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A Pre-game Evaluation of the Tourism Legacy of the Beijing 2022 Winter Olympic Games

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Abstract: The role of tourism in social and economic development and stabilizing the Olympic legacy has been widely discussed. Beijing is the first “Dual-Olympic City”. For the first time, the Beijing Winter Olympics has adopted a model of three competition areas, which has attracted much attention to the study of its tourism legacy. In the legacy plan, the construction of the “Beijing-Zhangjiakou Sports Culture and Tourism Belt” was proposed. The development of ice and snow tourism and the cultivation of the ice and snow tourism market is also reflected in many policy documents and government actions. The scientific planning before the competition laid a good foundation for the sustainable development of its ice and snow tourism heritage. This research combines Olympic legacy research with tourism destination theory, and focuses on ice and snow tourism directly related to the Winter Olympics and the significance of pre-event planning for legacy protection. At the same time, the improvement of the quality of ice and snow tourism destinations is embedded in the pre-Olympic legacy, and opinions and suggestions on how to ensure the stability of the legacy after the games are given. This study uses the literature review method and the second-hand materials survey research method, then through establishing a tourism legacy pre-game evaluation model and the use of geographic information, government reports, policies, publicly released statistics and news reports, etc.. It explores the legacy of the Beijing 2022 Winter Olympics and Paralympics, aiming to lay the foundation for preserving the continuous value of the ice and snow tourism legacy during and after the Olympics. The results indicate that the Beijing Winter Olympics has made relatively complete plans and reliable progress in both tangible and intangible legacy. Complete tourism infrastructure, an optimistic sport and cultural atmosphere, and the improvement of residents' health concept and sports awareness have become boosters for the development of ice and snow tourism in the Beijing-Zhangjiakou region.

Key words: Beijing 2022 Winter Olympics; tourism legacy; ice and snow tourism; winter sports tourism

1 Introduction

The concept of Olympic legacy coincides with the United Nations' concept of sustainable development, and research on legacy has received increasing attention from scholars in recent years. Regarding the concept and classification of legacy, scholars have expressed their diversified opinions. In the “*Legacy Strategic Approach Moving Forward*” published

by IOC (International Olympic Committee) in February 2018, the Olympic legacy is defined as “the result produced by the vision. The visible and invisible, long-term positive benefits produced or accelerated by the Olympic movement”. In the post-pandemic era, when international major events have been affected by various elements, assessing what kind of impact the hosting of the Olympic Games

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could bring to the host country or city is gaining increasing attention among international scholars. As the only city to have hosted both the Summer Olympic Games and the upcoming Winter Olympic Games, Beijing's legacy plan and legacy progress reports have also received widespread attention. It is worth noting that after Beijing successfully won the bid to host the Winter Olympics, a series of documents related to promoting mass ice and snow sports, consolidating the foundation of youth ice and snow sports, improving the level of ice and snow competition and creating ice and snow resorts were issued in rapid succession, highlighting the close connection between ice and snow sports, ice and snow tourism and the hosting of the Winter Olympics, and also China's ambition to use the Winter Olympics to improve the ice and snow industry chain and thus to boost the country's economic transformation and development.

As an important part of the Olympic Committee's legacy program, many cities bid to host the mega sports events with the intention of creating a tourist destination (e.g., Rio) that will attract more visitors to the host country and bring long-term economic benefits (Cornelissen, 2004). The Beijing Winter Olympics bid and legacy program explicitly included contents concerning tourism legacy, highlighting the importance of tourism legacy in achieving the overall legacy goals. Through the successful hosting of the Winter Olympics, the development of urban and regional tourism has become one of the important goals. In the legacy plan of the Beijing Winter Olympics, the goal of creating a "Beijing Zhang Sports Cultural Tourism Belt" was put forward. This belt relies on the Beijing Winter Olympics venues and facilities; leverages the advantages of local cultural tourism resources; develops sports culture, tourism and leisure activities, conferences and exhibitions; promotes the in-depth integration of sports, culture and tourism; and accelerates the industrial transformation and upgrading of the Beijing-Zhangjiakou area, the momentum of regional ecological construction, and the integration of transportation in the Beijing-Tianjin-Hebei region (Jiang et al., 2021), which is an important tourism legacy of the Beijing Winter Olympics. However, the sudden outbreak of the pandemic has brought additional uncertainties and challenges, as well as opportunities, in the preparations for the Beijing Winter Olympics and the implementation of the legacy program. At a time when the global tourism industry is severely hit and facing a comprehensive transformation, the Beijing Winter Games also faces many opportunities and challenges in the creation of the ice and snow tourism legacy. Determining how to face the challenges and explore the opportunities is an important guarantee to ensure the stability of the Beijing Winter Olympic legacy and promote the sustainable development of ice and snow tourism.

This study focuses on the ice and snow tourism legacy from the Beijing 2022 Winter Olympics and Paralympics.

The time period spans from 2015, when Beijing was given the bid for hosting the Winter Games, until the present, when the Games are due to happen. From the perspective of tangible and intangible legacy, this study refers to the IOC's definition, and draws on Olympic legacy research and related indicator systems for tourism destination shaping to form a unique evaluation system, adopting existing data, relevant policy texts and other second-hand materials, to assess the Beijing Winter Olympics ice and snow tourism legacy from a pre-game perspective. The significance of this pre-game legacy assessment is to adjust related actions made by governments and other stakeholders in time to ensure the better performance of tourism resources during the events, and to protect the stability of the legacy after the events, as the during-event and after-event legacy evaluations are based on preliminary legacy preparations.

2 Olympics and tourism legacy

The concept of Olympic tourism legacy has not been clearly defined by scholars. All content generated by the Olympic Games and closely related to the development of the tourism industry (such as tourism resource development, infrastructure upgrades, service system upgrades, cultural atmosphere enhancements, etc.) can be included in this category. It is closely related to cultural legacy, economic legacy, and regional legacy. Olympic tourism legacy has a close connection with the long-term development goals of sports participation, economy and society. Ensuring the longevity and sustainability of tourism legacy usually requires reliable and appropriate policy systems (Dansero and Puttilli, 2010).

Since the early 1990s, a group of scholars began to explore the relationship between sports events and tourism (Getz, 1991; Hall, 1992; Hinch and Higham, 2001; Preuss, 2005; Getz, 2008), and strictly distinguished sports-based events from other types of cultural activities (Hall, 1992). As a typical representative of large-scale sports events, the Olympic Games were given special attention in terms of its intricate relationship with tourism. Starting from Cashman (1998), a systematic study of the Olympic legacy has gradually evolved. Scholars have analyzed the Olympic legacy from the perspectives of economics (Ahiakpor and James, 2004), environment (Chappelet, 2003), tourism impact, urban development, residents' attitudes, residents' sports participation, etc., as well as long-term and short-term effects, and the legacy of the Winter Olympics and the Summer Olympics. Concerning Olympic tourism legacy research, the main topics include: the different tourism effects brought about by the holding of the Summer Olympics and Winter Olympics (Chappelet, 2003; Alberts, 2011); how the tourism industry influences the play of the Olympic legacy; the attitudes of tourists towards the host city and the changes in the flows of tourists (Smith and Stevenson, 2009; Fourie and Antana-Gallego, 2011; Moss et al., 2014); the crowding-out effect during the Olympic Games (Cope et al., 2015); and

the economic and social effects of the Olympic Games as evaluated from the perspective of tourism legacy (Li and McCabe, 2013). As for the close relationship between tourism legacies and other types of social impacts, Li and McCabe (2013) designed a set of propositions and measures to assess the legacies of mega-events and provided suggestions. They regard tourism as a key factor for social and economic growth. The three factors of the tourism destination image, the management of Olympic facilities and the integration of urban policies in an extending territory can be seen as crucial for re-territorializing the tourism legacy left by Torino 2006 (Dansero and Mela, 2007).

In terms of Olympic legacy evaluation, the official OGI (Olympic Games Impact) report uses multiple indicators before, during and after the games to quantify, discuss and analyze the legacy. The selection of evaluation indicators, data collection methods, and data analysis models are different for each report. Among them, the indicators in the OGI assessment report on the image of tourist destinations, the improvement of transportation facilities, the improvement of the number and quality of hotels, the number of tourists, and the amount of tourism consumption are all closely related to tourism legacy. Academic research on the evaluation of tourism legacy is more inclined to evaluate tourism legacy by discussing the improvement of the quality of the tourism resources themselves, the improvement of related supporting facilities and cultural atmosphere to explore the relationship between tourism and economic and social development, and whether the event will bring short-term or long-term, positive or negative impacts to tourism. Dansero and Puttilli (2010) evaluated the tourism legacy of Torino 2006 Winter Olympic Games using the territorialisation approach. Research suggests that the effect of the event on tourism must be viewed from both the demand and supply sides (Getz, 2008). From the supply side, this means resources to attract tourists, investments, new events and to “foster a positive destination image and contribute to general place marketing” (Getz, 2008). The demand side refers to those who would visit the host territory during and after the Games, as well as what are the motivations that support tourists (Gibson, 2006). From the demand side, tangible and intangible resources are considered. Tangible resources include physical improvements to sports facilities, hotels, restaurants, shops, markets, roads, railways, ports, airports, urban transport, etc., that could attract more inbound and outbound tourists. Building a better destination image, developing organizing capacities and establishing a series of policies are seen as intangible resources to ensure the positive impacts brought by legacies in the medium- and long-term (Dansero and Puttilli, 2010). Besides, Bottero et al. (2012) proposed five key elements for the evaluation of the Olympic legacy, among which “a new type of tourism” and “the landscape resources” are directly related to tourism improvement. “A new type of tourism” represents the de-

velopment of new types of sustainable tourism, based on an increase in the hospitality culture, balanced and careful use of resources, the self-management of local systems, the diversification of tourism models and territorial diffusion of economic and social benefits. “The landscape resources” represent the improvement of the natural and cultural legacy made to reinforce, qualify and innovate the identity and image of the city and the region. Regarding the construction of the Beijing Winter Olympics legacy evaluation plan, Xu et al. (2020) believed that the focus is based on the Beijing Winter Olympics heritage content system, used “indicators+data+analysis” as the basic model, and employed quantitative and qualitative analysis methods, evaluation methods such as KIPs and risk assessment methods and cost-benefit analysis methods.

Unlike the Summer Olympics, with venues distributed in both urban and mountainous areas, the Winter Olympics can often bring unique sustainable development opportunities to the extended region. For the sake of the economic efficiency and sustainable development of tourist destinations, more and more ice and snow tourist destinations have begun to work on strategies for creating “four-season tourism”. The Winter Olympics naturally have the potential to connect cities and mountains and promote the flow of high-quality urban resources to the mountains. The Winter Olympics provide mountainous areas with opportunities to showcase their natural landscapes and skiing resources to the cities and the world. Historically, regional ski towns such as St. Moritz in Switzerland and Innsbruck in Austria have grown into world-renowned ski destinations with the opportunities provided by the Winter Olympics (Zhang et al., 2021a). The term “ice and snow tourism” refers to tourism that uses the ice and snow natural resources generated by a region’s cold weather to attract tourists to seasonal cultural activities related to winter (Jin et al., 2020). Regarding ice and snow tourism destinations, scholars mainly conduct research from the viewpoint of tourists’ satisfaction with destination management, tourism resources, the importance of transportation (Jin et al., 2020) and the suitability of ice and snow tourism destinations (Yang and Sun, 2013). For example, Zhu et al. (2018) pointed out that ice and snow tourism resources, tourist accommodation, scenic facilities, scenic services and image, ticket prices, shopping environment and transportation factors affect tourist satisfaction. Shi (2020) proposed that ice and snow resources, ice and snow tourism projects, the infrastructure construction are the core elements affecting ice and snow tourism destinations. Xu et al. (2021) proposed a dual-influence path that influences tourists’ choice of ice and snow tourism destinations. In the path of “destination attribute-visitor perception”, core attractions such as ice and snow natural resources, additional attractions such as infrastructure, and perception of destination reputation affect tourists’ perception; while in the path of “visitor perception-willingness to choose”, tourists’ willingness to choose

is affected by service quality, demand satisfaction and tourism safety perception. In summary, most of the existing research on the evaluation of Olympic legacy is carried out after the games. Although many scholars have pointed out the importance of pre-match heritage planning for improving the efficiency of legacy (Dickson et al., 2011; Smith et al., 2011; Hiller, 2012), complete and scientific preparations can minimize the waste of Olympic resources and avoid deviation from the legacy goals. However, the pre-game evaluation is still relatively scarce. Some pre-game legacy evaluation studies have proposed evaluation standards or frameworks, but there is no corresponding evidence as support.

This article aims to conduct a pre-game evaluation of the tourism legacy of the Beijing Winter Olympics. The focus of the evaluation is on the pre-game “planning” and “design”, and the resulting behavior of stakeholders. In contrast to the legacy evaluation during and after the games, this research does not focus on the evaluation of quantifiable indicators, but on planning and related pre-game preparations, especially government actions, which play an important role in the ice and snow tourism industry and the overall social and economic benefits of the Olympic tourism legacy. The main innovation of this research lies in the combination of Olympic legacy research and tourism destination theory, focusing on ice and snow tourism directly related to the Winter Olympics, and the interpretation and analysis of relevant legacy documents and policy documents from a new perspective. Ice and snow tourism destination theory is adopted for the pre-game legacy upgrade, and opinions and suggestions on how to ensure the stability of the legacy after the games are put forward. This study provides a new exploration of Olympic tourism legacy, laying the foundation for further expansion of ice and snow tourism and Olympic legacy research.

3 Methods and materials

Based on the existing legacy theory and tourist destination theory, combined with the characteristics of the Beijing 2022 Winter Olympics, and taking into account multiple factors such as the accessibility and availability of the data to be assessed, this paper establishes an evaluation system and adopts multi-layer indicators for analysis. The data mainly comes from large geographic databases and other second-hand material sources, including official application documents, legacy documents, promotional materials, reports by the organizations and stakeholders involved, as well as newspapers, websites, social media and so on.

3.1 Evaluation model

As scholars have offered various classifications of Olympic legacy, “tourism” often appears in different categories, such as tourism and economic legacy, infrastructure legacy (Chappelet, 2003), sports legacy, history, symbols, memories and culture legacy, urban development legacy, and des-

tination image legacy (Dickson et al., 2011). However, each category of these classifications has contents related to legacy, and there would be difficulties and obstacles in evaluating tourism legacy based on any classification standard. Therefore, this article adopts “tangible legacy” and “intangible legacy” to classify tourism legacy, in order to make a comprehensive assessment of pre-game tourism resource exploitation and management.

According to IOC (2017), tangible legacy (hard legacy) is “easily captured by images and tends to dominate the public debate around the subject”, such as sports facilities and improvements in urban infrastructure. Intangible legacy (soft legacy) is not as easy to identify and has been less present in the public debate, although it is likely the most relevant with regard to the actual benefits to people and society. Intangible legacy often includes cultural and immaterial legacy assets, changes in attitudes/behaviours, professional skills, better understanding among people from different countries and new social networks.

Based on the issues discussed above, this study provides a new model (Table 1). This model is based on the IOC’s classification of tangible and intangible legacy, and refers to Dansero and Puttilli (2010), Getz (2008), Bottero et al. (2012) and Um et al. (1991). The tourism legacy and tourism resource evaluation models and indicators of the country include ice and snow tourism facilities, ice and snow tourism infrastructure, and ice and snow tourism high-tech facilities and equipment in the tangible legacy, while mass sports and cultural activities, and the image and reputation of tourist destinations are included in the intangible legacy. In the evaluation of specific indicators, the indicators proposed by Bottero et al. (2012) of tourism operator training, quality certification and tourism diversified project demand and supply are used for assessing the improvement of accommodation and service quality. The destination image is based on Zhao and Dou’s (2021) study on the impact of government behavior, with social security, talent training, publicity and promotion, consumer protection, tourism complaints, and market remediation and supervision as indicators.

3.2 Data sources

The POI data of ski resorts in Beijing and Zhangjiakou from 2013 to 2021 were obtained by using the API interface of AutoNavi Map. Tourism infrastructure and high-tech infrastructure data came from “*Beijing 2022 legacy plan, Legacy Report of Olympic and Paralympic Winter Games Beijing 2022 (pre-game)*” and news reports. Related materials of sports and cultural activities mainly came from the statistics provided by governments and unofficial reports, and news reports of the local sports and culture sectors. The materials for evaluating the image of the tourist destination mainly came from “*Legacy Report of Olympic and Paralympic Win-*

Table 1 Pre-game evaluation model of ice and snow tourism legacy for the Beijing 2022 Winter Olympics

Legacy category	Legacy evaluation factors	Evaluation results
Tangible legacy	Sports tourism facilities	<ul style="list-style-type: none"> • Newly built or upgraded venues for competitions, with outstanding tourism functions • The number and quality of other ice and snow sports tourism venues and tourist destinations have increased significantly
	Tourism infrastructure	<ul style="list-style-type: none"> • Comprehensive upgrade of transportation facilities, and significant progress in intelligence, humanization and regional connectivity • The number and quality of accommodation and reception facilities have been significantly improved, and the characteristic homestay project has become a benchmark
	Tourism high-tech facilities, equipment and devices	<ul style="list-style-type: none"> • The upgrade of smart facilities for sports events provides new ideas and new platforms for sports event tourism in the post-epidemic era
Intangible legacy	Mass ice and snow sports, tourism and cultural activities	<ul style="list-style-type: none"> • The number of ice and snow sports events, mass ice and snow activities, and other ice and snow tourism activities has increased significantly. The content of the activities is rich and diverse, and the ice and snow cultural atmosphere has been significantly improved
	Tourist destination image and reputation	<ul style="list-style-type: none"> • Social security had been gradually improving • Standardization, diversification and specialization of talent training • Multi-level and multi-channel publicity and promotion • Tourism complaints and handling mechanisms are gradually improved, and a consumer rights protection system had started to be established • Market rectification and supervision system had been continuing to improve

ter Games Beijing 2022 (pre-game)", government policy documents and the official website of the Beijing Organizing Committee for the 2022 Olympic and Paralympic Winter Games.

4 Results

4.1 Sports tourism facilities

Due to the particular needs of the Winter Olympics, the planning and later utilization of the Winter Olympics venues has always been one of the most difficult problems (Yao, 2016). The imbalance of supply and demand of the Winter Olympic venues, the imbalance between investment and income, and the lack of sustainable concepts in the design and operation of the Winter Olympic venues have all led to the waste and loss of function of the Winter Olympic venues (Wan et al., 2020). Therefore, reasonable planning of venues, giving full play to the tourism function of the Winter Olympic venues, and serving as venues for mass sports tourism activities are feasible paths. The sports tourism facilities in this study are mainly divided into two parts, one is the Olympic venues. According to relevant planning and design, these venues will not only serve the Olympic Games, but will also be used for mass sports culture, leisure and tourism activities in the future. The second is other ice and snow sports tourism venues and tourist destinations, such as ski resorts, ice and snow playgrounds, etc. They are important components of the pre-game ice and snow tourism legacy, and their quantity and quality are of great significance to ice and snow tourism in the region. The evaluation of Olympic venues mainly starts with the tourism function of these venues, and the evaluation of ski resorts mainly focuses on changes in quantity and quality.

In the 2022 Winter Games, Beijing will host four snow events (men's and women's snowboard big air and freestyle skiing big air), and all the ice events (curling, ice hockey

and skating), making use of the legacy venues of the Beijing 2008 games. Yanqing, a suburban district of Beijing is set to host the Alpine skiing and sliding (bobsled, skeleton and luge) events. Chongli District of Zhangjiakou in Hebei Province will host cross-country, Nordic combined, ski-jumping, aerials, halfpipe, moguls, slopestyle, cross and parallel giant slalom events.

Compared to their summer counterparts, the possibilities for reusing sports equipment are limited due to their technical and functional specialization (Essex and Chalkley, 2004). Beijing, as the "Dual Olympic City", along with the snow town Chongli strive to make full use of the venue legacy and natural resources to develop a new model that integrates traditional cultural characteristics and the modern ice and snow industries. Taking the Winter Olympics as an opportunity, the competition venues of the Summer Olympics have used technology to help them realize multiple functions in four seasons. At the same time, the ski resorts in Chongli and Yanqing have also ushered in a good opportunity to become integrated with international standards. Through the benchmarking of the Olympic competition standards, a number of international Olympic venues have been built, and the ski resorts in the entire region have been improved as a result. The current and potential tourism functions of these venues are shown in Table 2. According to their different functions, venues have carried out different forms of tourism resource development planning for after the games. Relying on high-level venues to become a regular place for high-level events, which in turn promotes sports event tourism; innovative transformation of venues to become high-quality leisure and sports consumption destinations; in-depth development of cultural and sports integration, and holding various types of entertainment activities to attract tourists are the main paths for post-event sustainable tourism development.

Table 2 Tourism functions of Olympic venues

Competition zones	Venues	Status	Current tourism functions and potential tourism functions
Beijing (excluding Yanqing)	National Speed Skating Oval	Newly built	Together with the “Bird’s Nest” and “Water Cube”, it constitutes the iconic building complex of the “Dual Olympic City” Beijing; making full use of the space around the national speed skating stadium to create a track along the artificial lake where citizens and tourists could run in summer and ski in winter. A leisure complex with a lake, a stadium (national speed skating stadium), and a track is under plan. The goal is to become a multi-functional ice center integrating “sports events, mass fitness, culture and leisure, exhibitions, and social welfare”
	National Aquatics Centre	Upgraded	The National Aquatics Center will constantly switch between the swimming season and the ice season. In the three seasons of spring, summer and autumn it will become “Water Cube” for water sports; in winter, it will be transformed into “Ice Cube” for ice sports. It will become a model of sustainable use of Olympic venues and an important tourist landmark
	National Indoor Stadium	Upgraded	The venue is used to host various levels of ice hockey events so as to promote sports event tourism
	National Stadium	Upgraded	The National Stadium provides ice and snow events and training, and will actively promote industrial integration, trying to create a new industry chain in which ice and snow industry, tourism, culture, and technology are deeply integrated
	Capital Indoor Stadium	Upgraded	It is used to host short-track speed skating and figure skating events so as to support sports event tourism
	Wukesong Sports Centre	Upgraded	The stadium can realize the conversion of the two game modes of ice hockey and basketball within 6 hours. It is the first stadium in China to hold both basketball and ice hockey professional sports events in the same venue serving as a precious place to develop sports event tourism
Zhangjiakou (Chongli)	Big Air Shougang	Newly built	Its design concept is derived from the traditional flying shape in the Dunhuang murals in China, and its beautiful and unique shape make it a unique landmark. Large outdoor activities attracting tourists such as concerts and press conferences could also be held there in the future
	Genting Snow Park	Upgraded	In addition to continuing to play its role as a ski resort, it also serves as a venue for hosting high-level international competitions and extreme skiing cultural activities, and hopefully will become a popular sports tourism destination
	National Biathlon Centre	Newly built	The two venues are planned to be built into a “mountain park” and an “outdoor ice entertainment center”, becoming places for both professional training and mass sports and entertainment activities
	National Cross-Country Centre	Newly built	
Yanqing District, Beijing	National Ski Jumping Centre	Newly built	Extreme tourism projects could be developed and other entertainment activities such as music festivals could be held; domestic and international competitions are used to develop sports event tourism
	National Alpine Skiing Centre	Newly built	It will be built into a mountain sports and leisure park. It could be used as an outdoor development training center in spring, summer and autumn to develop outdoor projects such as mountain biking, mountaineering, rock climbing, trekking, grass sliding, etc.; to develop sports event tourism through high-level events
	National Sliding Centre	Newly built	The sliding centre will develop experience-based projects for residents and tourists, and host high-level sports events

Note: Source: Legacy Report of Olympic and Paralympic Winter Games Beijing 2022 (pre-game); Legacy Strategy Plan of Olympic and Paralympic Winter Games Beijing 2022 and other news reports.

This study used the POI data method (Hu et al., 2019) to obtain spatial data on the ski resorts (including outdoor snow entertainment venues such as Snow World) in Beijing and Zhangjiakou. Figure 1 describes the spatial distribution and number of ski resorts in Beijing and Zhangjiakou starting from 2013. The ski resorts and outdoor snow entertain-

ment venues in Beijing have shown a clear upward trend from 2013 to 2021, while the distribution of ski resorts in Zhangjiakou is mainly concentrated in the Chongli District (Olympic region). Although there has not been a significant increase in number, the quality of its ski resorts has improved year by year. The number of trailing aerial ropeways



Fig. 1 Distribution of ski resorts in Beijing and Zhangjiakou in 2013, 2017, and 2021

can be used as a standard for assessing ski resort quality. According to “2020 China Ski Industry White Paper”, issued in 2020, there will be 68 trailing aerial ropeways for skiing purposes in China, including 22 in Hebei Province, distributed in 6 snow parks, all in Chongli District, Zhangjiakou City. The number and quality of ski resorts in Beijing and Zhangzhou have been significantly improved. Before the games, they have become important ski resorts in the country, laying a good foundation for the sustainable development of ice and snow tourism in both places, and becoming an important element of the pre-game ice and snow tourism legacy.

4.2 Tourism infrastructure

4.2.1 Transportation

The importance of infrastructure in the Olympic preparation of host cities is often discussed among scholars (Essex and Chalkley, 2004; Alberts, 2011). They have stated that the Winter Olympics require more transportation infrastructure and connections to ensure accessibility and to allow the athletes and spectators to move quickly between competition venues, which are often located in less accessible mountainous sites. The infrastructure investments for the Winter Olympics in Grenoble, Sapporo, Innsbruck, Turin, Sochi, and Pyeongchang were greater than the investments in venue construction and event operation, and a large part of the investment was used to improve the transportation network in the area (Zhang et al., 2021b). Jin et al. (2020) stressed that HSR (high-speed rail-way) expanded accessible destinations and promoted tourism-economy linkage.

The traffic improvement in Beijing and Zhangjiakou is mainly reflected in urban transportation network upgrades, the improvement of regional traffic connectivity and smart transportation with the characteristic of being passenger-friendly and smart. First of all, the transport network is

well-developed. Road networks inside and outside the Yanqing and Zhangjiakou Zones were built. Well-developed transport networks have been in place in the two competition zones. The newly built roads have increased the density of the transport networks, improved the structure of the networks, enhanced connectivity inside and outside the competition zones, and facilitated the long-term development of the competition zones after the Games. Secondly, Yanqing Transport Service Centre, Zhangjiakou South Transport Hub and Chongli South Transport Hub were built for transfer. Third, the completion and opening of the Beijing-Zhangjiakou High-speed Railway and Beijing-Chongli Expressway have greatly shortened the traffic time between Beijing and Zhangjiakou, and directly connected Beijing to the ski resort area, introducing Beijing’s consumers to Zhangjiakou. This positive connection would promote the interactions of ice and snow, culture, tourism and other industries in these two regions. According to statistics, the Beijing-Zhangjiakou High-speed Railway sent nearly 3.0×10^4 passengers on the first day of opening, and nearly 1.4×10^6 passengers were transported within one month of opening. On the first anniversary of the opening of the Beijing-Zhangjiakou high-speed rail, a total of 6.806×10^6 passengers had been sent, and the Yanqing branch line was opened for nearly one month and sent 1.5×10^4 passengers. Between May and December 2020, the total traffic flow of buses and trucks in the Yanqing-Chongli section of the Beijing-Chongli Expressway exceeded 2.2×10^6 , meaning ten thousand vehicles on average. Finally, both intra-city and regional transportation lines have been deeply integrated with modern technology in the process of construction and upgrading, making them more passenger-friendly, convenient and efficient, enhancing transportation efficiency while greatly improving the experiences of local residents and visitors (Table 3).

Table 3 Highlights of smart and passenger-friendly improvements

Transportation lines	Highlights of smart and passengers friendly improvement
Beijing-Zhangjiakou High-speed Railway	5G WiFi coverage, wireless charging, intelligent lighting adjustment, color-changing windows in the carriage; A media carriage for live broadcasts of Winter Olympics events; ski equipment storage area at the carriage connection specifically for athletes and skiers
Beijing-Chongli Expressway	5G covering the whole journey; construction and application of intelligent toilets, intelligent parking, intelligent robots to improve the level of intelligent operation and management; some service centers with additional caravan camps, children’s play facilities, etc.
Public transportation lines in Beijing	Building a green transportation integrated information service platform to promote big data sharing of transportation infrastructure such as parking spaces, and deepen information services for traffic participants

Note: Source: Legacy Report of Olympic and Paralympic Winter Games Beijing 2022 (pre-game).

4.2.2 Accommodations

Improvements in accommodation play an important role in Winter Olympics infrastructure, and also lay the foundation for further tourism development. A total of 10198 rooms were built for the Turin Games, which substantially increased the city’s hotel capacity (Bottero et al., 2012). In addition, the improvement of tourism service quality is also

considered to be an important factor in attracting tourists (Lu and Sun, 2010; Preuss, 2015; Quan et al, 2021). In the preparation process of the reception infrastructure for the Beijing Winter Olympics, in addition to increasing the number and quality of hotels to meet the needs of more participants and tourists, the Yanqing area and Zhangjiakou focused on deeply integrating the construction of guest-

houses with the goal of poverty alleviation, which gave full play to the function of the tourism industry in solving social problems. The increase in quantity is mainly reflected in the increase in the number of quality hotels above the four-star level and homestays, and the improvement in quality is evaluated by standards given by Bottero et al. (2012).

Concerning high-level hotel construction and upgrades, two new five-star hotels, one four-star hotel, and four three-star hotels have been upgraded in the Yanqing competition area. From 2015 to 2019, the number of star-rated hotels in Zhangjiakou increased from 48 to 74, and the number of hotels above the four-star level increased from 17 to 22. In addition to the increase in the number, many hotels have upgraded and modified their barrier-free facilities.

The Yanqing area has explored the “Yanqing experience” in the development of the guesthouse industry. The newly developed industry has relieved employment pressure for local residents and contributed to the poverty alleviation of the entire region. The total number of boutique guesthouse

brands in the district continues to increase, with the creation of four leading brands, namely “Beijing 2022 Homestay”, “Expo Homestay”, “Great Wall Homestay” and “Landscape Homestay”; currently there are 120 boutique guesthouse brands and 376 guesthouses in the district with nearly 4000 beds. In addition, according to the legacy plan, the Olympic Village in this competition area will be transformed into resorts with four- or five-star hotels after the games.

Apart from an increase in quantity, quality improvement is also prominent. When assessing the territorial effects of the Turin Olympic Games, Bottero et al. (2012) mentioned three actions to promote the culture of hospitality and the quality of structures, which are the training of tourism operators, quality certification labels and projects for the diversification of tourism demand and supply. Based on this classification, this study summarizes the work that has been done in the three regions (including Yanqing District) to improve the quality of hospitality (Table 4).

Table 4 Improvement in hospitality in Beijing and Zhangjiakou

Actions to promote the hospitality	City	
	Beijing	Zhangjiakou
Training of tourism operators	Yanqing District (Beijing) builds an online training management platform, which combines online and offline methods to carry out industry training for an average of 5000 person-sessions per year; the Winter Olympics guarantees hotel staff received training on Western food, foreign languages, and foreign affairs service etiquette	Relevant personnel of the city's key catering companies participated in the training class for the establishment of national green catering and national restaurant standards
Quality certification	“Joint Enforcement Agreement on Food and Drug Emergency Protection for the 2022 Winter Olympics and Winter Paralympics” was issued	Zhangjiakou City has compiled and completed 6 working standards including those for accommodation and catering; “Planning for the Food Supply Security System in Zhangjiakou for the Beijing 2022 Winter Olympics and Paralympics” was published
Diversification of tourism demand and supply	“Winter Olympics Family” has increased its efforts in passport recognition, language training, and skill improvement	Not found

4.3 Tourism high-tech facility equipment and devices

The Covid-19 pandemic has brought unprecedented challenges to the global tourism industry. The movement of people has been strictly restricted, and on-site tourism activities have been greatly affected. At the same time, newly emerging forms such as virtual museums, cloud tourism, and virtual scenic spots have developed rapidly (Li et al., 2021). With the prosperous high-tech developments such as 5G technology and mobile APP, tourism-related online facilities have become the unique tourism legacy of the Beijing Winter Olympics, building a good platform for improving tourism convenience and strengthening tourism communication after the Games.

Smart facilities mainly include smart facilities for sports events and the upgrading of related smart facilities for use in ice and snow tourism destinations. Smart facilities for sports events will provide new ideas and new platforms for sports event tourism in the post-pandemic era. The new media ecology brought about by the Internet has profoundly

changed the way sports events are broadcast (Zhang et al, 2021b), and the prosperity of sports events has stimulated the prosperity of the event tourism market. The improvement of related intelligent facilities in ice and snow tourism destinations has also laid the foundation for the “virtualization” development of sports event tourism. Virtual tourism plays an important role in tourism destination marketing and brand image building (Li and Tao, 2021), while it improves the convenience of ski resorts, thereby enhancing the attractiveness of ski tourism destinations and improving skier loyalty.

In terms of 5G application, China Unicom has proposed 10 applications for the scenarios of smart spectating, smart Games running and smart Games participation, which will be achieved simultaneously in the Beijing, Yanqing and Zhangjiakou Zones. Smart spectating refers to 5G+ smart competition live streaming and 5G+ Virtual Reality ice and snow interactive experiences. Smart Games running refers to smart 5G networked UAV emergency response systems, 5G+ smart first-aid, 5G+ AR goggles for interviews, smart

apparel, smart Games cockpits, 5G Games security and bodyguarding, and police and insurance coordination POC. Smart Games participation includes 5G+ smart marathon and 5G+ AI training.

In Zhangjiakou, the application of 5G characteristic technical achievements such as AR interactive ski helmets, ski 4K video live broadcasts, 5G sand table object tracking, naked-eye immersion VR, and 5G display inside ski lifts, are gradually being applied to the ski resorts. According to the legacy plan, the latest intelligent technology, including a contactless intelligent reservation system, an intelligent human settlement system, etc., will be widely used in the Yanqing competition area in the future. New information technologies such as the Internet of Things and cloud computing will be used for the construction of a national fitness information service platform in Yanqing District. In addition, professional ski booking and data-analyzing platforms such as “Learn ski” are gradually gaining popularity among ski enthusiasts.

4.4 Mass ice and snow sports, tourism and cultural activities

It is difficult to define the intangible legacy of the Olympic Games, and it is also not easy to evaluate it. Preuss (2005) attributed sports organization development, sports cultural awareness and sports cultural identity to “soft” legacy. Yeerkenbieke et al.’s (2021) research on the public’s sustainability of the Beijing Winter Olympics indicated that cultural identity and sense of community affiliation are important factors in social sustainability. In view of the close connection between ice and snow cultural and sport activities and Olympic cultural dissemination, mass sports participation awareness, and the social sports cultural atmosphere, this study explores the efforts and primary achievements made in spreading ice and snow culture and encouraging the masses to participate in ice and snow sports.

The positive atmosphere in Beijing and Zhangjiakou is mainly reflected in the large number of skiing population and the colorful mass ice and snow activities. According to statistics for the past three years, Hebei province and Beijing contributed a large number of skiing consumers to the domestic skiing market (Table 5) and ranked first and third, respectively. In the 2019/2020 ski season, ski populations in these two places decreased due to the outburst of the Covid-19 pandemic. However, in the 2020/2021 ski season, the declining trend was reversed with an apparent rise in the populations.

Beijing and Zhangjiakou have carried out a series of ice and snow carnival activities with regional characteristics and ethnic folklore, as well as ice and snow sports knowledge publicity and promotion activities, which will publicize and perform the ice and snow culture and folk stories with Chinese national traditions for the general public in multiple forms. Various ice and snow experience pub-

lic welfare activities were organized in campuses, communities, and towns based on diversified resources in varied districts to further increase the popularization of ice and snow sports knowledge and skills.

Table 5 Ski trips ranked (Top 5) by province

(Unit: $\times 10^4$ trips)

Rank	Province/City	2020/2021	2019/2020	2018/2019
1	Hebei	221	136	235
2	Jilin	202	123	207
3	Beijing	188	112	186
4	Heilongjiang	149	101	195
5	Xinjiang	133	76	116

Note: Data are from 2020 China Ski Industry White Paper. “Trips” means person-times.

In Beijing, ice and snow cultural activities are widely carried out. First, each district has continuously popularized winter Olympics knowledge and promoted ice and snow sports. The number of participants in ice and snow sports has increased year by year; the Winter Olympic Newspaper, Winter Olympic Community Official Account, and Winter Olympic Community Tiktok Account have spread the culture of the Winter Olympics, and at the same time residents are regularly organized to participate ice and snow sports activities. Once again, a series of activities for the Beijing People’s Happy Ice and Snow Season began to be held starting in 2014. Relying on the ice and snow season activities, the Beijing Municipal Bureau of Sports has established a pyramid-shaped ice and snow event system to play a leading role in high-end ice and snow events and form a high-end ice and snow event center. At the same time, a number of ice and snow mass activities are becoming popular among citizens.

In Zhangjiakou, the innovative “Ice and Snow Caravan” is equipped with a variety of ice and snow equipment such as VR ski simulators, ski machines, double-blade skates, land curling, land ice hockey, and table ice hockey. The “Ice and Snow Caravans” travel to all towns (streets) in all counties and districts of the city, to the communities, villages, schools, parks, shopping malls, etc., to provide the mobile teaching experience. The masses can still experience ice and snow, participate in ice and snow, and feel ice and snow in the other three seasons; the disabled ice and snow sports season was launched to help more disabled people participate in ice and snow sports and feel the charm of ice and snow. It is also worth noting that Zhangjiakou’s new forms of ice and snow tourism are emerging. For example, Shangyi County’s First Mandarin Duck Lake Ice and Snow Cultural Festival, Guyuan County’s First Ice and Snow Cultural Festival, Wanquan District Xinghuagou Ice and Snow Carnival, Chicheng County Ice and Snow Hot Spring Carnival, Huailai County’s First Ice Waterfall Festival, etc.

broke through the traditional ice and snow tourism modes and became Zhangjiakou's new highlights of ice and snow cultural tourism.

The widespread development of mass ice and snow sports, tourism and cultural activities can directly promote the prosperity of the local sports tourism and homestay market. Secondly, a booming sports culture could cultivate potential ice and snow tourism consumers, thereby forming a benign and sustainable ice and snow tourism market.

4.5 Tourism image and reputation

Mega-events have become of interest to researchers in tourism due to the potential they offer to generate long-term economic, socio-cultural and destination image impacts (Faulkner, 2003). Tourism legacy might materialize in three ways, including increased tourism, improved tourism infrastructure, and enhanced destination image (Gaudette et al., 2017). Alpine towns in the upper Susa and Chisone valleys saw the mega-event as a chance to boost their competitiveness in winter tourism by extending and improving their infrastructures and accommodation facilities, and increasing their image-building efforts (Dansero and Puttilli, 2010).

The image of a tourist destination is often discussed in terms of tourists' satisfaction and willingness to revisit (Li et al., 2021; Xu et al., 2021). However, some scholars have explored the influence of government actions on the image of a tourist destination, and summarized many factors that affect that image, including building a developing environment, infrastructure construction, talent cultivation, social security, preferential policies, fund investments, travels complaints, and consumer rights protection (Zhao and Dou, 2021). In the pre-Olympic period, questions will be answered regarding what kind of efforts the government has made to enhance the image of the destination, and what initial results have been achieved (Table 6). Evaluation indicators are selected as social security, talent cultivation, publicity and promotion, tourism complaint management and market regulation.

5 Conclusions and prospects

5.1 Conclusions and discussions

At the beginning of the legacy design, the venues used for the Olympics were all planned for sustainable development, in the hope that they would continue to be used as tourism resources in the future. However, due to the niche and technical characteristics of winter sports, transforming and upgrading existing resources after the game is a challenge faced by tourism developers and the focus of subsequent legacy evaluation. This study uses tangible legacy and intangible legacy as the overall framework and selects reasonable indicators to evaluate the tourism legacy in the preparatory stage of the Beijing 2022 Winter Games.

This study found that the Beijing Winter Olympics has carried out a relatively complete plan in terms of the tangi-

ble tourism legacy, and at this stage, it has been equipped to provide rich tourism resources for the Olympics and even for a long time after the Olympics. First of all, the design of the Olympic venues is sustainable, and the use of cutting-edge materials and new technology ensures the stability and diversity of the Olympic venues over a long period. The complete sustainability plan provides a guide for the multi-functional development and changes in the roles of the venues after the games. Secondly, the expansion and smart upgrade of the transportation network have greatly improved the accessibility of ski resorts, while laying the foundation for the development of the "Beijing-Zhangjiakou Sports Culture and Tourism Belt" and providing convenience for the mutual benefit of personnel and resources between the two places. Thirdly, while the Covid-19 pandemic has brought many challenges to the tourism industry and the hosting of the Olympic Games, it has also spawned and promoted the development and progress of new technologies. The new travel mode and game-watching mode will bring new possibilities for the development of sports event tourism in the future, and also create new opportunities for the dissemination of events.

In terms of intangible legacy, first of all, many ice and snow-related cultural activities have been widely carried out in Beijing and Zhangjiakou, creating a positive cultural atmosphere. Secondly, many efforts at the government level have been made for improving the image of tourism destinations. Corresponding policies have been formulated and newly introduced in social security, talent training, brand enhancement, consumer rights protection, and market supervision. Among them, there are relatively few policies for publicity and brand enhancement, and the protection of the rights and interests of ski tourism consumers also urgently needs the promulgation of relevant formal laws to support them.

This study found that the highlights of the pre-game tourism legacy of the Beijing 2022 Winter Olympics and Paralympics are mainly reflected in the following aspects. First of all, the Beijing Winter Olympics organizing committee worked with government departments and all walks of life to develop careful planning ahead of time. In addition to the legacy strategy plan, a progress report was released in 2020 and the 2021 progress report is due to be released. Secondly, the planning and layout of tourism legacy is not only reflected in the upgrade of infrastructure and the image of tourist destinations, but the idea of the overall layout also reflects the concern for tourism sustainable development. Plans such as "300 million people participating in ice and snow sports" and "Ice and snow sports into schools" all demonstrate the cultivation of ice and snow culture and potential customers, who will fundamentally stimulate the booming market. Thirdly, the government's role in the cultivation and development of new markets is even more obvious due to the particular characteristics of China's market

Table 6 Policy documents and actions by governments

Indicators	Related policy documents	Actions made by governments and preliminary achievements
Social security	Beijing 2022 Winter Olympics and Winter Paralympic Games during the Preparation Period and Radio Management Regulations 2020 Zhangjiakou City Housing Construction and Municipal Infrastructure Winter Olympics Project Quality and Safety Supervision Work Plan Ski Resort Safety Management Regulations General Technical Requirements for Ski Resort Safety Nets Sports Stadium Safety Operation Management Standardize Ski Places Three-year Action Plan for Beijing to Embrace the Blue Sky (2018–2020) Zhangjiakou City Air Quality Improvement Plan Implementation Plan (Blue Sky Action Plan) Plan 2016–2022 Environmental Protection Measures Responsibility Matrix Table	<ul style="list-style-type: none"> • Ski resorts and venues strictly implement the prevention and control measures and plans under the normalization of epidemic prevention and control • Measures are taken to ensure the safety of electricity, water and air quality; Air quality has improved significantly. As of the end of 2019, the annual average PM_{2.5} concentration in Beijing was 42 micrograms per cubic meter, which was the lowest value since monitoring began in 2013; natural gas sales have increased year by year; power infrastructure has shown leapfrog development, and the venues have achieved a 100% green power supply. All the venues' electricity for lighting, operation and transportation is provided by wind power and photovoltaic power in Zhangjiakou • Providing ski safety supervisors and other ski safety improvement measures are taken • Establishing food and drug inspection and testing laboratories to ensure food and drug safety
Talent cultivation	Beijing 2022 Winter Olympic and Paralympic Talent Action Plan Beijing's Twenty Measures for Strengthening Physical Education in Primary and Middle Schools to Enhance Students' Physical Health and Supporting Documents Olympic Education Plan for Primary and Secondary School Students in Beijing 2022 Winter Olympics and Paralympics	<ul style="list-style-type: none"> • Carrying out the training of professional workers who are skilled at refrigeration and ice pouring, snow making, track shaping, cable car operation, etc. • Implementing a series of overseas competition observations, overseas special training, practical skills training and other talent training projects • Accelerating the construction of coaching talent teams to ensure the number and quality of coaches in the ski resorts • Introducing winter sports into schools to cultivate potential ski tourism consumers. Beijing and Zhangjiakou have respectively 200 and 113 national and snow sports demonstration schools with the Beijing 2022 Winter Olympics and Paralympic Olympic Education Model Schools, ranking as the top two
Publicity and promotion	Not found	<ul style="list-style-type: none"> • Enhancing the brand recognition of the Winter Olympics by presenting emblems, mascots and slogans • Enhancing visibility and social influence through important memorial activities, such as the 100 days countdown ceremony • Zhangjiakou City has released city brands: City logos, mascots and slogans • Many ski resorts have promoted their brands, expanded their promotion channels through online platforms, and focused on brand maintenance, creating a wealth of themed cultural and sports activities to enhance brand influence
Tourism complaint management, Protection of tourists' rights and interests	Work Briefing of the High Court of Hebei Province	<ul style="list-style-type: none"> • The Chongli District Court of Zhangjiakou has explored and established a "court + ski field + insurance" tourism ski dispute resolution mechanism. Through innovative implementation of the "four one" model, it has played an important role in the "two guarantees and three enhancements", that is, protecting the vast number of tourists, the legal rights of ski enthusiasts and that of enterprises; improving the popularity of the "ski resort" of Chongli, and enhancing judicial credibility
Market regulation	Sustainable Procurement Guidelines for the Beijing Winter Olympics Sustainable Procurement Implementation Rules Technical Rules for Sustainable Procurement	<ul style="list-style-type: none"> • The Yanqing District Market Supervision Bureau of Beijing and the Zhangjiakou City Market Supervision Bureau of Hebei Province signed a cross-regional market supervision cooperation framework agreement. The two parties focus on ensuring market order, food and drug safety supervision, and special equipment safety guarantees. Especially in Beijing in 2022, for the Winter Games, the protection of the Olympic logo and the guarantee of major events, we will carry out larger-scale, wider-field, and deeper-level cooperation • Setting standards in the procurement of products and services

Note: Source: Legacy Report of Olympic and Paralympic Winter Games Beijing 2022 (pre-game) & official website of Beijing Organizing Committee for the 2022 Olympic and Paralympic Winter Games.

economy. This is especially true at the beginning of the development of new industries. The government can support the ice and snow industry to quickly enter the track through the introduction of relevant policies and capital investment. Taking the Winter Olympics as the starting point, China's

ice and snow tourism will surely usher in a golden period of development over the past few years and into the next few years. Thirdly, the redevelopment and utilization of the resources of the Summer Olympics deeply embodies the concept of sustainable development and incorporates the con-

cepts of green tourism and technological tourism. Finally, the multi-zone competition mode of the Beijing Winter Olympics has brought opportunities for poverty alleviation in the mountainous areas surrounding Beijing, and positive consequences are beginning to show. The “Using large-scale events to promote employment and solve poverty” model could be used as a reference in the future. The “Beijing-Zhangjiakou Sports Culture and Tourism Belt” has therefore become an important tourism legacy of the Beijing Winter Olympics.

5.2 Prospects and limitations

This pre-game evaluation of the ice and snow tourism legacy is extremely innovative and of practical importance, and it is of great significance for the preservation and protection of tourism legacy. First of all, the pre-game evaluation shows a complete picture of the tourism legacy, which can form a clear and complete understanding of the current status of legacy progress. Secondly, problems in the planning and implementation of the legacy could be found and corrected in time. Thirdly, putting “tourism legacy” into a separate division provides clearer guidance and suggestions for stakeholders, so that the ice and snow tourism industry, driven by the Olympics, can truly form a sustainable legacy and continue to exert economic and social effects. The innovative evaluation framework of this research can also lay the foundation for in-depth quantitative evaluation or qualitative research during and after the Winter Olympics. Under this research framework, follow-up evaluations are recommended to introduce more reliable data and conduct quantitative assessments.

However, this study still has limitations. First of all, this article does not carry out in-depth quantitative research or systematic policy text analysis, and the indicators such as tourism income and tourist flow commonly used in the Winter Olympics and tourism effect research are not included in the assessment category. The continuous quantitative research before, during and after the games will help to show the tourism effect of the Winter Olympic Games more comprehensively. Secondly, the development of related cultural activities only considered a significant increase in quantity, and did not evaluate their social effects. How does the development of related activities affect people’s awareness of sports participation, especially teenagers and children, and will it enhance the national image and national identity? These issues are closely connected to whether the social effects of the Olympic Games can be long-lasting and sustainable. Thirdly, on the image of tourist destinations, this article discusses what kinds of government actions could promote the image of tourist destinations, but whether these actions really promote the image of tourist destinations, and whether other conditions are needed to facilitate the image improvement of the subsequent destinations remain unknown. In addition, whether the image of ice and

snow tourism destinations affects the image of the Olympic city and the country is also worthy of follow-up discussion. Finally, as part of the tourism industry, ice and snow tourism is inseparable from the overall development of the tourism industry. Many indicators discussed in this article are not only closely related to the overall development of the tourism industry, but also to other branches of tourism industry. Therefore, in this article, the relationship between the part and the whole, and the relationships among the varied parts of the tourism industry are not analyzed clearly, and are also worthy of further research in follow-up studies.

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北京 2022 年冬奥会冰雪旅游遗产赛前评估

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摘 要: 旅游在社会经济发展和稳定奥运遗产中的作用, 已被广泛讨论。北京作为“双奥之城”, 北京冬奥会首次采用三赛区办赛, 使其旅游遗产的研究备受关注。在遗产规划中, 建设“京张体育旅游文化带”被提出, 发展冰雪旅游, 培育冰雪旅游市场, 也在诸多政策文件和政府行动中得以体现。赛前的科学规划, 为冰雪旅游遗产的可持续性发挥奠定良好基础。本研究将奥运遗产研究与旅游目的地理论相结合, 重点研究与冬奥会直接相关的冰雪旅游, 并重点关注赛前规划对于遗产保障的意义, 同时将冰雪旅游目的地品质提升嵌入奥运前遗产升级中, 并就如何确保赛后遗产的稳定性提出意见和建议。研究采用文献综述法和二手资料调查研究法, 通过建立冰雪旅游遗产赛前评估模型, 采用地理信息、政府报告、政策、公开发布的统计数据和新闻报道等, 对北京 2022 年冬奥会和冬残奥会的冰雪旅游遗产进行赛前总结和归纳, 并进行初步评估。研究发现北京冬奥会在有形遗产和无形遗产方面, 都进行了较为完备的规划并取得初步成果, 完备的旅游基础设施和良好的体育文化氛围, 后疫情时代居民健康理念和体育意识的提升, 都成为近年来京张地区冰雪旅游发展的助推器。

关键词: 2022 北京冬奥会和冬残奥会; 旅游遗产; 冰雪旅游; 冬季体育旅游