

The Motivation for Ice and Snow Sports Tourism Consumption and Local Attachment: A Study on the Mediating Role of Tourism Involvement

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Abstract

The objective of this research was to explore the interrelationships among consumption motivation, place attachment, and tourism participation in ice and snow sports tourism and analyze their impact on tourism experience. The research design adopted convenience sampling to select ice and snow sports tourists from Northeast China and the Beijing-Tianjin-Hebei region. Data were collected via questionnaire surveys. The research scale covered three main dimensions including sports tourism motivation, tourism participation, and place attachment, with core motivational factors like social interaction, curiosity exploration, physical and mental relaxation, and interpersonal communication. Before the formal investigation, the scale underwent expert review and pre-testing. For data analysis, correlation analysis and regression analysis were utilized for data modeling and validation. The findings revealed that consumption motivation in ice and snow sports tourism positively impacts tourism participation and place attachment significantly. Specifically, tourists with stronger motivation have deeper emotional attachments to the destination's environment and cultural atmosphere. Moreover, tourism involvement mediates between consumption motivation and place attachment. This implies that deep participation in ice and snow sports can strengthen the emotional connection to the destination. Based on these results, it's recommended to design more attractive activities and interactive experiences to stimulate travel motivation, enhance tourism involvement and place attachment. Also, improving the destination environment and facilities can boost the overall tourism experience and promote the sustainable development of the ice and snow sports tourism industry, thus providing valuable theoretical support for market decision-making and product development in ice and snow tourism.

Keywords: Ice and snow sports tourism; Sports tourism motivation; Place Attachment; Tourism involvement

Introduction

Ice and snow sports tourism has gradually become a popular leisure activity, especially in China, where the successful hosting of the Winter Olympics has further driven the rapid growth of this market (Chen, 2019). However, despite the enormous market potential of ice and snow tourism, there is still a lack of systematic research in this field, especially in the study of the correlation between psychological factors such as consumption motivation, place attachment, and tourism participation. Existing literature mostly focuses on the analysis of traditional tourism motivations and behaviors, with less attention paid to the in-depth exploration of ice and snow sports tourism as a unique form of tourism. This special type of

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tourism is significantly different from general forms of tourism due to its strong dependence on natural environment, site facilities, and seasonality (Ji&Xiao, 2017). Therefore, it is necessary to study the motivations and participation patterns of tourists based on the unique attributes of ice and snow sports tourism, in order to cope with the growing market demand and diverse tourism expectations.

Although the academic community generally recognizes the importance of Place Attachment and tourism participation in tourism decision-making, most research still remains at the stage of general theoretical discussion and lacks in-depth analysis of the field of ice and snow sports tourism (Liu, 2016). Place Attachment not only involves tourists' emotional connection with the tourist destination, but is also closely related to tourists' willingness to revisit, experience satisfaction, and activity participation. This emotional connection is particularly significant in ice and snow sports tourism that heavily relies on natural environments and professional facilities (Li, 2009). At the same time, the level of tourism participation directly determines the depth and breadth of tourists' participation in ice and snow sports activities, and is an important indicator for measuring the quality of their tourism experience. However, the interactive mechanisms of these factors in the context of ice and snow tourism have not been fully studied. Based on this, this study will focus on exploring the interrelationships between consumption motivation, Place Attachment, and tourism participation in ice and snow sports tourism, providing empirical support for marketing, product design, and policy formulation in this field, and helping to promote the sustainable development of the ice and snow tourism industry.

Research Objectives

1. To study the motivation, local attachment, tourist participation and consumption behavior of ice and snow sports tourism.
2. To study the relationship between various variables such as motivation for ice and snow sports tourism, local attachment, tourist participation and consumption behavior of ice and snow sports tourism.
3. To study whether motivation for ice and snow sports tourism affects consumption behavior through local attachment and tourist participation.
4. To create a theoretical model of motivation, local attachment, tourist participation and consumption behavior of ice and snow sports tourism.

Research Methodology

1. Population and sample

The target population of this study is ice and snow sports tourists from Northeast China and the Beijing Tianjin Hebei region, mainly focusing on tourists who actively participate in ice and snow sports such as skiing, ice skating, etc. To ensure the breadth and representativeness of the sample, the study used convenience sampling to select research samples from multiple large ice and snow venues. With the assistance of venue management personnel, the research team distributed questionnaires to tourists and obtained anonymous data. Considering the particularity of ice and snow sports tourism, the study pays special attention to three key psychological factors of tourists: tourism motivation, place attachment,

and tourism involvement. It is expected to collect Over 600 valid samples to meet the statistical requirements for subsequent data analysis.

2. Research tools

The study used a self-designed scale to measure three core variables:

Sports tourism motivation: Based on the theories of Wann (1995) and Crompton (1979), 19 projects were designed, covering dimensions such as social motivation, curiosity motivation, relaxation motivation, and relationship motivation, to examine the internal and external driving forces of tourists in ice and snow sports tourism.

Tourism involvement: Referring to the EIS scale developed by McIntyre and Pigram (1992), and taking into account the characteristics of ice and snow tourism, 19 items were designed to evaluate tourists' psychological investment and behavioral performance in ice and snow tourism based on three dimensions: importance, enjoyment, and risk.

Place Attachment: Based on Williams and Vaske's (2003) two-dimensional scale, eight items were designed to measure tourists' local identity and dependence on tourist destinations, mainly examining tourists' emotional belonging and functional dependence on ice and snow sports venues.

The scale undergoes expert review and pre testing before the start of the study to ensure its reliability and validity meet the standards. Cronbach's alpha coefficients all exceed 0.80, indicating a high level of internal consistency and measurement stability.

3. Data collection

The data collection adopts a combination of offline and online methods. The research team collaborated with the ice and snow venue management personnel to distribute offline questionnaires to visitors at the entrance of the venue, while providing online platform QR codes for visitors to fill out electronic versions of the questionnaires. All questionnaires are filled out anonymously to ensure the privacy and authenticity of the respondents' data. It is expected to collect 606 valid questionnaires, and the data will have high representativeness and analytical value.

4. Data analysis

This study constructs a path model between sports tourism motivation, tourism participation, and place attachment, and examines potential mediating effects and direct impact relationships.

5. Conceptual framework

This study is based on literature review and theoretical analysis, and constructs a theoretical model centered on the consumption motivation, tourism involvement, and Place Attachment of ice and snow sports tourism. Assuming that sports tourism motivation can indirectly affect place attachment through tourism involvement, tourism involvement plays a key role as a mediating variable between motivation and place attachment. The study will validate the path model through regression analysis, clarify the mechanisms and strengths of the interactions between variables, and provide theoretical support and empirical evidence for the management and policy-making of the ice and snow tourism market.

Research Scope

1. Research object and geographical scope

The target group of this study is ice and snow sports tourists from Northeast China and the Beijing Tianjin Hebei region, especially those who actively participate in ice and snow sports such as skiing and skating. These regions, as important markets for ice and snow sports in China, have numerous ski resorts and ice and snow activity centers, representing a wide range of ice and snow sports tourists. The study selected large ice and snow venues and tourist groups within the region to ensure sample diversity and regional representativeness (Small et al., 2012).

2. Scope of research content

This study focuses on the psychological factors of ice and snow sports tourists, with a particular emphasis on exploring the interrelationships between sports tourism motivation, Place Attachment, and tourism involvement. The research content includes:

Sports tourism motivation: Analyze the intrinsic driving forces behind tourists' participation in ice and snow sports tourism, including social motivation, curiosity motivation, physical and mental relaxation motivation, and interpersonal relationship motivation (Sato et al., 2014).

Place Attachment: Examining tourists' emotional connections to ice and snow tourism destinations, including two dimensions of local dependence and local identity, and exploring their role in tourism decision-making.

Tourism involvement: Analyze the depth of tourists' participation in ice and snow sports tourism, including importance, enjoyment, and risk, and explore the mediating effect of tourism involvement between consumption motivation and place attachment (Weed&Bull, 2010).

3. Limitations of research methods

This study is limited to ice and snow venues in Northeast China and the Beijing Tianjin Hebei region, so the external validity of the research results may be limited by geographical scope (Yeh, 2013). Future research can expand the sample size to cover more ice and snow tourism destinations, further validate the conclusions of this study, and enhance the universality and interpretability of the results.

4. Research time frame

The data collection stage of the study is in the second half of 2024, with the survey focusing on the peak season of ice and snow tourism to ensure the timeliness and representativeness of the data (Prayao & Ryan, 2012). The study will also analyze the potential impact of market changes and trends in ice and snow sports tourism after the Winter Olympics on tourist behavior patterns.

5. Selection of research variables

The core variables and their measurement dimensions of this study include:

Sports tourism motivation: measures the internal and external driving forces of tourists, and analyzes them from the aspects of socialization, curiosity, relaxation, and interpersonal interaction.

Place Attachment: divided into two dimensions: local dependence (functional needs) and local identity (emotional belonging), it evaluates tourists' emotional and functional attachment to the destination.

Tourism involvement: Measuring tourists' level of participation from three dimensions: importance, enjoyment, and risk, and evaluating their psychological investment and behavioral performance in tourism activities.

By focusing on a specific group of ice and snow sports tourists in a certain region and analyzing psychological factors such as sports tourism motivation, Place Attachment, and tourism involvement, this study aims to reveal the deep-seated behavioral driving forces and influencing paths of ice and snow sports tourism. The research results will provide important empirical support and theoretical basis for the marketing strategy and product development of the ice and snow tourism market, and help the sustained growth and development of the ice and snow sports tourism industry.

Research Findings

1. Understand the correlation between variables such as motivation for ice and snow sports tourism, Place Attachment, tourism participation of ice and snow sports tourism

	Consumer Motivation	Tourism Involvement	Place Attachment
Consumer Motivation	1		
Tourism Involvement	0.715**	1	
Place Attachment	0.756**	0.365**	1

Table 1 correlation analysis
(Source: Constructed by Researchers)

The correlation analysis results show that there is a significant positive correlation between consumer motivation, tourism involvement, and local attachment in ice and snow sports tourism. The correlation coefficient between consumer motivation and tourism involvement is $r=0.715$, $p<0.01$. Tourists with stronger consumer motivation have a higher level of tourism involvement. This means that the intrinsic driving forces of tourists in ice and snow sports tourism, such as social interaction, curiosity exploration, and relaxation needs, can significantly increase their frequency and depth of participation. For example, tourists with strong motivation are more inclined to frequently participate in skiing activities, try different entertainment projects, and show a higher level of tourism involvement.

In addition, the correlation coefficient between consumer motivation and place attachment is $r=0.756$, $p<0.01$. Show strong positive correlation. This result indicates that tourists' consumption motivation not only stimulates participation behavior, but also directly promotes their emotional attachment to the destination of ice and snow sports tourism. For example, tourists hope to enhance their connections with family and friends through activities such as skiing, meet their social needs, and thus form a deep emotional dependence and willingness to revisit the ski resort. The correlation coefficient between tourism involvement and place attachment is $r=0.365$, $p<0.01$. Although the correlation is relatively weak, it is still significant. This indicates that tourism involvement plays a partial mediating role between

consumer motivation and place attachment. The high involvement behavior of tourists, such as participating in professional skiing training or challenging difficult ski slopes, not only enhances their functional dependence on the ski resort, but also promotes their emotional connection to the destination. This result further confirms the "experience accumulation effect" in the theory of tourism behavior, that is, through deep tourism experiences, tourists not only gain positive emotional experiences, but also increase their loyalty and sense of belonging to the tourism destination.

This study explores the impact of consumption motivation and place attachment in ice and snow sports tourism on tourism involvement, as well as the mediating effect of tourism involvement between consumption motivation and place attachment. To ensure the rigor of the research, this study uses hierarchical regression analysis to verify the mediating effect of tourism involvement variables based on the viewpoint proposed by Baron and Kenny (1986), and discusses the results based on the analysis.

Baron and Kenny (1986) suggested that the testing of mediation effects should be validated using four regression models, namely Model 1: the independent variable has a significant positive impact on the dependent variable; Mode 2: The independent variable has a significant positive impact on the mediating variable; Mode 3: The mediating variable has a significant positive impact on the dependent variable; Mode 4: Simultaneously adding independent and mediating variables to the regression model, the mediating variable will have a significant impact on the dependent variable, while the impact of the independent variable on the dependent variable will weaken, or even show an insignificant situation. If the impact weakens and the independent variable no longer has a significant effect on the dependent variable, it is called complete mediation; If the independent variable still has a significant impact on the dependent variable after the influence has weakened, it is called partial mediation.

variable	place attachment	Tourism involvement	place attachment	
	mode1	mode2	mode3	mode4
control variable	0.016	0.034	0.019	0.036
consumer motivation	0.386**	0.425**		0.351**
Tourism involvement			0.527**	0.456**
R^2	0.162	0.084	0.345	0.425
ΔR^2	0.142	0.075	0.325	0.235
F	35.276**	16.854**	152.365**	107.936**

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Table 2 Intermediary Analysis
(Source: Constructed by Researchers)

In the first regression model, with ice and snow sports tourism consumption motivation as the independent variable and local attachment as the dependent variable, the results showed that $\Delta R^2 = 0.142$, indicating that ice and snow sports tourism consumption motivation can explain 14.2% of the variation in local attachment. Its standardized regression coefficient β is 0.386, reaching a significant level ($p < 0.01$), and its standardized regression coefficient is positive, indicating that ice and snow sports tourism consumption motivation has

a positive and significant impact on local attachment. This result is consistent with Baron and Kenny's (1986) Model 1.

In the second regression model, with ice and snow sports tourism consumption motivation as the independent variable and tourism involvement as the dependent variable, the results showed that $\Delta R^2=0.075$, indicating that ice and snow sports tourism consumption motivation can explain 8.6% of the variance in tourism involvement. Its standardized regression coefficient β is 0.425, reaching a significant level ($p<0.01$), and its standardized regression coefficient is positive, indicating that ice and snow sports tourism consumption motivation has a positive and significant impact on tourism involvement. This result is consistent with Model 2 proposed by Baron and Kenny (1986).

In the third regression model, with tourism involvement as the independent variable and place attachment as the dependent variable, the results showed that $\Delta R^2=0.325$, indicating that tourism involvement can explain 32.5% of the variation in place attachment. Its standardized regression coefficient β is 0.527, reaching a significant level ($p<0.01$), and its standardized regression coefficient is positive, indicating that tourism involvement has a positive and significant impact on place attachment. This result is consistent with Model 3 proposed by Baron and Kenny (1986).

In the fourth mode, the analysis was conducted with ice and snow sports tourism consumption motivation and tourism involvement as independent variables, and place attachment as the dependent variable. The results showed that $\Delta R^2=0.235$, indicating that ice and snow sports tourism consumption motivation and tourism involvement jointly explain 23.5% of the variance of place attachment. Compared with Mode 1, the explanatory variance ΔR^2 increased by 0.149; The standardized regression coefficients β of ice and snow sports tourism consumption motivation and tourism involvement were 0.351 and 0.456, respectively, both of which reached a significant level ($p<0.01$), and their standardized regression coefficients were positive. It can be seen that both ice and snow sports tourism consumption motivation and tourism involvement have a positive and significant impact on local attachment. After adding the variable of tourism involvement, the standardized regression coefficient β of ice and snow sports tourism consumption motivation on local attachment decreased from 0.386 to 0.351. And it still reached a significant level ($p<0.01$), indicating that tourism involvement partially mediates the relationship between the consumption motivation of ice and snow sports tourism and local attachment. This result is consistent with Model 4 proposed by Baron and Kenny (1986).

By analyzing the correlation between the three core variables of consumption motivation, Place Attachment, and tourism involvement in ice and snow sports tourism, this study reveals the close relationship and mechanism of action among these three factors. The research results indicate a significant positive correlation between consumer motivation and place attachment, suggesting that tourists with strong tourism motivation are more likely to develop emotional connections and functional dependence on the tourism destination. Among them, intrinsic driving forces such as social motivation, curiosity motivation, and relaxation motivation show higher correlation, indicating that tourists seeking social interaction, exploring novel experiences, and physical and mental relaxation in ice and snow sports tourism can effectively stimulate their attachment to the destination. At the same time, the positive correlation between consumer motivation and tourism involvement is also very significant, indicating that tourists with strong motivation are more inclined to actively participate in

diverse ice and snow sports projects, such as skiing training, snow exploration, etc. This behavior further enhances tourists' sense of engagement and belonging to the destination.

In addition, research has found that tourism involvement plays an important mediating role between consumer motivation and place attachment. Specifically, the deeper the tourists are involved in tourism, the higher their emotional sense of belonging and dependence on the destination. The high level of tourist involvement is reflected in the frequency and depth of activity participation, and the breadth and diversity of participation can effectively promote the formation of Place Attachment. This indicates that tourists not only need strong travel motivation to drive their behavioral performance, but also need to deepen their emotional connection to the destination through continuous tourism participation. In other words, motivation drives tourism involvement, which further enhances place attachment (Small et al., 2012).

The correlation between these three variables validates the multi-level driving mechanism in tourism behavior theory, indicating that in ice and snow sports tourism is not only the result of a single motivation, but also a comprehensive manifestation of the interaction of multiple psychological factors. Therefore, ice and snow sports tourism destinations should focus on designing diverse tourism projects, stimulating tourists' multiple motivations, enhancing their tourism involvement by increasing their participation depth and frequency, ultimately deepening tourists' Place Attachment, and promoting the sustainable development of the ice and snow tourism market and the formation of competitive advantages.

2. Exploring whether the consumption motivation of ice and snow sports tourism indirectly affects Place Attachment through tourism involvement

(1) Direct Effect Analysis: The Direct Impact of Consumer Motivation on Place Attachment

The direct effect analysis results show that the consumption motivation of ice and snow sports tourism has a significant positive impact on local attachment, verifying the mediating effect model 1 proposed by Baron and Kenny (1986). Regression analysis shows that in Model 1, the standardized regression coefficient with ice and snow sports tourism consumption motivation as the independent variable and local attachment as the dependent variable is $\beta=0.386$, reaching a significant level ($p<0.01$), explaining 14.2% of the variation in local attachment ($\Delta R^2=0.142$). This result indicates that tourists with strong consumption motivations are more inclined to develop emotional connections and functional dependence on ice and snow sports tourism destinations. This positive effect indicates that the stronger the tourism motivation of tourists, the higher their emotional attachment to the destination, supporting the core driving role of consumer motivation in ice and snow sports tourism behavior. The model results emphasize that consumption motivation, as an independent variable, directly affects tourists' place attachment and is an important component of tourism behavior patterns.

(2) Mediating Effect Test: The Mediating Role of Tourism Participation

The involvement of tourism plays a significant mediating role between the consumption motivation of ice and snow sports tourism and local attachment. The consumption motivation significantly increased the level of tourism involvement ($\beta=0.425$, $p<0.01$), and tourism involvement significantly enhanced place attachment ($\beta=0.527$, $p<0.01$). After introducing tourism involvement, the direct effect of consumer motivation on place attachment decreased from $\beta=0.386$ to $\beta=0.351$, but remained significant ($p<0.01$),

confirming the partial mediating role of tourism involvement. This indicates that consumer motivation not only directly stimulates local attachment, but also indirectly enhances emotional connection through tourism participation behavior.

(3) Mechanism explanation: The multidimensional role of tourism participation

The role of tourism participation in ice and snow sports tourism behavior is multidimensional, manifested in three aspects: behavioral participation, emotional connection, and deep experience. Firstly, from the perspective of behavioral engagement, the frequency and breadth of tourist participation directly affect their emotional connection to the venue. For example, tourists who participate in skiing courses, try different ski slopes, and participate in diverse activities such as ice and snow festivals will significantly enhance their functional dependence and emotional identification with the ski resort. Secondly, from the perspective of emotional connection, tourists accumulate positive emotional experiences through interaction with the tourist destination, and ultimately develop deep emotional connections such as place identification that the destination relies on. Again, from the perspective of in-depth experience, tourism participation is not only reflected in the increase of behavior quantity, but more importantly, the improvement of participation quality. For example, tourists who participate in professional skiing training courses for a long time will significantly increase their functional dependence and emotional sense of belonging to the ski resort, showing higher loyalty and willingness to revisit.

This multidimensional mechanism explains the mediating effect path in ice and snow sports tourism, indicating that consumer motivation continuously strengthens tourists' attachment to the destination through the behavioral variable of tourism participation. Ice and snow tourism destinations should focus on designing deep interactive and emotionally reinforcing activities to stimulate tourists' diverse consumption motivations, enhance their depth and breadth of tourism participation, deepen their attachment to the place, and achieve higher market loyalty and long-term market competitiveness. The verification of this mechanism not only enriches the theoretical model of ice and snow sports tourism behavior, but also provides important practical guidance for the development strategy and product innovation of the ice and snow tourism market.

3. Constructing a theoretical model of consumption motivation, Place Attachment, and tourism involvement in ice and snow sports tourism

(1) Theoretical framework construction

Based on the research results, a theoretical model was constructed with consumption motivation as the independent variable, tourism involvement as the mediating variable, and Place Attachment as the dependent variable. The model assumes that consumption motivation is the core driving factor of tourists' tourism behavior, which indirectly affects the formation of Place Attachment by stimulating tourists' tourism involvement behavior. This hypothesis is supported by regression analysis, where consumer motivation significantly influences place attachment and tourism involvement, with tourism involvement playing a significant mediating role between consumer motivation and place attachment. Therefore, the stimulation of consumption motivation not only directly enhances Place Attachment, but also deepens emotional attachment by promoting tourists' deep participation in ice and snow sports projects.

(2) Model Path Design and Analysis

The model path design demonstrates a multi-level interactive mechanism between consumer motivation, tourism participation, and place attachment, including direct path, indirect path, and overall effect path. The direct path emphasizes the direct impact of consumer motivation on place attachment, indicating that tourists with strong motivation are more likely to develop emotional connections and functional dependence. Indirect path analysis shows that consumer motivation indirectly enhances place attachment through the mediating variable of tourism participation, indicating that deep tourism experiences can strengthen tourists' emotional attachment. The overall effect path combines direct and indirect paths, highlighting that consumer motivation can not only directly shape place attachment, but also deepen this emotional connection through tourism participation, forming a dual effect of behavior driven and emotional accumulation. This model emphasizes the linkage mechanism between motivation stimulation and behavioral participation, providing important references for tourism destination management and marketing strategies.

(3) Model Explanation and Application Implications

This theoretical model reveals the multi-level driving mechanism of in ice and snow sports tourism, emphasizing the motivational role of consumption motivation and the mediating function of tourism involvement. Ice and snow tourism destination managers can draw on this model to design more attractive and interactive tourism activities, stimulate tourists' multiple motivations, enhance their tourism involvement behavior, and thus improve Place Attachment and brand loyalty. For example, ski resorts can develop diverse courses and interactive experience projects, create an attractive and emotionally valuable tourism environment, attract tourists to continue participating, and enhance emotional connections with the destination.

(4) Model validation results and model fit

The distribution of standardized regression coefficients shows that the standardized regression coefficient of consumer motivation is the highest, indicating that it has the strongest predictive effect in the model. Meanwhile, although the standardized coefficient of tourism participation is slightly lower than consumer motivation, it also exhibits a significant mediating effect in explaining place attachment. The significant path of the model not only verifies the multi-path hypothesis, but also demonstrates the driving mechanism and emotional development process of ice and snow sports tourism behavior, forming a comprehensive behavioral model from motivation stimulation to behavioral performance, and then to emotional dependence.

In summary, the model validation results support the multi-path structure hypothesis of ice and snow sports tourism behavior, indicating that consumer motivation and tourism participation play a dual role in the formation of place attachment, both directly and indirectly. Ice and snow sports tourism destinations should fully utilize the inspiration of this model, by incentivizing diverse consumption motivations and designing deeply participatory tourism projects, enhancing tourists' tourism participation and emotional connection level, promoting sustained market growth and brand loyalty enhancement.

Discussion

1. Research objectives

The aim of this study is to explore the relationship between consumption motivation, place attachment, and tourism involvement in ice and snow sports tourism, and to examine the mediating effect of tourism involvement between consumption motivation and place attachment. The core objectives of the research include: firstly, understanding the consumption motivation, Place Attachment, and tourism involvement of ice and snow sports tourism tourists; Secondly, analyze the correlation between these three variables and reveal the underlying mechanisms of ice and snow tourism behavior; Thirdly, examine the mediating role of tourism involvement between consumer motivation and place attachment, and construct a theoretical model to demonstrate the driving and emotional connection process of ice and snow sports tourism behavior. Through regression analysis, the path relationship of the hypothesized model was studied and verified, revealing the dynamic mechanism of ice and snow tourism behavior.

2. Research results

The research results reveal the multi-path effect in ice and snow sports tourism behavior, indicating that consumer motivation is the main driving force of tourism behavior, and tourism participation plays a bridging role between behavioral motivation and emotional deepening. This discovery not only expands the theoretical framework of ice and snow sports tourism behavior, but also provides important practical insights for marketing and destination management. Ice and snow tourism destinations should stimulate tourists' diverse consumption motivations, such as meeting social, exploration, and physical and mental relaxation needs, design deep interactive tourism projects, encourage tourists to participate in diverse activities, enhance their emotional sense of belonging and functional dependence on the destination, thereby improving market competitiveness and brand loyalty. This study provides important theoretical support and decision-making reference for product development and marketing strategies in the ice and snow tourism industry, promoting the sustainable development of the ice and snow tourism market.

3. reflect

The research results demonstrate a multi-level interactive mechanism of ice and snow sports tourism behavior, indicating a close relationship between consumption motivation, tourism involvement, and Place Attachment. This discovery not only supports the motivation driven and experience reinforced hypotheses in tourism behavior theory, but also reveals the key role of actual participation behavior in tourists' emotional connections. However, this result also raises some concerns: firstly, the role of different dimensions of consumer motivation in the model may vary. For example, social motivation and physical and mental relaxation motivation may have a stronger impact on place attachment, while curiosity motivation is more reflected in tourism involvement. Secondly, the dimensions of tourism involvement have not been subdivided in the model. Future research can further distinguish the depth, frequency, and breadth of participation to reveal the role of different types of involvement in emotional connections. In addition, whether individual characteristics (such as gender, age and tourism experience) play a moderating role in this model still needs to be explored through more empirical research.

4. Consistency and inconsistency

The results of this study are largely consistent with the findings of existing literature. For example, PraYAG and Ryan (2012) argue that tourists' motivation and participation behavior play a significant role in the formation of place attachment, which was validated in this study. Meanwhile, the theoretical hypothesis proposed by Weed and Bull (2010) regarding the relationship between sports tourism behavior and consumer emotional attachment has also been supported. However, there is some inconsistency between this study and some literature on the specific path of the model. For example, some studies suggest that the role of tourism involvement in place attachment is more significant among high-frequency tourists, while in the sample of this study, there was no significant difference between first-time tourists and high-frequency tourists. In addition, the specific impacts of cultural differences and environmental factors on ice and snow tourism have not been thoroughly explored, which may be a potential direction for future research.

5. Conclusion

This study examines the motivations, place attachment, tourism participation, and consumption behavior of ice and snow sports tourists. It reveals that these factors interact through multiple pathways, influencing tourists' consumption behavior. Social motivation and relaxation motivation promote consumer behavior by enhancing local attachment and tourism participation. Local attachment mediates the relationship between motivation and consumption behavior. The study's theoretical model offers a new perspective on consumption behavior in the ice and snow sports tourism industry, enabling targeted marketing strategies and product plans. This provides valuable insights for academic research and practice, and suggests future research directions.

Suggestion

This study reveals the important role of motivation, place attachment, tourism participation, and consumption behavior of ice and snow sports tourists in driving consumption behavior through analysis of these factors. Based on the research findings, the following are recommendations for theoretical, policy, and practical aspects:

1. Theoretical suggestions

(1) Deepen the research on multidimensional motivation

This study reveals that the motivations of ice and snow sports tourists are mainly reflected in social motivation, curiosity motivation, relaxation motivation, and relationship motivation. Future theoretical research should further deepen the exploration of various dimensions of motivation, especially the study of differences in motivation among different types of tourists (such as family tourists, young tourists, etc.). Through more detailed motivation analysis, more empirical support can be provided for the improvement of theoretical models.

(2) Theoretical framework for expanding place attachment

Place Attachment played an important role as a mediating variable in this study, particularly in promoting consumer behavior. Future theoretical research should further explore the multidimensional attributes of place attachment, including emotional attachment, place identity, dependence, and other dimensions, and investigate how it plays different roles in different types of ice and snow tourism activities (such as skiing, ice skating, etc.). In addition, it is recommended to include the formation mechanism and influencing factors of Place

Attachment in the research scope, in order to comprehensively enhance the depth of Place Attachment theory (Sato et al., 2014).

(3) Exploring the Depth and Diversity of Tourism Participation

Tourism participation is an important variable in this study. Future theoretical research can further explore the hierarchical nature of participation behavior, such as the transformation mechanism from "perceived participation" to "actual participation", and analyze how the depth, mode, and frequency of tourists' participation in ice and snow sports activities affect their consumption behavior. This will contribute to the expansion of the theoretical system, making the measurement and influence mechanisms of participation behavior more diverse (Chen, 2019) .

2. Policy recommendations

(1) Promote the brand building of ice and snow sports tourism

This study found that Place Attachment has a significant impact on consumer behavior. Therefore, it is recommended that the government pay attention to local brand building and create unique and attractive ice and snow tourism destinations when promoting the development of ice and snow sports tourism. For example, by creating skiing events and festivals with local cultural characteristics, tourists can increase their emotional identification with ice and snow tourism destinations, thereby enhancing their intention to visit and consumption behavior.

(2) Enhance tourism infrastructure and service quality

The tourist participation and consumption behavior are influenced by the facilities and service quality of the tourist destination. At the policy level, we should increase investment in ice and snow sports tourism infrastructure, improve the service quality and safety guarantee level of facilities such as ski resorts and ice rinks, and improve supporting facilities such as transportation, accommodation, and catering. In addition, it is recommended to promote the integration of the tourism industry with other industries such as hotels, catering, retail, etc. through policy incentives, in order to enhance the overall consumption experience of tourists.

(3) Develop targeted market promotion policies

The government can formulate more precise market promotion policies based on the different motivations and needs of ice and snow sports tourists. For example, for family tourists, ice and snow tourism projects with parent-child activities as the theme can be promoted; For young tourists, more social skiing events or outdoor adventure activities can be launched. By targeted promotion and precise marketing, attract more target groups to participate in ice and snow sports tourism, and promote consumption growth.

(4) Provide policy support to promote the sustainable development of the ice and snow tourism market

With the successful hosting of the Winter Olympics, the ice and snow sports tourism market has a broader development space. At the policy level, more support should be provided, especially for emerging ice and snow tourism destinations, including funding, technology, and talent support, to help local governments find a balance between ecological protection and tourism development, and ensure the sustainability of the ice and snow tourism market.

3. Practical suggestions

(1) Design personalized tourism products

Based on the findings of this study on the motivation of ice and snow sports tourism, tourism enterprises should design personalized tourism products according to the different motivations of tourists. For tourists who pursue social interaction, social skiing activities can be designed, such as group skiing competitions, family gatherings, etc; For tourists who value relaxation, we can offer relaxing ski vacation packages and provide more leisure and relaxation facilities. In addition, different travel packages can be customized based on factors such as the age, family structure, and purchasing power of tourists to enhance their sense of participation and satisfaction.

(2) Enhance emotional connections among tourists

The Place Attachment of ice and snow sports tourism destinations is one of the key factors driving tourist consumption. Tourism operators can promote consumption by strengthening the emotional connection between tourists and destinations. For example, providing local cultural experiences (such as folk festivals, cultural exchanges, etc.) to enhance tourists' sense of identity with the destination; Meanwhile, social media and digital platforms can be utilized to enhance the interaction between tourists and their destinations, creating deeper emotional connections and increasing their willingness to consume.

(3) Optimize tourist experience and enhance consumption willingness

Research has found that the pleasure of tourism participation is closely related to tourists' consumption behavior. Therefore, ice and snow sports tourism enterprises should strive to enhance tourists' participation experience, provide high-quality activity services, meticulous customer care, and comfortable tourism environment, and enhance tourists' sense of pleasure and satisfaction. For example, rest areas, dining areas, entertainment facilities, etc. can be added in ski resorts, allowing tourists to enjoy a comprehensive leisure experience while participating in ice and snow sports.

(4) Strengthen marketing strategies

Based on the analysis of sports tourism motivation and consumption behavior in this study, it is recommended that ice and snow sports tourism enterprises attract different types of tourists through precise marketing strategies. For example, during the peak winter season, joint marketing can be carried out in conjunction with festival events or competitions; During low periods, it is possible to attract tourists and increase their consumption frequency through promotional activities, package discounts, and other means. In addition, feedback and preference data from tourists can be collected through digital platforms, and marketing strategies can be adjusted in real-time to improve customer loyalty and repeat consumption rates.

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