

The influence of ski tourism service quality on tourists' leisure satisfaction and loyalty: The moderating role of novelty seeking

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ABSTRACT

Understanding how service quality influences tourist loyalty has become a central concern in ski tourism research. Anchored in the Stimulus–Organism–Response framework, this study examines the relationship between service quality in ski tourism and tourist loyalty, with a specific focus on the mediating role of leisure satisfaction and the moderating effect of novelty seeking. Five dimensions of service quality—tangibles, reliability, responsiveness, assurance, and empathy—are examined to determine their respective contributions to enhancing tourist satisfaction and loyalty. The findings indicate that responsiveness and assurance significantly enhance both leisure satisfaction and tourist loyalty, whereas tangibles, empathy, and reliability show no statistically significant effects. Leisure satisfaction is shown to mediate the effects of responsiveness and assurance on tourist loyalty. Furthermore, novelty seeking moderates several key relationships: it amplifies the effect of responsiveness on loyalty, strengthens the impact of assurance on satisfaction, and reinforces the linkage between satisfaction and loyalty. This study contributes to the tourism literature by incorporating novelty seeking into the service quality–loyalty model, providing practical implications for ski resorts aiming to enhance their competitive advantage through tailored service strategies.

1. Introduction

In recent years, the global tourism industry has seen rapid growth, fueled by increasing demand for leisure and recreational activities. Among various leisure travel options, ski tourism has become a particularly popular and dynamic segment (Happ et al., 2023). According to the International Ski Federation, ski resorts welcome over 400 million visitors annually, with China emerging as one of the fastest-growing markets for ski tourism (Fang et al., 2021). After the 2022 Beijing Winter Olympics, skiing has gained widespread popularity among Chinese tourists, who increasingly see it as a favored winter activity (Yang et al., 2023). As competition among ski destinations intensifies, ski resorts face growing pressure to provide superior service experiences (Sheppard & Williams, 2016). In response, many resorts have invested heavily in infrastructure, branding, and safety measures (Yu et al., 2025). Despite these efforts, academic research on service quality in ski tourism has lagged, often relying on broad tourism models or fragmented case studies that fail to address the unique needs of ski tourists (Maccioni et al., 2024). Additionally, climate change presents further challenges, including rising temperatures, shorter snow seasons, and less

dependable snowfall, all threatening the sustainability and quality of ski tourism operations (Leal Filho et al., 2024; Scott et al., 2020).

Understanding how service quality affects visitor satisfaction and loyalty has become a key focus in sports and adventure tourism research (Jeong & Kim, 2020). Among various service quality models, the SERVQUAL framework—comprising five dimensions: tangibles, reliability, responsiveness, assurance, and empathy—has been widely used to evaluate customer experiences across different service industries. Ski tourism stands apart from many other service settings because of its experiential, physically demanding, and risk-sensitive nature, which may cause tourists to assess service quality differently (Steiger & Scott, 2020). Furthermore, studies that have tried to apply SERVQUAL in similar high-involvement tourism contexts (e.g., adventure, ecotourism) have shown mixed results, especially regarding the importance of its five dimensions (Escobar Rivera et al., 2019; Pikkemaat et al., 2020). Therefore, both theoretical and practical reasons support reevaluating the relevance and predictive power of the SERVQUAL model in the ski tourism industry. Additionally, most current research emphasizes objective or tangible aspects of service delivery, such as facility improvements or safety measures (Lepp & Gibson, 2008), while paying less

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attention to subjective psychological factors that influence tourists' perceptions and reactions. One such factor is novelty seeking, which signals an individual's desire for new, varied, and exciting experiences (Skavronskaya et al., 2020). Although novelty seeking has been examined in relation to travel motivation and destination choice, its role as a moderator in the connection between service quality, satisfaction, and loyalty remains underresearched, especially in ski tourism, where experiences are both physical and mental (Cetin, 2020; Huang, 2025).

This study introduces an extended theoretical model. Specifically, we aim to answer these questions: (1) How does ski tourism service quality influence leisure satisfaction and tourist loyalty? (2) Does novelty seeking moderate the relationships between ski tourism service quality and leisure satisfaction, between ski tourism service quality and tourist loyalty, and between leisure satisfaction and tourist loyalty? (3) Does leisure satisfaction mediate the relationship between ski tourism service quality and tourist loyalty? By incorporating novelty seeking into a widely used ski tourism service quality framework, this research assesses the relevance of SERVQUAL in a new context. It strives to offer a more comprehensive understanding of tourist behavior in ski tourism.

2. Literature review

2.1. Ski tourism services quality

In customer-centered settings, services consist of a mix of tangible and intangible offerings tailored to meet consumer needs (Kindström & Kowalkowski, 2014). Grönroos (1984) was among the first to define service quality as a subjective perception, identifying two key dimensions: technical quality and functional quality. Building on this, Parasuraman et al. (1985) highlighted the inherently subjective and perceptual nature of service quality, describing it as the customer's judgment of service excellence. As the service industry becomes increasingly vital for employment and economic growth, the concept of service quality has gained attention in sports tourism research, particularly in Western academic circles (PJ et al., 2023). Among various frameworks, the SERVQUAL model, developed by Parasuraman et al. (1985), remains the most widely used. Although the SERVPERF model was later introduced to focus solely on performance perceptions, concerns about its reliability have kept SERVQUAL popular (Liu et al., 2025). Ski tourism presents unique challenges and expectations for service quality (Bausch et al., 2024). Skiing requires technical skill and an immersive experience, emphasizing the significance of qualified ski instructors, especially in emerging markets like China, where many skiers are beginners. Skiing is a high-risk activity; strict safety protocols and accessible medical support are essential, helping build tourists' trust in ski resorts. Additionally, offering comprehensive experiences—including quality lodging, diverse food options, efficient transportation, and activities like hot springs or cultural events—can greatly improve overall visitor satisfaction. Based on the SERVQUAL model, this study identifies five key service dimensions—Tangibles, Reliability, Responsiveness, Assurance, and Empathy—to systematically evaluate how ski resorts meet visitor expectations and create positive experiences.

2.2. Leisure satisfaction and loyalty among ski tourists

In tourism, leisure satisfaction usually results from comparing pre-trip expectations with actual experiences (Moreno-Gené et al., 2018). Loyalty, often defined as a tourist's intention to revisit and willingness to recommend a destination, has been consistently linked to satisfaction in tourism research (Antón et al., 2017). In ski tourism, many early studies in European and North American contexts have highlighted the importance of this relationship. For example, research in Austria, France, and Italy has shown that satisfaction with ski lift services, slope maintenance, and the overall resort atmosphere significantly predicts repeat visits and positive word-of-mouth (Moreno-Gené et al., 2018; Morin

et al., 2021; Salim et al., 2023; Spandre et al., 2019). Similarly, Hall et al. (2017) found that leisure satisfaction had a stronger effect on loyalty than service quality alone in Australian ski resorts. Bonnefoy-Claudet and Ghantous (2013) also argued that leisure value and emotional attachment mediate the link between satisfaction and loyalty in winter sports settings. Given the changing nature of global ski tourism—which is characterized by more diverse customer profiles and climate-related operational challenges—there is an ongoing need to revisit these traditional models by including newer variables. Our study expands on this foundation by adding novelty seeking and exploring how it influences the relationship between service quality, satisfaction, and loyalty in ski tourism.

2.3. Novelty seeking

Novelty seeking—an inherent psychological trait—has long been recognized as a key motivator of tourism behavior (Lee & Crompton, 1992). It differentiates tourism experiences by offering psychological stimulation and personal growth (Ji et al., 2016). Lee and Crompton (1992) proposed a multidimensional model to understand novelty, which includes four main aspects: breaking routines, seeking excitement, alleviating boredom, and experiencing surprise. Wang et al. (2015) highlighted the emotional effects of novelty, suggesting it can either enhance positive feelings or cause discomfort, depending on the situation. Li and Su (2022) redefined the concept into three core dimensions: excitement, escaping routine, and a boredom-surprise continuum. Research has explored novelty seeking from three primary perspectives: individual traits (e.g., sensation-seeking), self-perception (e.g., identity expression), and environmental stimuli (e.g., destination features, social dynamics). Notably, novelty seeking influences emotional responses and satisfaction. For example, participating in new tourism activities affects emotional arousal and increases overall satisfaction (Mitas & Bastiaansen, 2018). In ski tourism—a field known for adventure, physical challenge, and environmental novelty—novelty seeking likely plays a crucial role in shaping tourists' evaluations, emotional experiences, and loyalty. However, research on this topic remains limited, especially regarding its potential function as a moderator in the relationships among service quality, satisfaction, and loyalty.

3. Hypotheses and theoretical framework

The SOR theory suggests that external environmental factors can influence an individual's psychological state, shaping their attitudes and behaviors. In this study, external service quality dimensions (stimuli) affect tourists' internal psychological responses, including leisure satisfaction and novelty seeking. These responses, in turn, influence behavioral outcomes such as loyalty. The mediating role of leisure satisfaction and the moderating role of novelty seeking align with the SOR model's emphasis on internal states and their impact on reactions to external stimuli. Using SOR theory, this research offers a comprehensive understanding of how various service quality dimensions affect tourists' internal states and subsequent behaviors in ski tourism. Ski tourists who experience high-quality facilities and instruction at ski resorts tend to have positive and highly satisfying skiing experiences, which significantly shape their attitudes and evaluations. This study examines leisure satisfaction as a mediator between service quality at ski destinations and tourist loyalty. Additionally, the tendency to seek novelty has been identified as a key factor influencing tourism experiences and satisfaction. Therefore, by including novelty seeking as a moderating factor, this study further refines the SOR model to account for individual differences in psychological predispositions, enabling a deeper understanding of how varying levels of novelty seeking influence tourists' responses to service quality and their loyalty to ski resorts. Based on this, we have developed a theoretical model (Fig. 1) to illustrate how service quality at ski tourism destinations impacts tourist loyalty.

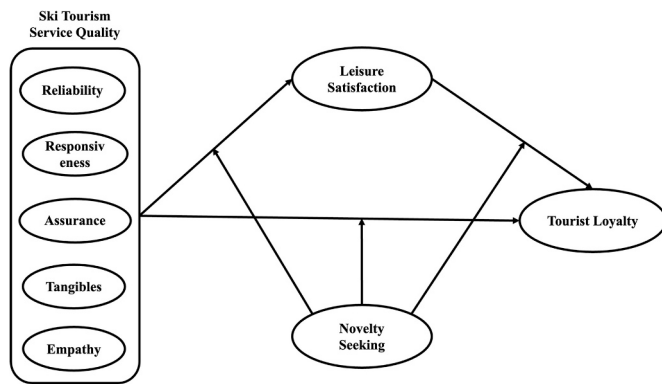


Fig. 1. Research framework model.

3.1. Ski tourism service quality, leisure satisfaction and tourist loyalty

A growing body of research emphasizes the crucial role of service quality in influencing tourists' leisure satisfaction at destination sites (Oviedo-García et al., 2019). High-quality facilities enhance tourists' comfort and safety, encourage participation in activities, and directly increase satisfaction levels (Xia et al., 2024). Skilled, professional ski instructors provide personalized guidance and support, helping visitors build confidence, reduce anxiety, and fully enjoy skiing (Wu & Yang, 2022). Additionally, the design and delivery of activities—including scheduling, time management, and variety—are vital in shaping the overall visitor experience. Effective management of ski events and contingency plans ensures activities run smoothly and that unexpected situations are addressed promptly to safeguard visitor safety. For example, clear emergency protocols and accessible medical support significantly boost trust and comfort among visitors (Peters & Pikke-maat, 2006). Empathetic interactions between staff and tourists further promote positive psychological responses. When staff respond with empathy through attentive inquiries, proactive problem-solving, and accommodating individual needs, tourists feel respected and valued. This deepens their attachment to the destination and increases the likelihood of repeat visits (Shang et al., 2022). Responsiveness—demonstrated by the ability to quickly and effectively meet tourists' evolving needs—is another key factor influencing satisfaction and loyalty. Ski resorts exhibit responsiveness through efficient management of logistics, such as equipment rentals, ski lesson scheduling, dining arrangements, and accommodations. Timely delivery of these services creates a seamless experience that enhances tourists' satisfaction (Font et al., 2023). Furthermore, destinations with robust feedback systems that swiftly process visitor suggestions and implement responsive improvements are more likely to meet or exceed tourists' expectations. This not only improves the immediate experience but also fosters long-term satisfaction and loyalty. Based on this, we propose the following hypotheses:

- H1a.** Tangibility has a significant positive correlation with leisure satisfaction;
- H1b.** Reliability has a significant positive correlation with leisure satisfaction;
- H1c.** Responsiveness has a significant positive correlation with leisure satisfaction;
- H1d.** Assurance has a significant positive correlation with leisure satisfaction;
- H1e.** Empathy has a significant positive correlation with leisure satisfaction.
- H2a.** Tangibility has a significant positive correlation with tourist loyalty;

H2b. Reliability has a significant positive correlation with tourist loyalty;

H2c. Responsiveness has a significant positive correlation with tourist loyalty;

H2d. Assurance has a significant positive correlation with tourist loyalty;

H2e. Empathy has a significant positive correlation with tourist loyalty.

When ski tourism destinations offer high-quality services, tourists are more likely to experience greater leisure satisfaction, which significantly affects their loyalty to the destination (Ahrholdt et al., 2017). Satisfied tourists are not only more likely to return for future visits but also tend to recommend the destination to others through positive word-of-mouth (Abubakar & Mavondo, 2014). This word-of-mouth effect can attract new tourists and further enhance the destination's reputation (Seow et al., 2024). Moreover, higher levels of leisure satisfaction contribute to increased brand loyalty, strengthening the destination's competitive position in the tourism market (Cossío-Silva et al., 2019). High-quality services—such as well-developed infrastructure (e.g., modern ski lifts, groomed slopes, accommodations, and safety facilities), skilled staff, and ample informational support—boost leisure satisfaction, which in turn increases tourists' attachment to the destination and their likelihood of revisiting (Cham et al., 2022). Therefore, we propose the following hypotheses:

H3. Leisure satisfaction has a significant positive impact on tourist loyalty.

H4. Leisure satisfaction mediates the relationship between ski tourism service quality and tourist loyalty.

3.2. The moderating role of novelty seeking

In ski tourism—a field characterized by physical challenges, dynamic environments, and strong emotional engagement—novelty seeking plays a crucial role in influencing tourists' evaluations, emotional reactions, and loyalty development (Albaity & Melhem, 2017). Ski destinations naturally offer a high level of experiential diversity: exposure to different terrains (e.g., backcountry, groomed trails, terrain parks), rapidly changing weather patterns, and evolving service formats (e.g., digital lift systems, immersive après-ski experiences). These features make skiing not just a sport but also an exploration-driven, novelty-rich activity. From a theoretical standpoint, the moderating role of novelty seeking is based on the interaction between internal psychological traits and external environmental cues (Min & Schwarz, 2022). Tourists with high novelty-seeking tendencies may respond more positively to diverse and unconventional service features, thus enhancing perceived service quality and its subsequent impact on satisfaction and loyalty (Pratminingsih et al., 2025). Conversely, low novelty seekers may prefer predictability and be less affected by such variations (Kiatkawin et al., 2021). Additionally, previous research has demonstrated that novelty seeking can moderate important tourism relationships in areas such as adventure tourism, cultural tourism, and experiential hospitality (Yuan & Hong, 2024). Given the exploratory and risk-involved nature of ski tourism, it offers an appropriate theoretical context and is underexplored empirically for studying such moderating effects. Based on these insights, we propose the following hypotheses:

H5a. Novelty seeking moderates the relationship between ski tourism service quality and tourist loyalty.

H5b. Novelty seeking moderates the relationship between ski tourism service quality and leisure satisfaction.

H5c. Novelty seeking moderates the relationship between leisure satisfaction and tourist loyalty.

4. Methodology

4.1. Sample and procedure

This study collected data from four leading Chinese ski resorts—Wanlong, Cocotohai, Xiling Snow Mountain, and Beidahu. Wanlong, located in Hebei Province and a well-established resort in the Beijing–Tianjin–Hebei region, hosted about 300,000 visitors during the 2021–2022 season. Cocotohai in Xinjiang attracts around 80,000 young, adventure-seeking tourists annually. Xiling Snow Mountain in Sichuan mainly serves families and beginners, drawing approximately 150,150,000 visitors. Beidahu in Heilongjiang, known for its long season and challenging slopes, attracts roughly 200,000 experienced skiers. These figures are based on official visitor statistics, national tourism reports, and resort branding profiles published in the China Ice and Snow Tourism Development Report, the China Statistical Yearbook, and official resort websites. The resorts vary in visitor types, services, and branding, offering a good basis for testing our framework's applicability. All four resorts primarily serve the mass market. Data collection took place during China's peak ski season, resulting in many potential respondents. Since data was gathered at a single point in time, this study is cross-sectional. We used simple random sampling for practical and resource reasons. The target group included individuals who recently participated in ski tourism and incurred related expenses. Of the 490 questionnaires distributed, 450 were returned, and 400 valid responses were analyzed, yielding an 81.6% response rate. The characteristics of the sample are shown in Table 1. To ensure the sample was suitable for structural equation modeling (SEM) with maximum likelihood estimation, we followed Hair et al. (2012), who recommend at least 10 respondents per observed variable. With 35 observed variables, the minimum sample size was 350; our sample of 400 exceeds this minimum. To verify data consistency across sites, we conducted multi-group confirmatory factor analysis. Results showed support for configural invariance (CFI = 0.962, RMSEA = 0.041, SRMR = 0.036), indicating a consistent factor structure. Metric (Δ CFI = 0.004) and scalar invariance (Δ CFI = 0.006) were also confirmed, demonstrating the equality of factor loadings and intercepts (Fig. 2).

4.2. Measures

All measurement items were adapted from previously validated scales to ensure conceptual rigor and reliability. The questionnaire measured four key constructs: service quality, leisure satisfaction, novelty seeking, and tourist loyalty. Service quality in ski tourism was measured using a five-dimensional adaptation of the SERVQUAL model (Parasuraman et al., 1985), tailored to the ski resort context. These

included: reliability (6 items), responsiveness (4 items), assurance (3 items), tangibles (3 items), and empathy (3 items). Leisure satisfaction was assessed with six items, novelty seeking with five items, and tourist loyalty with five items. Specifically, ski tourism service quality items were adapted from Ferrand and Vecchiatini (2002) and Rosenbaum and Massiah (2011). Leisure satisfaction was measured using a scale adapted from Yoon and Uysal (2005), and novelty seeking was based on the research of Mun et al. (2018). Tourist loyalty items were taken from Liu et al. (2016). All items were rated on a 5-point Likert scale from 1 = “strongly disagree” to 5 = “strongly agree.” To ensure cultural relevance and linguistic clarity, the initial English version was translated into Chinese and back-translated by bilingual experts for accuracy. The translated version was refined through expert review and minor wording adjustments. A pilot test was conducted in October 2024 using “Questionnaire Star” (<https://www.wjx.cn/>), a leading Chinese online survey platform. The pilot sample included individuals who had visited a ski resort within the previous 12 months. A total of 150 questionnaires were randomly distributed online, with 120 valid responses collected. Results showed satisfactory internal consistency (all Cronbach's alpha >0.70) and structural validity (all standardized factor loadings >0.70).

Following the pilot study, the finalized questionnaire was administered on-site between January 1 and January 26, 2025, at four major ski resorts in China. Data collection was carried out face-to-face using printed questionnaires by a trained team of field investigators. These investigators approached tourists in various public areas within the resorts, including cafés, rest areas, equipment rental shops, and lift waiting zones. After giving a brief explanation of the study's purpose, participants were asked to sign an informed consent form before completing the questionnaire. Each survey took approximately 10 to 12 min. Investigators were instructed to avoid leading respondents and to clarify questions only when explicitly asked. This careful administration process helped minimize response bias. A total of 450 questionnaires were collected across the four ski resorts: Wanlong Ski Resort—112 questionnaires; Koktokay Ski Resort—113 questionnaires; Xiling Snow Mountain Ski Resort—110 questionnaires; Beidahu Ski Resort—115 questionnaires. After data screening and validation, 400 valid responses were retained for analysis. The combination of online pre-testing and on-site data collection improved both the psychometric robustness and the contextual relevance of the measurement instrument, ensuring responses reflected the authentic experiences and perceptions of ski tourists.

5. Results

5.1. Test of measurement model

This study utilized SPSS 27.0 and AMOS 28.0 for data analysis. Prior to hypothesis testing, confirmatory factor analysis (CFA) was performed on the measurement model to ensure its validity. The results demonstrated a strong fit between the model and the data, as indicated by various fit indices ($\chi^2/df = 2.219 < 3$, RMR = 0.029 < 0.05, RMSEA = 0.055 < 0.10, CFI = 0.964 > 0.90, TLI = 0.959, IFI = 0.964, RFI = 0.928, NFI = 0.936). Furthermore, all variables achieved composite reliability (CR) and Cronbach's α values above 0.7 (Table 2), confirming high measurement reliability.

The questionnaire items were adapted from established measurement scales and refined through expert reviews and small-scale interviews to ensure robust content validity. Structural validity was assessed via convergent and discriminant validity. Factor loadings for all items surpassed 0.5, and the AVE values exceeded 0.5, supporting good convergent validity for items measuring the same constructs. Discriminant validity was verified as the correlation coefficients between variables were lower than the square roots of their corresponding AVE values, indicating clear distinctions among constructs (Table 3). We used Harman's single-factor test to mitigate potential common method bias concerns. The analysis revealed that the first factor accounted for

Table 1
Respondents' demographic and ski behavior characteristics (N = 400).

Variable	Category	N	%
Gender	Male	199	49.75
	Female	201	50.25
Age	18–24	99	24.75
	25–34	106	26.50
	35–44	144	36.00
	More than 44	51	12.75
Education	High school or below	34	8.50
	Junior college	101	25.25
	university	148	37.00
	Postgraduate or above	117	29.25
Ski experience	None	115	28.75
	1–2 years	208	52.00
	3–4 years	56	14.00
	More than 4 years	21	5.25
Ski frequency (every year)	1–2 times	83	20.75
	3–4 times	198	49.50
	5–6 times	84	21.00
	More than 6 times	35	8.75

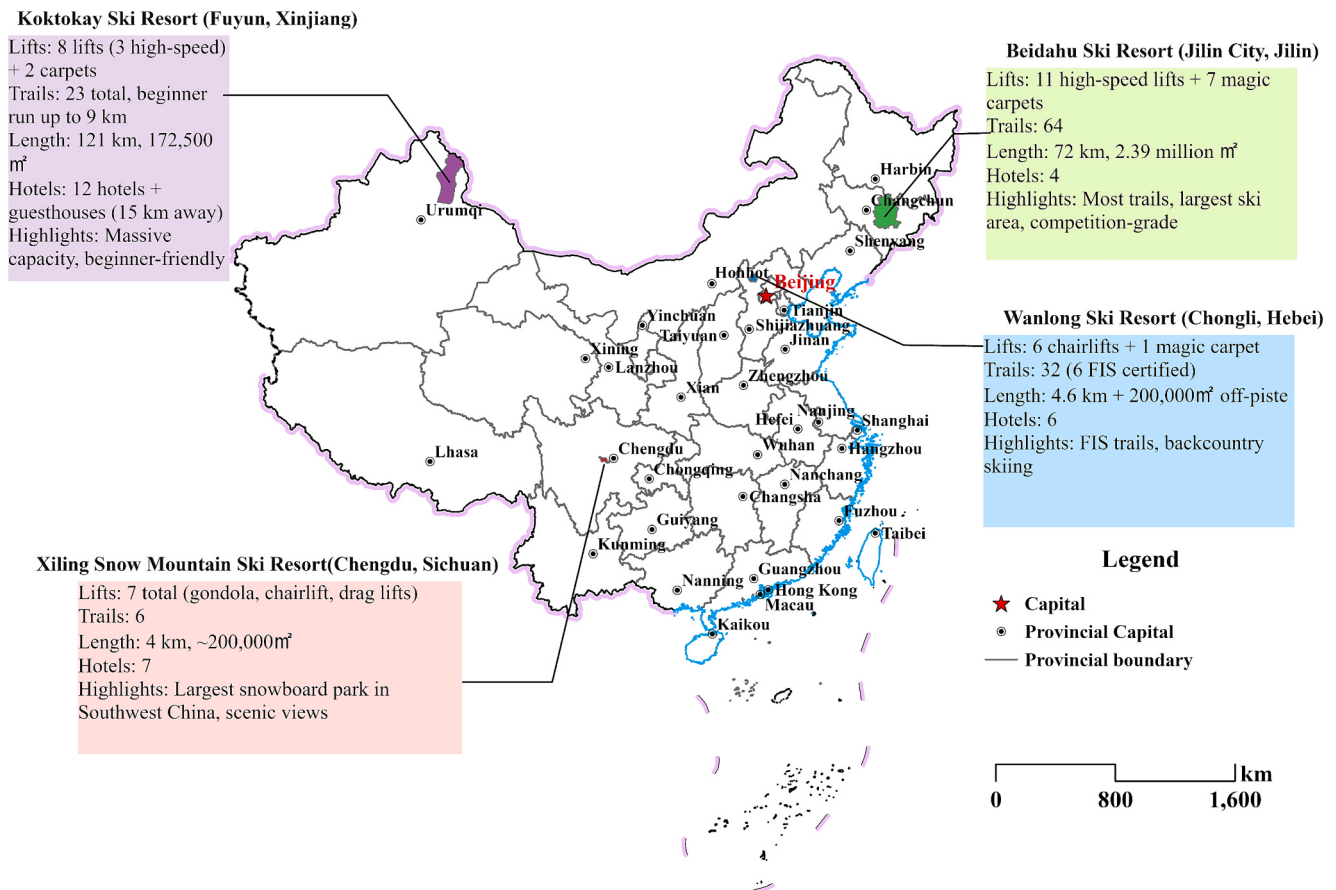


Fig. 2. Location and basic information of four ski resorts.

only 20.0 % of the total variance, significantly below the critical threshold of 40 %. This confirms the absence of substantial common method bias in the data.

5.2. Test of structural model

The results of hypothesis testing are shown in Table 4 and Fig. 3. Responsiveness significantly influences both Leisure Satisfaction and Tourist Loyalty ($\beta_{c} = 0.646$, $p < 0.001$; $\beta_{c} = 0.262$, $p < 0.05$), confirming hypotheses H1c and H2c. Likewise, assurance has a positive effect on both outcomes, with statistically significant results ($\beta_{d} = 0.237$, $p < 0.001$; $\beta_{d} = 0.317$, $p < 0.001$), supporting hypotheses H1d and H2d. Additionally, leisure satisfaction positively influences tourist loyalty ($\beta_{3} = 0.297$, $p < 0.05$), providing evidence for hypothesis H3. However, the analysis showed no statistically significant effect of tangibles on either leisure satisfaction or tourist loyalty ($\beta_{1a} = -0.009$, $p = 0.788$; $\beta_{2a} = -0.006$, $p = 0.887$), leading to the rejection of hypotheses H1a and H2a. Similarly, empathy did not significantly impact either outcome ($\beta_{1e} = -0.005$, $p = 0.881$; $\beta_{2e} = 0.009$, $p = 0.833$), resulting in the rejection of hypotheses H1e and H2e. Finally, the influence of reliability on both leisure satisfaction and tourist loyalty was also found to be non-significant ($\beta_{1b} = 0.083$, $p = 0.11$; $\beta_{2b} = 0.041$, $p = 0.522$), leading to the rejection of hypotheses H1b and H2b. In conclusion, the findings emphasize the importance of responsiveness, assurance, and leisure satisfaction in shaping tourist loyalty, while indicating that tangibles, empathy, and reliability have less impact in this context.

5.3. Test of mediating effects

The results of the Bootstrap mediation analysis showed that assurance had a significant partial mediating effect on tourist loyalty through

leisure satisfaction (Table 5). The direct effect of assurance was significant ($\beta = 0.285$, 95 % CI [0.111, 0.483]), as was its indirect effect via leisure satisfaction ($\beta = 0.063$, 95 % CI [0.010, 0.165]). The total effect ($\beta = 0.348$, 95 % CI [0.185, 0.548]) indicated that leisure satisfaction explained 18.1 % of the mediation pathway. Conversely, responsiveness demonstrated a significant full mediation effect. Although its direct effect on tourist loyalty was not significant, the indirect effect through leisure satisfaction was significant ($\beta = 0.172$, 95 % CI [0.040, 0.354]), and its total effect ($\beta = 0.408$, 95 % CI [0.255, 0.559]) was fully mediated by leisure satisfaction. These findings emphasize the key role of leisure satisfaction as a mediating factor. However, the analysis revealed that reliability, tangibles, and empathy did not have significant mediating effects between leisure satisfaction and tourist loyalty.

5.4. Moderating effect of novelty seeking

As shown in Table 6, measuring 0.600 ($t = 13.01$, $p < 0.001$) for leisure satisfaction and 0.263 ($t = 4.062$, $p < 0.001$) for tourist loyalty in Models M1 and M4, respectively. Similarly, assurance has a positive impact on tourist loyalty, with a coefficient of 0.252 ($t = 4.679$, $p < 0.001$) in Model M4. This effect remains stable even when novelty seeking, a moderating factor, is included, as shown by coefficients of 0.205 and 0.199 ($p < 0.001$) in Models M5 and M6. Additionally, novelty seeking significantly influences leisure satisfaction and tourist loyalty, with coefficients of 0.447 and 0.382, respectively ($p < 0.001$). Further analysis reveals that novelty seeking interacts with core variables—assurance, responsiveness, and leisure satisfaction—to produce unique moderating effects. In the leisure satisfaction model (M3), the interaction between assurance and novelty seeking has a small but significant positive effect (coefficient = 0.048, $t = 0.920$, $p < 0.05$). However, this interaction is not significant in the tourist loyalty model

Table 2
Measurement model analysis results.

Variables and measurement items	Factor loading	Cronbach's α	CR	AVE
Standards	>0.5	>0.7	>0.7	>0.5
Ski Tourism Service Quality (STSQ)				
Reliability (REL)		0.959	0.960	0.801
REL5: The resort maintained service performance throughout my stay.	0.913			
REL4: I can count on the resort to handle problems effectively.	0.917			
REL3: Services were delivered accurately the first time.	0.920			
REL2: The resort's staff handled my needs consistently and reliably.	0.894			
REL1: The ski resort provided services as promised.	0.884			
REL6: The resort was dependable even during peak times.	0.839			
Responsiveness (RES)		0.941	0.942	0.802
RES4: I received prompt service even during busy periods.	0.891			
RES3: Staff provided timely information about skiing conditions and services.	0.904			
RES2: The resort responded quickly to my requests or concerns.	0.902			
RES1: Staff were always willing to help when I needed assistance.	0.886			
Tangibles (TAN)		0.902	0.902	0.754
TAN3: Staff were neatly dressed and visually represented the resort well.	0.877			
TAN2: The ski equipment and gear provided were in good condition.	0.858			
TAN1: The resort's physical facilities were clean and well-maintained.	0.869			
Empathy (EMP)		0.898	0.899	0.747
EMP3: I felt that the staff cared about my overall experience.	0.881			
EMP2: The resort understood and responded to my individual needs.	0.864			
EMP1: The staff gave me personal attention when needed.	0.848			
Assurance (ASS)		0.896	0.896	0.742
ASS3: The staff demonstrated expert knowledge of skiing and safety.	0.877			
ASS2: I felt safe and confident under the guidance of the resort staff.	0.852			
ASS1: The resort staff were courteous and professional.	0.855			
Leisure Satisfaction (LS)		0.961	0.962	0.807
LS2: I am satisfied with my overall leisure experience at this ski resort.	0.903			
LS3: The skiing experience met or exceeded my expectations.	0.908			
LS4: I found my visit to this ski resort personally fulfilling and rewarding.	0.901			
LS5: I enjoyed myself and felt relaxed during my time at this ski resort.	0.873			

Table 2 (continued)

Variables and measurement items	Factor loading	Cronbach's α	CR	AVE
vLS1: I feel that skiing at this resort was worth the time and effort I invested.	0.896			
LS6: I believe this ski trip added meaningful value to my leisure time.	0.908			
Tourists Loyalty (TL)		0.921	0.921	0.701
TL2: I will consider this ski resort as my first choice rather than skiing at other ski resort.	0.877			
TL3: I will recommend this ski resort to other people to skiing.	0.888			
TL4: I will share with others the pleasant experience and experience of this ski resort.	0.850			
TL1: I will come back to this ski resort to skiing.	0.875			
TL5: I feel emotionally attached to this ski resort.	0.678			
Novelty seeking (NS)		0.927	0.945	0.776
NS3: Visiting this ski resort fulfilled my desire to try something novel and exciting.	0.900			
NS1: This ski resort offered me experiences that were new and different from my past travel experiences.	0.849			
NS2: I found the skiing activities and environment at this resort to be unique compared to other destinations.	0.889			
NS4: I came to this ski resort because I was looking for a fresh and unusual experience.	0.880			
NS5: In my opinion, this ski resort stands out from typical winter tourism destinations.	0.885			

(M6; coefficient = 0.004, $t = 0.064$, $p > 0.05$). Conversely, the interaction between responsiveness and novelty seeking gains significance in the tourist loyalty model. Although approaching significance for leisure satisfaction in Model M3 (coefficient = 0.100, $t = 1.606$, $p < 0.1$), it becomes significant in Model M6 for tourist loyalty (coefficient = 0.131, $t = 1.378$, $p < 0.05$). Additionally, novelty seeking significantly strengthens the link between leisure satisfaction and tourist loyalty (coefficient = 0.089, $t = 1.113$, $p < 0.05$ in Model 6), further improving the model's explanatory power. Model fit (R^2) improves as more variables and interactions are added, with R^2 values increasing from 0.788 in M1 to 0.847 in M3 for leisure satisfaction and from 0.709 in M4 to 0.740 in M6 for tourist loyalty. However, the contribution from interaction terms is modest ($\Delta R^2 < 0.01$). While theoretically significant, interaction effects have a relatively small practical impact. Overall, novelty seeking has a more prominent moderating effect on responsiveness in the tourist loyalty model and on assurance in the leisure satisfaction model. Although interaction effects show weaker significance overall, their combined influence significantly enhances the model's explanatory depth, illustrating how novelty seeking influences outcomes through multiple pathways.

6. Discussion

6.1. Conclusions

This study explores how different service quality factors in ski tourism affect tourist loyalty, with leisure satisfaction serving as a mediator. It also investigates how novelty seeking tendencies among ski tourists influence these relationships, especially how the desire for

Table 3
Discriminative validity test.

Variables	ASS	EMP	TAN	RES	REL	LS	TL
ASS	0.861						
EMP	0.025	0.864					
TAN	0.005	0.635***	0.868				
RES	0.859***	0.039	(0.011)	0.896			
REL	0.846***	0.038	0.027	0.800***	0.895		
LS	0.862***	0.024	(0.016)	0.916***	0.800***	0.898	
TL	0.833***	0.032	(0.005)	0.839***	0.756***	0.843**	0.837
AVE	0.742***	0.747***	0.754***	0.802***	0.801***	0.807**	0.701*

Note(s): ***p < 0.001, **p < 0.01, *p < 0.05. The full spelling is shown in Table 2.

Table 4
Hypothesis test result.

Pathways	Estimate	S.E.	C.R.	p	Result
RES → LS	0.646	0.064	10.500	***	Supported
TAN → LS	−0.009	0.057	−0.270	0.788	Not supported
EMP → LS	−0.005	0.054	−0.149	0.881	Not supported
ASS → LS	0.237	0.073	3.368	***	Supported
REL → LS	0.083	0.054	1.600	0.11	Not supported
LS → TL	0.297	0.083	3.064	**	Supported
REL → TL	0.041	0.058	0.640	0.522	Not supported
RES → TL	0.262	0.088	2.678	**	Supported
TAN → TL	−0.006	0.061	−0.142	0.887	Not supported
EMP → TL	0.009	0.058	0.211	0.833	Not supported
ASS → TL	0.317	0.082	3.482	***	Supported

Note(s): ***p < 0.001, **p < 0.01, *p < 0.05. The full spelling is shown in Table 2.

novelty moderates the connections between service quality and tourist loyalty, service quality and leisure satisfaction, and leisure satisfaction and tourist loyalty. Our results show that RES and ASS positively influence LS, while tangibility, reliability, and empathy do not show significant correlations. Tourists prioritize factors such as the quality of the slopes and the safety and functionality of facilities over the physical

environment, including resort appearance and staff attire (Carus & Castillo, 2021). Therefore, tangibility has a lesser effect on satisfaction. Additionally, since skiing depends on personal skills and natural conditions, tourists' satisfaction is mainly shaped by their personal experiences, such as improvements in skiing technique and snow quality (Hong-Min et al., 2021), rather than the reliability of service providers. Consequently, service stability at ski resorts has less impact on satisfaction than expected. Furthermore, skiing is a relatively independent activity, with tourists' experiences more influenced by their skills and slope conditions than emotional support from staff. Tourists might value professional guidance and safety assurances (Jiang et al., 2025) more than the empathy of service staff. Finally, the unique features of the Chinese market may affect these findings. In China, the ski industry is still developing, and tourists' expectations mostly focus on infrastructure and safety rather than emotional service aspects. Therefore, to improve tourist satisfaction, ski resorts should prioritize safety, facility functionality, slope quality, and enhancing the professionalism of ski instructors and services. Although tangibility, reliability, and empathy have less influence on leisure satisfaction, good infrastructure, safety, and professional services are essential for a better overall tourist experience. Given China's expanding ski market, resorts should tailor their services to meet tourists' needs—especially in ski instruction and safety—to foster trust and loyalty. The results also indicate that

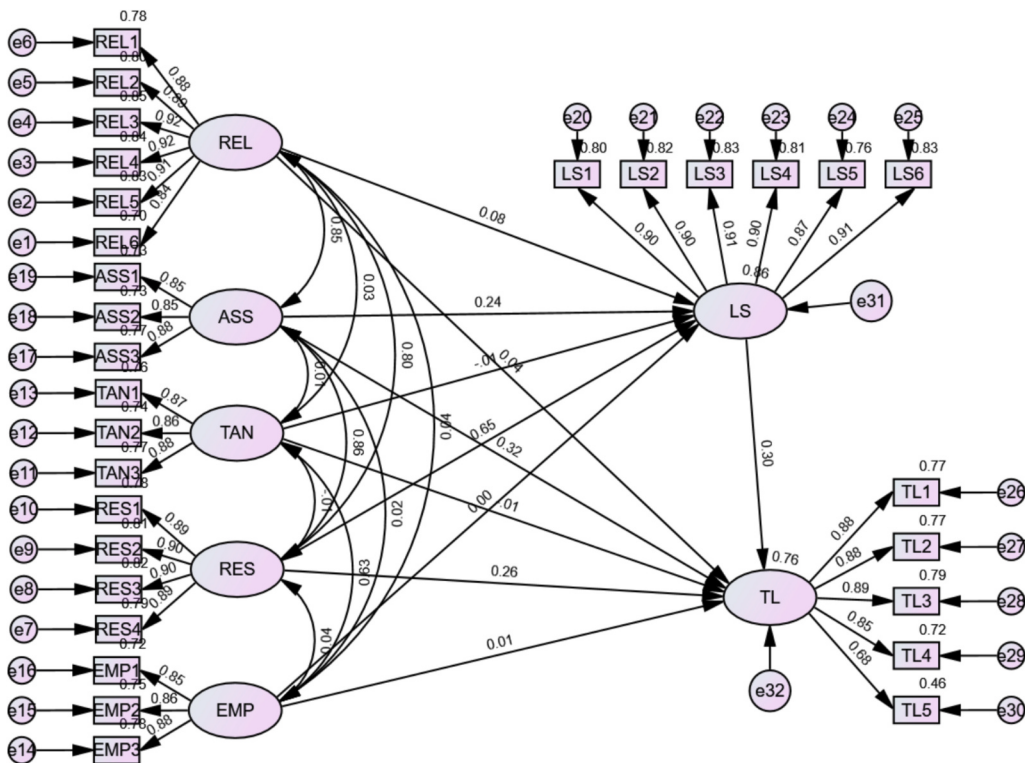


Fig. 3. SEM model (measurement items for each construct are listed in Table 2).

Table 5
Mediating effect test.

Pathway	Parameter	Estimate	Lower	Upper	p	Result
REL → LS → TL	Direct effect	0.037	−0.088	0.165	0.569	Not supported
	Indirect effect	0.022	−0.004	0.075	0.102	
	Total effect	0.059	−0.069	0.188	0.361	
ASS → LS → TL	Direct effect	0.285	0.111	0.483	***	Supported
	Indirect effect	0.063	0.010	0.165	**	
	Total effect	0.348	0.185	0.548	***	
TAN → LS → TL	Direct effect	−0.009	−0.130	0.113	0.841	Not supported
	Indirect effect	−0.004	−0.042	0.022	0.666	
	Total effect	−0.013	−0.138	0.108	0.790	
RES → LS → TL	Direct effect	0.236	−0.003	0.439	0.055	Supported
	Indirect effect	0.172	0.040	0.354	**	
	Total effect	0.408	0.255	0.559	***	
EMP → LS → TL	Direct effect	0.012	−0.104	0.135	0.811	Not supported
	Indirect effect	−0.002	−0.033	0.029	0.807	
	Total effect	0.010	−0.109	0.135	0.840	

Note(s): ***p < 0.001, **p < 0.01, *p < 0.05. The full spelling is shown in Table 2.

responsiveness and assurance positively impact TL, while reliability, tangibility, and empathy do not significantly affect loyalty. This may be because ski tourists prioritize the resort's responsiveness and safety, which directly influence their trust and loyalty. Conversely, the personal

nature of skiing means tourists have lower expectations for the resort's consistency, external environment, and emotional care from staff (Shang et al., 2022). Therefore, traditional service quality factors have less influence on loyalty. Ski resorts should focus on responsiveness and assurance, ensuring they can quickly and effectively meet tourists' needs and provide safety guarantees, thereby strengthening loyalty. Resorts can emphasize professionalism and safety without overemphasizing traditional service quality dimensions (such as tangibility and empathy), as these have limited impact on loyalty.

Furthermore, this study confirms that leisure satisfaction mediates the relationship between responsiveness, assurance, and tourist loyalty. This supports our view that leisure satisfaction plays a crucial role in linking service quality to loyalty (Tran et al., 2022). Specifically, different aspects of service quality, such as responsiveness and assurance, influence tourists' leisure satisfaction, which then affects their loyalty to the ski resort. Our findings agree with previous research, indicating that satisfied tourists are more likely to return and recommend the resort to others, thereby increasing loyalty (Hussain et al., 2023). However, leisure satisfaction does not mediate the relationship between reliability, tangibility, empathy, and tourist loyalty, probably because the main experience in skiing depends more on the quality of the slopes, safety, and personal skills rather than the consistency of service, appearance, or emotional connection. Tourist loyalty in skiing is more driven by the skiing experience itself than by traditional service quality factors. As a result, these aspects of service quality have a weaker impact on loyalty through leisure satisfaction. Finally, the study also shows that novelty-seeking tendencies can influence the connection between ski tourism service quality and tourist loyalty, especially regarding responsiveness and assurance in the ski tourism service quality model. Although the interaction effect is generally weak, the combined impact notably enhances the model's explanatory power, indicating that novelty-seeking affects tourists' key outcomes in various ways. Specifically, tourists who seek novelty tend to value the uniqueness and novelty of the service, which impacts their experience and loyalty to skiing differently. This finding underscores the important role

Table 6
Moderating effect test.

Variables	Leisure satisfaction			Tourist loyalty		
	M1	M2	M3	M4	M5	M6
Gender	0.004 (0.175)	0.013 (0.639)	0.011 (0.52)	−0.036 (−1.28)	−0.027 (−1.024)	−0.025 (−0.945)
Age	0.025 (0.917)	0.023 (0.953)	0.026 (1.085)	−0.053 (−1.647)	−0.05 (−1.627)	−0.052 (−1.67)
Education	−0.012 (−0.469)	−0.017 (−0.793)	−0.014 (−0.665)	−0.008 (−0.282)	−0.016 (−0.555)	−0.02 (−0.705)
Ski years	0.000 (−0.001)	0.008 (0.352)	0.005 (0.2)	0.024 (0.769)	0.031 (1.044)	0.032 (1.057)
Ski frequency	0.018 (0.741)	0.008 (0.407)	0.004 (0.215)	0.034 (1.212)	0.03 (1.125)	0.031 (1.16)
RES	0.600*** (13.01)	0.373*** (8.433)	0.370*** (8.339)	0.263*** (4.062)	0.202*** (3.249)	0.190*** (3.01)
ASS	0.230** (2.865)	0.041*** (1.04)	0.048*** (1.198)	0.252*** (4.679)	0.205*** (3.974)	0.199*** (3.826)
LS				0.298*** (5.017)	0.077 (1.178)	0.091 (1.362)
NS		0.447*** (11.662)	0.438*** (11.446)		0.382*** (6.637)	0.374*** (6.423)
int_ASS * NS			0.048*** (0.920)			0.004 (0.064)
int_RES * NS			0.100 (1.606)			0.131*** (1.378)
int_LS * NS						0.089*** (1.113)
R ²	0.788	0.843	0.847	0.709	0.738	0.740
△R ²	0.784	0.839	0.842	0.702	0.732	0.731
F	181.64***	232.315***	178.094***	105.434***	109.769***	78.255***
△F	181.64***	135.999***	3.269**	105.434***	44.049***	0.600

Note: The brackets are t-value. The full spelling is shown in Table 2.

of novelty-seeking in understanding tourist behavior, especially in fostering loyalty and leisure satisfaction.

6.2. Theoretical implications

By adding novelty-seeking as a moderating factor to the traditional service quality–satisfaction–loyalty framework, the research enhances and broadens existing models within the context of ski tourism. Including this psychological trait highlights individual differences among tourists and shows how personal characteristics interact with service quality dimensions to influence loyalty development. This integration not only deepens understanding of tourist behavior in specialized tourism settings but also increases the explanatory power of traditional loyalty models by incorporating a behavioral segmentation perspective. Moreover, the study provides empirical evidence on the different effects of service quality dimensions on leisure satisfaction and loyalty outcomes. Specifically, responsiveness and assurance proved to be the most impactful dimensions, suggesting that emotional and interpersonal aspects of service delivery are crucial for increasing tourist satisfaction and repeat visitation intentions in ski tourism.

6.3. Managerial implications

From a practical perspective, the findings provide valuable insights for ski resort managers looking to improve customer experiences and build long-term loyalty. First, the focus on responsiveness and assurance highlights the need for staff training programs that improve service efficiency, empathy, and dependability. Managers should emphasize frontline interactions that show attentiveness, competence, and confidence to meet tourists' expectations. Second, the moderating role of novelty-seeking indicates that ski resorts should diversify their service options to meet different psychological needs. For high novelty-seekers, offering unique, exciting, and personalized experiences—such as themed events, adventure activities, or cultural fusion packages—can increase satisfaction and loyalty while also making the resort stand out in a competitive market. From a policy perspective, the study emphasizes the importance of strategic investment in service quality infrastructure and workforce development across ski tourism areas. Policymakers can promote sustainable growth by supporting public–private partnerships that establish quality standards, foster innovation, and encourage the development of experience-driven tourism. Policies that promote creative tourism, regional uniqueness, and the enhancement of experiential value are especially important for attracting the growing segment of tourists who seek novel and experiential activities.

6.4. Limitations and future research

This study has several limitations that should be acknowledged. First, the data sample focuses only on the ski tourism market in China, which may not fully represent the diversity of the global ski tourism industry. As a result, the applicability of the findings might be limited. Future research could expand the sample to include ski tourists from different countries and regions to determine if the results hold across various cultural and tourism contexts. Second, this study used a cross-sectional research design, which limits our ability to observe changes in tourist satisfaction and loyalty over time. To better understand the dynamics of tourist behavior, future studies could adopt a longitudinal approach to track changes in satisfaction and loyalty at multiple points in time. Third, while this study examined novelty seeking as a moderating psychological trait, it did not consider other psychological factors, such as risk preference or emotional experiences, which could also significantly influence tourist satisfaction and loyalty. Future research could explore these additional psychological traits for a more comprehensive understanding of tourist behavior. Fourth, the study specifically focused on ski tourism, a unique leisure activity with particular features

like seasonality, technical demands, and safety concerns. Therefore, the findings may not apply to other types of leisure or adventure tourism. Future research could compare results across different tourism sectors (e.g., beach, cultural, or eco-tourism) to evaluate the model's relevance in other settings. Additionally, the sample includes many respondents with little or no ski experience (for example, more than 40 % have less than two years of ski experience). This demographic bias might influence perceptions of service quality, as beginner skiers may prioritize different aspects of the experience (such as safety and instruction) compared to experienced skiers. Future studies should aim to include a broader range of ski experience levels to test the model with diverse user groups.

CRediT authorship contribution statement

Lingkui Kong: Writing – original draft, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Chuanwen Yu:** Writing – review & editing, Writing – original draft, Software, Resources, Methodology, Formal analysis. **Changzhou Chen:** Writing – review & editing, Supervision, Funding acquisition, Formal analysis.

Ethical approval statement

This study has been approved by the Ethics Research Committee of Heze University, approval number HZU-2025-001.

Declaration of competing interest

On behalf of all authors, the corresponding author states that there is no conflict of interest.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.actpsy.2025.105819>.

Data availability

Data Availability Materials, including extracted data from included studies and data used for analyses, will be provided to researchers upon reasonable request to the corresponding author.

References

- Abubakar, B., & Mavondo, F. (2014). Tourism destinations: Antecedents to customer satisfaction and positive word-of-mouth. *Journal of Hospitality Marketing & Management*, 23(8), 833–864. <https://doi.org/10.1080/19368623.2013.796865>
- Ahrholdt, D. C., Gudergan, S. P., & Ringle, C. M. (2017). Enhancing service loyalty: The roles of delight, satisfaction, and service quality. *Journal of Travel Research*, 56(4), 436–450. <https://doi.org/10.1177/0047287516649058>
- Albaity, M., & Melhem, S. B. (2017). Novelty seeking, image, and loyalty—The mediating role of satisfaction and moderating role of length of stay: International tourists' perspective. *Tourism Management Perspectives*, 23, 30–37. <https://doi.org/10.1016/j.tmp.2017.04.001>
- Antón, C., Camarero, C., & Laguna-García, M. (2017). Towards a new approach of destination loyalty drivers: Satisfaction, visit intensity and tourist motivations. *Current Issues in Tourism*, 20(3), 238–260. <https://doi.org/10.1080/13683500.2014.936834>
- Bausch, T., Ortanderl, F., & Pröbstl-Haider, U. (2024). Rethinking growth orientation: Do ski-resorts' strategies fit the profiles of today's alpine skiers? *International Journal of Tourism Research*, 26(4), Article e2708. <https://doi.org/10.1002/jtr.2708>
- Bonnefoy-Claudet, L., & Ghantous, N. (2013). Emotions' impact on tourists' satisfaction with ski resorts: The mediating role of perceived value. *Journal of Travel & Tourism Marketing*, 30(6), 624–637. <https://doi.org/10.1080/10548408.2013.810999>

- Carus, L., & Castillo, I. (2021). Managing risk in ski resorts: Environmental factors affecting actual and estimated speed on signposted groomed slopes in a cohort of adult recreational alpine skiers. *Plos One*, 16(8), Article e0256349. <https://doi.org/10.1371/journal.pone.0256349>
- Cetin, G. (2020). Experience vs quality: predicting satisfaction and loyalty in services. *The Service Industries Journal*, 40(15–16), 1167–1182. <https://doi.org/10.1080/02642069.2020.1807005>
- Cham, T. H., Cheah, J. H., Ting, H., & Memon, M. A. (2022). Will destination image drive the intention to revisit and recommend? Empirical evidence from golf tourism. *International Journal of Sports Marketing and Sponsorship*, 23(2), 385–409. <https://doi.org/10.1108/IJMS-02-2021-0040>
- Cossío-Silva, F. J., Revilla-Camacho, M. Á., & Vega-Vázquez, M. (2019). The tourist loyalty index: A new indicator for measuring tourist destination loyalty? *Journal of Innovation & Knowledge*, 4(2), 71–77. <https://doi.org/10.1016/j.jik.2017.10.003>
- Escobar Rivera, D., Casadesús Fa, M., Alexandre Costa Araújo Sampaio, P., & Simon Villar, A. (2019). Exploring the role of service delivery in remarkable tourism experiences. *Sustainability*, 11(5), Article 1382. <https://doi.org/10.3390/su11051382>
- Fang, Y., Jiang, Y., Tsai, C. H. K., Luo, B., & Chen, M. H. (2021). Spatial patterns of China's ski resorts and their influencing factors: A geographical detector study. *Sustainability*, 13(8), Article 4232. <https://doi.org/10.3390/su13084232>
- Ferrand, A., & Vecchiattini, D. (2002). The effect of service performance and ski resort image on skiers' satisfaction. *European Journal of Sport Science*, 2(2), 1–17. <https://doi.org/10.1080/17461390200072207>
- Font, X., Torres-Delgado, A., Crabolu, G., Palomo Martinez, J., Kantenbacher, J., & Miller, G. (2023). The impact of sustainable tourism indicators on destination competitiveness: The European Tourism Indicator System. *Journal of Sustainable Tourism*, 31(7), 1608–1630. <https://doi.org/10.1080/09669582.2021.1910281>
- Grönroos, C. (1984). A service quality model and its marketing implications. *European Journal of Marketing*, 18(4), 36–44. <https://doi.org/10.1108/EUM00000000004784>
- Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science*, 40(3), 414–433. <https://doi.org/10.1007/s11747-011-0261-6>
- Hall, J., O'Mahony, B., & Gayler, J. (2017). Modelling the relationship between attribute satisfaction, overall satisfaction, and behavioural intentions in Australian ski resorts. *Journal of Travel & Tourism Marketing*, 34(6), 764–778. <https://doi.org/10.1080/10548408.2016.1232672>
- Happ, E., Schnitzer, M., & Scholl-Grissemann, U. (2023). Ski touring on groomed slopes—Exploring an alpine winter sports trend and potential tourism product. *Tourism Management Perspectives*, 48, Article 101155. <https://doi.org/10.1016/j.tmp.2023.101155>
- Hong-Min, A. N., Xiao, C. D., Tong, Y., & Fan, J. (2021). Ice-and-snow tourism and its sustainable development in China: A new perspective of poverty alleviation. *Advances in Climate Change Research*, 12(6), 881–893. <https://doi.org/10.1016/j.accre.2021.09.004>
- Huang, S. (2025). The impact of ski servicescape on tourist loyalty: Evidence from Chinese market. *Current Issues in Tourism*, 28(2), 220–239. <https://doi.org/10.1080/13683500.2023.2300038>
- Hussain, A., Li, M., Kanwel, S., Asif, M., Jameel, A., & Hwang, J. (2023). Impact of tourism satisfaction and service quality on destination loyalty: A structural equation modeling approach concerning China resort hotels. *Sustainability*, 15(9), Article 7713. <https://doi.org/10.3390/su15097713>
- Jeong, Y., & Kim, S. (2020). A study of event quality, destination image, perceived value, tourist satisfaction, and destination loyalty among sport tourists. *Asia Pacific Journal of Marketing and Logistics*, 32(4), 940–960. <https://doi.org/10.1108/APJML-02-2019-0101>
- Ji, M., Wong, I. A., Eves, A., & Scarles, C. (2016). Food-related personality traits and the moderating role of novelty-seeking in food satisfaction and travel outcomes. *Tourism Management*, 57, 387–396. <https://doi.org/10.1016/j.tourman.2016.06.003>
- Jiang, B., Zhang, C., Cui, Y., Zhu, J., & Liu, Z. (2025). Enhancement of Harbin ice and snow tourism destination competitiveness: A large-scale data study based on sentiment analysis and Latent Dirichlet Allocation. *Plos One*, 20(3), Article e0319435. <https://doi.org/10.1371/journal.pone.0319435>
- Kiatkawsin, K., Bui, N. A., Hrankai, R., & Jeong, K. (2021). The moderating roles of sensation seeking and worry among nature-based adventure tourists. *International Journal of Environmental Research and Public Health*, 18(4), 2021. <https://doi.org/10.3390/ijerph18042021>
- Kindström, D., & Kowalkowski, C. (2014). Service innovation in product-centric firms: A multidimensional business model perspective. *Journal of Business & Industrial Marketing*, 29(2), 96–111. <https://doi.org/10.1108/JBIM-08-2013-0165>
- Leal Filho, W., Dinis, M. A. P., Nagy, G. J., Fracassi, U., & Aina, Y. A. (2024). A ticket to where? Dwindling snow cover impacts the winter tourism sector as a consequence of climate change. *Journal of Environmental Management*, 356, Article 120554. <https://doi.org/10.1016/j.jenvman.2024.120554>
- Lee, T. H., & Crompton, J. (1992). Measuring novelty seeking in tourism. *Annals of Tourism Research*, 19(4), 732–751. [https://doi.org/10.1016/0160-7383\(92\)90064-V](https://doi.org/10.1016/0160-7383(92)90064-V)
- Lepp, A., & Gibson, H. (2008). Sensation seeking and tourism: Tourist role, perception of risk and destination choice. *Tourism Management*, 29(4), 740–750. <https://doi.org/10.1016/j.tourman.2007.08.002>
- Li, F., & Su, Q. (2022). The roles of novelty seeking and food authenticity in youth travellers' decision-making process at night markets: An application of a model of goal-directed behaviour. *Current Issues in Tourism*, 25(14), 2322–2337. <https://doi.org/10.1080/13683500.2021.1961697>
- Liu, H., Chu, H., Huang, Q., & Chen, X. (2016). Enhancing the flow experience of consumers in China through interpersonal interaction in social commerce. *Computers in Human Behavior*, 58, 306–314. <https://doi.org/10.1016/j.chb.2016.01.012>
- Liu, J., Kuai, X., & Wang, P. (2025). Research on the tourism service quality evaluation of Gongbei Lingnan community under the perspective of SERVQUAL theory. *Frontiers in Sustainable Cities*, 6, Article 1502234. <https://doi.org/10.3389/frsc.2024.1502234>
- Maccioni, S., d'Angella, F., De Carlo, M., & Sfogliarini, B. (2024). Stakeholder engagement and triggers for sustainable development in complex fragile ecosystems: Evidence from Alpine Trentino region. *Sustainability*, 16(22), Article 9879. <https://doi.org/10.3390/su16229879>
- Min, B., & Schwarz, N. (2022). Novelty as opportunity and risk: a situated cognition analysis of psychological control and novelty seeking. *Journal of Consumer Psychology*, 32(3), 425–444. <https://doi.org/10.1002/jcpsy.1264>
- Mitas, O., & Bastiaansen, M. (2018). Novelty: A mechanism of tourists' enjoyment. *Annals of Tourism Research*, 72, 98–108. <https://doi.org/10.1016/j.annals.2018.07.002>
- Moreno-Gené, J., Sánchez-Pulido, L., Cristobal-Fransi, E., & Daries, N. (2018). The economic sustainability of snow tourism: The case of ski resorts in Austria, France, and Italy. *Sustainability*, 10(9), Article 3012. <https://doi.org/10.3390/su10093012>
- Morin, S., Samacoits, R., François, H., Carmagnola, C. M., Abegg, B., Demiroglu, O. C., ... Cauchy, A. (2021). Pan-European meteorological and snow indicators of climate change impact on ski tourism. *Climate Services*, 22, Article 100215. <https://doi.org/10.1016/j.cliser.2021.100215>
- Mun, N. Y., Lee, W., & Jeong, C. (2018). Traveling from South to North: The relationships between historical nostalgia, novelty seeking, and attitudes to visit North Korea. *International Journal of Tourism Sciences*, 18(3), 170–191. <https://doi.org/10.1080/15980634.2018.1517934>
- Oviedo-García, M. Á., Vega-Vázquez, M., Castellanos-Verdugo, M., & Orgaz-Aguiera, F. (2019). Tourism in protected areas and the impact of servicescape on tourist satisfaction, key in sustainability. *Journal of Destination Marketing & Management*, 12, 74–83. <https://doi.org/10.1016/j.jdm.2019.02.005>
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, 49(4), 41–50. <https://doi.org/10.1177/002224298504900403>
- Peters, M., & Pikkemaat, B. (2006). Crisis management in Alpine winter sports resorts—The 1999 avalanche disaster in Tyrol. *Journal of Travel & Tourism Marketing*, 19(2–3), 9–20. https://doi.org/10.1300/J073v19n02_02
- Pikkemaat, B., Bichler, B. F., & Peters, M. (2020). Exploring the crowding-satisfaction relationship of skiers: The role of social behavior and experiences. *Journal of Travel & Tourism Marketing*, 37(8–9), 902–916. <https://doi.org/10.1080/10548408.2020.1763229>
- PJ, S., Singh, K., Kokkranikal, J., Bharadwaj, R., Rai, S., & Antony, J. (2023). Service quality and customer satisfaction in hospitality, leisure, sport and tourism: An assessment of research in web of science. *Journal of Quality Assurance in Hospitality & Tourism*, 24(1), 24–50. <https://doi.org/10.1080/1528008X.2021.2012735>
- Pratminingsih, S. A., Munawar, F., & Rudatin, C. L. (2025). Creative tourism experience: Exploring the influence of novelty-seeking, perceived coolness and servicescape on behavioral intention. *Cogent Business & Management*, 12(1), Article 2447906. <https://doi.org/10.1080/23311975.2024.2447906>
- Rosenbaum, M. S., & Massiah, C. (2011). An expanded servicescape perspective. *Journal of Service Management*, 22(4), 471–490. <https://doi.org/10.1108/09564231111155088>
- Salim, E., Mayer, M., Sacher, P., & Ravel, L. (2023). Visitors' motivations to engage in glacier tourism in the European Alps: comparison of six sites in France, Switzerland, and Austria. *Journal of Sustainable Tourism*, 31(6), 1373–1393. <https://doi.org/10.1080/09669582.2022.2044833>
- Scott, D., Steiger, R., Rutt, M., Pons, M., & Johnson, P. (2020). Climate change and ski tourism sustainability: An integrated model of the adaptive dynamics between ski area operations and skier demand. *Sustainability*, 12(24), Article 10617. <https://doi.org/10.3390/su122410617>
- Seow, A. N., Foroughi, B., & Choong, Y. O. (2024). Tourists' satisfaction, experience, and revisit intention for wellness tourism: E word-of-mouth as the mediator. *SAGE Open*, 14(3), Article 21582440241274049. <https://doi.org/10.1177/21582440241274049>
- Shang, Z., Luo, J. M., & Kong, A. (2022). Topic modelling for ski resorts: an analysis of experience attributes and seasonality. *Sustainability*, 14(6), 3533. <https://doi.org/10.3390/su14063533>
- Sheppard, V. A., & Williams, P. W. (2016). Factors that strengthen tourism resort resilience. *Journal of Hospitality and Tourism Management*, 28, 20–30. <https://doi.org/10.1016/j.jhtm.2016.04.006>
- Skavronskaya, L., Moyle, B., Scott, N., & Kralj, A. (2020). The psychology of novelty in memorable tourism experiences. *Current Issues in Tourism*, 23(21), 2683–2698. <https://doi.org/10.1080/13683500.2019.1664422>
- Spandre, P., François, H., Verfaillie, D., Pons, M., Vernay, M., Lafaysse, M., ... Morin, S. (2019). Winter tourism under climate change in the Pyrenees and the French Alps: relevance of snowmaking as a technical adaptation. *The Cryosphere*, 13(4), 1325–1347. <https://doi.org/10.5194/tc-13-1325-2019>
- Steiger, R., & Scott, D. (2020). Ski tourism in a warmer world: Increased adaptation and regional economic impacts in Austria. *Tourism Management*, 77, Article 104032. <https://doi.org/10.1016/j.tourman.2019.104032>
- Tran, P. K. T., Nguyen, P. D., Le, A. H. N., & Tran, V. T. (2022). Linking self-congruity, perceived quality and satisfaction to brand loyalty in a tourism destination: the moderating role of visit frequency. *Tourism Review*, 77(1), 287–301. <https://doi.org/10.1108/TR-04-2020-0143>
- Wang, Y., Liu, Y., Yang, L., Gu, F., Li, X., Zha, R., ... Zhang, X. (2015). Novelty seeking is related to individual risk preference and brain activation associated with risk

- prediction during decision making. *Scientific Reports*, 5(1), Article 10534. <https://doi.org/10.1038/srep10534>
- Wu, Y., & Yang, J. (2022). Lifestyle skiing contributes to health and eudaimonic well-being: An emergent Chinese lifestyle mobility. *Tourism Geographies*, 24(6–7), 1134–1152. <https://doi.org/10.1080/14616688.2021.1955958>
- Xia, L., Lee, T. J., & Kim, D. K. (2024). Relationships between motivation, service quality, tourist satisfaction, quality of life, and spa and wellness tourism. *International Journal of Tourism Research*, 26(1), Article e2624. <https://doi.org/10.1002/jtr.2624>
- Yang, J., Wang, Y., Tang, F., Guo, X., Chen, H., & Ding, G. (2023). Ice-and-snow tourism in China: Trends and influencing factors. *Humanities and Social Sciences Communications*, 10(1), 1–12. <https://doi.org/10.1057/s41599-023-02288-4>
- Yoon, Y., & Uysal, M. (2005). An examination of the effects of motivation and satisfaction on destination loyalty: A structural model. *Tourism Management*, 26(1), 45–56. <https://doi.org/10.1016/j.tourman.2003.08.016>
- Yu, C., Kong, S., Yang, H., & Li, Y. (2025). Development of ice and snow tourism destinations in China: ecological security assessment and obstacle degree analysis. *Current Issues in Tourism*, 28(10), 1548–1569. <https://doi.org/10.1080/13683500.2024.2345818>
- Yuan, A., & Hong, J. (2024). Impacts of virtual reality on tourism experience and behavioral intentions: moderating role of novelty seeking. *Journal of Hospitality and Tourism Research*, 48(6), 1067–1080. <https://doi.org/10.1177/10963480231171301>