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Ski Tourism Experience and Market Segmentation from the Perspective of Perceived Value: A Case Study on Chongli District of Zhangjiakou

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Abstract: As an emerging mountain vacation tourism product, ski tourism is becoming increasingly important in the domestic tourism market. As an important theory for studying the quality of consumer experience, perceived value has been widely employed in tourism research in recent years, and improving the ski tourism experience value has become the focus of competition among ski tourism destinations. Taking the ski tourists in Chongli District of Zhangjiakou as an example, 305 valid questionnaires were collected by using online and offline methods. Based on the theory of perceived value, this paper adopted principal component analysis and cluster analysis to conduct a preliminary study of ski tourism experience and market segmentation. In addition, this paper examined the differences in demographic and behavioral characteristics of different types of ski tourists. This study finds that: (1) The perceived value of ski tourism experience includes four dimensions: facility value, perceived price, safety value and service value. (2) Using the perceived value to segment ski tourists, three different customer segments are identified: comfort-pursuant, price-sensitive and safety-oriented. (3) There are significant differences in key metrics, such as number of visits and stay time, among different types of ski tourists according to their demographic characteristics such as gender, age, monthly income, and behavioral characteristics. These results reveal the different dimensions of the perceived value of ski tourism experience and determine the market segments and characteristics of ski tourists. Developing a corresponding marketing strategy based on the different market segments can better promote the perceived value of ski tourists, and ultimately strengthen the competitiveness of the enterprises.

Key words: perceived value; ice-snow tourism; tourism experience; market segmentation

1 Introduction

Ski tourism is a combination of tourism activities and sports. Compared with some more mature tourism products, such as mountain scenic areas, traditional ancient villages and historical sites, ski tourism is an emerging mountain vacation tourism product (Ke et al., 2019). In 2015, Beijing successfully bid for the 24th Olympic Winter Games in 2022. On September 5, 2018, the General Administration of Sport of China published “the Outline of Promoting 300 Million People to Participate in Ice-snow Sports (2018–2022)”,

which proposes to promote mass winter sports, contribute to the building of a “Healthy China” and strive to achieve the goal of “promoting 300 million people into ice-snow sports” (https://www.sohu.com/a/252708970_505662). This provides a new opportunity for the development of ice-snow tourism. Ski tourism, as a branch of ice-snow tourism, will also usher in a period of rapid development. The popularization of ice-snow sports promotes the prosperity and development of the ski tourism market. However, ski tourism enterprises are also caught up in fierce competition. Whether a tourism enterprise is competitive and can maintain a

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sustainable competitive advantage depends on whether it can meet the needs of tourists and create higher perceived value for tourists. Perceived value is “a new source of competitive advantage” (Zhang et al., 2012).

As perceived value is identified as an important source of competitive advantage, the measurement and analysis of perceived value can provide a better understanding of tourism experience. Hence, perceived value has been widely used in tourism research in recent years (Wang et al., 2014). Existing studies focus on examining the relationships between perceived value and satisfaction and behavioral intention (Guo et al., 2018; Zhao et al., 2018; Long and Zhu, 2020; Zhang et al., 2022). In addition, some studies are also exploring the structural dimensions of tourists' perceived value in different scenarios, such as festival tourism (Ma and Bao, 2012), ecotourism (Wang et al., 2014), and sports events (Hervás et al., 2020). However, in different tourism scenarios, the dimensions of perceived value derived from these investigations are not consistent. In addition to some common dimensions, the tourists' perceived value of different types of tourism products may also present some value dimensions that are unique for the features of such products (Wang et al., 2014; Zhao et al., 2018). As an emerging mountain vacation tourism product, ski tourism is a combination of tourism activities and sports. Therefore, the structural dimensions of perceived value among ski tourists may be different from those of other types of tourism products. Exploring the dimensions of ski tourists' perceived value can not only enrich the knowledge system of perceived value, but it can also deepen the understanding of ski tourism experience, thus providing a theoretical basis for improving ski tourists' perceived value.

Along with the increasing importance of ski tourism in China's tourism market, it is urgent to strengthen the research on ski tourism marketing. However, tourists are not homogeneous groups, and there are differences in their demographic characteristics, consumption behaviors and consumption preferences. Cao (2020) suggested that market segmentation is becoming a new trend in the development of ice-snow tourism. Market segmentation techniques can be used to divide heterogeneous tourism markets into several homogeneous sub-groups so as to identify target markets and formulate targeted marketing strategies (Rui and Yan, 2009). However, most existing ski tourism studies use lifestyle (Füller and Matzler, 2008), motivation (Alexandris et al., 2009), perceived benefit (Won and Hwang, 2009), destination selection criteria (Konu et al., 2011), ski experience (Sato et al., 2018) and other variables to segment the market, but few studies have segmented the market with perceived value as a variable. Segmenting the ski tourism market based on perceived value can determine the perceived value concerns of different groups and their demographic and behavioral characteristics, as well as improve the perceived value of tourists and enhance the competitiveness of enter-

prises by formulating targeted marketing strategies.

Based on the theory of perceived value, this study takes the ski tourists in Chongli District of Zhangjiakou as an example to explore the dimensions of the perceived value of ski tourism experience and to segment the ski tourism market on the basis of the perceived value. This study then further analyzes the differences in demographic characteristics and behavioral characteristics of different types of tourists, so as to provide reference for the management and marketing of the ski tourism market.

2 Literature review

2.1 Perceived value

Among many definitions of perceived value, the one put forward by Zeithaml (1988) is widely accepted and used. Perceived value refers to the overall evaluation of the utility of a product (or service) after consumers weigh the benefits perceived from the product (or service) against the costs incurred in obtaining the product (or service). In other words, perceived value is the consumer's overall cognitive evaluation after comparing perceived costs with perceived benefits of the product used (Zeithaml, 1988). The measurement of perceived value has undergone a transformation from a single dimension to multiple dimensions. Sheth et al. (1991) proposed that perceived value consists of five measurement dimensions, namely functional value, social value, emotional value, cognitive value and conditional value. Petrick and Backman (2002) put forward that the perceived value of golf tourists includes two dimensions: purchase value and transaction value, of which transaction value exerts a greater effect on perceived value. Petrick (2002) proposed the Service Perceived Value Scale (SERV-PERVAL), which includes five measurement dimensions: quality, monetary price, non-monetary price, reputation and emotional response. Perceived value is mainly studied from the traditional marketing perspective, relational perspective and experience perspective (Zhang and Jia, 2008). From the perspective of experience, scholars have identified two dimensions of perceived value, namely hedonic and utilitarian. The former is the hedonic dimension produced by the experience of using the product, which is experiential, non-instrumental and emotional, and is often associated with the intangible attributes of the product or service; while the latter is the utilitarian dimension generated by the function of the product, which is mainly functional, instrumental, cognitive, and methodologically purposeful (Babin et al., 1994; Voss et al., 2003). Chandon et al. (2000) further divided hedonic value and utilitarian value into three categories, of which hedonic value includes opportunities for value expression, entertainment and exploration, and utilitarian value includes savings, higher product quality, and improved shopping convenience.

In the 1990s, as the theory of customer value was gradually introduced into the field of tourism, the concept of

tourists' perceived value was extended, and became a major concern in the tourism academic circles at home and abroad (Bai et al., 2010). At present, researches on tourists' perceived value mainly focus on two aspects. One aspect is exploring the relationship between perceived value and other variables, as well as analyzing the impact of perceived value on satisfaction, loyalty and behavioral intention (Guo et al., 2018; Zhao et al., 2018; Long and Zhu, 2020; Zhang et al., 2022); while the other is studying the structural dimensions of tourists' perceived value under certain tourism scenarios, such as festival tourism (Ma and Bao, 2012), ecotourism (Wang et al., 2014), and sports events (Hervás et al., 2020).

However, due to different research objects, the dimensions of perceived value obtained by these studies are not consistent, which indicates that the tourists' perceived value of different types of tourism products not only has some common dimensions, but may also have some unique dimensions due to the features of such products (Wang et al., 2014; Zhao et al., 2018). Therefore, compared with other types of tourism products, the perceived value of ski tourism, as an emerging mountain vacation tourism product, also presents some unique value dimensions. Identifying the dimensions of ski tourists' perceived value can provide a better understanding of ski tourism experience.

2.2 Tourism experience from the perspective of perceived value

As an emerging tourism product, ski tourism has attracted more and more attention from scholars, and the study of ski tourism experience has gradually become one of the hot topics. On the one hand, scholars adopt quantitative research methods to explore the impacts of related variables on ski tourism satisfaction, such as positive emotion and crowding perception. Lee et al. (2014) explored the impact of pleasure, flow and involvement in the ski experience on satisfaction. Pikkemaat et al. (2020) discussed the impact of crowding on skiing experience, finding that individual skill level and behavior of other skiers play a moderating role in crowding and satisfaction. On the other hand, some scholars use qualitative research methods to explore the connotations of ski experience and how to create a positive ski tourism experience. Based on interviews and participatory observations, Arild et al. (2015) explored how tour guides interact with tourists to create a positive ski tourism experience, and found that tour guides can effectively and conveniently facilitate a fun experience with minimal exposure risk by using their knowledge about activities, areas, safety management and organizational skills. Ke et al. (2019) analyzed ski tourism experience with grounded theory based on Ctrip.com's comments, and found that the ski tourism experience clues mainly consist of three core categories: timeline, contact area and receiver. Mirehie and Gibson (2020) probed the skiing experience and happiness of female tour-

ists from the perspective of positive psychology, and constructed a framework of happiness through grounded theory, including five dimensions of positive emotions, engagement, relationships, meaning and accomplishment.

With the introduction of perceived value into tourism research, some scholars have explored the ski tourism experience based on perceived value, such as exploring the value that remote ski destinations bring to skiers, and determining the impact of perceived value on satisfaction. Berbek (2018) explored the motivation, experience and value of skiers who choose the Arctic as their skiing destination, and found that the value of the skiing experience in the Arctic mainly included three aspects: value associated with nature (beauty, wilderness and remoteness), value associated with skiing (unspoiled powder snow and independent trails) and the value of bonding with other participants (mutual help of participants strengthens the team bond). Bonnefoy-Claudet and Ghantous (2013) discussed the relationships between emotion, perceived value and satisfaction in the ski tourism experience, finding that overall perceived value plays a mediating role in emotion and satisfaction. However, in that study, the scholars only measured the overall perceived value from a single dimension, but did not explore the specific dimensions of perceived value.

More recently, scholars have begun to explore the multi-dimensional structure of ski tourists' perceived value. Through exploratory factor analysis, Wen (2016) found that the perceived value of ski tourists includes five dimensions: perceived service quality, perceived facility quality, convenience value, perceived price and social and emotional value. Drawing on existing scales (SERV-PERVAL), Sato et al. (2018) divided the perceived value of ski tourists into five dimensions: quality, emotional response, monetary price, behavioral price and destination reputation, and further discussed the influence of perceived value on the loyalty of tourists. From the perspective of perceived gains and perceived losses, Lu et al. (2018) divided the perceived value of ski tourists into five dimensions: perceived facility quality, perceived service quality, emotional value, perceived monetary cost and perceived non-monetary cost. However, most of the existing studies on ski tourists' perceived value refer to the existing scales while the unique value of the ski tourism experience has not been identified. Therefore, the dimensions of the perceived value of the ski tourism experience need to be further explored. Thus, based on the theory of hedonic-practical perceived value, this study explores the perceived value of the ski tourism experience, so as to deepen our understanding of the ski tourism experience.

2.3 Segmentation of ski tourism market

Segmentation of the tourism market has gradually become one of the key contents of tourism marketing research. The

tourism market can be subdivided according to a variety of variables, including gender, age, education and other demographic characteristic variables; interest seeking, loyalty and other behavioral variables; motivation, attitude and other psychological variables; natural, social environment and other environmental variables; national boundaries, regions and other geographical variables; and values, customs and other cultural variables (Mowen and Minor et al., 2003).

In the study of ski tourism, scholars have segmented ski tourists based on variables such as lifestyle, motivation, perceived benefit, and destination selection criteria. Füller and Matzler (2008) subdivided Alpine skiers into five groups based on lifestyle, namely non-family/diversion, family, sport/life-conscious, demanding and settled/intellectual. Alexandris et al. (2009) utilized motivations to identify four segments of recreational skiers in northern Greece: novice, multiple-interest, naturalist, and enthusiast. Won and Hwang (2009) subdivided Korean college skiers and snowboarders into four groups according to the perceived benefits of destination selection: fun and safety, ski variety, cost-conscious, and time-conscious. According to ski destination selection criteria, Konu et al. (2011) subdivided Finnish skiers into six groups: passive tourists, cross-country skiers, want-it-all, all-but-downhill skiers, sports seekers, and relaxation seekers. The above segmentation criteria focus on the emotion and cognition of tourists. Sato et al. (2018) identified four segments of Niseko ski tourists based on behavioral variables (i.e., length and frequency of snow-based sport participation): novice, short-active, long-inactive, and expert.

Despite this high level of interest, there are few studies which segment the ski tourism market from the perspective of perceived value. However, in the field of low-carbon tourism, some studies have segmented the market with perceived value as a variable. For example, Hou and Hu (2013) identified four categories of segmented consumer groups based on the perceived value of low-carbon tourism, namely emotional appeal type, far-away type, quality pragmatic type, and low-carbon faithful type. Thus, this study segments the ski tourism market based on perceived value, which can expand the segmentation variables of the ski tourism market and enrich existing research on the one hand; and can carry out precision marketing for different types of tourists on the other hand, so as to improve the perceived value of ski tourists and further enhance the competitiveness of ski enterprises.

3 Research design

3.1 Questionnaire design

The questionnaire in this study consists of three parts. The first part captures the basic information of the tourists in the survey, including gender, age, marriage, occupation, education level and monthly income. The second part covers the investigation of skiing behavior of the tourists, including the

number of visits, the number of ski days, the mode of transportation, the mode of use of ski clothes and equipment, the selection of ski resort and the information access channels. The third part provides the measurement of the tourists' perceived value of skiing. On the basis of reviewing a great deal of literature and drawing on existing research findings (Zhang et al., 2008; Wen, 2016; Lu et al., 2018), and in combination with the characteristics of consumption behavior of ski tourism, 15 items were selected to measure the perceived value of ski tourists via the five-point Likert scale method, involving facility, service, price and safety. Due to the participatory and experiential nature of ski tourism, ski tourists may pay attention to the perception of the quality of facilities and services. Skiing is a high-consumption sport, so tourists' perception of whether the price is reasonable needs to be noted. In addition, as skiing is a stimulating sport, the safety problem of tourists is also worthy of attention. Therefore, the safety value is added.

3.2 Data collection

Chongli in Hebei Province was in the first batch of national ski resorts, and seven large ski resorts have been built in Chongli, including Wanlong, Yunding, Taiwu, Duolemeidi, Changchengling, Fulong and Cuiyunshan Galaxy. Changchengling Ski Resort was mainly built to provide a base for athlete training. Fulong Ski Resort and Cuiyunshan Galaxy Ski Resort were officially opened at the end of 2016 and 2017, respectively, and were only operational for a short period of time when the data were collected. Therefore, in order to fully reflect the skiing tourism situation in Chongli District of Zhangjiakou City, this study selected four ski resorts, namely Wanlong, Yunding, Taiwu and Duolemeidi, to carry out the questionnaire survey, and the sampling method was convenience sampling. Questionnaires were distributed both online and offline.

Online questionnaires were mainly generated in the form of a questionnaire completion link through Sojump and sent to the QQ group and WeChat group related to Chongli skiing. Online questionnaires were distributed at the end of November 2017, and a total of 240 questionnaires were recovered. Offline questionnaires were distributed around the halls, trails, hotels and restaurants of the four ski resorts in the form of paper questionnaires. Offline questionnaires were distributed in January 2018, with about 25 questionnaires distributed to each ski resort, and 91 questionnaires were recovered. A total of 331 questionnaires (i.e., 240 online and 91 offline) were collected, of which 305 were valid, for an effective rate of 92.1%. Of the 305 valid questionnaires, the number of questionnaires for Wanlong and Yunding ski resorts accounted for more than half. According to the statistics, as of December 3, 2017, the ski resorts in Chongli had received 1.64×10^5 tourists in this snow season, including 68364 for Wanlong and 19989 for Yunding (Wang, 2017). The number of tourists received by the Wanlong and

Yunding ski resorts accounted for 53.9% of the total number of ski tourists in Chongli, so the data collection is representative among the different resorts.

3.3 Data analysis

In this study, the statistical analysis software SPSS 22.0 was used to analyze the data through the methods of exploratory factor analysis, cluster analysis and contingency table analysis. First, KMO and Bartlett's Test were used to determine whether the perceived value variable is suitable for factor analysis. Second, principal component analysis was adopted to reduce the dimensions of data. Third, K-means cluster analysis was used to reveal the grouping characteristics of the data cluster. Fourth, contingency table analysis was used to test whether there are significant differences in the demographic characteristics and the behavioral characteristics among several groups of the population.

4 Research results

4.1 Sample profile

Table 1 shows the demographic characteristics of the survey sample, in which men account for 51.5% and women make up 48.5% of the total, so there are roughly equal proportions of men and women. In terms of marital status, the married respondents account for 71.1% of the total. As for the age structure, people aged 19–30 account for 59.3% of the total. In terms of educational level, the largest group is undergraduates, accounting for 35.1%. The occupational distribution is relatively diverse, with employees of enterprises and public institutions (ordinary employees and management personnel) making up the largest proportion, accounting for 28.6% of the total. For the monthly income level, people with a monthly income of more than 8000 yuan make up 29.5% of the total.

Table 1 Demographic characteristics of tourists

Characteristic	Category	Frequency	Proportion (%)	Characteristic	Category	Frequency	Proportion (%)
Gender	Male	157	51.5	Age	< 18	6	2.0
	Female	148	48.5		19–30	181	59.3
Marital status	Married	217	71.1		31–50	112	36.7
	Unmarried	88	28.9		> 50	6	2.0
Occupation	Ordinary employees of enterprises and public institutions	45	14.8	Educational level	Junior middle school and below	22	7.2
	Management personnel of enterprises and public institutions	42	13.8		Senior high school (including technical secondary school)	67	22.0
	Civil servants	12	3.9		Junior college	76	24.9
	Service sales personnel	18	5.9		Undergraduate	107	35.1
	Freelancers	65	21.3		Master and above	33	10.8
	Cultural, educational, scientific and technical personnel	19	6.2	Monthly income (yuan)	< 1000	47	15.4
	Students	30	9.8		1000–3000	58	19.0
	Farmers	4	1.3		3000–5000	55	18.0
	Workers	16	5.2		5000–8000	55	18.0
	Other	54	17.7		> 8000	90	29.5

The behavioral characteristics of skiing in the survey sample are shown in Table 2. On the number of visits, the first time skiing makes up 43.3% of the total. In terms of the number of ski days, one day makes up 50.8%. In terms of the way of touring, self-guided tour accounts for 80.3%. For the mode of use of ski clothes and equipment, rental makes up 62.3%. As for the selection of ski resort, Wanlong Ski Resort accounts for 45.2%. Regarding information access channels, recommendation by friends accounts for 52.5% of the total.

4.2 Principal component analysis

First of all, the credibility and validity of the sample data were tested and reliability measurement analysis was conducted on the measurement items of the perceived value.

The Cronbach's α coefficient is 0.893, indicating that the credibility of the data is reliable. The KMO and Bartlett sphericity test, the two most commonly used validity test methods, were used to determine whether the data are suitable for factor analysis. The results of the statistical analysis show that the KMO test value is 0.810, the Bartlett sphericity test value is approximately the chi-square value 2643.67 and the P value is close to 0. The KMO test value is greater than 0.7, indicating that the data are suitable for factor analysis. The probability P value of Bartlett's sphericity test is less than the significant coefficient 0.001, and the null hypothesis of the sphericity test is rejected, indicating that there are significant differences in the correlation coefficient matrices and also proving that this group of data is suitable for factor analysis.

Table 2 Behavioral characteristics of skiing

Characteristic	Category	Frequency	Proportion(%)	Characteristic	Category	Frequency	Proportion (%)
Number of visits	First time	132	43.3	Mode of transportation	Self-guided tour	225	73.8
	Second time	46	15.1		Passenger car	43	14.1
	Over three times	127	41.6		Airplane	16	5.2
Stay time	1 day	155	50.8		Train	21	6.9
	2 days	67	22.0	Mode of use of ski clothes and equipment	Rental for all	190	62.3
	≥ 3 days	83	27.2		Purchase for all	76	24.9
Way of touring	Self-guided tour	245	80.3		Purchase for clothes, rental for equipment	35	11.5
	Organized by unit	22	7.2		Purchase for equipment, rental for clothes	4	1.3
	Tour by travel agency	17	5.6	Information access channels	Recommendation by friends	160	52.5
	Other	21	6.9		Publicity by the Olympic Winter Games	44	14.4
Selection of ski resorts	Wanlong	138	45.2		Internet	37	12.1
	Yunding	82	26.9		Other	56	18.4
	Taiwu	20	6.6		Outdoor media	4	1.3
	Duolemeidi	65	21.3		Travel agency	4	1.3

The common factor was extracted by principal component analysis and normalized maximum variance orthogonal rotation, and any item with a characteristic root more than 1 and factor load greater than 0.5 was taken as the extraction standard. Any item with a factor lower than 0.5 or the load on multiple factors greater than 0.4 was deleted. Four factors were extracted, including 15 items. The cumulative variance contribution rate of the four factors is 70.557%, which exceeds the minimum standard of a 60.0% variance contribution rate, indicating that tourists' perceived value has been well explained. The factor load after rotation is 0.5–0.9, which indicates that the scale has good convergence validity, and the credibility of each factor is greater than 0.7, showing that the factors have good internal consistency and high credibility. The specific results are shown in Table 3.

Factor F1 includes five items, which mainly reflect the perceived value of tourists from facilities and equipment of ski resorts, and is therefore named facility value. The variance contribution rate of this common factor is 40.966%, which is much higher than the other common factors, showing that it is the most important perceived value of the ski experience for tourists. Factor F2 consists of four items, which mainly reflect the perceived value from the aspect of money expenditure, and is hence named perceived price. The variance contribution rate is 12.302%. Factor F3 includes three items, which mainly reflect the perceived value from the standpoint of ski safety, so it is named safety value. The variance contribution rate is 8.983%. Factor F4 consists of three items, which mainly reflect the perceived value from the service level of the ski resort, so it is named service value. The variance contribution rate is 8.306%.

In order to understand the perceived value of ski tourists

and the perceived experience evaluation of its dimensions, the average calculation method was used to describe the average level of ski tourism experience evaluation. Generally speaking, in the Likert scale, scores of 1–2.4 indicate dissatisfaction, 2.5–3.4 indicate neutrality, and 3.5–5 indicate satisfaction. By comparing the mean value analysis, it can be seen that the scores of tourists for service value (3.54), safety value (3.51) and facility value (3.47) are high, and for perceived price (2.92) they are low.

4.3 Cluster analysis

The K-means clustering method in SPSS was used for cluster analysis of the four principal component factors (F1 facility value, F2 perceived price, F3 safety value and F4 service value). The initial cluster center, the maximum iterations and the convergence criterion were defaulted by the system. In cluster analysis, the number of clusters was set to 3 and 4, respectively, and the result of clustering into three categories was the best. Table 4 shows the scores of the three groups on the four perceived value factors; and the higher the score, the higher the group's recognition of the factor. On the contrary, a negative score represents disapproval. In addition, the probability values of the distance differences between categories are all less than 0.001 by variance analysis, indicating that the differences between categories are large enough and the cluster effect is good.

Tourists in the first category of have high scores in F1 facility value and F4 service value, and negative scores in F2 perceived price and F3 safety value, so they are "comfort-pursuant". That is to say, they pay more attention to facilities and service quality in ski tourism. The number of tourists in this category is the smallest at 60 people, accounting for 19.7% of the total. Tourists in the second category have

Table 3 Loads of perceived value factors

Factor	Item	Factor load	Mean value	Standard deviation	Total variance (%)	Credibility coefficient
F1 Facility value (3.47)	Reasonable setting of public rest place	0.820	3.43	0.829	40.966	0.866
	Complete and convenient ATM, shopping supermarket, toilet, public charging facilities and no need to queue	0.636	3.53	0.803		
	Convenient parking lot and vehicle repair shop when needed	0.593	3.50	0.824		
	Clean food and beverages with local characteristics	0.848	3.44	0.805		
	Clean and comfortable accommodation environment	0.768	3.46	0.738		
F2 Perceived price (2.92)	Reasonable skiing price	0.732	2.90	0.693	12.302	0.787
	Moderate rental price for ski equipment	0.696	3.01	0.877		
	Affordable food and beverages at the ski resort	0.765	2.92	0.859		
	Affordable accommodation price at the ski resort	0.799	2.84	0.827		
F3 Safety value (3.51)	Good and uncrowded ski track, good mood	0.606	3.40	0.781	8.983	0.828
	Safe skiing, ski resorts have largely removed the risk factors ahead of time	0.866	3.48	0.717		
	The cable car staff is considerate to ensure safety	0.697	3.64	0.761		
F4 Service value (3.54)	Good service attitude of staff contacted and considerate service	0.622	3.56	0.709	8.306	0.803
	Standard mandarin of staff contacted	0.768	3.50	0.698		
	Young staff contacted	0.864	3.55	0.677		

Table 4 Hierarchical cluster analysis of principal component factors

Name of cluster	Distance between final cluster centers				Number of cases
	F1 Facility value	F2 Perceived price	F3 Safety value	F4 Service value	
Comfort-pursuant	0.68540	-0.99340	-0.47993	0.66153	60
Price-sensitive	-0.42020	0.09077	-0.74516	-0.53313	109
Safety-oriented	0.03440	0.36552	0.80896	0.13544	136
<i>F</i> -test	28.028	52.366	175.358	36.925	
Sig.	0.000	0.000	0.000	0.000	

the highest score in F2 perceived price, but negative scores in F1 facility value, F3 safety value and F4 service value, so they are “price-sensitive”. In other words, they are more concerned about the rationality of consumption price in ski tourism. This category included 109 tourists, accounting for 35.7% of the total. Tourists in the third category have the highest scores in F3 safety value and low scores in F1 facility value, F2 perceived price and F4 service value, so they are “safety-oriented”. That is, the safety experience in ski tourism is of greater concern. The number of tourists in this category is the largest, with a total of 136 people, accounting for 44.6%.

4.4 Contingency table analysis

Contingency table analysis was used to examine whether there are significant differences among the different types of tourists by gender, marital status, age, educational level, occupation, monthly income, number of visits, or stay time. The results show that there are significant differences in the three categories of tourists in terms of gender ($P<0.001$), age ($P<0.001$), educational level ($P<0.001$), occupation

($P<0.001$), monthly income ($P<0.001$), number of visits ($P<0.001$), and stay time ($P<0.001$), but no significant differences in marital status ($P>0.05$) (Table 5).

Most of comfort-pursuant tourists are male, aged 31–50, and mainly with a bachelor’s degree. Most of them are freelancers, their monthly income is over 8000 yuan, the number of visits is over three times and the stay time is more than three days. They mainly purchase ski clothes and equipment. The proportions of men and women among price-sensitive tourists are basically the same, and they are mainly aged 19–30, with a junior college degree. Most of them are ordinary employees of enterprises and public institutions, and their monthly income is 5000–8000 yuan. Most of them are first-time visitors, stay for one day and mainly rent ski clothes and equipment. Most safety-oriented tourists are female, aged 19–30, and mainly with a bachelor’s degree. Most of them are freelancers, with a monthly income of 1000–3000 yuan. Most of them are first-time visitors, stay for one day, and mainly rent ski clothes and equipment.

Table 5 Differences in characteristics of the three different types of tourists

Variable	Category	Type of tourists			Total	Chi-square value	P value
		Comfort-pursuant	Price-sensitive	Safety-oriented			
Gender	Male	45 (75.0%)	57 (52.3%)	55 (40.4%)	157 (51.5%)	19.952	<0.001
	Female	15 (25.0%)	52 (47.7%)	81 (59.6%)	148 (48.5%)		
Marital status	Married	46 (76.7%)	72 (66.1%)	99 (72.8%)	217 (71.1%)	2.447	>0.05
	Unmarried	14 (23.3%)	37 (33.9%)	37 (27.2%)	88 (28.9%)		
Age	< 18	0 (0.0%)	6 (5.5%)	0 (0.0%)	6 (2.0%)	31.979	<0.001
	19–30	23 (38.3%)	63 (57.8%)	95 (69.9%)	181 (59.3%)		
	31–50	34 (56.7%)	37 (33.9%)	41 (30.1%)	112 (36.7%)		
	> 50	3 (5.0%)	3 (2.8%)	0 (0.0%)	6 (2.0%)		
Educational level	Junior middle school and below	3 (5.0%)	3 (2.8%)	16 (11.8%)	22 (7.2%)	60.153	<0.001
	Senior high school (including technical secondary school)	24 (40.0%)	13 (11.9%)	30 (22.1%)	67 (22.0%)		
	Junior college	0 (0.0%)	40 (36.7%)	36 (26.5%)	76 (24.9%)		
	Undergraduate	33 (55.0%)	36 (33.0%)	38 (27.9%)	107 (35.1%)		
	Master and above	0 (0.0%)	17 (15.6%)	16 (11.8%)	33 (10.8%)		
Occupation	Ordinary employees of enterprises and public institutions	14 (23.3%)	19 (17.4%)	12 (8.8%)	45 (14.8%)	49.169	<0.001
	Management personnel of enterprises and public institutions	7 (11.7%)	18 (16.5%)	17 (12.5%)	42 (13.8%)		
	Civil servants	0 (0.0%)	6 (5.5%)	6 (4.4%)	12 (3.9%)		
	Service sales personnel	0 (0.0%)	3 (2.8%)	15 (11.0%)	18 (5.9%)		
	Freelancers	15 (25.0%)	13 (11.9%)	37 (27.2%)	65 (21.3%)		
	Cultural, educational, scientific and technical personnel	0 (0.0%)	12 (11.0%)	7 (5.1%)	19 (6.2%)		
	Students	7 (11.7%)	14 (12.8%)	9 (6.6%)	30 (9.8%)		
	Farmers	3 (5.0%)	1 (0.9%)	0 (0.0%)	4 (1.3%)		
	Workers	3 (5.0%)	4 (3.7%)	9 (6.6%)	16 (5.2%)		
	Other	11 (18.3%)	19 (17.4%)	24 (17.6%)	54 (17.7%)		
Monthly income	< 1000 yuan	16 (26.7%)	25 (22.9%)	6 (4.4%)	47 (15.4%)	78.108	<0.001
	1000–3000 yuan	2 (3.3%)	6 (5.5%)	50 (36.8%)	58 (19.0%)		
	3000–5000 yuan	14 (23.3%)	17 (15.6%)	24 (17.6%)	55 (18.0%)		
	5000–8000 yuan	10 (16.7%)	33 (30.3%)	12 (8.8%)	55 (18.0%)		
	> 8000 yuan	18 (30.0%)	28 (25.7%)	44 (32.4%)	90 (29.5%)		
Number of visits	First time	12 (20.0%)	57 (52.3%)	63 (46.3%)	132 (43.3%)	25.307	<0.001
	Second time	7 (11.7%)	13 (11.9%)	26 (19.1%)	46 (15.1%)		
	Over three times	41 (68.3%)	39 (35.8%)	47 (34.6%)	127 (41.6%)		
Stay time	1 day	9 (15.0%)	63 (57.8%)	83 (61.0%)	155 (50.8%)	54.221	<0.001
	2 days	16 (26.7%)	16 (14.7%)	35 (25.7%)	67 (22.0%)		
	Over 3 days	35 (58.3%)	30 (27.5%)	18 (13.2%)	83 (27.2%)		
Mode of use of ski clothes and equipment	Rental for all	16 (26.7%)	84 (77.1%)	90 (66.2%)	190 (62.3%)	54.772	<0.001
	Purchase for all	29 (48.3%)	22 (20.2%)	25 (18.4%)	76 (24.9%)		
	Purchase for clothes, rental for equipment	15 (25.0%)	3 (2.8%)	17 (12.5%)	35 (11.5%)		
	Purchase for equipment, rental for clothes	0 (0.0%)	0 (0.0%)	4 (2.9%)	4 (1.3%)		

Note: $P < 0.05$, the significance level is acceptable; $P < 0.001$, has a better significance level.

5 Discussions

5.1 Perceived value dimensions of ski tourists' experience

An exploratory factor analysis found that the perceived value of ski tourists' experience mainly includes four dimensions: facility value, perceived price, safety value and service value. According to the theory of hedonic-practical perceived value, the perceived value of the ski tourism experience was analyzed. Among them, the perceived value under the hedonic dimension mainly refers to the safety value; while the perceived value under the utilitarian dimension mainly refers to facility value, service value and perceived price. The perceived value under the utilitarian dimension is similar to the results of several other studies (Wen, 2016; Lu et al., 2018), while the safety value under the hedonic dimension is a new discovery of this study. Skiing is characterized by high risk and stimulation, so the safety value is the most important sensory experience in ski tourism, as well as the basis for tourists to obtain their peak experience.

Among various dimensions of the perceived value of the ski tourism experience, facility value is the most important perceived value, followed by perceived price. Lu et al. (2018) also found that the quality perception of ski tourists exerts the highest effect on perceived value, indicating that ski tourists pay more attention to the comfort and convenience of related facilities in the ski experience. Furthermore, it also shows that compared to hedonic value, ski tourists attach more importance to the utilitarian value of the ski experience. In other types of tourism activities, some scholars have also found an important role of utilitarian value. For example, Ma and Bao (2012) conducted a survey of domestic tourists during the Dai Water-sprinkling Festival and found that cultural cognition value, as a utilitarian value, has the greatest impact on domestic tourists' satisfaction. In the perceived evaluation of the ski tourism experience, ski tourists offer the highest score for service value and the lowest score for perceived price. Skiing is a high-consumption activity, and it is necessary to purchase special ski clothes and equipment. Thus, in the questionnaire survey, more than half of the ski tourists (62.3%) chose to rent all clothes and equipment. In addition to paying rental fees, tourists also need to buy tickets, so the overall consumption cost in ski tourism will be relatively high.

5.2 Characteristics of ski tourism market segments based on perceived value

Cluster analysis was conducted on ski tourists based on perceived value, and the ski tourists were divided into three categories: comfort-pursuant, price-sensitive and safety-oriented. The price-sensitive type is similar to the cost-conscious market segment identified by Won and Hwang (2009), both of which reflect the ski tourists' atten-

tion to ski-related monetary cost. The market segment with the largest number of people is safety-oriented, followed by price-sensitive and comfort-pursuant. Different types of ski tourists pay different amounts of attention to perceived value. There are also differences in gender, age, education level, occupation, monthly income, number of visits, stay time, and the use mode of ski equipment. However, no difference was found in marital status among the different types of skiers.

Comfort-pursuant skiers have a richer skiing experience, most of whom have purchased ski equipment and stay for a longer time. Therefore, unlike price-sensitive and safety-oriented skiers, such skiers pay more attention to the quality of facilities and services in their skiing experience. Besides, this type of skier boasts a higher income level and pursues quality of life to some extent. The age structures of price-sensitive and safety-oriented skiers are similar. There are more young people, and most of them ski for the first time and rent ski clothes and equipment. Compared with comfort-pursuant and price-sensitive skiers, safety-oriented skiers include the largest proportion of women, showing that women have higher requirements for safety than men when they are first exposed to adventure sports. The income level of price-sensitive skiers is moderate among the three categories of skiers, while that of safety-oriented skiers is the lowest. This indicates that there is not a simple linear relationship between skiers' attention to monetary cost and income level, and the specific relationship between these two needs to be further explored.

5.3 Practical implications

In order to better enhance the competitiveness of ski tourism enterprises in Chongli District, it is necessary to formulate corresponding marketing and management strategies for different market segments, so as to better meet the demands of different types of tourists and improve the perceived value of ski tourists.

It is necessary to integrate natural and human resources, and build a joint operation network. Comfort-pursuant skiers stay longer and pay more attention to the accommodation facilities and service quality of ski resorts. Therefore, we could carry out joint operations within the region, combine ski resorts, hotels and scenic spots, launch various types of ski tourism packages, as well as provide rich experience activities such as featured restaurants, snow-covered mountains and hot springs, and music festivals in the snow season. Such efforts could not only improve the competitiveness of ski resorts and attract tourists to stay and consume, but they could also meet the diverse needs of tourists and enhance the perceived value of the ski tourism experience.

We could establish a ski subsidy system to train teenagers to become the main force in skiing. In 2020, the number of skiers in China reached 12.88 million, and the ski popula-

tion penetration rate was less than 1% (Wu, 2021). To increase the ski population penetration rate, great efforts need to be made to train teenagers to become a stable ski population (Wang and Tian, 2019). Price-sensitive skiers are usually 19–30 years old, most of whom are teenagers and are sensitive to the price associated with skiing activities. Therefore, attention should be paid to the issue of the ski expenses of younger skiers, and local ski resorts should be encouraged to open to them for free or with low fees in the form of government subsidies to cultivate their interest in skiing. In addition, importance should be attached to the young participants' first ski experience, and high-quality skiing instruction should be provided, so as to enhance their confidence, help them gain a sense of achievement and increase their revisitation rate.

Besides, we should strengthen safety training and increase the inputs into safety protection facilities. Safety-oriented skiers account for the most people among the three types of skiers, and most of them are women. Therefore, on the one hand, free skiing knowledge training can be provided for this type of skier, and psychological comfort can be imparted to eliminate their nervousness in the first skiing experience. On the other hand, we should strengthen the construction of safety protection facilities in ski resorts, pay attention to inputs in the protection nets, protection mats and other facilities of the ski tracks, and supply corresponding first aid equipment and patrol and rescue personnel. In addition, according to the observation data, the safety information of ski resorts should be released in a timely manner. Ski sports insurance should be recommended to skiers, and an emergency contact system should be established to provide the maximum safety guarantee for managing skiers' sports accidents and medical treatment.

6 Conclusions

From the perspective of perceived value, this paper conducted a preliminary study on ski tourism experience and market segmentation by means of a questionnaire survey. The results reveal the dimensions of the perceived value of the ski tourism experience, validate the feasibility and effectiveness of perceived value as a standard for segmenting the ski tourism market, and expand the segmentation variables of the ski tourism market. By analyzing the differences in demographic and behavioral characteristics of different types of skiers, this study can help ski enterprises determine the market segment profile and formulate appropriate marketing and management strategies.

This study provides a new perspective for exploring ski tourism, but it also has certain limitations. Most of ski tourists in Chongli District come from the Beijing-Tianjin-Hebei region. Investigating only the skiing tourism data in Chongli District may have certain limitations in the practical value of the research results for the entire skiing tourism field. Therefore, different ski tourism destinations should be

compared to improve the comprehensiveness and universality of the research results. Besides, the differences in different cultural contexts are also waiting to be verified, and the role of cultural values in perceived value could be compared.

Future research can be further extended. On the one hand, different ski tourism destinations can be selected to develop a scale of perceived value of ski tourism experience. On the other hand, it is also possible to explore the causes and consequences of the perceived value of ski tourism experience. By constructing a structural equation model, the driving factors of perceived value can be clarified, and the influence of perceived value on attitudes and behaviors can be investigated. Ski tourism at home is still in the preliminary stage of development, so a diachronic comparative study could better reveal the changing trends of ski tourists' perceived value, so that ski enterprises can grasp the primary concerns of tourists in time and provide ski tourists with more commensurate services and experiences.

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References

- Alexandris K, Kouthouris C, Funk D, et al. 2009. Segmenting winter sport tourists by motivation: The case of recreational skiers. *Journal of Hospitality Marketing & Management*, 18(5): 480–499.
- Arild R, Scott S, Rose J. 2015. The art of guiding in nature based adventure tourism: How guides can create client value and positive experience on mountain bike and backcountry ski tours. *Scandinavian Journal of Hospitality and Tourism*, 15(S1): 62–82.
- Babin B J, Darden W R, Mitch G. 1994. Work and/or fun: Measuring hedonic and utilitarian shopping value. *Journal of Consumer Research*, 20(4): 644–656.
- Bai K, Ma Y F, Li T S, et al. 2010. An association study on tourists' cognition, perceived value and behavior intention based on structural equation model (SEM): A case study of inbound tourists in Xi'an City. *Acta Geographica Sinica*, 65(2): 244–255. (in Chinese)
- Berbeka J. 2018. The value of remote Arctic destinations for backcountry skiers. *Scandinavian Journal of Hospitality and Tourism*, 18(4): 393–418.
- Bonnefoy-Claudet L, Ghanous 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.
- Cao J H. 2020. Market segmentation: New development trend of ice and snow tourism industry. *Chinese Social Sciences Today*, 2020-12-30(6). (in Chinese)
- Chandon P, Wansink B, Laurent G. 2000. A benefit congruency framework of sales promotion effectiveness. *Journal of Marketing*, 64(4): 65–81.
- Füller J, Matzler K. 2008. Customer delight and market segmentation: An application of the three-factor theory of customer satisfaction on life style groups. *Tourism Management*, 29(1): 116–126.
- Guo A X, Guo Y Z, Li H J, et al. 2018. Empirical research on tourists perceived value influence to revisit intention: The role of tourists satisfaction and risk probability. *Tourism Tribune*, 33(1): 63–73. (in Chinese)
- Hervás J C, Prado-Gascó V, González-Serrano M H. 2020. Perceived value

- in sporting events (PVSP): A further step for the strategic management. *Sustainability*, 12(14): 5498. DOI: 10.3390/su12145498.
- Hou F, Hu B. 2013. An study about low-carbon tourism tourist perceived value based on factor analysis and cluster analysis methods. *Ecological Economy*, (4): 132–137. (in Chinese)
- Ke Y Y, Xu K S, Lin M S. 2019. Experience evaluation of ski tourism based on grounded theory. *Resource Development & Market*, 35(7): 979–985. (in Chinese)
- Konu H, Laukkanen T, Komppula R. 2011. Using ski destination choice criteria to segment Finnish ski resort customers. *Tourism Management*, 32(5): 1096–1105.
- Lee H W, Shin S, Bunds K S, et al. 2014. Rediscovering the positive psychology of sport participation: Happiness in a ski resort context. *Applied Research in Quality of Life*, 9(3): 575–590.
- Long F, Zhu H. 2020. Supporting the development of homestay tourism in the Yangtze River Delta: A study based on tourists' perceived value. *Journal of Resources and Ecology*, 11(6): 624–632.
- Lu L, Liu C L, Liu L. 2018. Ski tourist perceived value and satisfaction in relation to behavioral intentions: A case study of Yunding ski resort in Chongli. *Journal of Arid Land Resources and Environment*, 32(5): 202–208. (in Chinese)
- Ma L, Bao J G. 2012. A study on tourist experience of traditional festivals from the perspective of perceived value: An example from Dai ethnic group's Water Splashing Festival at Xishuangbanna, China. *Geographical Research*, 31(2): 269–278. (in Chinese)
- Mirehie M, Gibson H J. 2020. Women's participation in snow-sports and sense of well-being: A positive psychology approach. *Journal of Leisure Research*, 51(4): 397–415.
- Mowen J C, Minor M S. (eds). Huang G F, Shu Y T (trans). 2003. Consumer behavior. Beijing, China: Tsinghua University Press: 27–32. (in Chinese)
- Petrick J F. 2002. Development of a multi-dimensional scale for measuring the perceived value of a service. *Journal of Leisure Research*, 34(2): 119–134.
- Petrick J F, Backman S J. 2002. An examination of the construct of perceived value for the prediction of golf travelers' intentions to revisit. *Journal of Travel Research*, 41(1): 38–45.
- 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.
- Rui T S, Yan H. 2009. Review research methods in tourist market segmentation. *Tourism Science*, 23(5): 59–63. (in Chinese)
- Sato S, Gipson C, Todd S, et al. 2018. The relationship between sport tourists' perceived value and destination loyalty: An experience-use history segmentation approach. *Journal of Sport Tourism*, 22(2): 173–186.
- Sheth J N, Newman B I, Gross B L. 1991. Why we buy what we buy: A theory of consumption values. *Journal of Business Research*, 22(2): 159–170.
- Voss K E, Spangenberg E R, Grohmann B. 2003. Measuring the hedonic and utilitarian dimensions of consumer attitude. *Journal of Marketing Research*, 40(3): 310–320.
- Wang J, Tian H. 2019. Experience and inspiration of Japanese ski industry development. *Sports Culture Guide*, (11): 104–109. (in Chinese)
- Wang L, Zhang H M, Lu L, et al. 2014. Tourist perceived value of wetland park: Evidence from Xixi and Qinh Lake. *Tourism Tribune*, 29(6): 87–96. (in Chinese)
- Wang W H. 2017. The major ski resorts in Hebei Province are gaining more and more visitors. *Hebei Daily*, 2017-12-11(3). (in Chinese)
- Wen H X. 2016. An analysis of the relationship between ski tourists' perceived value and revisit. Diss., Harbin, China: Heilongjiang University. (in Chinese)
- Won D, Hwang S. 2009. Factors influencing the college skiers and snowboarders' choice of a ski destination in Korea: A conjoint study. *Managing Leisure*, 14(1): 17–27.
- Wu B. 2021. White paper on China's ski industry 2020. <http://www.pinchain.com/article/250554>. Viewed on 2021-07-03. (in Chinese)
- Zeithaml V A. 1988. Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. *Journal of Marketing*, 52(3): 2–22.
- Zhang H M, Hong J, Zhang W J. 2012. The hierarchy relationship model tourists perceived value on tourism destination. *Human Geography*, 27(4): 125–130. (in Chinese)
- Zhang L, Yang S, Wang D N, et al. 2022. Perceived value of, and experience with, a World Heritage Site in China—The case of Kaiping Diaolou and villages in China. *Journal of Heritage Tourism*, 17(1): 91–106.
- Zhang T, Jia S H. 2008. A study on the dimensions and measurement of consumers' perceived values during festivals. *Tourism Tribune*, 23(5): 74–78. (in Chinese)
- Zhao L, Wu W Z, Li J, et al. 2018. The formation mechanism of tourist loyalty in ecotourism scenic spots from the perspective of tourist perceived value: Evidence from Xixi National Wetland Park. *Acta Ecologica Sinica*, 38(19): 7135–7147. (in Chinese)

感知价值视角下的滑雪旅游体验及市场细分研究——以张家口崇礼区为例

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摘 要:滑雪旅游作为一项新兴的山地度假旅游产品, 在国内旅游市场中的重要性日益凸显。作为研究消费者体验质量的一个重要理论, 感知价值近年来广泛应用于旅游研究中, 提高滑雪旅游感知价值正成为各滑雪旅游目的地竞争的焦点。本文以张家口崇礼区的滑雪游客为例, 采用线上线下相结合的方式发放问卷, 共收集有效问卷 305 份。基于感知价值理论, 应用主成分因子分析和聚类分析对滑雪旅游体验和市场细分进行了初步探究, 并检验了不同类型游客人口特征和行为特征的差异性。研究结果表明: (1) 滑雪旅游体验感知价值主要包括四个维度: 设施价值、感知价格、安全价值和服务价值。(2) 基于感知价值变量进行市场细分, 滑雪旅游者可分为三个类型: 舒适享受型、价格敏感型和注重安全型。(3) 不同类型滑雪旅游者在性别、年龄、月收入等人口特征, 以及到访次数、停留时间等行为特征上均存在显著差异。研究结果揭示了滑雪旅游体验感知价值的不同维度, 确定了滑雪旅游者的细分市场及其特征。基于不同细分市场制定相应的营销策略, 可以更好地提升滑雪旅游者的感知价值, 进而增强企业竞争力。

关键词: 感知价值; 冰雪旅游; 旅游体验; 市场细分