

# Impact of Tourist Motivation on Consumption Behaviour in Ice and Snow Sports Destinations

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## Abstract

Sports tourism involves traveling to either observe or engage in a sports event while being away from tourists' usual environment. The rapid growth of the Ice and Snow (I&S) tourism sector in the current duration has encouraged the sustainable improvement of the relationship between motivational factors and consumption behaviour. Tourism stakeholders could acquire significant insights by understanding the causes of consumer behaviour, particularly in light of the increasing popularity of winter sports and tourism. The tourism business has witnessed the emergence of I&S sports tourism as a significant sector, illustrating millions of tourists to winter each destination. The study combines the data gathered from visitors to various winter sports industries with information gathered from industry experts' focus groups and interviews. This study investigates the relationships between sports tourism motivation, involvement, place attachment, and consumption behaviour following the theoretical hypothesis formulation. It explores the impact of different motivational features on tourists' expenditure models and activity preferences in winter sports environments using Structural Equation Modelling (SEM). The study emphasizes the value of smart marketing and customized experiences in raising visitor engagement and retention. Strong relationships between the variables under study are shown by demographic and correlation studies, which assess the concepts validity and reliability. The study also emphasizes how customized experiences and marketing tactics are crucial for raising visitor engagement and retention rates. Accordingly, using a variety of hypotheses, including consumer behaviour theory, this article aims to examine the link between the motivation behind I&S sports tourism and consumer behaviour.

**Keywords:** Consumption Behaviour, Winter Sports, Tourism, Structural Equation Modelling (SEM).

## 1. Introduction

Tourism is the cultural, social, and economic event that refers to people traveling to other countries or places for pleasure, commerce, or work. Traveling temporarily to a destination other than one's usual location of residence and employment is known as tourism. Additionally, it provides a chance for individuals to comprehend a nation's religious, cultural, and civilizational characteristics. Tourism is the primary industry in many nations. Sports tourism is currently one

of the tourist sectors growing at the fastest rate [1]. Tourists are interested in participating in sporting events, as they offer genuine local experiences and cultural elements. Large-scale events like the Olympics and World Cups can boost tourism by promoting destinations, building infrastructure, and providing positive social and economic effects [2]. Ice and Snow (I&S) environmental tourism resources and the cultural significance of I&S could be highlighted through a variety of tourist activities that fall under the authority of ecotourism. The tourism industry and social development of the region are significantly influenced by I&S sports, which are intimately connected to the natural environment. Modern civilization has pushed I&S tourism to the front position of tourist actions due to improving living standards and an increased need for leisure and enjoyment [3]. I&S sports are a form of outdoor activity that is closely associated with the environment, they are also important for the growth of the local tourism industry and social fabric. Sports tourism has been the subject of discussions during the Chinese sports tourism theory's development. The notion of sports tourism is fundamental to it, as can be shown from an analysis of sports. Sports tourism won't be able to survive in the market if the sports business can't offer superior secure sporting facilities, basic, learnable sports abilities, and a thrilling competitive environment [4]. Fundamentally, the attraction of sports tourism is the integration of additional sports-related tourism components with the travel and tourism sector to enable travelers to engage in sports-related activities while visiting to augment the entertainment value of sports. I&S tourism is becoming one of the most popular forms of tourism in modern civilization due to improving living levels and a growing need for leisure and amusement [5]. China's Northeast region benefits from I&S sports for societal growth and tourism. The 2022 Winter Olympics promotion has increased tourism potential, causing the industry for I&S sports tourism to develop significantly [6]. Currently, intellectual, political, corporate, and sporting surroundings are focusing on how to best support the integrated growth of I&S sports tourism. Deeply explore its resources, raise the entire production value of I&S sports tourism, and completely improve its core competitiveness [7]. Travel planners, lodging preferences, activity selections, and spending habits are just a few examples of the diverse ways that visitors consume I&S sports. Tourists' purchasing behaviour is greatly influenced by a variety of factors, including sociodemographic traits, prior travel experiences, and the destination's perceived value. In addition, the accessibility, image, quality, and availability of amenities all have an impact on travelers' overall pleasure and loyalty, which in turn affects their propensity to return and refer others to the location [8]. By creating a motivation scale and examining the causes of shifts in consumer behaviour, this study seeks to comprehend the motivation of visitors who participate in I&S sports. To fulfill the demands of sports tourism consumers and to support the steady growth of China's I&S sports tourism business, it is imperative to comprehend the motivations behind visitors' participation in this project.

### 1.1 Key contribution

- The research advances the knowledge of I&S sports tourism by using SEM to create a connection between motivating variables and consumer behaviour.
- In the context of winter sports, it sheds light on the many motivating characteristics that affect visitor spending and activity selection.

- This study uses the SEM approach to investigate aspects linked to the hypotheses based on a questionnaire completed by 456 tourist consumers.
- To improve tourist engagement and retention in the expanding winter sports tourism industry, the research emphasizes the significance of customized experiences and marketing techniques by combining visitor data and expert perspectives.

## 2. Related work

Hong-Min et al., (2021) evaluated natural and socioeconomic factors, the integrity suitability index (ISI) was proposed to measure the feasibility and probable of I&S tourism in underdeveloped countries. The findings demonstrated that the regional distributions of the appropriateness of tourism associated with glaciers and skis varied significantly from one another. Xu (2022) explored the benefits and features of I&S tourism in Jilin Province, focusing on Changji-Tu development strategy, tourism planning, brand consciousness, and regional economic development. Xie et al., (2024) designed to create an evaluation model based on snowfall degree, weather, and wind speediness employing each-day meteorological data to compare the temperature level for I&S sports horizontally across China's top ski destinations; and expand the definition of the term "climate suitability for I&S sports. Chen (2024) examined the enlargement of I&S sports tourist resources, offering a foundation of reference for the market's future development. I&S sports tourism sector is managed conventionally. In addition to a lack of professional skill, I&S sports tourist sector lacks adequate public relations and promotion. Li and Liu (2022) used binary regression and sequential regression models to examine the engagement of social elite associations with I&S sports in addition to the influence of such programs' social mobilizing effects. The study revealed that China's I&S sports sector is developed at two distinct stages: one-time and ongoing involvement. Liu and Guo (2023) examined Chinese tourists' impressions of I&S tourism locations. The Winter Olympics have heightened interest in I&S tourism, but the rapid growth cannot keep up with glacial advancements in scenic locations, as evidenced by network text analysis. Hui (2020) analyzed the growth and issues of the I&S tourist industry in Jilin Province, proposing an integrated growth approach and remedies for increased integration. Zhang and Liu (2024) analyzed methods and tactics for the I&S economic activity, sports' sustainable growth, and winter sports training, Scientific study, coaching for winter sports, and sophisticated concepts, methodologies, and strategies were all covered.

## 3. Research Theoretical Model and Hypotheses

Motivation influences tourists' decisions and actions in I&S sports destinations, while consumption manner reflects how tourist incentives influence expenditures and activities. Moderating variables like engagement and environmental connection influence the link between motivation and consumption manner. In light of the study's theoretical framework and its succinct findings, we developed the following hypothesis:

A variety of motivational elements, such as a person's interests, competitive spirit and need for social connection, that have a big influence on how they consume in the framework of sports tourism. For instance, a tourist who travels for pleasure or social reasons can participate in activities differently from someone who travels for sports competitions.

- Hypothesis (H1): Each aspect of I&S sports tourism motivation (TM) has a major influence on every aspect of sports tourism consumption manners (CM).

Various aspects of motivation for sports tourism, such as thrill, adventure, or cultural curiosity, have a big impact on how people participate in sports tourism activities. This indicates that the reasons behind an individual's decision to participate in sports tourism in the first place have an impact on the type and degree of that engagement, including interaction, attendance, and involvement.

- Hypothesis (H2): Each aspect of I&S sports TM has a major influence on every aspect of sports tourism engagement (TE).

The people's consumption patterns are directly influenced by how they interact and participate in sports tourism activities. High degrees of involvement can result in distinct purchasing habits or preferences when contrasted to lesser levels of engagement.

- Hypothesis (H3): Each aspect of I&S sports TE has a major influence on each aspect of sports tourism CM.

The people's connections to the places where sports events or activities are held greatly influenced by the diverse reasons for sports tourism. This include things like how attached they are to the place or how important it is to their entire sports tourism experience.

- Hypothesis (H4): Each aspect of I&S sports TM substantially affects every aspect of place connection (PC).

People's consuming habits are influenced by their perceptions or connections to the locations of sports tourism activities. Strong cultural or emotional links to a place, for instance influence general consumption habits, preferences for particular activities, or spending patterns.

- Hypothesis (H5): Every aspect of PC has a major influence on every aspect of I&S sports tourism CM.

It contends that people's interactions with sports tourism activities influence their sense of place. A stronger feeling of attachment to the venue where the sporting activities result in increased engagement.

- Hypothesis (H6): Every aspect of sports TE has a major influence on every aspect of PC

The involvement acts as a mediator in the interaction between the motive for sports tourism and the modes of consumption. The degree of participation in sports tourism activities is a conduit through motives influence consumer manner.

- Hypothesis (H7): I&S sports TM influences sports tourism CM through sports TE.

The people's emotional attachment to the destination acts as a mediator between the impacts of sports tourism incentives on consumption behaviors. It suggests that reasons have an impact on people's connections to the place, which in turn has an impact on how they consume sports tourism.

- Hypothesis (H8): I&S sports TM influences sports tourism CM through PC.

### 3.1 Methodology

The study integrates quantitative and qualitative data collection approaches, 456 tourists at different I&S sports locations were gathered and assigned structured questionnaires to complete to collect data on the demographic features. However, comprehensive information regarding individual experiences was provided via open-ended questions, whereas Likert scale questions are evaluated through hypothesis. To obtain qualitative insight into consumption behaviour and motivating factors, several sectors qualified and tourists participated in semi-structured interviews and focus groups in addition to surveys. A deeper comprehension of the impacts on consumption behaviour in the framework of winter sports tourism was made probable by each neighboring approach.

### 3.2 Conceptual framework

The conceptual framework of this study is designed to explore the relationship between TM, PC, CM, and TE for motivation and consumption behaviour. The conceptual framework demonstrates the intricate interactions between many facets of PC, sports tourism CM, sports TE, and sports TM. It suggests that every aspect of TM has a direct and substantial influence on CM, affecting people's decisions to partake in sports tourism activities. In a similar vein, TM directly impacts TE, which affects CM. Furthermore, TM significantly influences PC, and PC directly impacts CM. In addition, by having an impact on PC, TE demonstrates its pivotal position as a mediator in the connection between TM and CM. The framework takes into account both direct and indirect effects, with TM influencing CM via TE and PC. This implies that TM influences connection and engagement with the place, which in turn influences consumption behaviors. Through an understanding of these linkages, the framework offers insights into how consumption and engagement are driven by motivation and how the connection to the place acts as a mediator between these behaviors. Designing focused conduct to improve sports tourism experiences by utilizing motivating elements and raising involvement with sports tourism activities requires an all-encompassing perspective. Figure 1 illustrates the Conceptual framework.

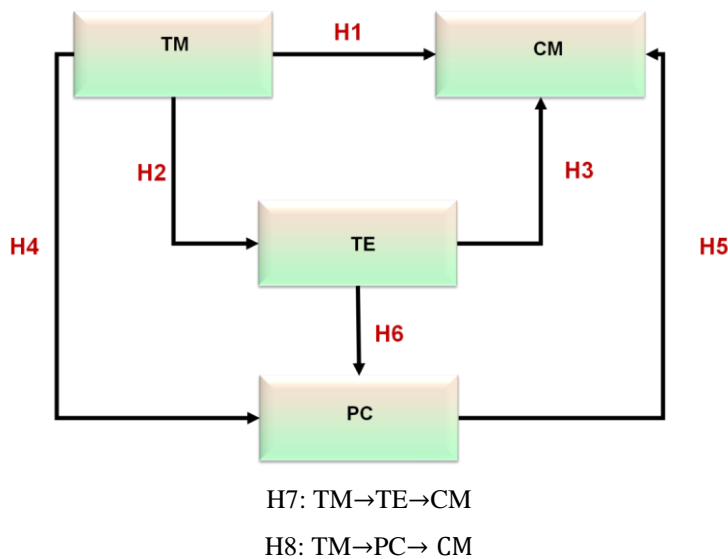


Figure 1: Conceptual framework

3.3 Measures and Variables

This study aims to investigate the visitor motivation and experience value related to ice-snow tourism. A five points Likert scale, from one (strongly disagree) to five (strongly agree), is used to connect the assessed items. A scale to assess the experience value of ice-snow tourism was developed and based on the theoretical correlations previously addressed in Table 1.

Table 1: Scale of experiencing value for ice-snow tourists

Factors	Measurement items	code
TE	Sports tourism is something I am very involved	TE 1
	Sports tourism is something I regularly engage	TE 2
	My life is significantly impacted by sports tourism	TE 3
	Put in a lot of work to participate in sports tourism	TE 4
PC	The sporting place I visit evokes significant emotions	PC 1
	In the places I travel to for sports tourism, I feel like I belong	PC 2
	I have a strong emotional bond with the sports tourism location	PC 3
	For me, the sports destination holds great psychological significance	PC 4
TM	My goal in engaging in sports tourism is to discover new experiences	TM 1

CM	Sports tourism gives me the chance to interact with people	TM 2
	I notice that going on sports tourism excursions helps me decompress	TM 3
	I spend on sports tourism on each trip	CM 1
CM	Total amount spent per year on sports-related expenses	CM 2
	Which types of sports tourism do you participate in the most regularly	CM 3

### 3.4 Data Analysis

This study used a preliminary distribution of the questionnaires to perform a pre-survey. The variables in this study are latent, which makes it difficult to quantify them accurately and immediately. Thus, using visible indicators would be indirect method of quantifying these hidden variables. Correlation analysis is a statistical technique for figuring out the strength and direction of correlations between one or more variables. To assess the study hypotheses and verify if the outcomes aligned with the conceptual model, this study employed SEM to examine the strong relationships between TM, PC, TE, and CM towards sustainable goods among a sample of 456 visitors. The four elements of the I&S tourist experiencing value were substantially positively connected with the tourist regulated hypothesis, according to correlation values. Furthermore, a significant link was seen at the 1% significance level between the moderating hypotheses of tourists.

## 4. Results

456 visitors from stunning I&S landscapes participated in the work. The majority of respondents had a master's degree or college education and the age distribution was balanced, according to the results. The most common vocations were those in government, and education. The strong validity and reliability of the hypotheses were validated by factor and correlation analyses. Significant correlations between motivation, engagement, consumption, and location attachment were revealed via SEM.

### 4.1 Demography analysis

The factor analysis results were in line with predictions, indicating strong structural validity and content validity for the questionnaire. Questionnaires were sent out for the official survey in online areas covered the I&S. It shows that the distribution of ages is fairly balanced, with the largest percentage (26.3%) of those under the age of 18 and a sizable share (25.4%) of those between the ages of 36 and 50. Regarding education, the majority of participants either have a master's degree (33.7%) or have finished college (41.8%). Government and educational positions account for the majority of occupations (34.7%), followed by those in students (24.1%) and business (23.2%). According to vacation trends, the majority of individuals (40.6%) visit national parks twice a year, while 36% visit less frequently and 23.4% visit more than three times. Appreciating natural resources (45.8%) and taking in beautiful vistas (54.2%) are the main causes of these holidays. Adventure sports rank highest in terms of popularity among sports

tourists (30.5%), with individual sports (24.6%) and team sports (28.1%) following. Table 2 shows the overview of the demographic data.

Table 2: An overview of the demographic data

Variable	Category	Frequency (n=456)	Percentage (%)
Age	Below 18	120	26.3
	19–25 years	115	25.2
	26–35 years	105	23.1
	36–50 years	116	25.4
Education level	Below junior high school	112	24.5
	College	191	41.8
	Master's Degree	155	33.7
Occupation	Student	110	24.1
	Government, or education	158	34.7
	Business	106	23.2
	Others	82	18.00
Annual vacation to countrywide parks	Below 1 time	164	36.00
	2 times	185	40.6
	Above 3 times	107	23.4
Reasons for comeback vacation	Enjoying attractive view	247	54.2
	Accounting for the resources of nature	209	45.8
Types of sports tourism activities	Team sports	128	28.1
	Adventure Sports	139	30.5
	Individual sports	112	24.6
	Others	77	16.8

4.2 Validity and Reliability Test

The motivation, engagement, and consumption behaviour of I&S visitors were tested using a hypothesis test, and all four coefficients are significant at the 1% level. It was done to extract the major component. Four variables of I&S tourist experience values' initial eigenvalues were larger than 1. There was one component for each moderated hypothesis that had an initial Eigenvalue larger than 1. A cumulative total of 80% of the variation in the data was explained by these factors. The four variables of I&S tourist experiencing value were next analyzed using the varimax rotation approach, and all of the factor loadings for the retained items were over 0.7. The aspects of TM, TE, CM, and PC were kept after the Exploratory Factor Analysis (EFA).

4.3 Confirmatory Factor Analysis (CFA)

The component in this study is theoretically based, and the measuring scale was developed; therefore, confirmatory factor analysis (CFA) tested convergent validity, discriminant reliability,



single dimension validity, and structural reliability. The evaluation model fits the data rather well, as seen by the indications meeting the recommended threshold. The study builds dependability using Cronbach's  $\alpha$  values and composite reliability scores. CFA tables are made by summarizing CFA findings, such as factor loadings, fit indices, t-values, and standard errors. A CFA table for the aforementioned study, which includes dimensions like PC, TE, CM, and TM, would normally look in Table 3. Strong correlations between items and hypotheses are shown by factor loadings, which vary from 0.70 to 0.85. Each concept has good internal consistency and reliability, as indicated by Cronbach's  $\alpha$  value of 0.80 to 0.87 and Composite Reliability (CR) values (0.83 to 0.90). By proving that each hypothesis captures more variation than measurement error, the Average variation Extracted (AVE) values, which range from 0.56 to 0.69, satisfactorily demonstrate convergent validity. The robustness and dependability of the hypothesis are confirmed by these measures. The concept validity was investigated using both discriminant and convergence validity approaches.

Table 3: Confirmatory factor analysis (CFA)

Factors	Item	Loading	Cronbach's $\alpha$	CR	Extracted AVE
TM	TM 1	0.78***	0.82	0.85	0.62
	TM 2	0.83***			
	TM 3	0.75***			
CM	CM 1	0.85***	0.80	0.83	0.56
	CM 2	0.78***			
	CM 3	0.75***			
PC	PC1	0.76***	0.85	0.89	0.65
	PC 2	0.79***			
	PC 3	0.72***			
	PC 4	0.70***			
TE	TE1	0.76***	0.87	0.90	0.69
	TE 2	0.82***			
	TE 3	0.79***			
	TE 4	0.77***			
Notes: ***p<0.001					

#### 4.4 Correlation Analysis

To evaluate the convergent validity, item loadings, and AVE values were employed. Table 4 shows that the concept exhibited significant discriminant validity, with the AVEs' square roots

being larger than the component correlations. The study's factors have important linkages, as shown by the correlation analysis. For the mean (4.25) and SD (0.86), TM exhibits moderate variability along with strong motivation. The mean (3.90) and SD (0.78), CM exhibits moderately variable consumption patterns. The mean (4.10) and SD (0.82), TE exhibits comparable variability and strong engagement. With an SD of 0.80 and a mean of 3.75, PC exhibit moderate attachment to its places. Significant positive associations between the dimensions are revealed by correlations; for example, TM has a large correlation with both CM (0.69) and TE (0.62), suggesting that increased motivation is linked to higher engagement and consumption.

Table 4: The correlations, standard deviations, and means of the hypotheses

Assemble	SD	Mean	TM	CM	TE	PC
TM	0.86	4.25	1.00	0.69**	-	-
CM	0.78	3.90	0.69	1.00	-	-
TE	0.82	4.10	0.62**	0.70**	1.00	-
PC	0.80	3.75	0.56**	0.54**	0.52**	1.00

Notes: AVEs are the italic variables \*\*p<0.01

4.5 Structural Equation Modelling (SEM) Analysis

SEM integrates traditional factor and path analysis and incorporates simultaneous equations from economics to handle relationships between a series of dependent variables, making it suitable for testing the associations between variables such as sports tourism motivation, sports tourism involvement, place attachment, and sports tourism consumer behavior in this study. The ML process was also used to assess the structural model. The site link and tourist incentive were modeled as second-order structures, in line with earlier research. An overview of the findings from the hypothesis testing for connections among the study's hypotheses can be found in Table 5. The beta coefficient ( $\beta$ ), SD, T-statistics (T statistics), and p-values for each hypothesis examined a particular relationship.

Table 5: Direct connection outcomes

Hypotheses	Connection Choice	T-Statistics	$\beta$	SD	p-value	Decision
H1: TM→ CM	Direct	8.14	0.65	0.08	<0.001	Accepted
H2:TM → TE	Direct	6.38	0.48	0.06	<0.001	Accepted
H3: TE→ CM	Direct	7.68	0.71	0.09	<0.001	Accepted
H4: TM→ PC	Direct	6.12	0.63	0.10	<0.001	Accepted
H5: PC → CM	Direct	5.62	0.50	0.07	<0.001	Accepted
H6: TE→ PC	Direct	8.36	0.69	0.08	<0.001	Accepted

The SEM analysis table shows the relationships between various hypotheses in the model, with each hypothesis being tested for significance. For H1, the path from TM to Sports CM is highly significant with a  $\beta$  of 0.65, a t-statistic of 8.14, and a p-value less than 0.001, indicating a strong influence. Similarly, H2 shows a significant effect of TM on sports TE with a  $\beta$  of 0.48 and a t-statistic of 6.38. H3 reveals that TE significantly impacts CM ( $\beta = 0.71$ ,  $t = 7.68$ ). H4 demonstrates TM's notable influence on PC with a  $\beta$  of 0.63 and a t-statistic of 6.12. H5 indicates a significant effect of PC on CM ( $\beta = 0.50$ ,  $t = 5.62$ ). Finally, H6 confirms a strong influence of

TE on PC with a  $\beta$  of 0.69 and a t-statistic of 8.36. All hypotheses are accepted due to their significant p-values.

To moderately investigate hypotheses H7 and H8, normally this evaluate the moderating effects of the relationships between sports TE, PC, TM, and CM. For these hypotheses, moderation could look like in Table 6.

Table 6: Moderation analysis

Hypotheses	Connection Choice	T Statistics	$\beta$	SD	p-value	Decision
H7	TM→TE→CM	2.87	0.48	0.06	<0.001	Accepted
H8	TM→PC→CM	2.69	0.44	0.03	<0.001	Accepted

With a T statistic of 2.87, a Beta of 0.48, and a p-value <0.001, the data support hypothesis H7, which states that sports TM promotes CM through sports TE. Hypothesis H8, which has a significant p-value of less than 0.001, a T statistic of 2.69, and a beta of 0.44, explains how TM influences CM through PC. The modified model is shown in Figure 2.

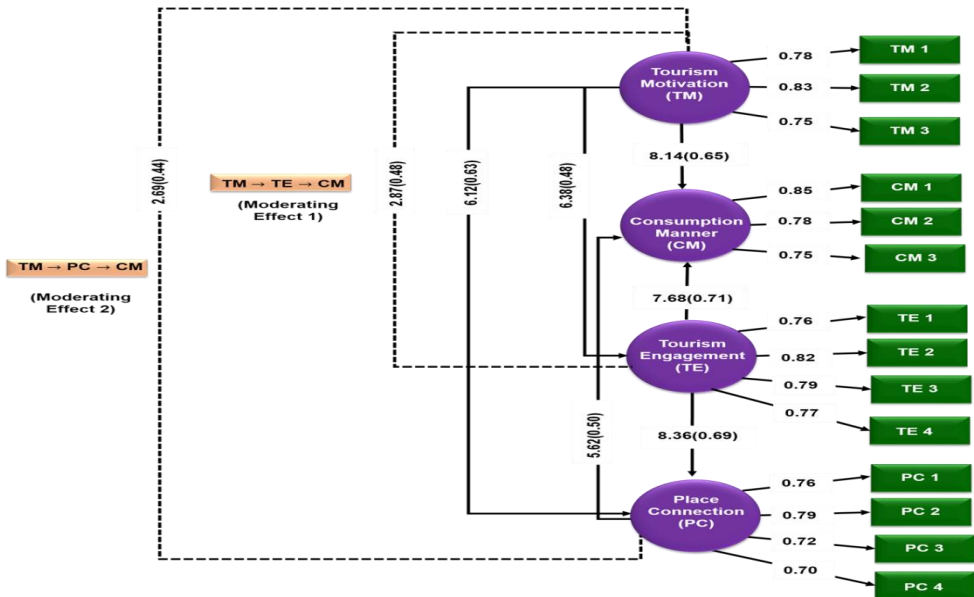


Figure 2: Modelling of moderating impact

SEM analysis supported the study's predictions and showed important connections between the components. The direct effects hypotheses, H1 through H6, all produced compelling findings: large path coefficients ( $\beta$  ranging from 0.50 to 0.71) indicate that motivation (TM) strongly influences CM, TE, and PC. Additionally, motivation affects PC, which influences CM, hence confirming H4 and H5. The moderation analyses for H7 and H8 showed a significantly significant indirect effect of TM on CM through TE and PC, respectively ( $\beta$  of 0.48 and 0.44,  $p < 0.001$ ). These results highlight the significance of engagement and motivational elements in

determining consumption patterns and place attachment in ice-snow tourism. According to the report, visitor spending and engagement may be increased through customized experiences and targeted marketing campaigns. The study emphasizes how tourist involvement and expenditure in winter sports tourism could be increased through particular experiences and marketing techniques.

## 5. Conclusion

Tourist motivation performs a critical role in forming consumption manners at I&S sports destinations. The engaging aspects that expect visitors who wish to participate in winter sports and the subsequent expenditure model results. This study explored the emerging area of I&S sports tourism, emphasizing the complex interplay between consumption patterns and motivating factors. Stakeholders must comprehend how motivating factors affect visitor manners as winter sports tourism grows in popularity. The study used SEM to experimentally investigate the relationships between sports tourism motivation, engagement, place attachment, and consumption manner by evaluating data from winter sports tourists and insights from industry experts. The outcome showed the visitors' purchase manner and preferences for winter sports performance are influenced by various motivating factors. It emphasized how crucial customized experiences and marketing tactics are to raising visitor engagement and retention rates. The results highlighted the need to comprehend and accommodate the changing preferences of winter sports enthusiasts and provide insightful information for tourism stakeholders. These results are used to suggest a quantity of recommendations for the premium growth of ice-snow tourism in China.

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