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Exploring mountain tourism dynamics in Türkiye: demographics, preference, and trip experiences

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ABSTRACT

Mountain tourism plays a vital role in economic development and environmental conservation, while also posing challenges related to sustainability and community impact. Although research on nature-based tourism has grown, studies focusing on the dynamics of domestic mountain tourists remain geographically limited, particularly in underrepresented regions such as Türkiye. As mountain tourism encompasses diverse tourist behaviours, understanding this segment is essential for informed policy-making, destination planning, and marketing strategies. This study investigates the demographic profiles, preferences, and trip characteristics of mountain tourists in Türkiye, aiming to identify distinct patterns of travel behaviour. Data were collected through a national online survey conducted in collaboration with the Turkish Mountaineering Federation, including participants both from federation members and individuals interested in mountaineering without federation membership, yielding responses from 1,372 participants. The findings reveal significant variations in natural area preferences and destination feature expectations based on demographic and tourist typological factors. These insights underscore the importance of adopting segmentation-based approaches in mountain tourism management and marketing. The study concludes with practical recommendations and directions for future research to support sustainable and targeted tourism development in Türkiye and comparable contexts.

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profiles; trip characteristics;
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Introduction

Nature-based tourism is one of the fastest-growing segments of the global tourism market (Hardiman & Burgin, 2016; Silva et al., 2023). According to the Centre for Responsible Travel, it accounts for approximately 20% of global tourism. This form of sustainable tourism is centred on visiting natural areas, promoting conservation, and benefiting local communities (Weaver, 2001). As an umbrella term, nature-based tourism encompasses various subcategories, including mountain tourism (Steiger et al., 2022), ecotourism (Honey, 2002), wildlife tourism (Higginbottom, 2004), geotourism (Dowling & Newsome, 2010), forest tourism (Jones & Tocchini, 2017), agritourism (Flanigan et al., 2014), rural tourism (Lane & Kastenholz, 2015), cultural and heritage tourism (Nyaupane et al., 2006), and tourism in protected areas (McCool & Haynes, 2002).

Mountain tourism, as a key component of nature-based tourism, takes diverse forms depending on specific ecosystems (e.g. forests, rivers), landscapes (e.g. mountains, waterfalls, lakes, canyons, rainforests, valleys), and visitor interests (e.g. photography, wildlife

observation, birdwatching, skiing, hiking, camping, peak climbing, ice climbing) (Weaver, 2001). Because of its multifaceted nature, any definition of mountain tourism should encompass the types of tourists, their interests, natural settings, nature-based activities, and underlying motivations (Giachino et al., 2019). Understanding these interconnected aspects is essential for comprehending tourist behaviour and informing policy, planning, management, and marketing strategies. Such an approach enhances the tourist experience, fosters repeat visits (Heitmann, 2011), and supports the tourism industry in advancing global sustainability goals (Dobre et al., 2024; Haukeland et al., 2023).

Recognized globally as vital tourism destinations, mountains serve not only as sources of well-being and rejuvenation for tourists but also as crucial drivers of income and economic opportunities for remote rural communities (Romeo et al., 2021). While mountain tourism is often praised for its economic contributions (Buckley, 2009) and its role in supporting conservation efforts (Balmford, 2009), it also offers significant physical (Kellert, 2005), social (Fredman & Tyrväinen, 2010), and

psychological benefits (Packer & Bond, 2010). However, visits to natural sites and participation in nature-based tourism and mountain recreation activities can simultaneously disrupt the social and cultural fabric of mountain communities, contribute to pollution, disturb wildlife, and lead to habitat loss-factors that, in turn, affect the breeding and feeding behaviours of certain species (e.g. Buckley, 2004).

Moreover, climate change has emerged as one of the most pressing challenges for mountain destinations, threatening their ecosystems and tourism potential (Steiger et al., 2022). Seraphin and Dosquet (2020) examined the impact of the COVID-19 pandemic on mountain and second-home tourism, highlighting the resilience of the industry amid global uncertainty. However, they also noted concerns among local residents in mountain regions regarding the influx of urban dwellers seeking refuge in rural areas. Furthermore, the growing influx of tourists to natural sites places additional strain on local infrastructure and can contribute to the commodification and commercialization of local cultures (e.g. Hardiman & Burgin, 2016).

Many activities conducted in mountainous regions have contributed to their rapid and ongoing degradation, making scientific and sustainable management essential to preventing further environmental decline (Sati, 2014). The UNWTO (2018) highlights the critical role of sustainable mountain tourism in advancing the 2030 Agenda and the Sustainable Development Goals (SDGs). Implementing sustainable tourism practices is vital for conserving mountain landscapes, protecting fragile ecosystems, and safeguarding cultural heritage. Achieving these goals requires collaborative efforts among innovators, entrepreneurs, and key stakeholders.

Chakraborty (2020) highlights that mountains, as a global heritage, should be regarded as a shared resource, necessitating collective action from scientists, tourism scholars, management professionals, and other stakeholders to ensure their preservation for future generations. Beyond their ecological significance, mountains serve as biodiversity hotspots, primary sources of major drainage systems, and areas of rich geodiversity. They also play a crucial role in connecting ecosystems across the planet, influencing seasonal dynamics, migration patterns, and providing refuge for diverse species.

Conceptualizing mountains as a shared planetary heritage extends their significance beyond their immediate physical attributes, reinforcing their role as a global common good (Debarbieux & Price, 2008). Ensuring the sustainability of mountain tourism depends on active stakeholder engagement. Colasante et al. (2024) argue that achieving sustainable tourism in mountain regions requires targeted interventions, such as infrastructure financing and incentives for zero-emission resorts.

Similarly, Cholakova and Dogramadjieva (2023) highlight that tourists in mountain resorts seek distinctive atmospheres and diverse activities, making stakeholder collaboration essential in meeting these expectations.

Mountain tourism presents significant opportunities for recreation, economic development, and cultural preservation. However, addressing challenges related to sustainability, competitiveness, and climate change requires a coordinated effort from all stakeholders to secure the long-term viability of these fragile yet invaluable regions. Additionally, existing literature identifies a gap in consumer analyses concerning sustainability issues in mountain areas, underscoring the need for further research in this domain (Yang et al., 2023). Additionally, as Cao et al. (2022) argue, many mountain destinations struggle with competitiveness due to factors such as limited governmental awareness, insufficient resources, weak stakeholder collaboration, and inadequate infrastructure. To address these challenges, the authors advocate for balancing competition and cooperation, enhancing stakeholder communication, expanding mountain tourism markets, and improving infrastructure (Steiger et al., 2022).

As tourism continues to expand in mountain regions, understanding the characteristics, preferences, and behaviours of mountain tourists becomes essential for informed destination planning, visitor management, and policy development (Cholakova & Dogramadjieva, 2023; Dobre et al., 2024). Despite the recognition of mountain tourism's economic and environmental significance, there remains a lack of empirical research focused on the domestic segment, particularly in emerging markets such as Türkiye, where mountain regions hold substantial untapped tourism potential.

Accordingly, this study aims to explore the dynamics of mountain tourism in Türkiye by examining three inter-related dimensions: (1) tourist profiles and demographics, (2) trip characteristics and participation patterns, and (3) natural area preferences and perceptions of destination features. In addition, the study assesses how natural area preferences and destination perceptions vary across demographic groups and tourist typologies. These insights are intended to guide tourism planners, marketers, and policymakers in designing sustainable and tailored tourism offerings that align with the expectations of diverse visitor segments.

Study background, hypotheses and research questions

Mountain tourism

Mountains cover approximately 24% of the world's landmass, serve as vital centres of biological and cultural

diversity, and are home to 10% of the global population (Somuncu, 2002). These regions, along with their forests, are recognized as part of the world's natural and cultural heritage, attracting tourists due to their pristine landscapes, rich biodiversity, wilderness characteristics, clean air and water, and diverse topography featuring unique biotic and abiotic resources (Honey, 2008; Hull & Richins, 2016; Lew et al., 2008; Price et al., 1997). As a result, mountains have long captivated human interest for various purposes (Somuncu & Karadeniz, 2004), leading to the emergence and growth of mountain tourism and recreation. These regions hold significant potential for tourism and recreational diversity (Kaymaz et al., 2020).

Boniface and Cooper (2005) highlight the global ecotourism potential of mountainous areas, citing examples from multiple countries. Mountain environments, which accommodate both seasonal and year-round activities, attract visitors seeking immersion in nature, relaxation, and engagement in mountain sports (Zaman, 2020). Travellers to mountain regions often participate in physically demanding and adventurous experiences shaped by the natural characteristics of these environments (Richins, 2016). Consequently, mountains provide opportunities for various activities, including camping, summit climbing, mountain skiing, glacier climbing, hiking/trekking, mountain biking, wildlife observation, and photography, among others.

Additionally, they serve as prime locations for adventure-seeking tourists engaging in outdoor recreation (Godde et al., 2000). Notably, nature tourists tend to be well-informed and independent in selecting their mountain destinations (Williams et al., 2001). Accordingly, mountainous areas support a broad spectrum of outdoor activities that can be classified as outdoor recreation, outdoor education, adventure tourism, outdoor sports, or ecotourism, depending on their specific nature and execution (Buckley, 2001).

In developed countries, many mountain tourism destinations have become significant contributors to local economies (Nepal, 2002). Tourism is a critical economic sector for many mountain communities and is among the fastest-growing industries in these regions (Scott, 2006). However, mountain tourism is often highly seasonal, with operations running at or near full capacity during the peak summer months (three to four months) when favourable weather conditions allow accessibility and engagement in outdoor activities. In contrast, winter seasons frequently experience stagnation due to harsh climatic conditions and low facility utilization rates (often below 40%), posing challenges for financial sustainability (Williams et al., 2001).

Recognizing the importance of mountains and mountain tourism, the United Nations Environment Programme (UNEP) designated 2002 as the International Year of Mountain Tourism. Mountains rank as the second most popular global tourism destination, following coasts and islands (Hull, 2016; UNEP, 2007), accounting for an estimated 15–20% of the global tourism market (Ng, 2022). The international mountain tourism market is valued between \$140 billion and \$188 billion annually, supporting the employment of approximately 25–47 million people worldwide (Kruk, 2010).

Mountain tourists' characteristics

Scholars have challenged the traditional perception of mountain tourists as a relatively homogeneous group. In response, various segmentation typologies have been proposed to assist managers of nature-protected areas in better understanding tourists' diverse needs and in developing more sustainable tourism activities (Arnegger et al., 2010).

The profile of mountain tourists is diverse and can be categorized based on demographic, psychographic, and behavioural characteristics. These tourists often seek experiences that foster a deeper connection with nature, promote personal growth, provide adventure, and align with environmental sustainability principles (Ballantyne et al., 2009). Their activity preferences vary based on the level of physical engagement, with some favouring strenuous, high-adrenaline activities while others opt for more passive and contemplative experiences. Mountain tourists are typically repeat visitors to their preferred destinations and tend to engage in a range of recreational activities to derive multiple benefits. They are also more inclined to choose eco-friendly accommodations, support local communities, and seek authentic cultural and nature-based experiences. Additionally, they tend to favour destinations with strong conservation practices and environmental protections (Eagles, 1992).

Research has shown that factors such as income, psychographics, family size, and environmental attitudes influence tourism decisions related to nature-based travel. For instance, Vilkaite-Vaitone and Skackauskiene (2024) examined how demographic factors, including income, shape sustainable accommodation choices. Dobre et al. (2024) study on mountain tourists suggests that perceptions and satisfaction with services differ according to demographic and economic factors. For example, women showed a slight preference for higher-quality accommodations and dining experiences, whereas respondents with lower incomes and secondary education reported greater satisfaction with local

hospitality. The study supports the importance of adopting a tailored approach to mountain tourists.

Similarly, Ardoin et al. (2015) highlighted the role of environmental attitudes in travel decision-making. Carlsen et al. (2001) further explored the environmental practices of family-run businesses in rural tourism, demonstrating how family size, income levels, and environmental values collectively shape tourism preferences.

Cordell et al. (2008) found that nature-based tourists span all age categories, with the largest proportion falling between their mid-20s and mid-40s. This group tends to be more physically active and inclined toward adventure tourism. Their findings also indicate a higher representation of males in physically demanding and high-adrenaline activities, while females are more engaged in educational and conservation-oriented trips. Additionally, nature-based tourists are generally well-educated, with many holding post-secondary degrees, and often belong to middle-to-high income brackets, enabling them to afford specialized tours and travel to remote destinations (Cordell et al., 2008).

While men have a higher participation rate in extreme mountain sports, a significant number of female tourists engage in activities such as hiking and camping (Pomfret & Bramwell, 2014). With growing environmental awareness and an increasing appreciation for nature, individuals with higher levels of education tend to show greater interest in mountain tourism (Orîndaru et al., 2021). The profile of mountain tourists is diverse, ranging from luxury travellers seeking high-end mountain resorts to budget-conscious tourists opting for camping and other affordable outdoor experiences (Holden, 2016).

Mountain tourists carefully consider factors such as weather conditions, trail information, and necessary equipment before embarking on their trips (Beedie & Hudson, 2003). While some engage in mountain tourism individually, guided tours and group activities remain popular (Weed & Bull, 2012). As a destination for both nature and adventure enthusiasts, mountain tourism should be understood within the broader framework of sustainable tourism. Studies indicate that this tourist segment is composed of environmentally conscious, physically active, and nature-oriented individuals.

Mountain tourists represent a heterogeneous group whose profiles vary based on demographic, psychographic, and behavioural characteristics. Demographically, mountain tourists are often characterized by higher education levels, mid-to-high income, and a relatively even gender distribution, although activity type may differ by gender (Pomfret, 2006).

From a psychographic perspective, mountain tourists tend to exhibit strong environmental values, actively support conservation efforts, and prefer sustainable

travel options. Many are adventure seekers who participate in activities such as hiking, mountain climbing, and wildlife safaris, driven by a desire for excitement and a sense of personal accomplishment (Ballantyne et al., 2009). Additionally, a significant portion of mountain tourists seek nature experiences for mental and physical well-being. For instance, those engaging in activities such as forest bathing, yoga retreats, and nature walks are often motivated by relaxation, mindfulness, and various health benefits (Hansen et al., 2017).

Study hypotheses and research questions

Based on the above discussion and study's objectives, the study has developed three research hypotheses (Figure 1) in alignment with three research questions. The hypotheses and questions emphasize the interaction between mountain tourist profiles, and their influence on travel behaviour, including destination preferences, activity choices, and perceptions of natural area features. The combined use of hypotheses and research questions within the same study is a common approach in tourism research, as it enhances clarity and strengthens the study's overall purpose (Kastenholz et al., 2018).

Study hypotheses

H1: There is a positive and statistically significant relationship between perceived destination features (DF) and natural area preferences (NAP) among mountain tourists.

H2: Natural area preferences (NAP) differ significantly based on the demographic and typological characteristics of mountain tourists.

H3: Perceptions of destination features (DF) differ significantly according to the demographic and typological characteristics of mountain tourists.

Study research questions

RQ1: How do perceived destination features influence natural area preferences among mountain tourists?

RQ2: In what ways do natural area preferences vary among mountain tourists based on their demographic and typological characteristics?

RQ3: How do perceptions of destination features differ among mountain tourists with varying demographic profiles and tourist typologies?

Method

Study area

This study was conducted in Türkiye, a country located within the Alpine-Himalayan mountain belt. The North

Anatolian Mountains in the north and the Taurus Mountains in the south stretch along the coastline, with some peaks exceeding 2,500-3,000 metres. Mountainous areas above 1,000 metres, classified within the mountain biome, account for approximately 56% of the country's total land area (Atalay, 2016). Türkiye has an average elevation of over 1,100 metres, with elevation levels increasing toward the east. While mountains in the Aegean and Marmara regions surpass 2,000 metres, elevations reach 5,137 metres at Mount Ararat in the east. Between these two extremes, there are 435 mountains and peaks exceeding 1,000 metres. The Taurus Mountains (Aladağlar) in the south and the Black Sea Mountains in the north reach their highest point at 3,937 metres in the Kaçkar Mountains in the Eastern Black Sea Region (Somuncu, 2002, p. 189). These features highlight Türkiye's highly mountainous landscape (Somuncu, 2002, p. 189).

Türkiye is endowed with diverse natural and cultural features, including varied geological and topographies, and significant fauna and flora biodiversity. The country is home to numerous protected areas, including 261 nature parks, 48 national parks, 110 nature monuments, 31 nature conservation areas, 122 wetlands, and 85 wildlife development zones (T.C. Ministry of Agriculture and Forestry, 2024), making it an ideal location for studying mountain tourists. Among these, 17 national parks – such as Mount Ararat, Kaçkar Mountains, Uludağ, Spil Mountain, Güllük Mountain-Termessos, Aladağlar, Sarıkamış Allahuekber Mountains, and Nemrut Mountain – have been designated for protection due to their natural, cultural, and historical significance. These parks offer a wide range of recreational opportunities, including nature tours, hiking, botany excursions, mountaineering, youth camps, winter tourism, science tours, wildlife observation, and mountain biking.

The Turkish Mountaineering Federation (TMF) was established in 1928 as the first official mountaineering organization, originally named the *Turkish Mountaineering Society*. In 1933, a club called the *Turkish Hiking, Mountaineering, and Winter Sports Club* was founded, later evolving into the *Tennis, Fencing, and Mountaineering Club*. The federation gained its first official status in 1936 as the *Mountaineering and Winter Sports Federation* under the General Directorate of Physical Education. Following the separation of mountaineering and skiing branches in 1966, it was officially renamed the *Turkish Mountaineering Federation*, with significant contributions from İsmet Ülker. The federation became a member of the International Climbing and Mountaineering Federation (UIAA) in 1967, the International Federation of Sport Climbing (IFSC) in 2007, the International Mountain Skiing Federation in 2008, and the

International Skyrunning Federation (ISF) in 2021 (TMF, 2024).

The federation oversees a wide range of activities, including mountaineering, sport climbing, mountain skiing, ice climbing, canyoning, and high-altitude running. As of 2024, the Turkish Mountaineering Federation operates with a provincial representative office in each region and supervises 551 clubs across Türkiye. These clubs engage in various outdoor and extreme sports, including mountaineering, water sports, scouting, photography, skiing and winter sports, trekking, search and rescue, climbing, archery, underwater sports, cycling, orienteering, aviation, and camping. The highest number of extreme sports clubs are found in İzmir (46), Bursa (34), Samsun (31), Ankara (30), İstanbul (28), Rize (23), and Kayseri (19) (TMF, 2024).

Sample, sampling frame, and period

The study population comprises mountain tourists residing in Türkiye who engage in mountain tourism activities and spend their vacations in mountain destinations. To facilitate data collection, one of the authors directly contacted the Turkish Mountaineering Federation (TMF) via phone to explain the purpose of the study. The federation, which oversees clubs, associations, and foundations related to mountain, nature, and nature-based sports, subsequently reached out to its provincial representatives to encourage survey participation among their nature-based tourist members. As a result, a survey link was distributed across all 81 provinces (Figure 2).

According to TMF (2024), there are 20,310 registered mountaineers and nature athletes, comprising 8,026 women and 12,284 men, affiliated with various clubs under the federation. Beyond this official membership, thousands of individuals across Türkiye participate in mountain recreation and tourism activities without formal affiliation to any club. Additionally, data from the Turkish Ministry of Culture and Tourism (2024) indicate that approximately 91 million domestic visitors travelled to protected areas in 2022.

Given the study's focus on mountain tourists across the country, face-to-face interviews or on-site administered questionnaires were not feasible. Therefore, an online survey was conducted using Google Forms as the data collection tool. The survey was active from February 17, 2022, to June 25, 2022. The study is based on 1,372 fully completed responses from both club and association members affiliated with the Turkish Mountaineering Federation (TMF) as well as individual mountain tourists interested in mountain tourism and recreation. This includes not only TMF members but also individuals who are engaged in mountaineering without federation

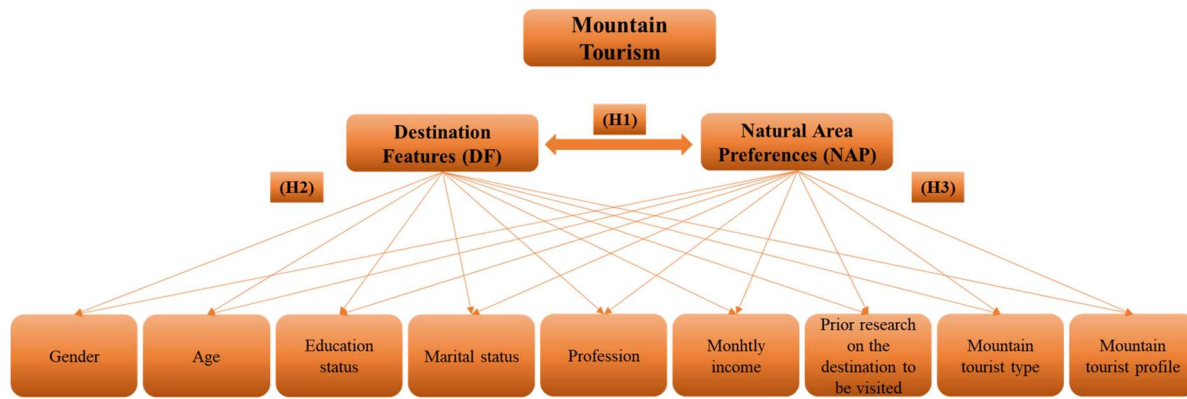


Figure 1. Hypotheses for mountain tourist.

membership. Therefore, the sample is not limited to federation members, and the goal was to diversify participant profiles to accurately reflect the general trends within the mountaineering community.

Prior to conducting the survey, ethical approval was obtained from the Atatürk University Social and Human Sciences Ethics Committee, as documented in the approval letter dated January 26, 2022 (E.88656144-000-2200027492). Furthermore, the survey cover page outlined the purpose of the study and included statements ensuring participant anonymity and confidentiality. It also emphasized that all data would be aggregated into a single report and that participation was entirely voluntary. The survey was administered in Turkish. The survey results were obtained using a back-translation process to ensure linguistic and conceptual accuracy (Brislin, 1970).

The instrument

A structured questionnaire was developed based on validated scales and established tourism research. The instrument included item statements adapted from prior studies in the field of nature-based tourism and mountain travel behaviour. Respondents were asked to express their opinions using a five-point Likert scale ranging from 1 = Not at all to 5 = Very much.

The questionnaire consisted of two main sections. The first section included six items capturing the demographic characteristics of tourists (e.g. gender, age, marital status, education, profession, and income) and thirteen items related to their travel behaviour and trip characteristics (e.g. length of stay, transportation, activities, travel group composition, repeat visitation).

The second section assessed two main constructs: Natural Area Preference (NAP) and Destination Features (DF). These dimensions were measured using a total of sixteen items (nine for NAP and seven for DF), adapted

from scales used in prior research. The literature base includes Ziffer (1989), Laarman and Durst (1987), Weaver (2001, 2005), Kaymaz (2022), Smith (1989), and Page and Dowling (2002). For travel motivations, the scale developed by Eagles (1992) was adapted and contextualized to the Turkish mountain tourism setting (Box 1).

Box 1. Summary of key survey variables and source.

Variable	Number of items	Source(s)
Demographics	6	Author-developed
Trip Characteristics	13	Author-developed
Natural Area Preference (NAP)	9	Eagles (1992); Weaver (2001); Kaymaz (2022)
Destination Features (DF)	7	Page and Dowling (2002); Ziffer (1989); Smith (1989)

A pilot test was conducted with 24 respondents, followed by revisions based on participant feedback and internal review by the authors. Explanatory notes were added to clarify any potentially unfamiliar terminology. These steps helped enhance the reliability, face validity, and comprehension of the final instrument. The questionnaire took on average 10 min to complete.

Data analysis

The analysis was conducted using IBM SPSS 25, IBM AMOS V25 (Chicago, USA), and SmartPLS 4 (Ringle et al., 2024). First, descriptive statistical analysis was performed. To ensure scale reliability, Cronbach's alpha, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and Structural Equation Modeling (SEM) were applied.

To examine differences between demographic variables and the two main dimensions, a normality test was conducted on the independent and dependent variables. The results indicated that the data followed a normal distribution. Consequently, Independent-

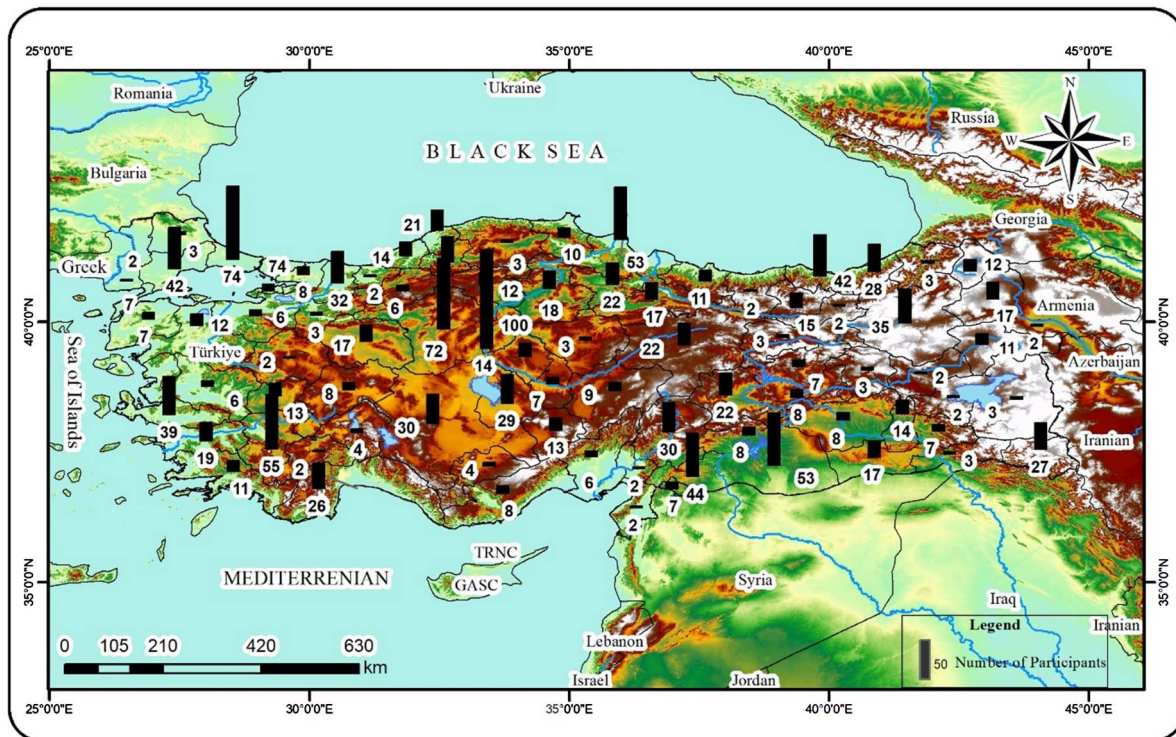


Figure 2. Distribution of respondents by province.

Sample t-test and One-Way ANOVA, both parametric methods, were employed for further analysis.

For discriminant validity, the Fornell-Larcker Criterion coefficients and the Heterotrait-Monotrait (HTMT) ratio were used to ensure that the constructs were sufficiently distinct.

Findings

Sample demographic characteristics

As shown in Table 1, approximately three-quarters of the sample are male, while 30% are female. In terms of marital status, 56% of respondents are married, and 44% are single. The sample includes individuals from various age groups, with those aged 51 and older forming the largest segment. Regarding education, all levels are represented, with undergraduate degree holders making up the majority (65.4%). In terms of occupation, 30% identify as civil servants, while 14.4% are retired. It is important to note that the high proportion of civil servants does not imply affiliation with the Turkish Mountaineering Federation. Instead, this finding suggests that civil servants may have a stronger inclination to seek escape from work-related stress and the routine of city life through mountain tourism. Concerning income, Table 1 shows that all

income brackets are represented, with the largest proportion (27%) earning a monthly income of 30,001-40,000 TL.

Trip characteristics, and profile of mountain tourists

Regarding the length of stay at the destination, the largest proportion of respondents (39.5%) plan to stay for 3 to 4 days, while 11% opt for stays of 7 days or more. The majority of tourists plan their mountain tourism trips with friends (66%), while 12% travel with family.

In terms of activities, 74% of respondents engage in multiple activities, with 21% selecting trekking as their preferred activity. Most participants are repeat visitors, with 35% visiting the area 2-3 times per year, and 6% returning more than 20 times annually.

Regarding accommodation preferences, the majority prefer commercial lodging, with 17% opting for hotels, while 28% choose to stay in tents. Nearly all respondents (96.5%) seek information about the destination prior to their trip.

In terms of mountain tourist typologies, 33% identify as determined mountain tourists, 31% as dedicated mountain tourists, and 24% as accidental mountain tourists.

Additionally, in another classification, 39% identify as researchers, while 13% consider themselves beginners.

Concerning trip expenditures, the largest proportion of respondents (26.5%) spend 17,000 TL or less, whereas 8% report spending 50,001 TL or more. Repeat visitation is common, with approximately 58% returning to the destination 2 to 3 times per year.

Regarding transportation, the majority (42%) travel by car, while 26% use buses (Table 2).

Among nature-based tourism activities, mountain tourism and mountaineering are particularly popular. A significant portion of mountain tourists have ascended multiple mountains and peaks. Recent trends indicate that the most preferred mountains are the highest and most popular mountainous regions of Anatolia in terms of mountain tourism. Within the scope of mountain tourism, the most preferred mountains are the Kaçkar, Ağrı, and Toros (Demirkazık, Emler, etc.) mountains (Table 2). Furthermore, between 2010 and 2023, the number of mountaineers from various countries who ascended to altitudes of 5054–8848 metres is 108 in Türkiye. Among the most frequently climbed peaks abroad by mountaineers are Annapurna I, Broad Peak, Everest, Gasherbrum I, Gasherbrum II, Ismail Somoni Peak, K2, Kanchenjunga, Kazbegi Peak, Khan Tengri, Korzhenevskaya Peak, Makalu, Manaslu, Nanga Parbat, Peak Lenin, Pobeda Peak, and Shishapangma (TMF, 2024).

Table 1. Sample's demographic characteristics.

		N	%
Gender	Male	412	30.0
	Woman	960	70.0
Marital status	Single	767	55.9
	Married	605	44.1
Age	25 and below	205	14.9
	26–30	138	10.1
	31–40	275	20
	41–50	343	25
	51 and above	411	30
Education status	Primary education	26	1.9
	High school	208	15.2
	Undergraduate education	898	65.4
	Postgraduate	240	17.5
Profession	Student	177	12.9
	Officer	413	30.1
	Academician	53	3.9
	Worker	58	4.2
	Retired	197	14.4
	Housewife	11	0.8
	Private sector	233	17
	Self-employment	103	7.5
	Not working	27	2.0
	Other	100	7.3
Monthly income (TL)	17000 TL and below	199	14.5
	17001–25000 TL	191	13.9
	25001–30000 TL	314	22.9
	30001–40000 TL	368	26.8
	40001 and above	300	21.9

Scale reliability, and validity analysis results

Scale reliability analysis results

The internal consistency and reliability of the scales were assessed using Cronbach's Alpha coefficient and item-total correlation analysis (Table 3). The item-total correlation values for all items exceeded 0.20, indicating acceptable internal consistency. The Cronbach's Alpha coefficient for the natural area preference dimension was 0.807, while for the destination characteristics dimension, it was 0.782, demonstrating satisfactory reliability.

Scale validity results

The results of the Principal Component Analysis conducted to assess the validity of the scale are presented in Table 4. The factor loadings for all items exceed the threshold value of 0.40, which is widely accepted in the literature, indicating a high level of validity. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is 0.841, surpassing the minimum required threshold of 0.50, confirming that the sample is suitable for factor analysis. The Bartlett's Sphericity Test results also confirm the appropriateness of the factor analysis with Varimax rotation ($p < 0.05$). Additionally, the scatter plot for the factor analysis supports the two-dimensional structure of the scale (Figure 3). Based on these results, the research scale was deemed a valid measurement tool.

Results of the scale's discriminant validity

For the discriminant validity of the scale, the Fornell-Larcker criterion coefficients proposed by Fornell and Larcker (1981) and the HTMT criteria proposed by Henseler et al. (2015) were applied. The results of the analysis are presented in Table 5.

Upon examining the Fornell-Larcker and HTMT values, the factors were deemed suitable for structural equation modeling (SEM) analysis, confirming the discriminant validity of the scale. According to the Fornell-Larcker Criteria, the Pearson correlation coefficient (r) between natural area preferences (NAP) and destination Features (DF) was found to be 0.401. As this value falls within the 0.26–0.49 range, it indicates a weak relationship (Kalaycı, 2010; Table 5).

Furthermore, when the Heterotrait-Monotrait (HTMT) ratio results were examined, the HTMT coefficient was found to be 0.517, which is below the commonly accepted threshold of 0.90 or 0.85. This confirms that the factors in the study meet the requirements for structural equation modeling analysis based on both the Fornell-Larcker and HTMT results (Table 5).

Table 2. Trip characteristics and profile of mountain tourists.

Length of visit	N	%
1-2 days	413	30.1
3-4 days	542	39.5
5-6 days	267	19.5
7 days or more	150	10.9
Approach to the execution of the event	N	%
Individual	216	15.75
Family	324	23.61
Friend group	450	32.80
Association or club	311	22.66
Tour company	71	5.18
Nature-based tourism activity type	N	%
Trekking or hiking	354	25.80
Mountaineering	207	15.10
Camping	189	13.77
Rock climbing	95	6.92
Glacier climbing	32	2.33
Mountain Bike	48	3.50
Skiing	68	4.95
Nature photography	93	6.77
Surfing	5	0.36
Rafting and canoeing	35	2.55
Canyon crossing	40	2.91
Underwater diving	28	2.04
Jeep safari	16	1.16
ATV and offroad trips	22	1.60
Fauna and flora observation	16	1.16
Cave	42	3.06
Orienteering (direction finding)	30	2.20
Hunting (wildlife and sport fishing)	34	2.50
Air sports (such as paragliding)	18	1.32
Most preferred mountains and peaks	N	%
Verçenik Peak	66	4.8
Ağrı Mountain	125	9.1
Big Demirkazık	96	7.0
Emler Peak	84	6.1
Erciyes Mountain	81	5.9
Hasan Mountain	72	5.2
Kaçkar Mountain	124	9.0
Small Demirkazık	89	6.5
Süphan Mountain	67	4.9
Other	568	41.4
Number of nature vacations	N	%
1 time	225	16.5
2-3 times	482	35.1
4-5 times	224	16.3
5-6 times	133	9.7
7-9 times	143	10.4
10-15 times	69	5
16-20 times	12	0.9
21 and above	84	6.1
Type of accommodation facility	N	%
Hotel	231	16.83
Boutique hostel	107	7.80
Hostel	164	11.95
Tent	396	28.86
Caravan	55	4.00
Home	82	5.97
Bungalow	133	9.70
Mountain house	156	11.40
Other	58	3.49
Spending	N	%
17.000 TL and below	364	26.5
17.001- 20.000 TL	357	26
20.001-30.000 TL	284	20.7
30.001-40.000 TL	151	11
40.001-50.000 TL	105	7.7
50.001 TL and above	111	8.1

(Continued)

Table 2. Continued.

Length of visit	N	%
Only once	385	28.2
2-3 times	795	57.9
4-5 times	99	7.2
5-6 times	21	1.5
7 and above	72	5.2
Type of transportation vehicle	N	%
Special vehicle	576	41.99
Car rental	68	4.95
Airplane	153	11.15
Bus	353	25.73
Train	91	6.65
Ship	18	1.31
Motorcycle or bicycle	69	5.02
Hitchhiking	44	3.20
Information about destination	N	%
Yes	1324	96.5
No	48	3.5
Mountain tourist type	N	%
Determined mountaintourist	457	33.3
Dedicated mountain tourist	431	31.4
Mountain tourist following a certain trend	157	11.5
Accidental mountain tourist	327	23.8

Results of path analysis

Data solutions were analyzed using IBM AMOS V24 (Chicago, USA) and Smart-PLS 4. In the first step, measurement models for the dimensions were evaluated. Although the fit values of the measurement models were within the acceptable limits, the standardized path coefficients for NAP10 and DF5 within the NAP and DF dimensions were found to be below 0.5. Consequently, the modification indices were examined, revealing that these items suggested correlations with other dimensions. Based on this observation, the related items were removed from the analysis. When the analysis was re-run, all remaining items within the NAP and DF dimensions were found to be statistically significant.

In the final structural model, the fit index values for the measurement model were obtained as follows: Chi-Square = 251, DF = 97, CMIN/DF = 2.591, RMSEA = 0.062, CFI = 0.905, and GFI = 0.925. All path coefficients were statistically significant and within the acceptable range (Table 6).

The standardized and non-standardized analysis results of the path coefficients for the sub-dimensions are presented in Table 7, while the significance values of the path coefficients are shown in Table 8 and Figure 4.

Normality testing

Before conducting hypothesis tests, normality tests were performed to assess the distribution of the scale

dimensions. The results of the Skewness and Kurtosis test for the conformity of dimension mean scores to a normal distribution are presented in Table 9. According to Tabachnick and Fidell (2013), data is considered normally distributed if skewness and kurtosis coefficients fall between -1.5 and $+1.5$. The results obtained in this study fall within this range, indicating that the data conforms to a standard normal distribution.

Table 3. Internal consistency coefficient, Cronbach Alpha coefficient and item-total correlation analysis results for each sub-dimension of the scale.

	Mean when item is deleted	Variance when item is deleted	Corrected item-total correlation	When the item is deleted Cronbach's Alpha
NAP1 Remote and deserted areas	28.99	33.016	0.477	0.792
NAP2 Natural and untouched areas	28.75	32.106	0.611	0.774
NAP3 Lakes and rivers	28.63	32.672	0.624	0.774
NAP4 Natural vegetation (forests, alpine meadows, flowers etc.)	28.33	33.897	0.598	0.779
NAP5 Protected Areas (national parks, biosphere reserves, nature parks, nature reserves, wetlands etc.)	28.59	34.665	0.447	0.795
NAP6 Mountains	28.46	33.537	0.519	0.786
NAP7 Valleys and canyons	28.80	31.800	0.647	0.769
NAP8 Caves	29.68	33.635	0.412	0.801
NAP9 Sea and ocean coasts (bay, gulf, coast etc.)	29.03	35.502	0.271	0.821
Natural Area Preference (NAP)	0.807			
DF1 Good accessibility facilities	21.90	17.723	0.592	0.781
DF2 Variety and good accommodation facilities and alternatives	22.04	17.007	0.640	0.770
DF3 Variety and richness of eating and drinking facilities	22.29	16.893	0.633	0.738
DF4 Cost-effectiveness of the activity	21.60	18.953	0.448	0.727
DF5 Being worth seeing	21.30	19.836	0.402	0.728
DF6 Being educational	21.81	18.489	0.465	0.765
DF7 Being popular	22.72	18.076	0.394	0.773
Destination Features (DF)				0.782

$0.60 \leq \alpha < 0.80$ the scale is highly reliable, and if $0.80 \leq \alpha < 1.00$ the scale is highly reliable.

Consequently, parametric analysis methods were applied in hypothesis testing.

Hypothesis testing results

The relationship between destination features (DF) and natural area preference (NAP)

H1: There is a positive and statistically significant relationship between perceived destination features (DF) and natural area preferences (NAP) among mountain tourists. In SEM modeling, the path coefficient between destination fetures (DF) and natural area preference (NAP) was found to be statistically significant ($\beta = 0.453$, $p = 0.001$). Therefore, hypothesis H1 was confirmed (Table 8).

Differences in natural area preference of mountain tourists according to their demographics and characteristics

H2: Natural area preferences (NAP) differ significantly based on the demographic and typological characteristics of mountain tourists. The results in Table 10 examine whether differences in natural area preferences exist based on demographic characteristics (e.g. gender, age, education, income) and mountain tourist characteristics (e.g. tourist type, profile).

Regarding gender, males ($M = 32.24$) and females ($M = 32.81$) exhibit similar mean preferences for natural areas. The difference between male and female preferences is not statistically significant ($p = 0.130$), suggesting that gender does not have a significant influence on natural area preferences.

For marital status, single individuals ($M = 33.37$) show higher preferences for natural areas compared to married individuals ($M = 31.65$). The difference is

Table 4. Principal Component Analysis (Factor Analysis) results for the validity of the scale.

	1	2
NAP1	0.741	
NAP2	0.773	
NAP3	0.530	
NAP4	0.561	
NAP5	0.513	
NAP6	0.754	
NAP7	0.609	
NAP8	0.771	
NAP9	0.742	
DF1		0.719
DF2		0.746
DF3		0.741
DF4		0.643
DF5		0.573
DF6		0.584
DF7		0.538

KMO: 0.841; Barlett's Test of Sphericity: 7049.859; Total Variance: %59

Nature Area Preference (NAP) and Destination Features (DF)

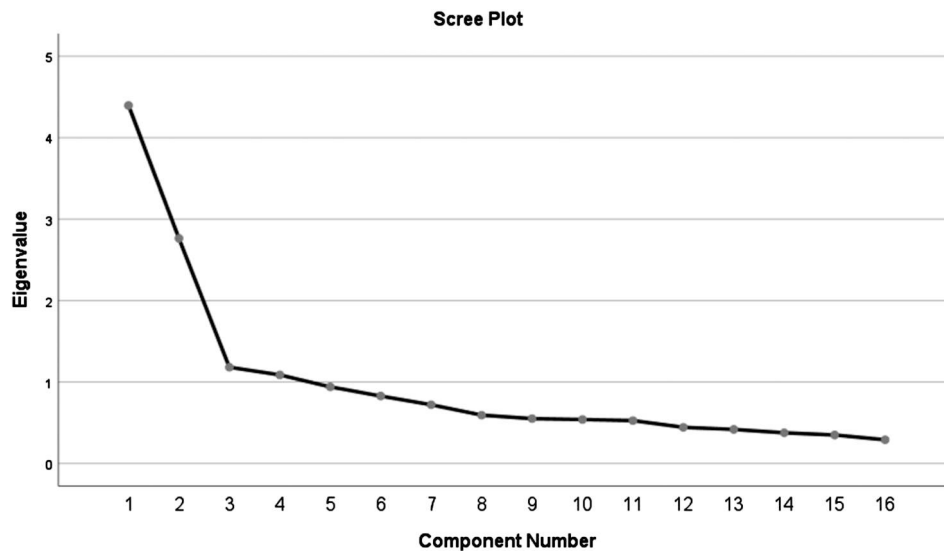


Figure 3. Factor analysis scatter plot.

statistically significant ($p = 0.001$), indicating that marital status influences preferences, with single individuals showing a stronger inclination toward natural areas.

Considering age, preferences vary across age groups, with the highest preference recorded in the 26-30 age group ($M = 33.81$) and the lowest in the 51 and above group ($M = 31.47$). The differences are statistically significant ($p = 0.001$), suggesting that age plays an important role in shaping natural area preferences.

Regarding educational status, there is an indication that preferences increase with education level, with primary education showing the lowest mean ($M = 29.81$) and postgraduate education the highest ($M = 32.62$). The differences are statistically significant ($p = 0.043$), indicating that education level affects preferences for natural areas.

When comparing different professions, preferences vary, with housewives showing the lowest preference ($M = 29.55$) and private sector employees the highest ($M = 33.38$; $p = 0.032$), suggesting that profession influences natural area preferences.

For monthly income, preferences remain fairly consistent across income groups, ranging from $M = 32.71$ to $M = 31.94$, with no statistical significance recorded ($p = 0.648$), implying that income does not significantly impact natural area preferences.

Regarding trip planning, tourists who research their destination prior to travel have a higher preference ($M = 32.47$) compared to those who do not ($M = 30.63$). However, this difference is not statistically significant ($p = 0.050$), indicating that prior research does not strongly influence natural area preferences.

Examining tourist typologies, statistically significant results ($p = 0.001$) show that tourists dedicated to nature have the highest preference for natural areas ($M = 34.05$), while coincidental mountain tourists have the lowest ($M = 29.90$). This suggests that different classifications of mountain tourists exhibit varying preferences for natural areas.

Regarding tourist profiles, unusual ($M = 33.61$) and researcher tourists ($M = 33.44$) show the highest preferences, while ordinary ($M = 30.39$) and beginner tourists ($M = 30.34$) report the lowest. With statistical significance recorded ($p = 0.001$), this finding indicates that different mountain tourist types significantly impact natural area preferences. Based on these results, H2 is supported.

Differences between demographic and trip characteristics of mountain tourists and destination features

H3: Perceptions of destination features (DF) differ significantly according to the demographic and typological characteristics of mountain tourists. Table 11 presents the differences in destination features based on

Table 5. Fornell-Larcker Criterion and Heterotrait-Monotrait Ratio (HTMT) discriminant validity.

	Fornell-Larcker Criterion		Heterotrait-Monotrait Ratio (HTMT)		
	DF	NAP	DF	DF	NAP
DF	0.570				
NAP	0.401	0.535		0.517	

Table 6. Model fit results.

Indexes/Parameters					
CMIN	DF	CMIN/DF	RMSEA	CFI	GFI
251.304	97	2.591	0.062	0.905	0.925
		≤ 3	≤ 0.8	≥ 0.90	≥ 0.90

Table 7. Standardized and unstandardized analysis results of path coefficients.

	Measurement Model		$\beta 1$	$\beta 2$	S.E.	C.R.	P Value
NAP9	<—	Natural area preference	0.508	1			
NAP8	<—	Natural area preference	0.375	0.841	0.143	5.869	<0.001
NAP7	<—	Natural area preference	0.347	0.876	0.158	5.533	<0.001
NAP6	<—	Natural area preference	0.511	0.728	0.101	7.196	<0.001
NAP5	<—	Natural area preference	0.533	0.789	0.107	7.373	<0.001
NAP4	<—	Natural area preference	0.686	0.695	0.084	8.293	<0.001
NAP3	<—	Natural area preference	0.718	1.003	0.131	7.652	<0.001
NAP2	<—	Natural area preference	0.563	0.820	0.108	7.58	<0.001
NAP1	<—	Natural area preference	0.460	0.712	0.106	6.715	<0.001
DF7	<—	Destination features	0.401	1			
DF6	<—	Destination features	0.346	0.562	0.108	5.183	<0.001
DF5	<—	Destination features	0.283	0.282	0.063	4.495	<0.001
DF4	<—	Destination features	0.400	0.614	0.108	5.676	<0.001
DF3	<—	Destination features	0.724	1.331	0.181	7.359	<0.001
DF2	<—	Destination features	0.827	1.323	0.175	7.548	<0.001
DF1	<—	Destination features	0.734	1.184	0.160	7.386	<0.001

demographic and mountain tourist characteristics. Women ($M = 27.04$) exhibit higher preferences for destination features compared to men ($M = 25$; $p = 0.001$), indicating that gender has a significant effect on destination preferences. Similarly, single individuals ($M = 26.16$) show a stronger preference for destination features than married individuals ($M = 25.17$; $p = 0.001$), suggesting that marital status plays a significant role in shaping these preferences.

Age also appears to be a significant factor, with younger tourists displaying higher preferences for destination features. The highest preference is observed among those aged 25 and below ($M = 26.93$), while the lowest is recorded among those aged 51 and older ($M = 25.09$; $p = 0.001$). Additionally, profession has a statistically significant impact on destination preferences ($p = 0.002$). Students exhibit the highest preference ($M = 26.91$), whereas academicians report the lowest ($M = 24.64$).

Income also demonstrates statistically significant differences in destination preferences. Respondents earning 17,000 TL or less show the highest preference ($M = 26.73$), while those with an income exceeding 40,001 TL report the lowest ($M = 24.05$), suggesting that income level significantly affects destination preferences.

On the other hand, education level does not appear to have a significant impact on destination preferences. Respondents with primary education report the highest preference ($M = 27.19$), whereas those with postgraduate education show a lower preference ($M = 25.32$), with no statistical significance recorded ($p = 0.218$).

Similarly, prior research about a destination does not seem to significantly influence destination preferences. Tourists who gathered information before their trip have slightly higher preferences ($M = 25.65$) compared to those who did not ($M = 24.50$), but the difference is not statistically significant ($p = 0.109$).

Regarding mountain tourist typologies, tourists following a specific trend have the highest preference ($M = 26.09$), while determined mountain tourists have the lowest ($M = 25.36$). However, these differences are not statistically significant, indicating that mountain tourist typology does not have a meaningful impact on destination preferences. A similar pattern is observed for mountain tourist profiles, where ordinary mountain tourists show the highest preference ($M = 25.94$), compared to unusual mountain tourists, who have the lowest ($M = 24.73$). Again, the differences are not statistically significant ($p = 0.116$), suggesting that variations in mountain tourist profiles do not significantly affect preferences for destination features. Based on these findings, H3 is partially accepted.

Summary and conclusion

This study provides a comprehensive exploration of the demographic profiles, travel behaviours, and destination feature preferences of mountain tourists in Türkiye. Drawing on a large, nationally representative sample, the research enhances our understanding of the variables shaping mountain tourism experiences and offers empirical support and partial confirmation of the study's hypotheses (Table 12; Table 13).

H1 / RQ1: How do perceived destination features influence natural area preferences among mountain tourists?

A positive and statistically significant relationship was found between destination features and natural area

Table 8. Path coefficients significance values.

	Original Sample (O)	Sample Average (M)	Standard Dev. (STDEV)	T Statistics (O/STDEV)	P Value
NAP → DF	0.453	0.466	0.033	13.615	0.001

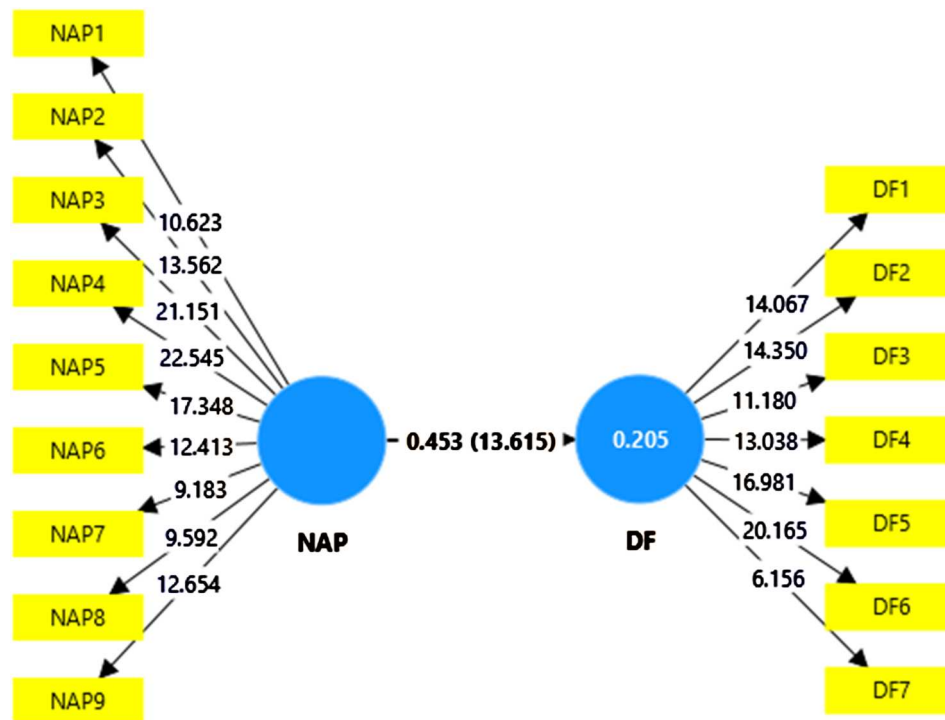


Figure 4. Significance values of path coefficients.

preferences. Key attributes such as accessibility, accommodation and food variety, educational value, and cost-effectiveness were shown to meaningfully shape mountain tourists' preferences. These findings underscore the importance of aligning destination development with tourist expectations to enhance satisfaction and promote sustainable engagement with mountain environments.

H2 / RQ2: In what ways do natural area preferences vary among mountain tourists based on their demographic and typological characteristics?

Natural area preferences varied significantly by age, marital status, education level, profession, and tourist typology. Younger, single, and more educated individuals, as well as Dedicated and Determined Mountain Tourists, exhibited stronger preferences for natural settings. In contrast, gender, income level, and prior destination research showed no significant influence, suggesting that not all demographic factors are equally predictive.

H3 / RQ3: How do perceptions of destination features differ among mountain tourists with varying demographic profiles and tourist typologies?

Differences in destination feature preferences were observed among women, younger tourists, students, and lower-income individuals. However, variables such as education level, prior research, and self-reported

tourist identity showed no significant effects. The partial support for H3 may reflect a convergence of preferences among members of organized mountain recreation communities, like the Turkish Mountaineering Federation (TMF), who may share similar values and expectations regardless of demographic differences.

From a theoretical perspective, the results challenge the sufficiency of demographic segmentation and instead emphasize the value of incorporating psychographic and behavioural data to better capture the complexity of mountain tourist behaviour. Practically, this means that tourism planners and managers should focus on dynamic indicators such as trip frequency, preferred activities, and tourist typologies to guide strategic decision-making.

The study's typological insights, such as identifying Dedicated, Accidental, and Trend-Driven Mountain Tourists, offer a strong behavioural framework for understanding varied levels of engagement. These distinctions can inform targeted marketing, product development, and visitor management strategies that better match tourist expectations and capacities.

In sum, this study demonstrates that mountain tourists in Türkiye are far from a homogeneous group. Their preferences and behaviours reflect differences in life stage, recreational orientation, and socio-economic status. The findings advance theoretical understanding of mountain tourism behaviour and underscore the need for more

Table 9. Results of the Skewness-Kurtosis test for the conformity of the distribution of dimension mean scores to normal distribution.

Scale	Subdimension		Normal Parameters						
			Mean	Std. Deviation	Test Value	Skewness		Kurtosis	
Mountain Tourism	Natural Area Preference (NAP)	N	32.4074	0.17352	0.041	Statistic	Std. Deviation	Statistic	Std. Deviation
		1372				−0.257	0.066	0.101	0.132
	Destination Features (DF)	N	25.6093	0.13177	0.045	Statistic	Std. Deviation	Statistic	Std. Deviation
		1372				−0.176	0.066	−0.085	0.132

adaptive and inclusive segmentation strategies in both academic research and strategic planning.

By extending knowledge of an understudied population, i.e. domestic mountain tourists in Türkiye, this research contributes to mountain tourism theory, practice, and policy.

Theoretical contribution

This study contributes to the growing body of knowledge on mountain tourism and nature-based travel by addressing several theoretical gaps. By integrating

context-specific insights with behavioural and typological analysis, it advances theoretical discourse and offers a more comprehensive and evidence-based understanding of mountain tourist behaviour.

Contextual contribution in an understudied setting

While mountain tourism has been extensively examined in Western and alpine contexts, there remains limited empirical work focusing on domestic mountain tourists in emerging markets such as Türkiye. By

Table 10. Differences between mountain tourists' preference for natural areas (NAP) according to demographic and *selected* tourist characteristics.

		N	Mean	Standard Deviation	Test Value	P Value
Gender	(a) Male	412	32.2354	6.37013	1.514	0.130 ^a
	(b) Woman	960	32.8083	6.54869		
Marital Status	(a) Single	767	33.3736	6.25633	−4.988	0.001^a
	(b) Married	605	31.6454	6.46173		
Age	(a) 25 and below	205	32.5707	6.06833	6.933	0.001^b
	(b) 26-30	138	33.8116	6.82904		
	(c) 31-40	275	33.6109	6.66272		
	(d) 41-50	343	31.9096	6.06162		
	(e) 51 and up	411	31.4647	6.41611		
Education Status	(a) Primary education	26	29.8077	5.57867	2.724	0.043^b
	(b) High school	208	31.6587	6.52337		
	(c) Undergraduate	898	32.5991	6.38627		
	(d) Postgraduate	240	32.6208	6.50989		
Profession	(a) Officer	413	32.5182	6.20897	2.036	0.032^b
	(b) Academician	53	32.7358	5.56137		
	(c) Worker	58	31.1897	7.39715		
	(d) Private sector	233	33.3820	6.52680		
	(e) Self-employment	103	32.5922	6.71906		
	(f) Retired	197	31.1218	6.35075		
	(g) Housewife	11	29.5455	6.40880		
	(h) Student	177	32.4689	5.93051		
	(i) Not working	27	32.3333	6.21413		
	(j) Other	100	32.7800	7.29962		
Monthly Income (TL)	(a) 17000 TL and below	199	32.7085	5.93615	0.621	0.648 ^b
	(b) 17001- 25000 TL	191	32.6021	7.28364		
	(c) 25001-30000 TL	314	31.9363	6.79097		
	(d) 30001-40000 TL	368	32.5516	6.11538		
	(e) 40001 and up	300	32.4000	6.15192		
Prior Research on the Destination to be Visited	Yes	1324	32.4721	6.42275	1.958	0.050 ^a
	No	48	30.6250	6.36020		
Mountain Tourist type	(a) Determined	457	32.8818	5.91638	29.000	0.001^b
	(b) Dedicated to nature	431	34.0487	6.04671		
	(c) Following a specific current	157	31.7389	6.81265		
	(d) Coincidence	327	29.9021	6.62882		
Mountain Tourist Profile	Researcher	538	33.4405	5.97241	14.027	0.001^b
	Exclusive	144	33.0139	6.40584		
	Unusual	171	33.6140	6.27906		
	Extraordinary	74	33.1757	6.66284		
	Ordinary	265	30.3887	6.36127		
	Just started	180	30.3444	6.77683		

^aIndependent-Sample t-Test, ^bOne-Way Anova

Table 11. Differences between mountain tourists' demographic and nature tourist characteristics and selected destination features (DF).

		N	Mean	Standard Deviation	Test value	P Value
Gender	(a) Male	412	24.9958	4.90472	7.239	0.001^a
	(b) Woman	960	27.0388	4.51798		
Marital Status	(a) Single	767	26.1620	4.78133	-3.742	0.001^a
	(b) Married	605	25.1734	4.91759		
Age	(a) 25 and below	205	26.9317	4.31427	6.384	0.001^b
	(b) 26-30	138	26.0580	5.54315		
	(c) 31-40	275	25.8145	4.99033		
	(d) 41-50	343	25.0933	4.63177		
	(e) 51 and up	411	25.0925	4.91302		
Education Status	(a) Primary education	26	27.1923	5.26132	1.481	0.218 ^b
	(b) High school	208	25.3558	5.32593		
	(c) Undergraduate	898	25.6993	4.75707		
	(d) Postgraduate	240	25.3208	4.88114		
Profession	(a) Officer	413	25.8208	4.98560	2.964	0.002^b
	(b) Academician	53	24.6415	4.60808		
	(c) Worker	58	26.5862	5.11288		
	(d) Private sector	233	24.8798	4.67137		
	(e) Self-employment	103	24.9223	5.08880		
	(f) Retired	197	25.3350	5.04059		
	(g) Housewife	11	26.3636	5.33428		
	(h) Student	177	26.9096	4.31867		
	(i) Not working	27	25.1852	4.93057		
	(j) Other	100	25.3600	4.83781		
	(a) 17000 TL and below	199	26.7337	4.45113	11.314	0.001^b
Monthly Income (TL)	(b) 17001- 25000 TL	191	25.8796	5.46868		
	(c) 25001-30000 TL	314	25.9331	4.63822		
	(d) 30001-40000 TL	368	25.8533	4.67939		
	(e) 40001 and up	300	24.0533	4.92117		
Prior Research on the Destination to be Visited	(a) Yes	1324	25.6495	4.85834	1.604	0.109 ^a
	(b) No	48	24.5000	5.40685		
Mountain Tourist Type	(a) Determined	457	25.3567	4.96144	2.087	0.100 ^b
	(b) Dedicated to nature	431	25.3782	4.86787		
	(c) Following a specific current	157	25.9873	4.75420		
	(d) Coincidence	327	26.0856	4.81995		
Mountain Tourist Profile	(a) Researcher	538	25.7788	4.71431	1.769	0.116 ^b
	(b) Exclusive	144	25.7292	4.93343		
	(c) Unusual	171	24.7251	4.77991		
	(d) Extraordinary	74	24.9730	4.91287		
	(e) Ordinary	265	25.9396	5.10312		
	(f) Just Started	180	25.6222	5.02303		

^aIndependent-Sample t-Test, ^bOne-Way Anova.

analyzing a large and nationally representative sample of 1,372 domestic tourists, this study expands the geographic and cultural scope of existing research. It offers contextually grounded insights into how mountain tourists in Türkiye behave, travel, and perceive natural area features, thus contributing to a more inclusive and diversified understanding of global mountain tourism.

Table 12. Hypotheses summary.

Hypothesis	Accepted
H1: There is a positive and statistically significant relationship between perceived destination features (DF) and natural area preferences (NAP) among mountain tourists.	Yes
H2: Natural area preferences (NAP) differ significantly based on the demographic and typological characteristics of mountain tourists.	Yes
H3: Perceptions of destination features (DF) differ significantly according to the demographic and typological characteristics of mountain tourists.	Partially accepted

Extending segmentation beyond demographics

Although demographic segmentation has long dominated mountain tourism research, the findings of this study demonstrate the value of incorporating behavioural typologies to better capture visitor diversity. By distinguishing between tourist types such as Dedicated, Accidental, and Trend-Driven Nature Tourists, the study extends previous segmentation frameworks

Table 13. Summary of findings.

Constructs Measured	Variables Indicating Significant Differences	Variables Not Indicating Significant Differences
Natural Area Preference (NAP)	Marital Status, Age, Education Status, Profession, Monthly Income, Tourist Type, Tourist Profile.	Gender, Prior Research.
Destination Features (DF)	Gender, Marital Status, Age, Profession, Monthly Income.	Education Status, Prior Research, Tourist Type, Tourist Profile.

(e.g. Arnegger et al., 2010; Mehmetoglu & Normann, 2013). These typologies provide a more nuanced lens through which to understand variation in destination preferences and travel behaviours, highlighting the importance of non-demographic segmentation in tourism analysis.

Advancing sustainable tourism frameworks

In addition to its contribution to mountain tourism theory, the study offers insights for refining sustainable tourism models. Traditional sustainability frameworks have often emphasized infrastructure, environmental regulation, and community-based management (Bramwell & Lane, 1993; Butler, 1980). This study complements those approaches by advocating for a visitor-centred perspective that prioritizes actual tourist behaviour, travel patterns, and typological diversity. Recognizing that different types of tourists may place varying levels of importance on accessibility, cost, educational value, and other destination features, the study supports sustainability strategies that are adaptive, targeted, and data-informed. This aligns with the broader call in tourism literature for integrated frameworks that merge demand-side insights with sustainability planning (Dobre et al., 2024; Dolnicar et al., 2008; Weaver, 2012).

Implications for policy and practice

The findings of this study highlight the diverse profiles, behaviours, and preferences of domestic mountain tourists in Türkiye, offering a foundation for more targeted and effective tourism planning and policy-making.

Destination marketing and visitor engagement

Tourism boards and marketers can utilize demographic and trip characteristic insights to design more tailored marketing strategies. For example, younger tourists and students, who exhibited higher preferences for specific destination features, may respond positively to campaigns promoting low-cost, experience-rich activities. Similarly, shorter-duration travellers or those making frequent visits may be more receptive to weekend packages or seasonal offerings tailored to their patterns.

Product design and on-site management

Tourism service providers should consider trip characteristics and visitor preferences when designing tourism experiences. For instance:

- Destinations could improve accessibility and basic infrastructure to accommodate tourists with limited mobility or time.
- Budget-conscious tourists may benefit from inclusive, value-oriented activity bundles.
- Preference for 'worth seeing' and 'educational' destination features suggests the value of interpretive signage, nature trails, and cultural programming.

Policy development and sustainability strategy

Policymakers can draw on findings about natural area preferences and destination feature perceptions to implement more context-sensitive and sustainable practices:

- Infrastructure investment should align with features that tourists value most, such as accessibility, variety of amenities, and cultural experiences.
- Regional planners may consider segmenting tourism zones by activity type and visitor capacity to minimize environmental strain.
- Data on age, income, and travel behaviour can support inclusive planning, ensuring facilities and programmes are accessible across groups.

Tackling seasonality and building resilience

Insights into tourist demographics and travel patterns can support diversification and off-season planning. For example, targeting older, experience-seeking tourists during shoulder seasons could flatten demand peaks while supporting regional economies year-round.

Implications of typology-based planning

Typological distinctions identified in the study, such as Dedicated, Accidental, and Trend-Driven Mountain Tourists, highlight the importance of recognizing different levels of engagement and expectation. Destination managers can develop parallel product offerings tailored to each segment, such as low-effort scenic trails for casual visitors and more immersive educational experiences for experienced mountain tourists. This type of segmentation can also aid in visitor dispersal strategies and help manage capacity sustainably.

Altogether, these implications emphasize the need for dynamic, evidence-based approaches to mountain tourism management in Türkiye. By accounting for the real and diverse characteristics of domestic mountain tourists, stakeholders can build tourism systems that are more resilient, inclusive, and aligned with long-term sustainability goals.

Limitations

This study is not without limitations. First, the length and structure of the questionnaire may have led to survey fatigue among some participants, potentially impacting the accuracy and completeness of responses. Additionally, the study utilized a focused set of variables related to mountain tourism preferences and traveller characteristics. While these variables provide valuable insights, future research could benefit from broader or more tailored measurement instruments that capture a wider range of tourist experiences and motivations. The exclusive use of an online survey format may have also limited participation among certain groups, particularly individuals who are not digitally active or not affiliated with nature-related associations. This raises the possibility of sampling bias and limits the representativeness of some demographic segments, such as older or rural populations. Furthermore, the study concentrated solely on domestic mountain tourists in Türkiye. As such, the findings may not be generalizable to international visitors or to tourists engaged in mountain tourism in other geographical or cultural contexts. This national focus, while intentional, narrows the scope of applicability and invites further comparative research.

Suggestions for further research

To build on the current findings, future research could benefit from comparative studies between domestic and international tourists. Exploring differences in travel behaviour, motivations, and destination preferences between these groups would offer valuable insights for tourism planners aiming to attract and serve diverse tourist markets. Such studies could also assess the influence of cultural background, travel constraints, and economic conditions on decision-making in mountain tourism.

Further research could also deepen the profiling of mountain tourists by segmenting them based on motivational factors, environmental attitudes, prior experience, and preferred activities. Identifying these subgroups would enable researchers and practitioners to better understand the drivers of tourist behaviour and tailor tourism products accordingly. Such segmentation could also contribute to the development of sustainable tourism strategies that balance visitor satisfaction with environmental conservation.

In addition, future studies could assess the need for and application of multidimensional measurement tools in mountain tourism research. Exploring which dimensions, such as emotions, sustainability orientation, or digital engagement, are most relevant could enhance the design of data-driven policies and marketing

strategies. A refined understanding of mountain tourist typologies would support the creation of customized tourism offerings, effective promotional campaigns, and better-targeted sustainability initiatives.

Cross-cultural comparisons also present a promising direction. Given that nature-based tourism is shaped by local environmental, cultural, and policy contexts, comparative studies between Turkish mountain tourists and their counterparts in other regions could illuminate culturally specific motivations, behaviours, and perceptions of sustainability. While outside the scope of this study, such research would significantly enrich the global discourse on mountain tourism.

Additionally, incorporating alternative theoretical frameworks, such as Push–Pull Motivation Theory or Place Attachment Theory, could provide more focused explanations of destination choice and emotional engagement. These perspectives could complement the current findings by offering deeper insights into the psychological dimensions that influence repeat visitation and place loyalty.

Finally, future studies should examine the underlying drivers of demographic and behavioural differences identified in this study. While our findings highlighted variations by age, gender, marital status, and income, understanding the root causes, such as cultural values, life-stage priorities, or economic accessibility, requires qualitative or mixed-method approaches. These methods could illuminate how individual and social factors shape engagement with mountain tourism and inform more inclusive destination planning.

Further research may also explore the feasibility and implementation of segmentation-driven management practices. For instance, evaluating how seasonality can be addressed through tailored promotional strategies, or how small-scale operators in rural mountain areas can adopt sustainable tourism models, would offer practical insights. Collaborative efforts between government agencies, local communities, and private stakeholders could be examined to support infrastructure development, policy alignment, and long-term sustainability of mountain tourism destinations.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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