# Research on the Integrated Development of Hainan's Coastal Sports Tourism Industry Under the Construction of the Free Trade Port: A Multidimensional Perspective of "Sports + Tourism + Health and Wellness"

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## ABSTRACT

This study aims to investigate the integrated development of Hainan's coastal sports tourism industry from the multidimensional perspective of "sports + tourism + health and wellness," identify the key constraints and influencing factors, and propose corresponding development pathways. Taking the coastal areas of Hainan Island as the study area, this study employs literature review, field investigation, and logical analysis to examine the resource endowment, industrial foundation, policy environment, development characteristics, and existing challenges of coastal sports tourism. Geographic detector analysis is further employed to identify the factors influencing the spatial distribution of coastal sports tourism resources and to examine their explanatory power and interactions. The results indicate that Hainan has distinctive advantages in coastal natural resources, tourism market demand, health and wellness resources, and policy support, providing a favorable foundation for the development of coastal sports tourism. Nevertheless, several challenges remain, including insufficient depth of industrial integration, pronounced spatial imbalances, inadequate support in terms of professional talent, capital, and technology, increasing pressures related to safety management and ecological protection, and institutional and mechanism constraints. The spatial distribution of coastal sports tourism resources is jointly influenced by socioeconomic conditions, industrial development, and natural resource endowment, with socioeconomic factors demonstrating the strongest explanatory power. These factors interact to form a "resource–industry–economy" circular mechanism that influences the development of coastal sports tourism. Accordingly, Hainan should optimize its spatial development pattern, deepen the integration of sports, tourism, and health and wellness, strengthen supporting factors, enhance safety management and ecological protection, and promote institutional innovation. These measures can facilitate the high-quality and sustainable development of Hainan's coastal sports tourism industry.

**Keywords:** coastal sports tourism; industrial integration; sports + tourism + health and wellness; Hainan Free Trade Port; sports tourism demonstration zone

## INTRODUCTION

### 1.1 Research Background

In recent years, sustained economic and social development in China, coupled with the continuous upgrading of residents' consumption patterns, has contributed to the rapid growth of sports tourism[1]. As an emerging industry that integrates sports and tourism, sports tourism has become an important avenue for optimizing the tourism industry structure and facilitating its transformation and upgrading[11]. In 2016, the General Administration of Sport of China and eight other ministries and commissions jointly issued the Development

Plan for the Water Sports Industry, which called for the water sports industry to become more market-oriented, large-scale, brand-driven, professional, and standardized. In the same year, the General Office of the State Council issued the Opinions on Accelerating the Development of the Fitness and Leisure Industry, recognizing water sports as an important component of the fitness and leisure service system [12]. Subsequently, the Outline for Building a Leading Sports Nation, issued by the General Office of the State Council in 2019, further emphasized the strategic importance of integrating the sports industry with related industries, providing policy support for the diversified development of sports tourism. [17]

Hainan, China's only province located entirely within the tropics, enjoys distinctive advantages in marine resources, climatic conditions, and ecological environments, providing a strong foundation for the development of coastal sports tourism. In 2018, the Central Committee of the Communist Party of China and the State Council issued the Guiding Opinions on Supporting Hainan in Comprehensively Deepening Reform and Opening Up, which explicitly supported the development of a National Sports Tourism Demonstration Zone in Hainan and encouraged the promotion of beach sports, water sports, and related activities [1]. In 2020, the People's Government of Hainan Province issued the Development Plan for Hainan National Sports Tourism Demonstration Zone (2020–2025). The plan proposed advancing the water sports industry toward greater market orientation, scale, branding, professionalism, and standardization; establishing a spatial development framework for water sports; and positioning Hainan as an emerging international hub for water sports. Furthermore, the development of the Hainan Free Trade Port has created additional opportunities for the coastal sports tourism industry [3]. Supporting institutional arrangements, including visa-free entry for citizens of 59 countries and offshore duty-free shopping policies, have helped strengthen Hainan's international accessibility and tourism appeal, creating favorable conditions for further industrial development. [7]

Despite these favorable policy conditions and resource advantages, Hainan's coastal sports tourism industry continues to face several challenges, including limited integration across related industries, uneven regional development, shortages of specialized professionals, an underdeveloped safety management system, and mounting ecological pressures. These challenges may constrain the industry's capacity to translate its resource advantages into sustainable development outcomes. Consequently, a key issue is how Hainan can move beyond a resource-dependent development model toward one driven by industrial integration and innovation, while deepening the integration of sports, tourism, and health and wellness. Addressing this issue is essential to improving the quality and sustainability of coastal sports tourism development and supporting Hainan's ambition to become an internationally influential destination for sports tourism. [3,8,13,14,20]

### 1.2 Research Objectives and Significance

The objectives of this study are to systematically review the resource endowment, industrial foundation, and policy environment of the integrated development of Hainan's coastal sports tourism industry; analyze in depth its current characteristics and existing problems; construct a model of the mechanisms influencing integrated development; and propose feasible pathways and countermeasures, thereby providing theoretical support and decision-making references for Hainan's development of an international sports tourism demonstration zone.

Theoretically, from the multidimensional perspective of "sports + tourism + health and wellness," this paper enriches the theoretical system concerning the integration of the coastal sports tourism industry and expands the application of industrial integration theory in the field of sports tourism.

Practically, the findings can provide references for governments at various levels in Hainan when formulating sports tourism industry policies, offer guidance for coastal sports tourism enterprises in optimizing product supply and operating models, and provide practical support for promoting the high-quality development of Hainan's coastal sports tourism industry.

### 1.3 Research Object and Methods

The research object is the coastal sports tourism industry in the coastal areas of Hainan Island, mainly including the coastal cities and counties of Haikou, Sanya, Wanning, Lingshui, Qionghai, and Danzhou, with a particular

focus on practical models and advancement pathways for the integrated development of "sports + tourism + health and wellness."

The main research methods include: (1) literature review, involving a systematic search of relevant literature on coastal sports tourism, industrial integration, health and wellness tourism, and related fields through databases such as CNKI and Wanfang Data; (2) field investigation, involving on-site visits to coastal sports tourism projects in Haikou, Sanya, Wanning, and other areas of Hainan; and (3) logical analysis, using inductive and deductive methods to conduct an in-depth analysis of the collected materials.

# LITERATURE REVIEW AND THEORETICAL FOUNDATIONS

## 2.1 Definition of Relevant Concepts

Coastal sports tourism is a product of the deep integration of coastal tourism and sports tourism. Based on existing research, this paper defines coastal sports tourism as tourism activities that rely on the distinctive natural resources and sports facilities of coastal areas, take participation in, viewing of, or appreciation of various marine sports activities as the primary motivation, and aim to achieve such purposes as physical fitness, health and recreation, leisure experiences, sightseeing, and vacationing. [1,7]

Industrial integration refers to the dynamic development process in which different industries, or different sectors within the same industry, penetrate and intersect with one another and ultimately merge into an integrated whole, gradually forming new industries. The essence of industrial integration lies in the blurring of industrial boundaries and the complementarity of industrial functions. [11,17]

The "sports + tourism + health and wellness" integration model refers to a comprehensive industrial form that takes sports as its content, tourism as its carrier, and health and wellness as its objective, and that integrates resources, complements functions, and innovates business formats to combine physical exercise, leisure tourism, and health preservation. This model responds to consumers' growing pursuit of healthy lifestyles and is consistent with the trend toward cross-sectoral industrial integration. [11,19]

## 2.2 Theoretical Foundations

Industrial integration theory provides an analytical tool for examining the mechanisms through which coastal sports tourism integrates with the health and wellness industry. The theory holds that the main drivers of industrial integration include technological innovation, policy liberalization, changes in market demand, and competitive pressure, while the integration process is manifested through different levels, including technological, product, and market integration. [11,17]

Core–periphery theory and the point–axis theory in spatial structure theory provide theoretical guidance for analyzing the spatial distribution of coastal sports tourism resources in Hainan and optimizing its spatial layout. Core–periphery theory can be used to explain the "two cores–one belt–multiple points" spatial pattern of Hainan's coastal sports tourism, while point–axis theory can provide a basis for constructing a spatial system characterized by "dual-core leadership, multi-polar development, and coordinated regional development." [4,18]

Sustainable development theory emphasizes meeting the needs of the present without compromising the ability of future generations to meet their own needs. For coastal sports tourism, sustainable development requires a balance between industrial development and ecological protection to ensure the long-term preservation and sustainable utilization of coastal sports tourism resources. [9]

The Theory of Planned Behavior in consumer behavior theory holds that behavioral attitudes, subjective norms, and perceived behavioral control are three key factors influencing behavioral intentions. This theory can be used to analyze the factors affecting consumers' intentions to participate in coastal sports tourism and provide a basis for optimizing product supply and marketing strategies. [6]

# BASIC CONDITIONS FOR THE INTEGRATED DEVELOPMENT OF HAINAN'S COASTAL SPORTS TOURISM INDUSTRY

## 3.1 Analysis of Resource Endowment

Hainan possesses natural resource advantages for developing coastal sports tourism. In terms of natural resources, Hainan Island has a coastline of 1,527 kilometers, with sandy beaches accounting for more than 50% of the total. It has numerous high-quality bays, including Yalong Bay, Haitang Bay, Shimei Bay, and Riyue Bay. The clear seawater, fine sand, and suitable wind and waves are conducive to various water sports, including surfing, sailing, diving, and jet skiing. Hainan has a tropical monsoon climate with no winter, an average annual temperature above 23°C, and more than 300 days per year suitable for water sports, giving it a unique climatic advantage in China. [1,3,7]

In terms of cultural resources, Hainan possesses rich cultural resources, including Li and Miao ethnic minority cultures, fishing community culture, and Maritime Silk Road culture, providing distinctive materials for integrating coastal sports tourism with the cultural industry. Traditional Li sports, Miao festivals, fishermen's sea-worship ceremonies, and other cultural elements can be transformed into sports tourism products with distinctive regional characteristics. [1]

In terms of health and wellness resources, Hainan has diverse resources including hot springs, forests, and the ocean. The Boao Lecheng International Medical Tourism Pilot Zone, the only medical special zone of its kind in China, provides high-end medical support for the integration of "sports + health and wellness." [19]

## 3.2 Analysis of the Industrial Foundation

In the coastal sports tourism sector, Hainan has established a coastal sports system centered on sailing, surfing, diving, jet skiing, and other activities. Riyue Bay in Wanning serves as a training base for China's national surfing team and has more than 30 surfing clubs along the coastline. The number of surfing participants visiting Riyue Bay reached approximately 110,000 in 2019, 300,000 in 2020, and 500,000 in 2024. Since its establishment in 1987, the National Sailing and Windsurfing Training Base in Haikou has trained multiple Olympic champions and world champions. Sanya has developed a water sports cluster centered on diving, jet skiing, and yachting. [2,3,7,16]

In the tourism sector, Hainan received 83.112 million tourists in 2019, generating total tourism revenue of RMB 105.7 billion. Even under the impact of the COVID-19 pandemic, Hainan received 64.55 million tourists in 2020, generating tourism revenue of RMB 87.2 billion. The large tourism market provides a solid source of visitors for the development of the coastal sports tourism industry.

In the health and wellness sector, the Boao Lecheng International Medical Tourism Pilot Zone has introduced a number of internationally renowned medical institutions and formed a health and wellness industry cluster centered on medical tourism and rehabilitation. Baoting, Wuzhishan, and other central mountainous areas have developed business formats such as hot-spring wellness and forest wellness by leveraging their hot-spring and forest resources. [19]

## 3.3 Analysis of the Policy Environment

At the national level, strategies such as building a leading sports nation, Healthy China, and a maritime power provide top-level policy design for the development of coastal sports tourism. The Development Plan for the Water Sports Industry set a target of reaching a total water sports industry scale of RMB 3 trillion by 2020. The 14th Five-Year Plan for Tourism Development proposed improving policies for cruise and yacht tourism, low-altitude tourism, and other sectors and promoting the development of marine tourism products and business formats.

At the Hainan Free Trade Port level, the Overall Plan for the Construction of the Hainan Free Trade Port proposes promoting deep integration between tourism and sports around the development of an international tourism and

consumption center. Institutional innovations such as visa-free entry for citizens of 59 countries and offshore duty-free shopping have provided policy benefits for the development of coastal sports tourism.

At the local level, the Development Plan for Hainan National Sports Tourism Demonstration Zone (2020–2025) explicitly proposes constructing a water sports spatial structure, enriching water sports products, improving the quality of branded water sports events and activities, and strengthening comprehensive support and services for water sports. Coastal cities and counties have also successively introduced sports tourism development plans and supporting policies.

# CURRENT SITUATION OF THE INTEGRATED DEVELOPMENT OF HAINAN'S COASTAL SPORTS TOURISM INDUSTRY

## 4.1 Practical Exploration of Integrated Development

In terms of "sports + tourism" integration, Hainan has developed three major models: event tourism, experiential tourism, and leisure tourism. Event tourism is led by branded events such as the Around Hainan International Regatta, the Wanning International Surfing Competition, and the Hainan Golf Open, attracting large numbers of domestic and international visitors to watch and participate. Experiential tourism is centered on surfing, diving, sailing, and other participatory activities, allowing tourists to take part in water sports under the guidance of professional instructors. Leisure tourism focuses mainly on coastal vacations, beach sports, and marine sightseeing to meet tourists' needs for leisure and relaxation. [1,2,7,12]

In terms of "sports + health and wellness" integration, Hainan has leveraged the policy advantages of the Boao Lecheng medical pilot zone to explore integrated models such as sports rehabilitation, hot-spring therapy, and climate-based wellness. Some coastal sports tourism enterprises have cooperated with medical institutions to develop wellness products targeting sports injury rehabilitation and exercise interventions for chronic diseases. [19]

In terms of comprehensive "sports + tourism + health and wellness" integration, projects such as the Mission Hills Haikou Sports and Health Characteristic Town and the Sanya Haitang Bay Coastal Health and Wellness Resort Complex have initially developed integrated service capabilities combining physical exercise, leisure tourism, and health preservation.

## 4.2 Spatial Pattern of Integrated Development

In terms of spatial distribution, Hainan's coastal sports tourism resources exhibit a "two cores–one belt–multiple points" spatial pattern. The "two cores" are the clusters centered on Wanning and Haikou. Wanning relies on the surfing resources of Riyue Bay and the national surfing training base to form a nationally recognized surfing industry cluster. Haikou relies on the National Sailing and Windsurfing Training Base and the Mission Hills Sports and Health Characteristic Town to form clusters centered on sailing, windsurfing, and golf. The "one belt" refers to the coastal belt formed by the southeastern coastal areas and surrounding urban clusters, mainly involving Wanning, Sanya, Lingshui, and Qionghai. The "multiple points" refer to sports tourism resources distributed in point-like clusters in areas such as Wenchang, Wuzhishan, Danzhou, and Baisha. [4,18]

In terms of regional differences, coastal cities in eastern Hainan have a dense distribution of coastal sports industry projects and relatively intense homogeneous competition. Although central and western areas also possess favorable natural resources, their development of coastal sports industries is relatively lagging because of weaker economic conditions and infrastructure. This "strong east, weak west; strong coast, weak mountains" pattern constrains the coordinated development of Hainan's coastal sports tourism industry as a whole to some extent. [3,4,18]

## 4.3 Market Demand for Integrated Development

From the perspective of consumer demand, intentions to consume coastal sports tourism are influenced by perceived behavioral control, behavioral attitudes, subjective norms, and other factors. Research shows that

perceived behavioral control is the primary driver of intentions to consume coastal sports tourism: the fewer barriers consumers perceive to participating in coastal sports tourism, the stronger their consumption intentions. In addition to time and economic factors, concerns about sports risks, inadequate facilities and services, and insufficient information have become major barriers affecting consumers' choices of coastal sports tourism. [6]

In terms of tourists' intention to revisit, surfing tourists in Hainan show relatively strong revisit intentions. Perceived value, destination image, and satisfaction all have significant positive effects on revisit intention, with destination image exerting the greatest influence. This indicates that enhancing the image of coastal sports tourism destinations, improving tourists' perceived value, and increasing tourist satisfaction are effective ways to strengthen revisit intentions. [5,10]

## DIAGNOSIS OF PROBLEMS IN THE INTEGRATED DEVELOPMENT OF HAINAN'S COASTAL SPORTS TOURISM INDUSTRY

### 5.1 Insufficient Depth of Industrial Integration

At present, the integration of Hainan's coastal sports tourism industry is still dominated by "physical aggregation" rather than genuine "chemical integration." Specifically, product homogenization is severe, and the product portfolios of coastal sports tourism across regions are highly similar. Coastal sports projects in the eastern and southern regions focus mainly on basic activities such as surfing and diving, failing to fully explore the unique marine geological characteristics and cultural elements of each region. The industrial chain is incomplete, with the integration of sports tourism with culture, health and wellness, education, and other industries remaining largely superficial and lacking deeply integrated products and services. Value-added development is also insufficient, as coastal sports tourism products are mainly basic experiential products, with an inadequate supply of high-end, personalized, and customized products. [3,11,17]

### 5.2 Unbalanced Spatial Development

Hainan's coastal sports tourism industry exhibits significant spatial imbalance. The eastern coastal region has a dense concentration of projects, well-developed facilities, and strong branding effects, whereas central and western regions, despite having favorable natural resources and coastal sports resources, find it difficult to develop sustained attractiveness because of relatively weak economic conditions and inadequate supporting infrastructure. More than 30 surfing clubs operate along Riyue Bay in Wanning, resulting in intense homogeneous competition, while the coastal sports industries in western cities and counties such as Changjiang and Dongfang remain significantly underdeveloped. [3,4,18]

### 5.3 Insufficient Factor Support

The shortage of professional personnel is an important factor constraining the integrated development of Hainan's coastal sports tourism industry. Coastal sports such as surfing, sailing, windsurfing, and jet skiing require highly professional capabilities in event organization, operation, and management. However, China faces a shortage of professional personnel in these fields, and Hainan's relatively remote geographical location and comparatively less developed regional economy make it difficult to attract highly qualified professionals. Funding sources are also limited. The development of coastal sports tourism relies mainly on government investment and project fees, while participation by private capital remains low and financing channels are limited. Technological empowerment is insufficient as well, with relatively low levels of digitalization and intelligent services and smart sports tourism applications still at an early stage. [8,15,16]

### 5.4 Safety Management and Ecological Protection Pressures

Coastal sports tourism activities are characterized by high risk, experiential features, professionalism, and uncertainty. In recent years, several safety incidents involving personnel have occurred in Hainan's coastal sports tourism sector, revealing various deficiencies in safety management. At the same time, as the number of tourists continues to increase, pressure on the carrying capacity of the marine ecological environment has grown. Many scenic areas and coastlines suffer from significant environmental pollution, while garbage and debris seriously

damage beach environments. The contradiction between industrial development and ecological protection has become increasingly prominent. [8,13,14]

### 5.5 Institutional and Mechanism Barriers

The integrated development of Hainan's coastal sports tourism industry faces multiple institutional and mechanism barriers. Fragmented administration and inadequate interdepartmental coordination are prominent problems. Tourism, culture, radio and television, sports, and other administrative departments at different levels lack effective coordination mechanisms, making resource integration difficult and responsibilities unclear, which hinders the formation of joint development efforts. Industry standards and regulatory systems are also incomplete; standards for water sports services, safety, and instructor qualifications remain underdeveloped. Market supervision and consumer rights protection mechanisms are inadequate, and some coastal sports tourism projects have problems such as opaque pricing and nonstandard services. [8,20]

## ANALYSIS OF THE MECHANISMS INFLUENCING THE INTEGRATED DEVELOPMENT OF HAINAN'S COASTAL SPORTS TOURISM INDUSTRY

### 6.1 Drivers of Integrated Development

The integrated development of Hainan's coastal sports tourism industry is jointly driven by multiple factors. In terms of demand, rising household incomes and increasing health awareness have generated sustained growth in demand for coastal sports tourism and health and wellness tourism, providing market momentum for industrial integration. In terms of policy, the benefits of Hainan Free Trade Port policies and the establishment of the National Sports Tourism Demonstration Zone provide institutional support. In terms of technology, the development of digital technologies and smart tourism technologies provides technical support. In terms of resources, Hainan's unique natural resource endowment and locational advantages provide the material foundation for industrial integration. [11,12,17,19]

### 6.2 Mechanisms Influencing Integrated Development

Based on geographic detector analysis, the spatial distribution of coastal sports tourism resources in Hainan is jointly influenced by socioeconomic factors, industrial development factors, and natural resource factors. Socioeconomic factors have the strongest explanatory power, with indicators such as transportation conditions, the share of the tertiary industry, tourist arrivals, tourism revenue, and GDP showing relatively high explanatory power. Industrial development factors rank second, with the current development of the tourism industry providing support and guidance for the spatial distribution of coastal sports tourism resources. Although the influence of natural resource factors has relatively declined, they remain critical to the basic spatial pattern and sustainable development of coastal sports tourism resources. [4,18]

The three categories form a circular "resource–industry–economy" mechanism. Natural resource endowment is the starting point and directly affects the development potential of tourism resources; the level of industrial development is the driving force that transforms resource advantages into industrial advantages; and socioeconomic conditions serve as both an outcome and a hub for reinvestment, using economic growth to feed back into the protection and development of natural resources and thereby form a cycle of sustainable development. [9]

### 6.3 Analysis of Development Effects

From the perspective of economic effects, the integration of the coastal sports tourism industry stimulates regional tourism consumption and promotes employment and economic growth. From the perspective of social effects, the integration of the coastal sports tourism industry promotes nationwide fitness, enriches cultural life, and improves residents' health. From the perspective of ecological effects, the integrated development of coastal sports tourism places higher demands on the marine ecological environment and requires scientific planning and strict management to achieve sustainable development. [17,19]

# PATHWAYS AND COUNTERMEASURES FOR THE INTEGRATED DEVELOPMENT OF HAINAN'S COASTAL SPORTS TOURISM INDUSTRY

## 7.1 Overall Approach and Development Objectives

Guided by Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era and by fully implementing the guiding principles of the 20th National Congress of the Communist Party of China, Hainan should build on the strategic positioning of the Hainan Free Trade Port and the National Sports Tourism Demonstration Zone, adhere to the principles of ecological priority, integrated development, innovation-driven development, and co-construction and sharing, take the deep integration of "sports + tourism + health and wellness" as the main line, focus on optimizing spatial layout and upgrading industrial capacity, and strengthen institutional innovation and factor support as the foundation. These efforts should promote the high-quality development of Hainan's coastal sports tourism industry and build Hainan into a coastal sports tourism destination with global influence.

The development objectives are divided into three stages. In the short term (2025–2027), the focus is on improving infrastructure and standard systems and initially establishing a basic framework for the integrated development of "sports + tourism + health and wellness." In the medium term (2028–2030), the focus is on enhancing industrial capacity and brand influence and developing a number of coastal sports tourism complexes with international influence. In the long term (2031–2035), the goal is to fully establish an international sports tourism demonstration zone and form a globally competitive coastal sports tourism industry cluster.

## 7.2 Pathway for Optimizing Spatial Layout

A spatial pattern of "dual-core leadership, multi-polar development, and coordinated regional development" should be constructed. Haikou and Sanya should serve as the dual cores, leveraging the leading roles of the provincial capital and the major tourism hub to build internationally competitive coastal sports tourism service centers. Wanning, Lingshui, Qionghai, and Danzhou should serve as multiple development poles, cultivating distinctive coastal sports tourism industry clusters based on their respective resource endowments. Coordinated development should be promoted across five zones: the northern urban sports tourism cluster, centered on Haikou and focusing on sports events, sports exhibitions, and sports leisure; the southern international event tourism zone, led by Sanya and focused on building a world-class coastal sports tourism destination; the eastern health and exhibition tourism belt, which leverages the policy advantages of the Boao Lecheng medical pilot zone to construct an integrated "medical care + sports + tourism" development model; the western mountain-and-sea sports experience zone, which leverages Danzhou's role as a regional center to develop distinctive mountain-and-sea interactive products; and the central ecological and ethnic sports zone, centered on the Tropical Rainforest National Park and focused on ecological sports tourism.

## 7.3 Pathway for Deepening Industrial Integration

The deep integration of "sports + tourism" should be promoted through the development of new formats such as event sightseeing, training vacations, and experiential tourism, creating a sports tourism product system based on the concept of "traveling with the event." The deep integration of "sports + health and wellness" should be promoted through the development of products such as sports rehabilitation, hot-spring therapy, and climate-based wellness, as well as the construction of coastal health and wellness resort complexes. The deep integration of "sports + culture" should be promoted by exploring the cultural value of traditional Li and Miao sports and marine culture and developing sports and cultural tourism products with distinctive regional characteristics. The deep integration of "sports + education" should be promoted by bringing water sports into schools and establishing a youth water sports training system. The deep integration of "sports + technology" should be promoted by developing smart sports tourism platforms and improving digital and intelligent service capabilities. [11,12,17]

## 7.4 Pathway for Strengthening Factor Support

Talent development and recruitment should be strengthened by establishing a training system for interdisciplinary professionals in coastal sports tourism, encouraging universities to offer relevant programs and

courses, and strengthening exchanges and cooperation with international water sports organizations. Funding channels should be broadened by establishing a special fund for the development of the coastal sports tourism industry, guiding private capital participation, and exploring public–private partnership models. Technological empowerment should be strengthened by building a digital management platform for coastal sports tourism and promoting the development of smart scenic areas, smart events, and smart services. [15,16]

### 7.5 Pathway for Safety and Ecological Protection

A safety control system for water sports should be established, with improved water sports safety standards and emergency plans, cross-department emergency coordination mechanisms, and strengthened safety training for practitioners and safety education for tourists. Mechanisms for ecological impact assessment and visitor capacity control should be established. Strict environmental impact assessments should be implemented for coastal sports tourism projects, and visitor capacity limits for individual scenic areas should be scientifically determined. Green and low-carbon operating models should be promoted, encouraging the use of environmentally friendly materials and clean energy and reducing the impact of coastal sports tourism activities on the marine ecological environment. [8,13,14]

### 7.6 Pathway for Institutional and Mechanism Innovation

A cross-departmental coordination mechanism should be established, including the creation of a provincial-level coordinating body for coastal sports tourism development to integrate the resources and efforts of departments responsible for culture and tourism, sports, marine affairs, transportation, emergency management, and other areas. Industry standards and regulatory systems should be improved by accelerating the formulation of standards for water sports services, safety, and instructor qualifications and promoting alignment with national and international standards. Market supervision and consumer rights protection mechanisms should be innovated by establishing a credit evaluation system for coastal sports tourism enterprises, improving complaint-handling and advance-compensation mechanisms, and creating a safe and trustworthy consumption environment. [20]

## CONCLUSIONS AND PROSPECTS

From the multidimensional perspective of “sports + tourism + health and wellness,” this paper systematically analyzes the basic conditions, current characteristics, and existing problems of the integrated development of Hainan’s coastal sports tourism industry, constructs a model of the mechanisms influencing integrated development, and proposes development pathways and countermeasures. The main conclusions are as follows:

First, the integrated development of Hainan’s coastal sports tourism industry benefits from unique resource endowments, a sound industrial foundation, and strong policy support, indicating substantial development potential and broad prospects. [1,3,7]

Second, the integrated development of Hainan’s coastal sports tourism industry faces practical difficulties, including shallow integration, unbalanced spatial development, insufficient factor support, considerable pressure on safety management and ecological protection, and institutional and mechanism barriers. These problems urgently require systematic measures to address them. [3,8,13,14,20]

Third, the integrated development of Hainan’s coastal sports tourism industry is driven by multiple factors, including demand, policy, technology, and resources. Socioeconomic factors, industrial development factors, and natural resource factors jointly shape a circular “resource–industry–economy” mechanism. [4,18]

Fourth, promoting the integrated development of Hainan’s coastal sports tourism industry requires coordinated efforts across five dimensions: optimizing spatial layout, deepening industrial integration, strengthening factor support, ensuring safety and ecological protection, and innovating institutional mechanisms. This entails constructing a spatial pattern of “dual-core leadership, multi-polar development, and coordinated regional development,” deepening the “sports + tourism + health and wellness” integration model, strengthening support from talent, capital, and technology, establishing firm safety and ecological boundaries, and innovating institutional mechanisms. [11,13,15,16,20]

Future research could further introduce time-series data and employ spatial econometric methods to conduct longitudinal comparative analyses of the types, spatial patterns, and influencing factors of Hainan's coastal sports tourism resources, thereby revealing their evolutionary patterns and driving mechanisms. At the same time, spatiotemporal big data such as remote-sensing imagery and mobile signaling data could be incorporated to construct more refined analytical models and improve the scientific rigor and predictive value of the research findings. In addition, the research scale could be extended to South China, which shares similar tropical coastal characteristics, and comparative studies could be conducted to identify the commonalities and differences in coastal sports tourism development across regions, thereby providing theoretical support for the construction of a nationwide sports tourism network.

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