

Research on the Implementation Pathways for the 15th National Games to Promote High-Quality Development of the Greater Bay Area Sports Industry

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Abstract: As the first national-level comprehensive sporting event jointly hosted by mainland China and a Special Administrative Region, the 15th National Games presents a historic opportunity for the high-quality development of the Greater Bay Area sports industry. Based on synergy theory, polycentric governance theory, and industrial integration theory, this study employs literature review, logical analysis, and field research to deeply examine the mechanisms and pathways through which the Games propel the high-quality development of the Greater Bay Area's sports industry. Findings reveal that the mechanisms include resource integration and aggregation, technological innovation-driven development, industrial coupling and coordination, and collaborative governance safeguards. Based on these findings, the study proposes the following pathways: optimizing resource integration to achieve efficient factor mobility; leveraging technological innovation breakthroughs to drive industrial upgrading; deepening industrial coupling to expand value space; and enhancing collaborative governance to ensure sustainable development. This research aims to explore feasible models for the transformation, upgrading, and coordinated development of the Greater Bay Area's sports industry through the empowerment of the 15th National Games, providing theoretical references and practical guidance for building a world-class sports industry hub and achieving high-quality regional economic development.

Keywords: the 15th National Games; Greater Bay Area; Sports Industry; High-Quality Development

1. Introduction

High-quality development of the sports industry

embodies new development concepts, manifests higher-quality attributes, and accelerates industrial modernization. It necessitates transformation across sports competition and performance, sports products and services, and industrial chains and supply chains. The 15th National Games (hereinafter referred to as the "15th Games"), as a comprehensive national sporting event in China, will be jointly hosted by Guangdong, Hong Kong, and Macao in November 2025. The event not only showcases achievements in competitive sports but also provides robust support for the high-quality development of the Greater Bay Area's sports industry. Leveraging the hosting of the 15th Games as an opportunity, we can propel the high-quality development of the Greater Bay Area's sports industry.

2. The 15th National Games: Driving High-Quality Development of the Greater Bay Area Sports Industry

2.1 Resource Integration: Collaborative Reconfiguration of Factor Allocation

The hosting of the 15th National Games has accelerated the aggregation of sports resources in the Greater Bay Area, yielding synergistic effects through resource integration and shared development. Theoretically, resource integration and aggregation follow systems theory and coordination theory, representing the process of organically integrating and optimizing various factors. The Greater Bay Area possesses abundant sports resources—including venues, talent, funding, and technology—but suffers from uneven distribution. The 15th Games served as a pivotal catalyst, propelling these resources from mere aggregation toward cross-border integration, consolidation, and convergence. Through the Games' organization and development, resources across the three regions were integrated and optimized, breaking down

geographical and administrative barriers to achieve resource complementarity, sharing, and cohesion. From a factor perspective, this encompasses multiple dimensions including cross-regional coordinated utilization of venue spaces, mutual recognition and mobility of sports talent qualifications, coordinated sports funding policies, and collaborative development of sports event IP. The core lies in achieving effective circulation and precise matching of various factors within the Greater Bay Area sports industry ecosystem through resource integration.[1] Resource integration is not merely a simple aggregation of resources, but rather a process grounded in comparative advantages to integrate and optimize resources. While serving the 15th National Games, it also serves the long-term future of the industry, laying the foundational conditions for the clustered and aggregated development of the Greater Bay Area's sports industry.

2.2 Technology Empowerment: The Core Engine of Industrial Upgrading

Technology empowerment harnesses technological innovation as a driving force, leveraging technological transformation and new conceptual practices to propel industrial upgrading and model transformation. Its essence lies in using technological penetration as a breakthrough path for industrial development, converting the technology empowerment advantages of the Greater Bay Area's international science and technology innovation hub into high-quality development competitiveness for the sports industry. From a practical perspective, this includes: Applying smart technologies in event operations: The 15th National Games fully promoted new technologies like 5G, big data, and artificial intelligence to create a "Smart National Games," driving the sports industry's transformation toward digitalization, networking, and intelligence;[2] Developing intelligent sports manufacturing equipment: Utilizing new materials and processes to enhance sports product performance for high-level competition and training demands; Developing digital applications for sports services, such as online fitness, virtual competitions, and smart stadium reservations to create new consumption scenarios; and fostering integrated mechanisms for industry-academia-research-application collaboration to

advance the Greater Bay Area's construction of sports technology R&D platforms and technology transfer systems. This approach underscores that technological innovation is the core driver of industrial upgrading, with technological empowerment propelling the Greater Bay Area's sports industry toward high-end, intelligent, and green development—aligning with the intrinsic requirements of high-quality industrial advancement in the new era.

2.3 Industrial Coupling: Value Co-creation through Business Model Integration

Coupling theory posits that when systems establish close connections through various means, they cease to exist as isolated entities and instead form an interdependent whole, generating synergistic effects. The essence of industrial coupling lies in dismantling boundaries within the sports industry and between it and related sectors, fostering a deeply integrated industrial ecosystem of diverse business models to achieve co-creation of value and leapfrog development. The core logic of industrial coupling driving high-quality growth in the sports industry through the 15th National Games is leveraging the powerful influence of the Games' event IP to promote close cooperation and coordinated development across the industrial chain, integration between the sports industry and related sectors, and the formation of industrial clusters.[3] Specifically, industrial coupling facilitates supply chain upgrading by shifting the focus of value creation from intermediate segments like sports equipment manufacturing toward high-value-added segments at both ends—such as event IP creation, R&D design, brand marketing, and digital services. As a comprehensive event, the 15th National Games inherently connects multiple industries, driving deep integration between sports and tourism, culture, health, and other sectors to generate new growth momentum.[4] Leveraging comparative advantages, the three regions have established a differentiated development pattern that fully utilizes each area's strengths and resource endowments, generating industrial cluster effects.

2.4 Collaborative Governance: The Practical Dimension of Institutional Safeguards

The essence of collaborative governance lies in establishing a cross-regional, multi-tiered

system involving diverse stakeholders to provide institutional and long-term safeguards for the high-quality development of the Greater Bay Area's sports industry. Hosting the 15th National Games—a cross-regional, cross-system event—requires coordinated governance among the three regions. The deeper value of such governance is establishing sustainable developmental mechanisms. In terms of governance content, achieving collaborative governance in operational norms, industry standards, market access and supervision, intellectual property protection, and other areas fundamentally aims to reduce cross-regional industrial operational costs through governance coordination, foster a fair and orderly market environment, and drive sustained post-event benefits.[5] Collaborative governance embodies legal safeguards, focusing on institutional alignment to promote rule convergence across the three regions—such as in intellectual property protection and market regulation—thereby creating an open and fair competitive environment. Collaborative governance embodies risk prevention and control, achieving shared risk responsibility through the construction of emergency management systems and the establishment of effective oversight mechanisms to ensure the safe and orderly hosting of the 15th National Games. This aspect highlights the safeguarding value of governance innovation for industrial development. Essentially, it solidifies the collaborative mechanisms established during the governance process into normalized institutional frameworks. This not only ensures the successful hosting of the 15th National Games but also lays a solid institutional foundation for the sustainable development of the Greater Bay Area's sports industry, underscoring the value of collaborative governance in driving high-quality industrial development.

3. Mechanisms for Promoting High-Quality Development of the Sports Industry in the Greater Bay Area through the 15th National Games

3.1 Resource Integration and Aggregation Mechanism

The resource integration and aggregation mechanism serves as the core pathway for achieving optimized allocation and efficient

aggregation of sports industry resources through cross-regional coordination. It establishes an efficient regional factor allocation system. Leveraging the “1+4” Greater Bay Area liaison mechanism, the Games established a cross-regional resource allocation platform that breaks down administrative barriers. This platform systematically integrates core resources across the three regions—including sports venues, event operations, talent and technology, and funding policies—addressing structural issues such as uneven distribution of sports resources and impeded factor mobility within the Greater Bay Area. Regarding venue resources, adhering to the organizing principles of “simplicity, safety, and excellence,” over 90% of venues achieved multifunctional reuse through renovation and upgrading. Core venues like Guangzhou Tianhe Sports Center, Hong Kong Kai Tak Sports Park, and Macao East Asian Games Stadium will form an interconnected network. Unified scheduling will ensure efficient resource utilization during the Games, with post-event transformation into versatile venues for public fitness, commercial performances, and exhibitions. This will drive a comprehensive wave of smart and green upgrades for all venues. Regarding human resources, a specialized talent pool for sports across the three regions will be established to facilitate exchanges and mutual recognition of qualifications among coaches, referees, and event management personnel. Joint training programs and collaborative projects will enhance the overall quality of the industry's workforce. Pilot policies such as tax incentives and visa facilitation will promote the cross-border mobility and clustering of professional talent. Integrate fiscal support funds, social capital, and industrial funds from the three regions to establish a Greater Bay Area Sports Industry Development Fund, prioritizing support for event IP development, technology commercialization, and SME cultivation. Coordinate industrial policies across the three regions to build synergistic support in tax incentives, land use guarantees, and market access, reducing operational costs and attracting high-quality sports enterprises to cluster. Through resource integration mechanisms, transform fragmented industrial resources into integrated systems to achieve clustering and economies of scale, thereby providing reliable

safeguards for high-quality industrial development.

3.2 Science and Technology Innovation-Driven Mechanism

The science and technology innovation-driven mechanism centers on digital technology to lead the Greater Bay Area sports industry toward intelligent, green, and sustainable future forms. It serves as the key driver for upgrading the entire sports industry chain and cultivating emerging business models.[6] Leveraging the Greater Bay Area's status as an international science and technology innovation hub, the 15th National Games systematically advanced the application of digital technologies including 5G, IoT, big data, AI, and VR/AR. Widespread adoption of technologies such as 5G+8K ultra-high-definition live streaming, AI real-time competition analysis, digital twin smart venues, and intelligent security screening effectively enhanced event operations management and spectator experiences while elevating technological innovation content and organizational efficiency. Simultaneously, opening digital technology application scenarios and case studies to Greater Bay Area sports enterprises fostered emerging sectors like smart venue operations, digital sports content, and athletic data analytics. Innovation in sports equipment manufacturing was deepened through developing smart wearables, wearable fitness gear, and eco-friendly sports equipment products,[7] elevating product value. New digital sports consumption models were cultivated, expanding into online sports, virtual competitions, and the sports metaverse to broaden the industry's scope. At the innovation support level, we have established a Sports Technology Research Institute in collaboration with universities, research institutions, and enterprises. This institute focuses on scientific research and technological development in areas such as sports intelligence, rehabilitation medicine, and green sports.

3.3 Industrial Coupling Coordination Mechanism

As a powerful catalyst for industrial synergy, the 15th National Games leverages the industrial connectivity and brand influence of sporting events to break down barriers across regions, sectors, and industries. It advances the development of sports industry formats in

accordance with market principles, while promoting deep integration between the sports industry and other sectors, fostering cluster-based industrial growth. This creates a diverse "Sports Plus" convergence ecosystem. Using the Games as a connecting thread, the 15th National Games will drive deep coupling between the sports industry and sectors such as cultural tourism, technology, manufacturing, and health. This will foster models like sports tourism, smart sports, and wellness-sports integration, enriching the industrial ecosystem. Accelerate deep integration of the industrial chain. The Games drive the sports industry chain to extend upstream and downstream, expanding from event operations to venue construction, equipment manufacturing, competition organization, sports media, and derivative product development.[8] This accelerates the process of enterprises within the Greater Bay Area identifying their positions along the industrial chain and collaborating based on their respective strengths. Events guide resource concentration toward specific regions and sectors, facilitating the formation of clusters such as: Sports event performance and sports technology R&D hubs centered on Guangzhou, Shenzhen, and Hong Kong; Sports equipment manufacturing clusters anchored by Dongguan and Foshan; Sports leisure tourism clusters focused on Zhuhai, Macao, and Huizhou. The essence of this mechanism lies in leveraging the events' extensive market influence and industrial reach to reshape the organizational structure of the Greater Bay Area's sports industry through market-oriented approaches. This fosters an innovative sports industry ecosystem, systematically enhancing the region's overall competitiveness and resilience within the sector.

3.4 Collaborative Governance Safeguard Mechanism

The 15th National Games' contribution to high-quality sports industry development lies in establishing an innovative, cross-institutional collaborative governance system. Through institutional innovation and multi-stakeholder coordination, it addresses market fragmentation and regulatory disparities arising from the "one country, two systems, three jurisdictions" framework within the Greater Bay Area, providing a stable institutional environment for high-quality sports development. The 15th

National Games established an organizing committee comprising central ministries and leaders from the three regions, providing strategic coordination and political assurance. It also set up specialized working groups and regular communication mechanisms to address specific issues such as venue standards, personnel clearance, security coordination, medical rescue, and information sharing. Unified standards for event operations, related services, and industry oversight were established, transforming the institutional innovations of “one event, three regions; one policy, three regions; one regulation, three regions” into routine practices. This advances rule alignment and institutional openness for high-quality sports development. Establish a policy coordination platform for supporting sports industry development across the three regions, harmonizing policies on industrial planning, market access, and intellectual property protection to formulate a coordinated policy support system. Build a cross-regional public service platform offering policy guidance, information exchange, resource matching, and dispute resolution services. Establish a statistical monitoring and evaluation system for sports industry development to track industrial progress and performance, providing evidence for government policy adjustments and improvements. Implement risk prevention and control mechanisms to mitigate operational risks in event management, market competition risks, and cross-border cooperation risks, thereby promoting healthy industry development. This framework provides robust institutional safeguards and enhanced governance efficiency to facilitate the high-quality, high-speed operation of the Greater Bay Area's sports industry, ensuring the sustained release of sports events' enabling effects.

4. Implementation Pathways for the 15th National Games to Drive High-Quality Development of the Greater Bay Area Sports Industry

4.1 Optimizing Factor Resource Integration: Precise Allocation and Efficient Utilization

Integrating factor resources can address issues such as fragmented elements and regional barriers within the Greater Bay Area sports

industry. By promoting the spatial mobility of factors—including sports facilities, talent, capital, and policy systems—economies of scale and scope can be achieved. Shared use of sports facilities enhances utilization efficiency through integrated planning via institutional design, innovative PPP construction models, maximizing post-event multifunctional use, and standardized management. Cross-border barriers for sports professionals are dismantled through mutual recognition of qualifications, talent exchange programs, and mobility incentives, enabling mutual learning among regional experts to bolster the talent pool and stimulate innovation. Coordinated financial and policy support will be established through a tri-regional industrial development fund, bond financing, asset securitization instruments, streamlined administrative approvals, and enhanced cross-regional regulatory coordination. This will foster diversified investment models and create an equitable, dynamic market environment. This pathway reduces transaction costs through cross-regional factor mobility and sharing, generating resource agglomeration effects. As a necessary approach to achieving scaled and clustered development of the Greater Bay Area's sports industry, its core value lies in building a bridge between short-term event demands and long-term industrial growth—a replicable solution for integrating cross-regional sports industry factors and resources.

4.2 Solidly Promoting Technological Innovation: Digital Leadership and Intelligent Upgrades

Leveraging the resource endowments of the Greater Bay Area as an international science and technology innovation hub, we will transform digitalization, intelligence, and disciplinary integration into new sources of productive forces and value creation for the industry. Efforts will focus on embedding digital technologies into event practices, [9] riving innovations in smart event command systems, intelligent venues, and immersive spectator experiences to enhance operational efficiency and user engagement. Extend technological applications across the entire industry chain by establishing smart event platforms, developing VR/AR immersive viewing and cloud streaming, optimizing IoT-based venue management, and promoting open data sharing to reshape consumption and

operational models; Intelligent Sports Equipment: Focusing on intelligent R&D design, smart factory construction, service-oriented manufacturing transformation, and green manufacturing to elevate traditional manufacturing toward intelligence, sustainability, and high-end positioning, thereby shaping the international competitiveness of the Greater Bay Area's sports manufacturing sector. Construction of Government-Industry-Academia-Research-Application Joint Innovation Platforms: Establishing high-efficiency innovation consortia that integrate government, industry, academia, research, and application. These platforms will address market demands through interdisciplinary collaboration, with outcomes transferred to local implementation. This tripartite integration will play a crucial role in overcoming key technological challenges.

4.3 Deepening Sports Industry Coupling: Integration Innovation and Cluster Development

The path to deepening industrial coupling centers on breaking down sector boundaries and value creation, fostering integrated development across industrial chains, business models, and clusters. This approach aligns with the objective principles of modern industrial convergence theory and practice. Deepening industrial chain coupling involves expanding upstream into the Greater Bay Area Technology Innovation Alliance, midstream into intelligent manufacturing upgrades, and downstream into high-end sectors like event operations and sports training. This promotes collaboration and resource sharing among upstream and downstream enterprises, enhancing the chain's resilience and competitiveness. Supply chain coordination and integrated development between large, medium, and small enterprises further strengthen the chain's robustness. "Sports+" business model integration focuses on cultural tourism, health, technology, and education. It drives innovation in sports products and establishes pilot demonstration zones to activate cross-sector development momentum. This approach expands the application scenarios and value space of the sports industry, achieving mutual penetration between the sports sector and surrounding industries [10]. Expand sports industry clusters by leveraging cities' unique endowments to

position them as hubs within the Greater Bay Area. Cultivate leading enterprises and specialized, refined, distinctive, and innovative companies within clusters, while optimizing the collaborative ecosystem for industry-academia-research partnerships and cross-regional linkages.

4.4 Enhancing Collaborative Governance Efficiency: Institutional Improvement and Risk Prevention

Forming a governance community through multi-stakeholder co-construction, co-governance, and co-sharing highlights the institutional role of modern governance in safeguarding high-quality industrial development. Institutional innovation breaks down governance barriers across the three regions. Collaborative governance systems are established by integrating event operation rules, advancing mutual recognition of qualifications, and coordinating industrial policies. This fosters a competitive-cooperative symbiotic governance community, reducing cross-regional operational costs for the sports industry. The industrial development service system is strengthened by building collaborative service platforms and enhancing government services, public services, talent services, financial services, and internationalization services, providing service guarantees for sports industry growth. The establishment of risk monitoring and early warning systems, tiered control mechanisms, and emergency response protocols precisely mitigates hidden risks in event operations, market competition, and policy changes, enhancing the stability and security of sports industry development. Institutional innovation breaks down barriers, service optimization elevates experiences, risk prevention and control solidify the bottom line, and the construction of a routine governance system for the Greater Bay Area ensures the sustainable development of the sports industry.

5. Conclusion

The 15th National Games has presented unprecedented opportunities for the high-quality development of the Greater Bay Area's sports industry. Through research and practice on pathways for high-quality development—including resource integration, technological innovation, industrial coupling, and collaborative governance—the region has made significant strides in factors, industrial

upgrading, business model convergence, and institutional safeguards. Moving forward, tracking specific cases from the Games' hosting process will enable quantitative analysis of pathway implementation outcomes. Additionally, exploring long-term utilization mechanisms for event legacies will enhance the high-quality development model for the sports industry.

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