

# The practical challenges of inadequate service quality in ice and snow venues and optimization pathways for service upgrading

*Xinyu Xu*

Northeast Normal University, Changchun, China

1144638735@qq.com

---

**Abstract.** With the advancement of the national strategy of "engaging 300 million people in ice and snow sports," ice and snow venues, as the core carriers of ice and snow sports, have become directly linked to the high-quality development of the ice and snow industry and the participation experience of the public. Although the number of ice and snow venues in China continues to increase, deficiencies in service quality have become increasingly prominent. These venues currently face a range of practical challenges, including inadequate basic service facilities, insufficient professional competence among service personnel, monotonous service offerings, imperfect operation and management mechanisms, and significant seasonal constraints. This paper expounds the core value of improving the service quality of ice and snow venues and proposes targeted optimization pathways for service upgrading from five dimensions: improving basic service facilities, strengthening personnel training, enriching service content, optimizing operational mechanisms, and overcoming seasonal limitations. The study aims to provide theoretical references and practical guidance for the operation and management of ice and snow venues, thereby promoting quality improvement, efficiency enhancement, and the sustainable development of the ice and snow industry.

**Keywords:** ice and snow venues, service quality, practical challenges, optimization pathways, ice and snow industry

---

## 1. Introduction

With the in-depth implementation of the national strategy of "engaging 300 million people in ice and snow sports," together with the successive introduction of policy documents such as the Development Plan for Ice and Snow Sports (2021–2035) and the 14th Five-Year Plan for Sports Development, China's ice and snow sports sector has embraced unprecedented development opportunities. The ice and snow industry has become an important growth driver for promoting the high-quality development of the sports industry and enriching the spiritual and cultural life of the public. As the core carriers for conducting ice and snow sports, ice and snow venues serve as the critical link connecting such sports with public participation. Their service quality directly affects the popularization of ice and snow sports, participants' experiential satisfaction, and the overall sustainable development of the ice and snow industry [1]. At present, the construction of ice and snow venues

in China continues to accelerate, with venue numbers steadily increasing and coverage gradually expanding. However, in the course of rapid development, shortcomings in service quality have become increasingly evident. Numerous practical difficulties have constrained the full realization of venue functions and are inconsistent with the national policy orientation aimed at promoting the high-quality development of the ice and snow industry. In order to address the bottlenecks in the service quality of ice and snow venues, promote service improvement and efficiency enhancement, better satisfy the growing public demand for ice and snow sports, and facilitate the high-quality development of the ice and snow industry, this paper focuses on the practical challenges arising from insufficient service quality in ice and snow venues. It further explores scientific and feasible pathways for service upgrading and optimization, with the aim of providing theoretical references and practical guidance for the operational management of ice and snow venues.

## **2. The core value of improving service quality in ice and snow venues**

### **2.1. Meeting the diverse needs of participants and enhancing experience and satisfaction**

The population participating in ice and snow sports demonstrates diversified characteristics, encompassing general fitness enthusiasts, professional athletes in training, adolescents, and elderly individuals, all of whom exhibit significantly different service demands. Ordinary enthusiasts place greater emphasis on the convenience, safety, and enjoyment of ice and snow sports; professional trainees focus on the professionalism of venue facilities and the completeness of supporting services; adolescents require targeted introductory instruction and safety protection; while elderly participants pay more attention to service comfort and convenience. Improving the service quality of ice and snow venues enables operators to accurately address the core needs of different participant groups by optimizing service procedures, refining service details, and resolving common difficulties encountered in venue usage, equipment rental, and instructional services. Such improvements can effectively enhance participants' sense of experience and overall satisfaction. At the same time, high-quality service experiences help strengthen participant loyalty, encourage broader public participation in ice and snow sports, and contribute to the realization of the goal of "engaging 300 million people in ice and snow sports," thereby enabling ice and snow sports to truly integrate into everyday public life [2].

### **2.2. Promoting the sustainable operation of ice and snow venues and strengthening core competitiveness**

Against the backdrop of the rapid development of the ice and snow industry, the number of ice and snow venues continues to grow, and market competition has become increasingly intense. Under such circumstances, service quality has emerged as the core factor in differentiated competition among venues. At present, some ice and snow venues place excessive emphasis on hardware construction while neglecting service quality improvement, resulting in customer loss, declining reputation, and difficulties in achieving long-term stable operation. Enhancing service quality can help ice and snow venues establish a favorable brand image, attract customer traffic through superior services, accumulate positive public reputation, and form differentiated competitive advantages, thereby overcoming the dilemma of homogeneous competition. Meanwhile, high-quality services can facilitate the transformation of ice and snow venues from a "hardware-oriented" model to a "service-oriented" model, optimize operational patterns, reduce operating costs, and improve profitability. Such improvements can effectively address various operational challenges encountered

during venue management and ensure the sustainable operation of venues, thereby providing solid support for the long-term development of ice and snow sports.

### 2.3. Facilitating the high-quality development of the ice and snow industry and improving the industrial service system

Ice and snow venues constitute a core component of the service system within the ice and snow industry, and their service quality directly influences the overall development level of the industry. High-quality development of the ice and snow industry requires not only sound hardware infrastructure but also a comprehensive and high-quality service system. Improving the service quality of ice and snow venues can promote the coordinated development of related sectors such as ice and snow equipment manufacturing, training services, sporting events, and ice and snow tourism, thereby forming a synergistic development pattern characterized by "venues + industry." For example, high-quality venue services can promote the standardized development of the ice and snow training industry and attract more professionals to engage in ice and snow training. Likewise, optimized supporting services can improve the overall experience of ice and snow tourism and stimulate the growth of tourism-related consumption. At the same time, the improvement of service quality in ice and snow venues can contribute to the establishment of more comprehensive service standards within the ice and snow industry, promoting the industry's transformation from "scale expansion" to "quality enhancement." This process will facilitate the realization of high-quality development in China's ice and snow industry and strengthen its core competitiveness internationally [3].

## 3. Practical challenges of inadequate service quality in ice and snow venues

### 3.1. Inadequate basic service facilities and insufficient adaptability

Basic service facilities constitute the prerequisite for the operation of ice and snow venues. At present, some ice and snow venues in China suffer from incomplete facilities and insufficient adaptability, which seriously affect service quality. With regard to venue facilities, some venues have ice and snow tracks with inadequate smoothness, while protective facilities are outdated and damaged. Certain ski slopes are not classified according to difficulty levels, resulting in beginners and professional athletes sharing the same slopes, which easily creates safety hazards. In some indoor ice and snow venues, refrigeration equipment operates unstably, leading to poor ice and snow quality and negatively affecting the sporting experience. In terms of supporting facilities, many venues lack sufficient rest areas, storage areas, and restrooms, and sanitary conditions are often unsatisfactory. Some venues are not equipped with barrier-free facilities and therefore cannot meet the participation needs of elderly individuals, people with disabilities, and other special groups. In addition, some equipment rental areas are poorly equipped, and the rented ice and snow equipment is outdated, limited in size and model availability, and inadequately maintained, thereby posing potential safety risks. Furthermore, the layout of supporting service facilities in certain venues is unreasonable. For example, dining and shopping areas are located far from the activity areas, causing inconvenience for participants and further diminishing their overall experience [4].

### 3.2. Low professional competence among service personnel and lack of standardized services

Service personnel are the direct providers of services in ice and snow venues, and their professional competence and service level directly determine venue service quality. At present, the problems of insufficient professional competence and lack of service standardization among service personnel are particularly

prominent in China's ice and snow venues. On the one hand, many service personnel lack professional skills. Most venue staff have not received systematic professional training and therefore lack competencies in areas such as ice and snow sports instruction and emergency response. As a result, they are often unable to effectively respond to participants' consultation and guidance needs. In some venues, the qualifications of coaches vary considerably, and in certain cases unqualified personnel are employed, resulting in poor teaching quality that fails to meet participants' training demands. On the other hand, the service awareness of some personnel remains weak. Certain staff members display rigid attitudes, respond slowly, and pay insufficient attention to participants' reasonable requests, with some even engaging in buck-passing behavior. Meanwhile, China has not yet established unified service standards for ice and snow venues. Significant differences exist among venues in terms of service procedures and service specifications, leading to uneven service quality. Furthermore, the absence of effective service quality control mechanisms makes it difficult to ensure the stability and standardization of services.

### 3.3. Monotonous service content and lack of personalization and innovation

At present, the service content provided by most ice and snow venues in China remains relatively monotonous, being largely confined to basic services such as venue rental and equipment rental. Such services lack personalization and innovation, making it difficult to satisfy participants' increasingly diversified and high-quality service demands. Regarding service content, many venues fail to provide targeted services, such as introductory ice and snow training programs for adolescents, gentle ice and snow experience programs for elderly participants, or specialized training services for professional athletes. In addition, the supply of value-added services is seriously insufficient. Most venues do not offer services such as ice and snow culture promotion, event planning, or health consultation, resulting in low service added value. In terms of service methods, many venues continue to rely on traditional service models and lack innovation. Digital and intelligent technologies have not been fully utilized to improve service convenience. For instance, some venues have not introduced online reservation systems or online instructional services, requiring participants to queue on-site to complete various procedures, thereby wasting time and energy. Furthermore, some venues lack distinctive service features and suffer from serious homogenization, making it difficult to establish unique service brands or attract and retain participants [5].

### 3.4. Imperfect operation and management mechanisms and insufficient service support capacity

Operational and management mechanisms are critical to ensuring the service quality of ice and snow venues. However, some venues in China currently suffer from imperfect management mechanisms and inadequate service support capacity, which seriously constrain improvements in service quality. In terms of visitor flow management, some venues have underdeveloped reservation systems that cannot accurately predict or regulate visitor flow. Consequently, venues become overcrowded during peak periods, and venue resources become strained, which not only affects participants' experiences but also increases safety risks. Some venues also fail to formulate reasonable crowd-diversion plans and lack effective traffic management measures during peak hours, further aggravating congestion problems. With respect to safety management, some venues lack sound safety management systems and comprehensive emergency response plans. Emergency equipment is insufficient or outdated, while emergency rescue personnel often lack adequate professional competence, making it difficult to respond effectively and promptly to sudden safety incidents. In addition, some venues fail to identify and address potential safety hazards in a timely manner, neglect regular safety inspections and emergency drills, and therefore possess weak safety risk prevention and control capabilities. In terms of complaint handling, some venues lack smooth and effective complaint-processing mechanisms. They do not

employ dedicated complaint-handling personnel or standardized complaint-handling procedures, resulting in participants' concerns being inadequately addressed in a timely manner. This lowers participant satisfaction and negatively affects the reputation of the venues.

### 3.5. Significant seasonal constraints and insufficient service continuity

The particular nature of ice and snow sports means that ice and snow venues are heavily affected by climatic conditions, resulting in significant seasonal constraints. At present, most ice and snow venues in China face problems related to insufficient continuity of services. In northern China, most outdoor ice and snow venues can only operate during winter. During the off-season, venues remain idle and service supply is interrupted, resulting in low operational efficiency. In southern China, although indoor ice and snow venues can operate year-round, visitor numbers decline sharply during the off-season due to factors such as climate and consumer habits, leading to low utilization rates of service resources [6]. At the same time, seasonal operation creates seasonal labor shortages in ice and snow venues. During the snow season, venues often recruit large numbers of temporary workers to cope with peak visitor flows. However, these temporary employees generally lack systematic training, making it difficult to guarantee service quality. During the off-season, venues reduce staffing levels, leading to the loss of service personnel. When the next snow season arrives, venues must once again recruit and train new employees, which increases operating costs and causes fluctuations in service quality. In addition, some venues lack operational planning for the off-season and have failed to develop service programs suitable for non-snow seasons. As a result, they cannot maintain continuous service provision, which further constrains the sustainable operation of the venues.

## 4. Optimization pathways for service upgrading in ice and snow venues

### 4.1. Improving basic service facilities and enhancing facility adaptability and safety

Improving basic service facilities constitutes the foundation for enhancing the service quality of ice and snow venues. Targeted measures should therefore be adopted to address existing problems related to incomplete facilities and insufficient adaptability. With regard to venue facilities, regular maintenance and inspection should be conducted on core facilities such as ice and snow tracks and refrigeration equipment to ensure their stable operation. Ski slopes should be reasonably classified according to difficulty levels based on the needs of different participant groups, with beginner-exclusive slopes and professional training slopes established to prevent participants of different skill levels from sharing the same slopes and thereby reduce safety risks. In addition, the design and layout of ice and snow venues should be optimized to improve overall comfort and practicality. In terms of supporting facilities, the number of rest areas, storage spaces, and restrooms should be increased, and sanitary conditions should be improved. Adequate seating areas, hot beverage supply stations, and similar facilities should also be provided to enhance participant comfort. Barrier-free facilities should be further improved through the addition of wheelchair-accessible pathways and accessible restrooms to satisfy the participation needs of special groups. Furthermore, equipment rental areas should be strengthened by replacing outdated equipment, supplementing equipment of different models and sizes, and establishing professional maintenance systems to ensure regular inspection and disinfection of equipment, thereby guaranteeing safety. At the same time, the layout of supporting service facilities should be optimized so that dining areas, shopping areas, and other functional zones are more conveniently connected with activity venues, thus improving service accessibility [7].

#### 4.2. Strengthening personnel training and establishing a standardized service system

Enhancing the professional competence of service personnel and establishing a standardized service system are key to improving the service quality of ice and snow venues. On the one hand, a hierarchical and category-based training system should be established to provide targeted training for personnel in different positions. For example, venue service staff should receive training in facility operation and emergency response; coaches should be trained in professional skills and teaching methodologies; and consultation personnel should receive instruction in communication skills and service etiquette. Cooperation with professional institutions and industry associations should be strengthened to carry out regular training programs and invite industry experts to deliver lectures, thereby improving staff professionalism and service capabilities. In addition, a training assessment mechanism should be established by linking training outcomes with performance evaluations so as to encourage personnel to continuously improve their competencies. On the other hand, unified service standards should be formulated to clarify service procedures, specifications, and requirements for different positions, covering all aspects of service provision such as reception and consultation, venue usage, equipment rental, and complaint handling. This would promote service standardization and normalization. A service quality supervision mechanism should also be established to regularly inspect and evaluate service quality, identify existing problems in a timely manner, and implement corrective measures. Moreover, an incentive mechanism should be introduced to commend and reward personnel demonstrating outstanding service performance, thereby stimulating employees' enthusiasm and initiative [8].

#### 4.3. Enriching service content and creating personalized and innovative services

Enriching service content and developing personalized and innovative services are important means of meeting participants' diverse needs and enhancing the core competitiveness of venues. In terms of service content, venues should focus on the demands of different participant groups and introduce personalized services, such as introductory ice and snow training packages for adolescents, gentle ice and snow experience programs for elderly participants, specialized training services for professional athletes, and parent-child ice and snow activities for families. At the same time, value-added services should be expanded to include ice and snow culture promotion, event planning, health consultation, photography services, and related offerings in order to increase service added value. Local ice and snow cultural characteristics should also be explored and integrated into venue services so as to establish distinctive regional service brands and avoid homogeneous competition. With respect to service methods, innovative service models should be promoted through the full utilization of digital and intelligent technologies to improve convenience. Online reservation systems, online instructional services, and online complaint channels should be introduced to reduce participants' waiting times on-site. Advanced technologies such as VR and 3D mapping should also be incorporated to create immersive ice and snow experience programs and facilitate the transformation of ice and snow services from "landscape viewing" to "immersive interaction." Furthermore, venues should regularly organize ice and snow competitions, ice and snow cultural festivals, and related activities to enrich participant experiences and enhance venue attractiveness [9].

#### 4.4. Improving operational and management mechanisms and enhancing service support capacity

Improving operational and management mechanisms and strengthening service support capacity constitute important guarantees for the stable enhancement of service quality in ice and snow venues. Regarding visitor flow management, reservation systems should be optimized and integrated with big data technologies to enable visitor flow prediction and precise control, thereby ensuring the rational allocation of venue resources

and avoiding congestion during peak periods. Comprehensive visitor flow diversion plans should also be formulated, with additional service personnel deployed during peak periods to strengthen on-site guidance and maintain orderly use of facilities. In addition, staggered reservation and time-slot booking systems should be implemented to improve venue utilization efficiency and participant experience. In terms of safety management, comprehensive safety management systems should be established, accompanied by detailed emergency response plans specifying response procedures and responsibilities. Adequate emergency equipment should be provided and regularly inspected and maintained to ensure proper functioning. Emergency rescue personnel should receive strengthened training, and regular emergency drills should be organized to improve emergency response capabilities. Moreover, a normalized safety hazard inspection mechanism should be established to conduct routine inspections of venue facilities and safety protection measures and eliminate potential risks in a timely manner. Regarding complaint handling, smooth and efficient complaint-handling mechanisms should be established through the appointment of dedicated complaint-handling personnel and the creation of clear complaint channels. Complaint processing timelines and procedures should also be clearly specified. Participants' concerns should be addressed promptly and properly, and feedback mechanisms should be strengthened in order to improve participant satisfaction and recognition [10].

#### 4.5. Overcoming seasonal constraints and realizing sustainable service supply

Overcoming seasonal constraints and achieving sustainable service provision are essential to promoting the sustainable operation of ice and snow venues. On the one hand, diversified operation of ice and snow venues should be promoted in order to break seasonal limitations and develop service programs suitable for the off-season. Examples include indoor ice and snow experiences, ice and snow-themed activities, fitness training, conferences and exhibitions, and educational tourism. Such measures can activate venue resources and improve the utilization rate of service resources. Drawing upon the operational experience of venues such as Harbin Ice and Snow World and the Winter Olympic venues in Zhangjiakou, indoor ice and snow venues may be developed to "bring" outdoor ice and snow landscapes indoors, thereby realizing year-round provision of ice and snow experience services. On the other hand, stable employment mechanisms should be established by combining long-term recruitment with seasonal employment arrangements to ensure an adequate supply of service personnel. Training and management of seasonal employees should also be strengthened to improve service quality and avoid fluctuations in service standards. Furthermore, partnerships with professional institutions should be established to implement order-oriented talent cultivation programs and provide venues with professional service and management personnel, thereby alleviating labor shortages. At the same time, publicity and promotional efforts should be enhanced through both online and offline channels to promote off-season service programs and attract a broader participant base. Such measures would help maintain stable year-round visitor flow and facilitate the sustainable provision of services in ice and snow venues.

## 5. Conclusion

Improving the service quality of ice and snow venues is a key measure for promoting the high-quality development of the ice and snow industry and implementing the national strategy of "engaging 300 million people in ice and snow sports." It is also an inevitable requirement for satisfying the public's diversified demands for ice and snow sports. At present, the challenges faced by China's ice and snow venues—including inadequate facilities, insufficient personnel competence, and monotonous service content—have constrained the effective functioning and sustainable operation of such venues. These developmental bottlenecks urgently

require systematic optimization and resolution. The pathways proposed in this paper, including facility improvement, personnel training, service innovation, enhancement of operational mechanisms, and the overcoming of seasonal constraints, provide practical and implementable solutions for upgrading the services of ice and snow venues. In the future, ice and snow venues should proceed from their own operational realities, accurately respond to public needs, continuously optimize service quality, and promote iterative upgrading of service models. At the same time, stronger industry collaboration and greater experience-sharing should be encouraged in order to gradually improve the service system for ice and snow venues. Such efforts will facilitate the transformation of China's ice and snow industry from "scale expansion" to "quality enhancement," integrate ice and snow sports more deeply into public life, and inject sustained momentum into the sustainable development of China's ice and snow industry.

## References

- [1] Li, Xiuru, & Chai, Jiao. (2022). Evolutionary game analysis of ice and snow service quality improvement under the incentive of government subsidies. *Journal of Shenyang Sport University*, 41(4), 14–21.
- [2] Li, Shuwang, Li, Jinglü, Liu, Xiaokai, et al. (2022). Evaluation of ski tourism service quality and optimization strategies in the post-Beijing Winter Olympics era: From the perspective of skiers' perceptions at Beijing ski resorts. *Journal of Beijing Sport University*, 45(5), 146–161.
- [3] Liu, Xiaoxiao, Che, Di, Cong, Peiyu, et al. (2026). Evaluation of the implementation effect of ice and snow tourism standards based on the AHP–fuzzy comprehensive evaluation method. *Standard Science*, (3), 69–77.
- [4] Yang, Qi. (2020). Research on the service quality of ski tourism in Luoyang based on the SERVQUAL model. *Contemporary Sports Technology*, 10(12), 233–236.
- [5] Yuan, Yucheng, & Gao, Ying. (2024). Evaluation and improvement strategies for the service quality of indoor ski resorts in the Guangdong–Hong Kong–Macao Greater Bay Area. *China Winter Sports*, 46(3), 22–31.
- [6] Chen, Xiangyu, Xu, Shiyi, Tang, Chengcai, et al. (2022). Tourist satisfaction evaluation and improvement model for ice and snow tourism destinations. *Journal of Resources and Ecology*, 13(4), 635–645.
- [7] Wan, Kaimeng, & Li, Anna. (2025). Research on service quality evaluation and improvement strategies for ice and snow tourism destinations in Qinhuangdao based on tourist perception. *Bulletin of Sports Science and Technology Literature*, 33(9), 124–126, 137.
- [8] Zhang, Zhe. (2020). Research on the operational difficulties and countermeasures of four-season ice and snow sports venues in Shijiazhuang. *Research on Innovation in Ice and Snow Sports*, (16), 5–6.
- [9] Liu, Huaxiang. (2023). Research on the high-quality development of China's ice and snow sports industry in the post-Winter Olympics era. *Sports Culture Guide*, (6), 82–88.
- [10] Li, Chunyan, & Zhao, Binbin. (2025). Research on the high-quality development path of China's ice and snow sports industry under the background of new quality productive forces. *Contemporary Sports Technology*, 15(6), 77–79.