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Factors Affecting the Selection of Outdoor Tourism Equipment and Supplies

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Abstract: Outdoor tourism has become a leisure choice for more and more people due to its unique natural experiences and adventure elements. As a result, there is an increasing demand for outdoor equipment and supplies. This article explores the multiple factors that affect the selection of outdoor tourism equipment and supplies, including functionality, environmental adaptability, personal needs, brand reputation and price, and technological innovation. Through empirical analysis, a series of purchasing suggestions is proposed, hoping to provide scientific and accurate equipment selection guidance for outdoor tourism enthusiasts, provide scientific reference basis for outdoor tourism equipment manufacturers and industry decision-makers, and promote the healthy development of the outdoor tourism market.

Keywords: Factors; Outdoor Tourism; Equipment and supplies; Selection; Affecting.

1. Introduction

With the improvement of people's quality of life and the enhancement of health awareness, outdoor tourism is increasingly favored as a leisure way that is close to nature and exercises the body and mind [1]. According to statistics from the China Outdoor Sports Association, the number of participants in outdoor sports in China has exceeded 100 million, with an average annual growth rate of over 10% [15]. Outdoor tourism equipment, as an important tool to ensure travel safety and enhance the tourism experience, its selection and use have become the key to ensuring safety and enhancing the experience [2]. However, facing the dazzling array of equipment on the market, making wise choices has become a challenge for many outdoor enthusiasts. This article will discuss the key factors and mechanisms that affect the selection of outdoor tourism equipment from five main dimensions, aiming to provide decision-making basis for outdoor enthusiasts, enhance their comfort, safety, and environmental awareness in outdoor activities. At the same time, it provides scientific reference basis for outdoor tourism equipment manufacturers and industry decision-makers to promote the healthy development of the outdoor tourism market.

2. Research Background and Theoretical Foundation

2.1. Research Background

With the diversification of lifestyles and the improvement of health awareness, outdoor activities have become an increasing choice for more and more people. This trend has driven the rapid development and diversification of the outdoor equipment market, from basic tents and backpacks to professional climbing equipment, diving equipment, etc., with a wide variety of types [5]. This diversification not only provides consumers with a wide range of choices, but also increases their difficulty in making choices. When facing numerous brands and products, consumers need to make decisions in multiple dimensions such as functionality, environmental adaptability, personal needs, brand reputation and price, and technological innovation. In addition, with the increasing awareness of environmental protection, consumers are increasingly inclined to choose sustainable and environmentally friendly products when choosing outdoor equipment [6].

2.2. Theoretical Basis

2.2.1. Consumer Behavior Theory

Consumer behavior theory explores how consumers make purchasing decisions and what factors affect their decision-making process [7]. In the selection of outdoor equipment, consumer decisions are often influenced by factors such as personal preferences, needs, budget, and perception of product information [10]. Consumers will evaluate which equipment is most suitable for their needs through comparative analysis of different brands and products before making a purchase decision [11].

2.2.2. Product Lifecycle Theory

The product lifecycle theory describes the entire process of a product from introduction to exit the market, including four stages: introduction, growth, maturity, and decline [12]. Outdoor equipment also follows this lifecycle, with market performance and consumer demand varying at each stage [8]. Understanding the different stages of the lifecycle of outdoor equipment can help manufacturers and sellers develop more effective market strategies, and also help consumers make wiser purchasing decisions.

2.2.3. Sustainable Development Concept

The concept of sustainable development emphasizes meeting contemporary needs without compromising the ability of future generations to meet them [13]. In the production and consumption of outdoor equipment, this concept has prompted manufacturers and consumers to pay more attention to the environmental characteristics and sustainability of products [14]. The concept of sustainable development runs through the entire lifecycle of outdoor equipment, from raw material procurement, production process to final sales and use of products, affecting consumer choices and market development direction.

3. Research Question and Research Methods

This study employed a quantitative Research to comprehensively address the research question: What are the key factors influencing the selection of outdoor tourism equipment and supplies among outdoor enthusiasts? The methodology consisted a questionnaire survey.

3.1. Questionnaire Survey

3.1.1. Design and Distribution

A structured questionnaire was developed to gather quantitative data on the factors influencing outdoor equipment selection. The questionnaire included multiple-choice questions, Likert scale items, and open-ended questions to capture a wide range of responses.

The survey was distributed online through various outdoor tourism and sports forums, social media platforms, and email lists targeting outdoor enthusiasts. This approach ensured a broad reach and diverse participant pool.

3.1.2. Sample Size

A total of 400 outdoor tourism enthusiasts participated in the survey. Participants were selected based on their engagement in outdoor activities, ensuring that they had relevant experience and knowledge regarding outdoor equipment.

3.1.3. Data Analysis

The collected data were analyzed using SPSS software. Descriptive statistics were employed to summarize the demographic information and responses, while inferential statistics (such as correlation and regression analysis) were used to identify relationships between different factors influencing equipment selection.

3.1.4. Criteria for Selection

A total of 400 respondents participated in this study, all of whom are outdoor tourism enthusiasts actively engaged in various outdoor activities such as hiking, camping, backpacking, and adventure travel. These participants were selected to ensure that they possess relevant experience, insight, and familiarity with the use of outdoor tourism equipment and supplies—making them suitable informants for the study's research objective. The sample size of 400 was determined based on standard practices in quantitative research to achieve a reliable and statistically significant representation of the target population. This size provides an adequate basis for conducting descriptive and inferential statistical analyses and helps minimize sampling error.

The participants were chosen through non-probability purposive sampling, guided by non-discriminatory criteria and processes. Specifically, individuals were included if they met the following inclusion criteria: (1) they were 18 years old and above, (2) had at least one year of experience engaging in outdoor recreational activities, and (3) had made at least one purchase of outdoor tourism equipment or supplies within the past 12 months. There were no exclusions based on gender, ethnicity, or socioeconomic background, ensuring fairness and inclusivity in the participant selection process. The inclusion and exclusion criteria were considered justifiable based on the nature of the study, as the research required participants with relevant and recent consumer behavior related to outdoor gear.

To ensure ethical standards and the safety of all involved, the researcher adopted several risk management measures and protective strategies for both participants and research personnel. Informed consent was obtained from all respondents prior to participation, and they were briefed on the purpose, scope, and voluntary nature of the study. Confidentiality and anonymity were maintained throughout the data collection and analysis processes. Moreover, as the study employed an online questionnaire survey, participants were able to respond at their convenience and in a risk-free environment, thereby eliminating any physical or psychological risk associated with participation.

The researcher also adhered to ethical research protocols by obtaining prior clearance from the academic institution's ethics review committee. All research assistants or personnel involved in data collection were trained on proper data handling procedures and participant interaction protocols to ensure professionalism and respect for respondents' rights. These procedures ensured the integrity of the research while safeguarding the dignity, safety, and autonomy of the participants.

Participants were chosen based on the following criteria:

Experience Level: A mix of novice, intermediate, and expert outdoor enthusiasts to capture a range of perspectives.

Diversity of Activities: Participants engaged in various outdoor activities (e.g., hiking, camping, climbing, water sports) to ensure comprehensive coverage of different equipment needs.

Geographic Representation: Participants from different regions to account for varying climatic and topographic conditions that influence equipment selection.

3.2. Data Gathering

The researcher followed several key procedures in collecting quantitative data for the study:

Obtaining Approvals and Ethical Clearance: Before initiating the research, the researcher secured all necessary approvals and ethical clearance from the appropriate academic and institutional authorities. This included approval from the Institutional Review Board (IRB) to ensure that the research complied with ethical standards and protected the rights and welfare of participants.

Formal Approval from Participating Organizations and Groups: Formal permission was obtained from outdoor clubs, retail shops specializing in tourism equipment, and organized hiking or trekking communities in Zhejiang Province. The researcher coordinated with their leaders and managers to gain access to their members and customers for participation in the survey.

Testing Research Instrument Validity and Reliability: The research instrument, in the form of a structured survey questionnaire, was subjected to pre-testing with a small group of 30 outdoor tourism enthusiasts. This pilot test ensured the clarity, relevance, and reliability of the questionnaire items. Feedback was used to make necessary revisions to enhance the accuracy and comprehensiveness of the tool.

Adherence to Ethical Procedures: All ethical protocols were strictly followed throughout the data collection process. Informed consent was obtained from each participant before taking part in the study. Participants were informed about the purpose of the research, confidentiality of their responses, voluntary participation, and their right to withdraw at any time without penalty.

Setting up Data Collection Schedule: After receiving approval from the participating organizations, the researcher coordinated with the key contacts to schedule the distribution

and collection of the survey questionnaires. The schedule was strategically arranged to accommodate the availability of respondents and to avoid interfering with any planned outdoor activities or retail operations.

Data Collection Using Online and Field-Based Surveys: A total of 400 outdoor tourism enthusiasts participated in the survey. Participants were selected based on their active involvement in outdoor activities such as hiking, trekking, camping, and adventure travel, ensuring that they possessed firsthand experience in selecting and using outdoor tourism equipment and supplies. The survey was conducted using both online platforms and in-person distribution at outdoor gear shops and tourism events to ensure a broader reach.

Data Analysis: After the data collection phase, responses were encoded and processed using Microsoft Excel and SPSS software. Descriptive statistics such as frequency counts, means, and standard deviations were used to summarize the data. The researcher then collaborated with a professional statistician to conduct inferential analyses, including correlation and regression, to identify significant factors influencing the selection of outdoor tourism equipment.

Discussion of Findings: The researcher thoroughly discussed the analyzed data, identifying key trends and significant patterns. The findings were interpreted in relation to the study's objectives and were compared with existing literature. Implications of the results were highlighted, particularly concerning consumer behavior, marketing strategies for tourism supply companies, and recommendations for improving product offerings in the outdoor equipment market.

3.3. Integration of Findings

The results from the questionnaire survey to provide a comprehensive understanding of the factors influencing outdoor tourism equipment selection. The quantitative data offered statistical insights into the prevalence of various factors, while the qualitative data enriched the findings with personal experiences and nuanced perspectives.

By employing this Quantitative approach, the study aimed to ensure the objectivity and reliability of the research results, providing a robust foundation for understanding the key factors that influence outdoor tourism equipment selection among enthusiasts.

4. Ethical Considerations

In conducting this research, several ethical considerations were taken into account:

Informed Consent: Participants in the questionnaire survey and in-depth interviews were fully informed about the purpose of the study, the nature of their participation, and how their data would be used. Consent was obtained prior to their involvement.

Confidentiality: The anonymity and confidentiality of participants were ensured. Personal identifiers were removed from the data collected, and all responses were aggregated to protect individual privacy.

Voluntary Participation: Participation in the study was entirely voluntary, and participants were free to withdraw at any time without any consequences.

Data Integrity: The research adhered to ethical standards regarding data collection and analysis. All data were reported honestly and accurately, without fabrication or manipulation.

Respect for Participants: The study was designed to respect the rights and dignity of all participants, ensuring that their views and experiences were valued and accurately represented in the research findings.

By addressing these ethical considerations, the research aimed to uphold the integrity of the study while ensuring the protection and respect of all participants involved.

5. Influencing Factors

5.1. Outdoor Equipment Functionality

5.1.1. Basic Function

The basic functions of outdoor equipment mainly include protection, warmth, breathability, waterproofing, wear resistance, etc. Taking tents as an example, their windproof and rainproof performance is crucial. A test result on mainstream tents on the market [6] shows that high-quality tents can still maintain stability in simulated wind environments of level 6, with a waterproof rating of over 2000mm, effectively preventing rainwater infiltration. In addition, the warming effect of the sleeping bag should match the expected usage environment. The internationally recognized temperature scale system (EN13537) divides sleeping bags into three levels: extreme temperature, comfortable temperature, and limited temperature. Consumers can choose the corresponding level of sleeping bags based on the lowest temperature at their destination [4]. The EN13537 standard provides a reliable framework for evaluating the thermal performance of sleeping bags, ensuring that consumers can make informed decisions based on their specific outdoor conditions [3]. As for clothing, breathability, quick drying, sun protection, insect prevention and other functions are equally indispensable. For example, Gore Tex fabric is widely used in high-end outdoor clothing due to its excellent breathability and waterproof performance. It has 9 billion micropores per square inch, each hole is 20000 times smaller than a water droplet and 700 times larger than water vapor molecules. It can effectively block rainwater and quickly expel sweat, keeping the wearer dry and comfortable [16].

5.1.2. Special Functions

For specific outdoor activities such as mountaineering, hiking, camping, cycling, diving, etc., equipment needs to have corresponding special functions. Taking hiking shoes as an example, good grip and support are crucial. Vibram soles are chosen by many top outdoor shoe brands due to their unique rubber formula and shoe pattern design, providing excellent friction and wear resistance [9]. In diving equipment, waterproof sealing and buoyancy control are the foundation for ensuring the safety of divers. According to statistics, the diving accident rate is significantly lower when using diving equipment that meets the ISO 13289 standard compared to non compliant equipment (PADI, 2024).

5.2. Environmental Adaptability

5.2.1. Climatic Conditions

The climate differences in different regions and seasons have a direct impact on equipment selection. According to data from the National Meteorological Administration, the average winter temperature in northern China is generally lower than -10 ℃. At this time, outdoor activities need to choose high insulation equipment, such as down jackets, snow boots, etc. On the contrary, outdoor activities in tropical rainforest areas need to pay attention to moisture-proof, insect proof, and sun protection functions. For example, clothing and tents treated with Permethrin can effectively repel

mosquitoes and reduce the risk of transmission of diseases such as malaria and dengue fever [10].

5.2.2. Topographic Features

Different terrains such as mountains, deserts, jungles, and water bodies have specific requirements for the wear resistance, slip resistance, and lightweight characteristics of equipment. For mountain hiking, it is necessary to choose hiking shoes that are durable and have strong grip, such as the Salomon X Ultra 3 GTX, whose Contagip outsole performs well on various terrains such as rocks and mud [9]. Water activities require professional life jackets and waterproof bags. The US Coast Guard requires all participants in water activities to wear life jackets that comply with USCG Type III standards to ensure personal safety in the event of accidental drowning [17].

5.3. Personal Needs

5.3.1. Performance Status

Equipment selection should consider individual physical fitness and physical load capacity. For example, regarding the backpack system, according to research by the US Military Institute of Ergonomics, the weight of the backpack should not exceed 20% of its own weight, otherwise it will exert excessive pressure on the spine and increase the risk of injury. Therefore, those with poor physical fitness or long-distance hikers should choose lightweight equipment, such as the Osprey Exos series backpack, which uses ultra light nylon fabric and a hollow aluminum frame design to reduce its weight to below 1kg, greatly reducing the burden on the backpack [6].

5.3.2. Technical Level

Proficiency in outdoor skills affects equipment selection. Junior outdoor enthusiasts often prefer equipment that is easy to operate and integrates functions, such as multifunctional knives, integrated cookware, etc. These equipment simplify the usage process and lower the learning threshold. For experienced outdoor players, they may pursue professional and finely divided equipment, such as independent climbing ropes, ice axes, skis, etc. Although these types of equipment are relatively complex to operate, they can better cope with challenges in specific environments, enhance the professionalism and safety of outdoor activities.

5.3.3. Personalized Needs

Personalized needs include aesthetic preferences, special needs (such as photography, cooking, first aid, etc.), and attention to environmentally friendly materials. For example, some outdoor enthusiasts prefer retro style equipment, such as the Leatherman Charge TTi multi-purpose tool, which uses advanced stainless steel and leather wrapped handles, balancing practicality and aesthetic value [10]. In addition, with the rise of outdoor lifestyles such as drone aerial photography and outdoor cooking, equipment specifically designed for such activities such as DJI Mavic Air 2 drones and Jetboy Flash portable stoves are also highly sought after [11]. In terms of environmental protection, more and more consumers are inclined to choose equipment produced using environmentally friendly technologies such as recycled materials and fluorine-free waterproofing agents. For example, Patagonia's Torrentshell 3L jacket uses 100% recycled polyester fiber fabric and a DWR coating without PFCs, achieving a dual optimization of environmental protection and performance.

5.4. Brand Reputation and Price

5.4.1. Brand History and After-Sales Service

Famous brands usually have mature production processes, strict quality control, and good user feedback, and the risk of purchasing their products is relatively low. Taking The North Face as an example, as a leading outdoor brand globally, since its establishment in 1966, it has always adhered to innovation and quality. Its products have won the annual best awards from authoritative institutions such as OutdoorGearLab and Backpack Magazine multiple times, with user satisfaction reaching over 90% [13]. A comprehensive after-sales service system can ensure that consumers receive timely solutions to quality issues and improve long-term satisfaction with equipment usage. As REI provides an unconditional retum and exchange policy, equipment purchased from its own brand can be returned for free within one year for any reason. This measure has won widespread praise from consumers, and its customer loyalty ranks first in the outdoor retail industry.

5.4.2. Price Range and Cost-Effectiveness Considerations

Consumers should set a reasonable equipment purchase budget based on their own economic strength. According to the Outdoor Industry Association (2024), the average annual expenditure on outdoor equipment consumption is about 5% of an individual's annual income, which is a reasonable reference ratio. Within the budget range, comprehensively compare various performance indicators, service life, maintenance costs, and other factors of the equipment to select the most cost-effective product. For example, although some high-end equipment has a higher initial investment, its excellent durability, low maintenance costs, and high performance make it more cost-effective in the long run. Taking Arc'teryx Beta AR Jacket as an example, although its price is higher than the market average, its Gore Tex Pro fabric, precision cutting, and top-notch workmanship ensure excellent performance in extreme environments. In addition, Arc'teryx's lifetime warranty service makes it a cost-effective choice for many outdoor enthusiasts [15].

5.5. Technological Innovation

5.5.1. Intelligent Technology

Pay attention to the application of new materials, new processes, and intelligent technologies in the field of outdoor equipment, such as ultra light materials, fast drying technology, GPS positioning, solar charging, etc. These innovations often greatly improve the convenience and safety of outdoor activities. For example, the Vertex Ultralight Jackets launched by Graphene-X use graphene reinforced nylon fabric, which is not only extremely lightweight (weighing only 70 grams), but also has excellent warmth retention, tear resistance, and quick drying characteristics, overturning the design concept of traditional outdoor clothing [17]. The Garmin Fenix 6X Pro smartwatch integrates multiple functions such as GPS navigation, heart rate monitoring, blood oxygen detection, weather forecasting, music playback, and supports solar charging, greatly improving the intelligence level of outdoor exploration.

5.5.2. Industry Trends

Understanding the development trends of the outdoor equipment industry, such as the popularization of environmental protection concepts and the rise of personalized customization services, can help consumers make forward-looking equipment choices. Currently,

sustainable development has become a consensus in the outdoor equipment industry, and major brands have launched environmentally friendly series of products, such as Columbia's OutDry Extreme Eco Jackets, which are made of 100% renewable materials, are water-saving and energy-saving in the production process, and the packaging is completely recyclable. In addition, personalized customization services such as Nike By You, Adidas miCoach, etc. allow consumers to customize equipment colors, patterns, and even functional configurations according to their personal preferences, meeting the needs of outdoor enthusiasts seeking unique personalities [13].

6. Research Results

6.1. Functionality

Table 1. Functionality Descriptive Analysis

Questions	Mean	Standard Deviation	Verbal Description
The outdoor equipment I choose must support multi-functional use.	2.874	0.991	agree
I prefer equipment that offers high durability and reliability during outdoor activities.	3.293	0.922	Agree
The usability of outdoor gear significantly affects my purchase decision.	2.883	1.113	agree
I consider it important that outdoor equipment can perform well under different physical demands.	2.975	0.891	agree
I prioritize products with features that ensure user convenience and comfort.	3.123	0.891	Agree

3.51 – 4.00 Strongly Agree
2.51 – 3.50 Agree
1.51 – 2.50 Disagree
1.00 – 1.50 Strongly Disagree

The data in Table 1 reveals the respondents' perceptions of functionality as a factor influencing their selection of outdoor tourism equipment and supplies. All five items under the functionality category yielded mean scores within the range of 2.51 to 3.50, which corresponds to the verbal interpretation of "Agree." This indicates that functionality is generally considered an important factor by outdoor enthusiasts when choosing equipment.

Among the items, the statement "I prefer equipment that offers high durability and reliability during outdoor activities" received the highest mean score of 3.293 (SD = 0.922), suggesting that durability and reliability are the most valued functional attributes. This highlights the importance of selecting products that can withstand challenging environmental conditions and prolonged use.

On the other hand, the item "The outdoor equipment I choose must support multi-functional use" registered the lowest mean score of 2.874 (SD = 0.991), though it still falls within the "Agree" category. This implies that while multifunctionality is appreciated, it is relatively less prioritized compared to durability and user convenience.

Other items such as "The usability of outdoor gear significantly affects my purchase decision" (M = 2.883, SD = 1.113), "I consider it important that outdoor equipment can perform well under different physical demands" (M = 2.975, SD = 0.891), and "I prioritize products with features that ensure user convenience and comfort" (M = 3.123, SD = 0.891) also scored close to the upper limit of the "Agree" category, indicating strong overall agreement on the significance of functional features.

In terms of variability, the standard deviations ranged from 0.891 to 1.113, reflecting moderate variability in the responses. The highest variability was observed in the item related to usability, suggesting differing levels of importance placed by respondents on how easy the gear is to use.

Overall, the analysis suggests that functionality—especially durability, comfort, and usability—is a key factor influencing consumer decisions when selecting outdoor tourism equipment. These findings underscore the need for manufacturers and retailers to focus on these attributes when designing and marketing their products to outdoor enthusiasts.

6.2. Environmental adaptability

Table 2. Environmental adaptability Descriptive Analysis

Questions	Mean	Standard Deviation	Verbal Description
I choose outdoor gear that is adaptable to different weather conditions.	3.123	1.012	agree
Equipment that can withstand harsh environmental elements is essential for my activities.	3.311	1.112	Agree
I consider waterproof or windproof features important when purchasing outdoor gear.	3.015	0.995	agree
I prefer gear that performs consistently in diverse terrains and climates.	2.663	0.872	agree
I pay attention to thermal insulation and ventilation features in outdoor equipment.	2.997	0.992	Agree

3.51 – 4.00 Strongly Agree
2.51 – 3.50 Agree
1.51 – 2.50 Disagree
1.00 – 1.50 Strongly Disagree

The data in Table 2 presents the perceptions of respondents regarding environmental adaptability as a factor influencing their selection of outdoor tourism equipment and supplies. All five items yielded mean scores ranging from 2.663 to 3.311, which fall within the range of 2.51–3.50, corresponding to the verbal interpretation of "Agree." This indicates a generally favorable assessment of environmental adaptability among outdoor enthusiasts when choosing their gear.

The item with the highest mean score was “Equipment that can withstand harsh environmental elements is essential for my activities” with a mean of 3.311 (SD = 1.112). This suggests that durability against extreme environmental conditions is a critical concern for the respondents. Outdoor enthusiasts place strong importance on equipment that can reliably function in challenging environments.

The lowest-rated item was “I prefer gear that performs consistently in diverse terrains and climates” with a mean score of 2.663 (SD = 0.872), although it still falls within the "Agree" range. This indicates that while performance across various terrains and climates is valued, it may not be as high

a priority as other features such as weather resistance and material durability.

Other items such as "I choose outdoor gear that is adaptable to different weather conditions" (M = 3.123, SD = 1.012), "I consider waterproof or windproof features important when purchasing outdoor gear" (M = 3.015, SD = 0.995), and "I pay attention to thermal insulation and ventilation features in outdoor equipment" (M = 2.997, SD = 0.992) also received relatively high ratings. These responses emphasize the importance of weather adaptability and protective features in consumers' purchasing decisions.

The standard deviations for all items ranged from 0.872 to 1.112, reflecting moderate variability in the responses. The highest variability was observed in the item regarding harsh environmental conditions (SD = 1.112), which may suggest differences in the types of outdoor environments frequented by the respondents (e.g., extreme vs. moderate climates).

Overall, the findings suggest that environmental adaptability is a significant consideration for outdoor enthusiasts when selecting tourism equipment. The ability of gear to perform well under various weather conditions, terrains, and environmental stressors is viewed as essential, making this factor a vital component for manufacturers and retailers to prioritize in product development and marketing strategies.

6.3. Personal Needs

Table 3. Personal needs Descriptive Analysis

Questions	Mean	Standard Deviation	Verbal Description
I select outdoor gear based on my specific travel or activity requirements.	2.996	0.993	agree
My physical characteristics (e.g., height, weight) influence my choice of outdoor equipment.	2.945	0.937	Agree
I value personalized fit and ergonomic design when selecting outdoor gear.	2.875	1.002	agree
I choose equipment that aligns with my outdoor experience level and skill set.	2.993	1.117	agree
I consider storage capacity and weight when selecting outdoor equipment.	3.221	0.927	Agree

3.51 – 4.00 Strongly Agree
2.51 – 3.50 Agree
1.51 – 2.50 Disagree
1.00 – 1.50 Strongly Disagree

The data in Table 3 provides insight into the role of personal needs in influencing the selection of outdoor tourism equipment and supplies. All five statements received mean scores within the range of 2.51 to 3.50, which corresponds to the verbal interpretation of "Agree". This indicates that respondents generally consider their individual needs and preferences when selecting outdoor gear. The highest-rated item was "I consider storage capacity and weight when selecting outdoor equipment", with a mean score of 3.221 and a standard deviation of 0.927. This finding highlights that practical considerations—such as how much the equipment can carry and how easy it is to transport—are highly important to outdoor enthusiasts.

Other items, including "I select outdoor gear based on my specific travel or activity requirements" (M = 2.996, SD = 0.993) and "I choose equipment that aligns with my outdoor experience level and skill set" (M = 2.993, SD = 1.117), also received relatively high levels of agreement. These results suggest that users tend to select gear based on the type of activity, location, and their level of expertise, aiming for products that match their personal performance needs. Similarly, "My physical characteristics (e.g., height, weight) influence my choice of outdoor equipment" (M = 2.945, SD = 0.937) implies that users consider body-fit and suitability when choosing gear. However, the item "I value personalized fit and ergonomic design when selecting outdoor gear" received the lowest mean score of 2.875 (SD = 1.002), though still interpreted as "Agree." This may suggest that while comfort and ergonomics are valued, they are slightly less emphasized than weight, storage, and activity-specific functionality.

The standard deviation values across all items ranged from 0.927 to 1.117, reflecting moderate variability in responses. The greatest variation occurred in responses to the statement about experience level and skill set, possibly indicating that participants had diverse levels of outdoor activity experience. Overall, the analysis underscores that personal needs—such as functionality aligned with physical attributes, activity type, and gear portability—play a significant role in consumer decision-making. For businesses in the outdoor tourism industry, this suggests the importance of offering customizable, lightweight, and user-oriented equipment to meet the varied needs of their target market.

6.4. Brand Reputation and Price

Table 4. Brand Reputation and Price Descriptive Analysis

Questions	Mean	Standard Deviation	Verbal Description
I prefer purchasing outdoor equipment from well-known and reputable brands.	3.319	1.078	agree
I believe that trusted brands provide higher quality and better after-sales service.	3.432	1.116	Agree
I consider user reviews and ratings when evaluating brand reputation.	2.994	0.997	agree
I compare prices before buying but will pay more for better quality or brand value.	2.870	0.896	agree
I think that high price often reflects higher performance in outdoor equipment.	3.109	0.984	Agree

3.51 – 4.00 Strongly Agree
2.51 – 3.50 Agree
1.51 – 2.50 Disagree
1.00 – 1.50 Strongly Disagree

The data presented in Table 4 examines the influence of brand reputation and price on the selection of outdoor tourism equipment and supplies among respondents. All five statements received mean scores within the range of 2.51 to 3.50, which corresponds to the verbal description of "Agree." This overall agreement indicates that brand image and pricing

considerations are important factors in the decision-making process of outdoor enthusiasts.

Among the items, the highest-rated statement was "I believe that trusted brands provide higher quality and better after-sales service", which received a mean score of 3.432 with a standard deviation of 1.116. This finding suggests that consumers associate brand trustworthiness with product quality and post-purchase support, reinforcing the value of brand equity in the outdoor gear market. This is followed by "I prefer purchasing outdoor equipment from well-known and reputable brands" (M = 3.319, SD = 1.078), which further confirms the influence of brand familiarity and recognition on consumer preferences.

Additionally, the items "I think that high price often reflects higher performance in outdoor equipment" (M = 3.109, SD = 0.984) and "I consider user reviews and ratings when evaluating brand reputation" (M = 2.994, SD = 0.997) received moderate agreement, indicating that perceived value, user feedback, and price-performance expectations are also considered when evaluating options. Interestingly, "I compare prices before buying but will pay more for better quality or brand value" had the lowest mean score of 2.870 (SD = 0.896), though it still falls within the "Agree" range. This suggests that while price sensitivity exists, many consumers are willing to invest more in brands they perceive as high-quality.

Standard deviations ranged from 0.896 to 1.116, showing moderate variability in responses. The highest variability was observed in items related to brand trust and service, implying that while many respondents value brand reputation, some may rely on other factors such as personal experience or peer recommendations.

In summary, the analysis indicates that both brand reputation and pricing play a crucial role in consumers' decisions when selecting outdoor tourism equipment. Buyers are generally inclined toward reputable brands, associate price with performance, and are influenced by reviews and perceived brand value. These findings highlight the need for outdoor gear companies to maintain strong brand visibility, offer quality assurance, and manage pricing strategies effectively to appeal to their target market.

6.5. Technological Innovation

Table 5. Technological Innovation Descriptive Analysis

Questions	Mean	Standard Deviation	Verbal Description
I am more likely to purchase outdoor gear that incorporates the latest technology.	2.798	0.959	agree
I value smart features such as GPS, solar charging, or wearable tech in outdoor gear.	2.879	0.991	Agree
I believe technological advancements improve safety and convenience in outdoor travel.	2.948	1.026	agree
I follow new trends in outdoor gear technology when making purchasing decisions.	3.241	1.115	agree
I am willing to try innovative products that offer unique functions or enhancements.	3.461	0.991	Agree

3.51 – 4.00 Strongly Agree
2.51 – 3.50 Agree
1.51 – 2.50 Disagree
1.00 – 1.50 Strongly Disagree

Table 5 presents the respondents' perceptions regarding technological innovation as a factor influencing their selection of outdoor tourism equipment and supplies. All five items received mean scores within the 2.51 to 3.50 range, corresponding to a verbal interpretation of "Agree." This indicates a positive perception of technological advancements in outdoor gear among the surveyed outdoor enthusiasts.

The highest-rated item was "I am willing to try innovative products that offer unique functions or enhancements," which recorded a mean of 3.461 and a standard deviation of 0.991. This suggests that a significant portion of respondents are open to experimenting with new, tech-driven equipment, especially when it offers distinct features that enhance their experience. Following closely, the item "I follow new trends in outdoor gear technology when making purchasing decisions" received a mean of 3.241 (SD = 1.115), indicating that trend-awareness and interest in innovation are also influential in the decision-making process.

Other items also reflected agreement with the importance of technology in gear selection. The statements "I believe technological advancements improve safety and convenience in outdoor travel" (M = 2.948, SD = 1.026) and "I value smart features such as GPS, solar charging, or wearable tech in outdoor gear" (M = 2.879, SD = 0.991) highlight a strong appreciation for functional tech features that contribute to both security and ease of use during outdoor activities. The item with the lowest mean, though still within the "Agree" range, was "I am more likely to purchase outdoor gear that incorporates the latest technology" (M = 2.798, SD = 0.959), indicating some degree of cautious adoption, possibly due to cost, unfamiliarity, or concerns about practicality.

The standard deviations, which range from 0.959 to 1.115, suggest moderate variability in responses, with slightly higher variation seen in trend-following behavior. This variability reflects differences in individual levels of technological enthusiasm or exposure to innovation in outdoor tourism products.

The analysis shows that technological innovation is a relevant factor in influencing the purchasing decisions of outdoor enthusiasts. While the general sentiment is favorable toward technology-enhanced gear, the data also suggests varying degrees of tech adoption across individuals. For businesses in the outdoor equipment industry, these findings underscore the value of integrating smart and innovative features while also considering factors like consumer familiarity, perceived usefulness, and ease of use when introducing technologically advanced products.

7. Conclusion and Recommendations

Through analysis, this article finds that the selection of outdoor tourism equipment and supplies is influenced by various factors such as functionality, environmental adaptability, personal needs, brand reputation and price, and technological innovation. This is the same conclusion as scholar lee's research [6]. Understanding and grasping these factors can help tourists make wise purchasing decisions, as well as aid equipment manufacturers in accurately positioning the market and developing products that better meet consumer needs. Scholar Smith also reached the same conclusion. Consumers should pay more attention to the functionality and environmental adaptability of products when choosing outdoor equipment, taking into account personal needs, brand

reputation, and price. At the same time, they should pay attention to technological innovation, weigh their own actual situation, and choose suitable equipment to ensure travel safety and comfort. At the same time, it is recommended that consumers pay attention to the concept of sustainable development, choose environmentally friendly products, and jointly contribute to building a beautiful outdoor tourism environment.

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