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# Segmenting Winter Sport Educational Tourism: An Experience Economy Approach

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**Abstract.** This study examines market demand patterns for winter sport educational tourism in Liaoning Province, China, through the lens of experience economy theory. Using the four-dimension experience framework (educational, entertainment, esthetic, and escapist experiences), we employ K-means clustering analysis to identify distinct market segments among 1,426 participants. Results reveal four distinct demand patterns: education-driven (35.2%), entertainment-oriented (28.4%), esthetic-immersive (21.8%), and escapist-relaxation (14.6%) segments. Each segment exhibits unique demographic characteristics, consumption behaviors, and experience preferences. The education-driven segment demonstrates the highest participation frequency and brand loyalty, while the escapist-relaxation segment shows the highest per capita spending. These findings challenge the traditional view of educational tourism as a homogeneous market and provide empirical evidence for the heterogeneity of consumer demands. The study contributes to experience economy theory by extending its application to educational tourism contexts and offers practical implications for developing differentiated marketing strategies in winter sports destinations.

**Keywords.** Experience Economy, Winter Sport Tourism, Market Segmentation

## 1. Introduction

The global winter sports industry has experienced remarkable growth following the 2022 Beijing Winter Olympics. China's winter sport tourism sector reached 344 million tourists during the 2021-2022 season, generating revenue of 474 billion Yuan RMB despite the COVID-19 pandemic (China Tourism Academy, 2023). The '300 Million People on winter sport' initiative has catalyzed regional development, particularly in northeastern provinces with abundant snow resources. Liaoning Province, leveraging its geographic advantages and policy support, has positioned winter sport educational tourism as a strategic pillar for economic transformation and regional competitiveness enhancement.

Educational tourism represents a significant and growing segment of the global tourism market, valued at USD 413.47 billion in 2023 and projected to reach USD 1,203.6 billion by 2032 (SkyQuest, 2024). The integration of winter sports with educational objectives creates unique opportunities for physical literacy development, cultural exchange, and outdoor learning experiences. However, the market faces challenges including product homogenization, insufficient differentiation, and limited understanding of consumer heterogeneity.

This study addresses two critical research questions: (1) What are the distinct market demand patterns for winter sport educational tourism based on experience economy dimensions? (2) How do these segments differ in demographic characteristics, consumption behaviors, and experience preferences? By applying Pine and Gilmore's (1999) experience economy framework and employing K-means clustering analysis, we systematically identify and profile market segments, providing empirical evidence for differentiated marketing strategies.

## **2. Literature Review**

### **2.1 Experience Economy Theory**

Pine and Gilmore (1999) introduced the experience economy concept, proposing that economic value has progressed from commodities and goods through services to experiences. They conceptualized experiences across four dimensions: educational (skill acquisition and knowledge enhancement), entertainment (passive participation for amusement), esthetic (immersion in pleasant environments), and escapist (active participation to escape reality). This '4E' framework has been widely applied in tourism research, demonstrating its relevance across diverse contexts (Oh et al., 2007).

Recent studies continue to validate the experience economy framework's applicability to tourism contexts. Kim et al. (2024) conducted a comprehensive review identifying three research streams: the experience economy, nomological network analysis of memorable tourism experiences, and remembered experience analysis. Their work demonstrates the continued theoretical evolution and empirical validation of experiential dimensions in tourism. In winter sports contexts specifically, Bausch and Gartner (2021) identified three distinct skier segments ('moderate skiers,' 'urban recreational skiers,' and 'focused skiers') based on motivational factors, demonstrating the heterogeneity of winter sports tourists.

### **2.2 Market Segmentation in Educational Tourism**

Market segmentation represents a fundamental strategic marketing approach for understanding heterogeneous consumer groups. The educational tourism market has demonstrated remarkable growth, with the college segment accounting for approximately 36% of market share in 2024, while professional development tourism comprises 34% (Grand View Research, 2024). Traditional educational tourism segmentation has relied primarily on demographic variables such as age, education level, and income. However, psychographic and behavioral segmentation approaches have gained prominence, recognizing that consumers with similar demographics may exhibit distinct motivations and preferences.

Clustering techniques, particularly K-means clustering, have proven effective for tourism market segmentation. These data-driven approaches identify natural groupings based on multiple variables simultaneously, revealing patterns that may not be apparent through traditional segmentation methods. Recent applications in winter sports tourism have demonstrated the method's effectiveness; Zhang and Sun (2023) employed heterogeneous network analysis to examine demand patterns for winter sport tourism products in China, identifying key influencing factors through sophisticated modeling approaches. Similarly, Xie et al. (2024) analyzed climate suitability for winter sports across major Chinese ski destinations, providing empirical evidence for market development strategies.

### **2.3 Conceptual Framework**

This study integrates experience economy theory with market segmentation methodology to examine winter sport educational tourism demand patterns. We propose that educational tourism participants seek multidimensional experiences encompassing education,

entertainment, esthetics, and escapism. The relative importance of these dimensions varies across individuals, creating distinct market segments with unique characteristics and preferences. Understanding these segments enables tourism providers to develop targeted products and marketing strategies aligned with specific consumer needs.

### **3. Methodology**

#### **3.1 Research Design and Data Collection**

We employed a cross-sectional survey design to collect data from winter sport educational tourism participants in Liaoning Province. The sampling frame included visitors to major winter sports venues and educational tourism facilities across multiple cities including Shenyang, Dalian, Benxi, and Dandong. Data collection occurred during the 2023-2024 winter season, with trained research assistants administering on-site questionnaires. A total of 1,580 questionnaires were distributed, yielding 1,426 valid responses (90.25% effective response rate).

The sample composition reflected diverse participant categories: primary and secondary school students (42.3%), university students (23.7%), family groups (21.5%), and corporate team-building participants (12.5%). Age distribution ranged from under 15 years to over 40 years, with gender representation of 52.3% male and 47.7% female respondents. Monthly household income levels varied from under ¥5,000 to over ¥20,000, ensuring socioeconomic diversity.

#### **3.2 Measurement Instruments**

The questionnaire comprised three sections. First, experience economy dimensions were measured using scales adapted from Oh et al. (2007), with modifications for the winter sport educational tourism context. Each dimension (educational, entertainment, esthetic, escapist) was assessed through four items using five-point Likert scales (1 = strongly disagree, 5 = strongly agree). Sample items included: 'This experience enhanced my knowledge about winter sports' (educational), 'The activities were entertaining and fun' (entertainment), 'The venue environment was aesthetically pleasing' (esthetic), and 'This experience allowed me to escape from daily routine' (escapist).

Second, consumption behavior variables included participation frequency, average expenditure per visit, repeat visit intention, and recommendation likelihood. Third, demographic information captured age, gender, education level, occupation, and monthly household income. The questionnaire underwent pilot testing with 50 participants to ensure clarity and content validity, with minor revisions made based on feedback.

#### **3.3 Data Analysis**

Data analysis followed a three-stage process using SPSS 26.0. First, reliability and validity assessment confirmed measurement quality. Cronbach's alpha coefficients exceeded 0.85 for all dimensions, indicating strong internal consistency. Confirmatory factor analysis supported the four-factor structure with acceptable fit indices ( $\chi^2/df = 2.14$ , CFI = 0.94, TLI = 0.93, RMSEA = 0.06).

Second, K-means clustering analysis identified market segments based on experience dimension scores. We tested solutions from two to six clusters, evaluating each using silhouette coefficients, within-cluster sum of squares, and theoretical interpretability. The four-cluster solution demonstrated optimal statistical fit and meaningful segment differentiation, explaining 73.68% of variance.

Third, post-hoc analyses examined segment differences using ANOVA for continuous variables and chi-square tests for categorical variables. Effect sizes ( $\eta^2$ ) were calculated to

assess practical significance. All statistical tests employed  $\alpha = 0.05$  significance level with Bonferroni corrections for multiple comparisons.

## 4. Results

### 4.1 Market Segment Identification

K-means clustering analysis revealed four distinct market segments with statistically significant differences across experience dimensions ( $F = 156.32, p < .001, \eta^2 = 0.74$ ). Table 1 presents cluster centers for each experience dimension.

**Table 1 Experience Dimension Cluster Centers and Market Shares**

Segment	Educational	Entertainment	Esthetic	Escapist	n (%)
Education-Driven	4.52±0.38	3.68±0.52	3.45±0.61	3.21±0.58	35.2%
Entertainment-Oriented	3.42±0.55	4.63±0.42	3.87±0.49	3.56±0.53	28.4%
Esthetic-Immersive	3.76±0.48	3.95±0.51	4.58±0.36	3.89±0.47	21.8%
Escapist-Relaxation	3.25±0.62	3.78±0.56	4.02±0.44	4.71±0.33	14.6%
<i>F</i> value	168.45***	152.78***	145.93***	179.26***	-

*Note. Values are presented as Mean±SD. Experience dimensions measured on 5-point Likert scales (1 = strongly disagree, 5 = strongly agree). \*\*\*  $p < .001$ .*

Segment 1: Education-Driven ( $n=502, 35.2\%$ ). This segment exhibited the highest educational experience scores ( $M=4.52, SD=0.38$ ), significantly exceeding other dimensions. Participants prioritized systematic learning, skill development, and safety assurance. This segment primarily comprised school-age students and their families seeking structured educational programming.

Segment 2: Entertainment-Oriented ( $n=405, 28.4\%$ ). Characterized by highest entertainment experience scores ( $M=4.63, SD=0.42$ ), this segment valued novelty, social interaction, and enjoyment. Members were predominantly young adults (18-30 years) seeking recreational experiences and social connections.

Segment 3: Esthetic-Immersive ( $n=311, 21.8\%$ ). This segment demonstrated elevated esthetic experience scores ( $M=4.58, SD=0.36$ ), emphasizing environmental quality, cultural atmosphere, and service excellence. Members typically represented middle-to-high income families pursuing premium experiences.

Segment 4: Escapist-Relaxation ( $n=208, 14.6\%$ ). Showing the highest escapist experience scores ( $M=4.71, SD=0.33$ ), this segment sought stress relief and temporary escape from daily pressures. Corporate team-building participants dominated this segment (85.3%).

### 4.2 Segment Profiling and Comparative Analysis

Demographic analysis revealed significant differences across segments. Table 2 presents comprehensive comparative data on demographic profiles and consumption behaviors.

**Table 2 Demographic and Behavioral Characteristics by Market Segment**

Characteristic	Education-Driven	Entertainment-Oriented	Esthetic-Immersive	Escapist-Relaxation
Mean Age (years)	12.6	23.8	35.7	32.4
Male (%)	58.7	50.2	45.3	63.5
Participation Frequency (times/year)	3.8	2.3	2.1	1.2
Average Expenditure (¥/visit)	580	780	1,280	1,580
Repeat Purchase Rate (%)	62.4	37.5	48.3	28.7
Brand Loyalty (1-5)	4.3	2.9	3.8	2.7
Price Sensitivity (1-5)	4.1	3.5	2.3	2.8

*Note. Brand loyalty and price sensitivity measured on 5-point Likert scales (1 = very low, 5 = very high). Average expenditure reported in Chinese Yuan (CNY). All between-group differences significant at  $p < .001$ .*

The education-driven segment was youngest ( $M = 12.6$  years), while escapist-relaxation was oldest ( $M = 32.4$  years). Consumption behavior patterns differed substantially. Education-driven participants demonstrated highest participation frequency (3.8 times annually) and repeat purchase rates (62.4%), but lowest per-visit expenditure (¥580). Conversely, escapist-relaxation participants showed lowest frequency (1.2 times annually) but highest expenditure (¥1,580 per visit).

Brand loyalty metrics revealed education-driven (4.3/5.0) and esthetic-immersive (3.8/5.0) segments as most loyal, while entertainment-oriented (2.9/5.0) and escapist-relaxation (2.7/5.0) segments demonstrated lower loyalty levels. Price sensitivity inversely correlated with expenditure levels, with education-driven showing highest sensitivity (4.1/5.0) and esthetic-immersive lowest (2.3/5.0).

## 5. Discussion

### 5.1 Theoretical Contributions

This study advances experience economy theory by demonstrating its applicability to educational tourism contexts. While Pine and Gilmore (1999) and subsequent researchers have examined experience dimensions across various settings, limited research has systematically explored how these dimensions structure educational tourism demand. Our findings reveal that educational tourism participants indeed seek multidimensional experiences, with distinct consumer segments emerging based on experience dimension priorities.

The identification of four distinct segments challenges the traditional assumption of educational tourism as a homogeneous market driven primarily by learning objectives. Instead,

results suggest heterogeneous motivations encompassing education, entertainment, esthetics, and escapism. This finding aligns with recent tourism research demonstrating the complexity of experiential tourism markets (Kim et al., 2024) and extends insights from winter sports tourism segmentation studies (Bausch & Gartner, 2021) to the educational tourism domain.

Methodologically, this study validates K-means clustering as an effective technique for experience-based market segmentation. The approach offers advantages over traditional demographic segmentation by revealing psychographic differences that may not align with demographic categories. This data-driven methodology provides objective, replicable results while maintaining theoretical grounding in experience economy principles.

### **5.2 Practical Implications**

Findings offer actionable insights for winter sports destination managers and educational tourism operators. First, the substantial education-driven segment (35.2%) represents a stable foundation requiring systematic curriculum development, professional instruction, and safety assurance. Partnerships with schools and educational institutions can secure consistent demand through structured programs.

Second, the entertainment-oriented segment presents opportunities for innovation through novel activities, social experiences, and marketing via social media platforms. Though less loyal, this segment's willingness to pay premium prices for unique experiences justifies investment in creative programming and digital marketing strategies.

Third, the esthetic-immersive segment, despite smaller size, offers high-value opportunities. Premium positioning emphasizing environmental quality, cultural authenticity, and personalized service can attract affluent consumers willing to pay for superior experiences. This segment's strong recommendation behaviors also provide valuable word-of-mouth marketing benefits.

Finally, the escapist-relaxation segment represents an emerging market with significant growth potential. Corporate team-building packages emphasizing stress relief, team cohesion, and departure from routine can capitalize on this segment's willingness to pay premium prices despite low frequency participation.

### **5.3 Limitations and Future Research**

Several limitations warrant consideration. First, the cross-sectional design captures demand patterns at a single time point, precluding examination of seasonal variations or temporal changes. Longitudinal research tracking segment evolution would enhance understanding of market dynamics.

Second, geographic focus on Liaoning Province limits generalizability to other regions with different climatic conditions, cultural contexts, and market development levels. Research by Xie et al. (2024) highlights significant spatial and temporal variations in climate suitability for winter sport across Chinese ski destinations, suggesting regional adaptation strategies may differ. Comparative studies across multiple destinations would strengthen theoretical development and practical applicability.

Third, while K-means clustering provides robust segmentation, alternative approaches such as hierarchical clustering, latent class analysis, or mixture modeling could offer additional insights. Future research should explore multiple analytical techniques to validate findings and assess segmentation stability.

Future research directions include examining the relationship between segment membership and actual consumption outcomes, investigating moderating effects of demographic variables on experience-satisfaction linkages, and exploring how segments respond differently to marketing stimuli. Given the growing importance of climate change for

winter sports tourism sustainability (Xie et al., 2024), future studies should also investigate how different market segments perceive and respond to environmental challenges and adaptation strategies.

## 6. Conclusion

This study contributes to tourism research by systematically examining market demand patterns for winter sport educational tourism through an experience economy lens. Employing K-means clustering analysis, we identified four distinct segments characterized by unique experience dimension priorities: education-driven, entertainment-oriented, esthetic-immersive, and escapist-relaxation. These segments exhibit substantial differences in demographic profiles, consumption behaviors, and loyalty metrics, demonstrating significant market heterogeneity.

Findings challenge conventional assumptions of educational tourism as uniformly education-focused, revealing complex motivational structures encompassing learning, enjoyment, appreciation, and escape. This multidimensional perspective enriches theoretical understanding while providing practical guidance for developing differentiated products and targeted marketing strategies.

As winter sports destinations increasingly compete for educational tourism markets, understanding demand heterogeneity becomes essential for strategic positioning and sustainable competitive advantage. By recognizing and serving distinct segment needs, destinations can enhance visitor satisfaction, optimize resource allocation, and achieve long-term market success. This research provides a conceptual foundation and empirical evidence supporting experience-based segmentation approaches in specialized tourism contexts.

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## Conflicts of Interest

The authors declare no conflicts of interest.

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