reveal the coupling mechanism of sports events empowering urban economic transformation and image upgrading, exploring their internal logic and differentiated performance. Specifically, the research goals include three aspects: first, clarify the role path of sports events in urban economic structure transformation and image upgrading, and reveal their functional mechanism in industry linkage, resource allocation, and cultural communication; second, construct a coupling mechanism model of sports events empowering urban development, explaining theoretically the interaction between economic and image evolution; third, identify the differentiated performance and regulating factors of coupling effects in different types of cities (such as international metropolises, regional central cities, and characteristic small and medium cities), providing references for classified guidance and policy making. By achieving the above research goals, this paper expects to build a systematic analytical framework of sports events driving urban development at the theoretical level, and to provide practical paths and experience reference for China’s urban economic transformation and image upgrading.

2. Theoretical Basis and Mechanism Framework

2.1. Urban Economic Transformation Theory

Urban economic transformation refers to the process in which a city, during its development, evolves from a traditional factor-driven growth model to an innovation-driven and service-oriented economic structure^[1]. This transformation reflects the trend of shifting from resource dependence to high-value-added factors such as knowledge capital, technological innovation, and cultural creativity. According to Schumpeter’s innovation theory and Porter’s competitive advantage theory, innovation is the core driving force for continuous urban economic growth and industrial upgrading, while industrial structure optimization is the key path for a city to achieve high-quality development. In this context, sports events, as a highly concentrated economic activity, have significant industrial spillover effects and innovation-driven functions. On one hand, the hosting of events promotes the coordinated development of related industries such as sports, culture, tourism, conventions, and media, boosting the proportion of the service industry and upgrading the consumption structure; on the other hand, the infrastructure construction, digital management, and smart city system applications triggered by events activate the urban innovation ecosystem and promote cross-sector flow of technology, capital, and talent. Therefore, sports events are not only a catalyst for urban economic transformation but also an important engine for building new urban industrial systems and innovation ecosystems.

2.2. Urban Image and Brand Communication Theory

Urban image is the public’s comprehensive impression of a city’s overall characteristics at the level of psychological cognition and cultural perception, and it is an important embodiment of urban soft power^[2]. According to urban communication theory and semiotics, the construction of urban image relies on the interactive process of symbol communication and social recognition. Symbol communication theory holds that sports events, as highly communicable social events, have significant symbolic characteristics. Their iconic venue, their event logos, and their cultural rituals all constitute the basic content of the urban symbol system. These symbols become amplifications through the media narrative and social communication for emotional appeal and cultural identification with the city brand. At the same time, brand co-creation theory points out that the formation of city brands is no longer a one-way communication process, but a social collaborative

process involving multiple subjects such as government, enterprises, residents, and audiences. Sports events promote the shift of urban image from passive shaping to active co-creation by aggregating multiple resources and public discourse spaces. Especially in a digital communication environment, the visual dissemination, interactive experience, and cross-media integration of events further enhance the multidimensional communication effect and international influence of urban image.

2.3. Analysis Framework of Sports Event Empowerment Mechanism

Based on the above theories, this study constructs a four-stage mechanism model of sports events empowering urban economic transformation and image upgrading: “event input—industry linkage—image output—coupling feedback,” to reveal the internal logic of sports events driving dual urban transformation. In the “event input” stage, cities achieve preliminary aggregation of resource elements through infrastructure construction, capital introduction, and organizational management innovation; in the “industry linkage” stage, sports events drive coordinated development of related industries such as culture, tourism, media, and commercial services, forming spillover and extension effects of the industrial chain; in the “image output” stage, events build urban recognition and output image value through brand communication, media reporting, and cultural narrative; in the “coupling feedback” stage, economic benefits and image value interact, promoting city brand premium, investment attraction, and redevelopment cycle. This model reveals the multidimensional functional mechanism of sports events in urban development, which is based on economic transformation, extended by image shaping, and sustained by coupling feedback, forming a systematic logic of sports events empowering high-quality urban development.

3. Sports Events and Urban Economic Transformation

3.1. Event Economic Chain and Industry Extension Effect

Sports events, as economic activities with strong aggregation and spillover effects, have long exceeded the sports industry itself, extending to tourism, transportation, catering, accommodation, cultural and creative industries, media, and other related fields, forming a complete event economic chain [3]. According to industry linkage theory and input-output analysis model, sports events generate significant multiplier effects through direct consumption expenditure and indirect industry stimulation. On one hand, the concentrated flow of a large number of participants, audiences, and media personnel during events directly drives the growth of urban service consumption and promotes the increase of the tertiary industry proportion in local GDP structure; on the other hand, the surrounding development and supporting service upgrades driven by events, such as sports goods manufacturing, digital broadcasting platform construction, and cultural creative product development, promote the extension and structural optimization of the industrial chain. From the perspective of economic measurement, based on the industry multiplier effect model, the structural impact of sports events on urban GDP is mainly reflected in two aspects: first, increasing short-term consumption and employment, enhancing urban economic activity; second, through long-term infrastructure investment and brand value-added effects, bringing continuous economic growth momentum. Overall, at the industry level, sports events have obvious functions of driving, diffusing, and integrating, injecting new growth potential into urban economic transformation.

3.2. Event Promotion of Innovation and Investment Structure Optimization

Sports events not only bring economic vitality at the consumption level but also promote optimization of urban investment structure and reconstruction of the innovation system at the supply side. First, event preparation is usually accompanied by large-scale infrastructure investment, including sports venue construction, transportation system optimization, deployment of digital management platforms and smart city systems. These investments not only improve the city's hardware conditions but also provide practical scenarios for the application of digital technology, information systems, and sustainable construction concepts. Second, events guide capital concentration into innovation fields, promoting the development of emerging industries such as sports

technology, green energy, and smart equipment, forming an innovative industrial ecosystem characterized by “event + technology,” “event + green,” and “event + digital.” For example, data collection and analysis during events, artificial intelligence-assisted management, and cloud broadcasting technology application all promote the urban implementation of technological innovation. In addition, the green economic orientation brought by events is also noteworthy. In energy-saving venue construction, low-carbon transportation systems, and renewable energy application, events become an important practical carrier for promoting urban sustainable development^[4]. Through investment structure optimization and innovation ecosystem construction, sports events play a structural traction role in promoting urban economic diversification and high-quality development.

3.3. Typical Case Comparative Analysis

Large comprehensive events in China, represented by the Hangzhou Asian Games and Chengdu Universiade, provide typical samples for sports events promoting urban economic transformation. During the preparation of the Asian Games, Hangzhou relied on the advantages of digital economy infrastructure to promote the integrated development of “sports + technology + culture and tourism^[5].” Through smart venue systems and digital management platforms, it drove rapid growth of artificial intelligence, information communication, and cloud computing industries, forming an innovation-oriented economic ecosystem centered on events; at the same time, culture and tourism consumption and digital life services expanded rapidly during the event, and the proportion of service industry in regional GDP further increased. In contrast, Chengdu focused more on urban infrastructure and regional coordinated construction when hosting the Universiade. Through the opportunity of events, it improved the urban public transportation system, optimized urban spatial layout, and used the event brand to drive the coordinated development of sports industry and convention economy. Its economic transformation path is a multi-level linkage model of "event-driven- industry upgrading- regional resonance." In comprehensive comparison, the Hangzhou model focuses on digital innovation and technology empowerment, with characteristics of innovation-oriented transformation of a high-tech city; the Chengdu model focuses on infrastructure improvement and development of regional integration, and has characteristics of the structural optimization path of a comprehensive city. This difference reflects the diversified mechanism of sports events empowering urban economic transformation and provides targeted references for other cities in formulating event introduction and industry development strategies.

4. Sports Events and Urban Image Upgrading

4.1. Event Brand and Urban Communication Effect

Sports events have become an important medium for city brand communication, and their influence goes far beyond the competition itself. The hosting of large-scale events not only achieves wide exposure through traditional media but also forms continuous public attention and content co-creation through interactive communication on social platforms^[6]. During the event, the urban image is presented in multiple dimensions—venue construction shows the city's modernization level, volunteer services reflect civic quality and social warmth, and the event's visual system and cultural products strengthen the city's symbolic recognition. By constructing the “event brand–media communication–public perception” image perception model, it can be found that the communication effect of the event is amplified at three levels: cognition, emotion, and behavior. At the cognitive level, it enhances city awareness; at the emotional level, it increases external favorability; at the behavioral level, it stimulates tourism, investment, and talent mobility. The international operation of event branding allows cities to gain greater discourse power in the global communication network, forming a city image amplification mechanism centered on sports.

4.2. Cultural Narrative and Public Identity Mechanism

Sports events are no mere athletic events, but also a form of creating some form of cultural

narrative. Eventually, the visual symbols, the ritual performance, the narrative expression, incorporate historical memory of the city, the spirit of the culture and the nature of the epoch to the communication and as such, the cultural symbolic system of the city is established. In this process, the event becomes an important carrier of public identity [7]. Citizens form emotional resonance through participation and sharing, thereby strengthening their sense of belonging and pride in the city. The spread of event culture also promotes the enhancement of the city's soft power—on the one hand, it allows local values to be understood and accepted externally through cultural translation; on the other hand, it mobilizes collective emotions to shape an urban spirit that combines an international vision with local characteristics. On this basis, sports events promote the transformation of the city from a “space being watched” to a “culture being understood,” enabling the city image to gain deep psychological recognition and lasting extension.

4.3. Brand Reshaping under an International Perspective

Under the background of globalization, international sports events have become an important channel for cities to go to the world stage. By holding large-scale international events, cities can not only demonstrate their infrastructure and organizational capabilities, but also realize the repositioning of their global brands [8]. The wide coverage and high level of attention to international events provide cities with the opportunity to redefine themselves in the eyes of international media and audiences. Through "event diplomacy", cities establish multi-level communication and interaction with international organizations, brand sponsors and global audiences to shape the image of an open and inclusive city. At the same time, "brand co-creation" makes urban brands no longer a one-way process, but a shared communication through multi-party participation. The cross-cultural exchange and cooperation network formed during the activity not only enhanced the international influence of the city, but also laid the foundation for subsequent economic, tourism and cultural cooperation. Therefore, sports events promote the transformation of urban brands from "regional business cards" to "global symbols" under the perspective of internationalization, and realize the international reconstruction and value upgrading of the city's image.

5. Coupling Mechanism Modeling and Performance Evaluation

5.1. Construction of the Coupling Model

The impact of sports events on urban economic transformation and image improvement is not a linear one-way process, but a dynamic evolution system of multi-dimensional interaction [9]. Based on the theoretical framework of system dynamics and structural equation modeling, a ternary coupling model of "investment in sports events - economic transformation - image upgrading" is constructed. In the model, "sports event investment" is the core driving variable, covering financial investment, infrastructure construction, talent introduction, policy support and other factors; "economic transformation" is reflected in the comprehensive performance of industrial structure optimization, innovative ecosystem cultivation, service industry expansion, etc.; "image upgrading" reflects urban brand recognition Comprehensive changes in knowledge, cultural communication and public awareness. The three interact through a positive feedback mechanism: sports event investment drives economic vitality improvement, economic growth promotes image communication, and image upgrading in turn enhances event attractiveness and investment confidence. Through the system dynamics model, the dynamic relationships of each variable over time can be simulated, revealing the long-term impact path of sports events on urban development, thus providing quantitative basis and predictive support for policy-making.

5.2. Measurement Method of Coupling Effect

To verify the rationality and practical applicability of the model, this study uses the entropy method and the coupling coordination degree model to conduct quantitative analysis on typical sample cities. First, the entropy method is used to determine the weight of each indicator to ensure objective balance among different dimensions; second, the coupling coordination degree model is used to calculate the

interaction strength and coordination level between economic transformation and image upgrading. The measurement results show that in cities with a high economic foundation and high social participation, the coupling effect of sports events is more significant, and the optimization of the economic structure and urban image building show a high positive correlation. At the same time, in areas where event resource allocation is uneven or where urban governance efficiency is relatively low, the coupling coordination degree fluctuates to some extent, indicating that the empowerment effect of sports events is still limited by institutional support and social capital. Further dynamic analysis also finds that the “short-term driving effect” brought by events needs to be transformed into a “long-term synergistic effect” through subsequent industrial extension and brand maintenance, providing important reference for cities to formulate sustainable development strategies.

5.3. Influencing Factors and Regulation Mechanism

The realization of the empowerment effect of sports events is jointly influenced by multiple factors. This study analyzes from four dimensions: policy support, social capital, event scale, and cultural foundation. Policy support is the basic guarantee, reflected in the government's institutional guidance in event planning, financial investment, and supporting infrastructure construction; social capital is the catalytic factor, as the broad participation of social organizations, enterprises, and the public determines the social depth and sustainability of event influence; event scale directly affects economic driving and communication coverage, and international events often bring more significant agglomeration and diffusion effects; while cultural foundation determines the compatibility between the event and the city's temperament, serving as the key to the transformation of soft power and brand identity^[10]. These four dimensions together form the regulatory system of the coupling mechanism, and their interaction determines the actual performance of sports events in urban economic transformation and image upgrading.

5.4. Strategies for Enhancing Performance

Based on the identification of the coupling mechanism, improving the empowerment performance of sports events needs to be systematically promoted from three aspects: policy guidance, industrial collaboration, and sustainable development. First, policy orientation and resource allocation optimization are crucial. The government should enhance the efficiency of event resource allocation through institutional innovation, financial guidance, and diversified investment and financing mechanisms, establish cross-departmental coordination mechanisms, and ensure systematic management of event planning, construction, and operation. Second, it is necessary to strengthen industrial collaboration and brand integration paths, promote the integrated development of “sports + tourism,” “sports + technology,” and “sports + culture,” form a composite industrial chain of the event economy, and at the same time achieve integrated communication and multidimensional extension of the image through the city's visual identity system and brand storytelling system. Finally, emphasis should be placed on sustainable development and post-event utilization, exploring the reuse of venues, transformation of event legacy, and brand continuation mechanisms, turning one-time investment into long-term assets and social benefits. Through post-event operation and continuous communication, the transformation from “event dividend” to “urban sustainability” can be realized, truly building a long-term mechanism for high-quality urban development empowered by sports events.

6. Conclusion and Prospect

This study takes the empowerment of sports events in promoting urban economic transformation and image improvement as the core topic, and systematically reveals the coordination mechanism of sports events in urban development. Research shows that sports events are not only a new engine of economic growth, but also an important carrier for urban rebranding and cultural communication. The event promotes the transformation of the urban economy from factor-driven to innovation-driven by driving the development of the industrial chain, optimizing the investment structure, and promoting technological innovation. At the same time, through media communication and cultural narrative, it strengthens the brand awareness and public awareness of the city, and realizes the

upgrading of the city's image from material display to cultural expression. The constructed “industrial structure–image communication–policy support” ternary interactive model shows that sports events form a dynamic linkage between economy and image, with policy orientation and social capital serving as key factors coordinating the two-way effect. Empirical results show that high-level activities can significantly enhance the economic vitality and brand influence of cities, and their empowerment effect depends on economic foundation, cultural identity and institutional support. Theoretically, it enriches the cross-research of sports economy and urban communication; in practice, it provides reference for local governments to optimize the allocation of competition resources, promote industrial integration, and promote brand co-construction. Future research can further explore cross-city comparison, index system optimization, post-event effect evaluation and other aspects, focusing on the long-term and social impact of event heritage utilization, and promoting the coordinated upgrading of urban economy and image.

References

- [1] Wang C H. Research on the coordinated transformation of resource-based cities in China [D]. University of Electronic Science and Technology of China, 2009. DOI:CNKI:CDMD:1.2009.160029.
- [2] Nie Y M. Research on the evaluation index system and improvement strategies of urban image influence in China [D]. Shanghai Normal University, 2015. DOI:10.7666/d.D641537.
- [3] Yang J, Tang X T. Research on the economic effects related to large-scale sports events [J]. China Sport Science and Technology, 2006, 42(3): 4. DOI:10.3969/j.issn.1002-9826.2006.03.005.
- [4] Li F, Zhang S Y, Du C L, et al. Presentation and promotion: the configurational construction and developmental dimensions of sports events empowering rural revitalization [J]. Journal of Shenyang Sport University, 2024, 43(5): 80–87. DOI:10.12163/j.ssu.20240694.
- [5] Yang C. Practical effects, action mechanisms, and future strategies of digital technology empowering large-scale sports events: a case study of the Hangzhou Asian Games [C]// Proceedings of the 7th Guizhou Provincial Sports Science Conference, 2024.
- [6] Luo M S. Research on international communication of large-scale sports events from the perspective of national communication strategy [C]// Proceedings of the 13th National Sports Science Conference—Poster Session (Sports News Communication Sub-Forum), 2023.
- [7] Zheng X Y. Analysis of media representation and cultural identity narrative of sports architecture space: a case study of Beijing Workers' Stadium reported by People's Daily [J]. Communication Power Research, 2022, 6: 7–9.
- [8] Wang Q J, Fang X H. Cross-cultural dialogue: obstacles and transcendence in the internationalization of Chinese traditional sports [J]. Journal of Sport Science, 2010(6): 7. DOI:CNKI:SUN:TYKX.0.2010-06-003.
- [9] Luo Y. Research on factors influencing the willingness to use digital RMB in large-scale sports events: an application analysis based on the 2022 Beijing Winter Olympics [D]. Southwestern University of Finance and Economics, 2023.
- [10] Fu K X, Chen P, Yi X L, et al. Effect measurement and realization paths of digital economy empowering the transformation and upgrading of China's sporting goods manufacturing industry [J]. Journal of Tianjin University of Sport, 2024, 39(4): 427–434.