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Demand Segmentation for Sustainable Adventure Destination Management: A Study of Santa Elena, Ecuador

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Abstract

Adventure tourism has established itself as a growing sector that integrates physical activity, interaction with nature, and cultural exchange. Understanding the heterogeneity of demand is crucial for designing effective and sustainable destination management strategies. Despite the global growth of adventure tourism, there is a scarcity of empirical studies analyzing the motivations, segmentation, and loyalty of tourists in emerging coastal destinations. This study contributes to filling this gap by providing evidence from the case of Santa Elena, Ecuador. This study examines the motivations, market segmentation, and loyalty of adventure tourists in Santa Elena, an emerging coastal destination in Ecuador. Based on a survey of 318 visitors and using exploratory factor analysis (EFA) and k-means cluster segmentation, five motivational dimensions were identified: learning, social, biosecurity, relaxation, and competence-mastery. The results revealed two distinct segments: (i) Relaxation seekers, primarily motivated by rest and stress reduction, and (ii) multi-motivation tourists, with high levels of motivation across all dimensions. This latter group showed greater loyalty, evidenced by the intention to return, recommend, and spread a positive image of the destination. The study contributes to academic knowledge by proposing a motivation-based segmentation model that integrates emerging dimensions such as biosecurity and offers practical implications for the sustainable management of adventure destinations. It recommends designing differentiated tourism products that cater to dominant motivations, thereby strengthening competitiveness and contributing to the sustainability of tourism in emerging contexts.

Keywords: adventure; demand segmentation; motivation; loyalty; sustainable destination management; sustainability

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1. Introduction

According to a report by Future Market Insights [1], the global adventure tourism market is expected to experience sustained growth over the next decade, reaching a pro-

jected value of USD 745.7 billion by 2035, compared to an estimated USD 345.6 billion in 2025. This increase reflects a compound annual growth rate of 8.0%, clearly highlighting the continuous expansion of this tourism segment and its consolidation as one of the most dynamic areas within the travel and leisure industries.

Adventure tourism is characterized by a combination of physical activities, interaction with natural environments, and a certain degree of perceived risk on the part of the traveler. This type of tourism offers participants the opportunity to explore nature in an active and often challenging way [2]. The UNWTO defines adventure tourism as tourism that typically occurs in specific geographical locations and is characterized by physical activities, cultural exchange, social interaction, and proximity to nature. Giddy & Webb [3] highlight the connection between adventure tourism, sustainability, and the appreciation of the natural environment. As Rantala et al. [4] note, definitions of adventure tourism may vary, but all include elements of risk and uncertainty to some extent.

In recent years, however, adventure tourism has shifted its focus from solely on risk and adrenaline to a space for learning, personal transformation, and a broadened worldview. In this context, Akaho [5] proposes conceptualizing the adventure tourist as a cross-border learner who emphasizes both unlearning and unplanned cultural exploration, thus enhancing the development of new identities through unforeseen experiences and increasingly authentic everyday contexts.

Market segmentation is a key task, as it allows different types of travelers to be classified into homogeneous groups for the purpose of designing personalized experiences, improving communication and promotion with each traveler based on their profiles, aligning the offer with expectations, and optimizing both services and prices [6]. This strategy is crucial in adventure tourism, where motivations include seeking adrenaline, connecting with nature, and achieving personal growth.

To increase customer satisfaction and refine marketing strategies, effective segmentation techniques are essential, as they facilitate a deeper understanding of tourism and optimize industry decisions [7]. In adventure tourism, understanding traveler motivations—such as the pursuit of excitement, learning, social interaction, or connection with nature—enables effective segmentation. In this sense, Laškarin-Ažić & Suštar [8] emphasize that adherence to a vacation style is influenced by various motivational factors and rewarding experiences, which becomes a fundamental aspect for the design of differentiated and sustainable tourism offers. While in the past this task could be carried out through traditional means, today electronic word of mouth [9] has become a valuable source of information that improves consumer classification and more appropriately adjusts offers to their expectations [9].

In addition to its inherent importance as a driving force behind the decision to travel, motivation in adventure tourism directly influences destination loyalty, given that meaningful experiences strengthen emotional bonds and the intention to return [10]. Understanding tourists' motivations throughout the three stages of the trip—before, during, and after—enables us to design more relevant experiences, thereby increasing satisfaction and fostering loyalty [11]. According to Zhou & Yu [12], when the tourist experience favors perceived well-being, the connection with the destination or service is strengthened. Thus, satisfaction and the experience have a direct impact on the intention to return, a relationship that, as we noted, is currently mediated by eWOM, an efficient tool for promoting destinations sustainably [13]. This influence encompasses both those who decide to travel and those who recommend or make decisions on their behalf.

Santa Elena, located on Ecuador's west coast, is an emerging destination for adventure tourism. The province boasts a diverse range of natural attractions, including extensive beaches, mountainous areas, and a rich biodiversity, making it an ideal location

for activities such as surfing, paragliding, hiking, and diving. Montañita, one of its most famous locations, attracts surfers from around the world due to its challenging waves and vibrant youth culture. Additionally, other areas, such as San Pedro, offer paragliding opportunities, providing visitors with unforgettable panoramic views of the coast and adrenaline-filled experiences.

Adventure tourism has grown significantly, consolidating its position as a key modality within the global tourism market. Despite its boom, academic literature on motivation-based demand segmentation in this type of tourism remains limited, especially in emerging destinations such as Santa Elena. This lack of studies represents a significant gap in tourism research [14,15], with potential consequences both in the academic field and in practical applications: without localized evidence, planning and development strategies may replicate ineffective foreign models, overlooking the destination's differentiating potential and increasing the risks of unsustainable management. While some research has explored this topic, most has focused on other regions, yielding mixed results. In this regard, focusing the analysis on Santa Elena is valuable not only because of its distinctive features—such as its coastal natural heritage and the cultural diversity of its local communities—but also because it represents an example of the challenges and opportunities faced by emerging adventure destinations, particularly in Latin America. Analyzing this case makes it possible to generate knowledge applicable both to the Ecuadorian context and to comparable settings, thereby contributing to enriching the international literature on adventure tourism in developing destinations.

Previous studies on motivation-based segmentation have also yielded mixed results. From a practical perspective, delving deeper into the motivations and segmentation that guide the behavior of adventure tourists in Santa Elena is essential for designing differentiated and personalized tourism products, thus optimizing the visitor experience and the competitiveness of the local offering.

Within this framework, this study sets the following objectives: (i) To identify the drivers of adventure tourism demand; (ii) To determine the segmentation of adventure tourism demand; (iii) To establish the relationship between demand segments and loyalty in adventure tourism. The results will constitute a significant contribution to the academic literature on adventure tourism and help adventure destination managers develop management guidelines that enable sustainable development.

2. Literature Review

Contemporary tourism cannot be understood separately to the socio-ecological disruptions that have shaped global life in recent decades. At present, as in other sectors, tourism activity unfolds within a web of health crises, climatic phenomena, economic instabilities, and geopolitical tensions that interact simultaneously and, in many cases, even cumulatively. This condition has been conceptualized as a 'polycrisis,' a framework that describes the interconnection and feedback of multiple crises that do not manifest independently, but rather as a complex system of intertwined disruptions [16,17].

Recognizing tourism within this logic makes it possible to understand why certain traditional motives acquire renewed centrality in current travel patterns and why new ones emerge, projecting them into the future as well [18]. In this scenario, the search for safety, biosecurity, emotional restoration, contact with nature, and resilience does not respond to circumstantial dynamics, but rather to a global environment characterized by uncertainty and the interdependence of multiple crises. This approach anchors the study of adventure tourism beyond traditional micro-theories of tourism and connects it with structural dynamics of global scope, offering a stronger framework for better outlining motivations, segmentation, and loyalty in this field.

2.1. Motivations in Adventure Tourism

Tourist motivations are the internal and external factors that drive people to travel, satisfying needs such as seeking new experiences, relaxation, adventure, or cultural learning [19,20]. These motivations influence the destination, the traveler's activity choice, and the perception of their tourist experience. Therefore, identifying and understanding them helps tourism professionals design tourism products that align with travelers' profiles and needs [21]. Hence, uncovering motivations is key to understanding tourist behavior and travel decisions [22].

In the specific case of adventure tourism, motivations are the impulses that lead people to seek experiences that combine physical challenge, controlled risk, and contact with nature [23]. Similarly, in this case, it is essential to understand the motivations that drive travelers to analyze their behavior and anticipate adventure proposals [24].

In recent years, there has been a growing interest in researching motivations in the field of adventure tourism [25]. Studies have focused on diverse destinations, reflecting the evolution of the field and an increasingly profound understanding of its determining factors.

For example, in 2014, we encountered the work of Pomfret & Bramwell, who analyzed the characteristics and motivations of outdoor adventure tourists in Charmonix, France, identifying factors such as socialization, challenge, and connection with nature. They drew on two sources: a critical review of existing literature and a case study in the region as mentioned above. The results showed that outdoor adventure tourists are a diverse group, with variables such as prior experience, age, and gender significantly influencing their motivations.

Beckman et al. [26] examined the motivations of tourists who enjoy rafting on the Ocoee River in the United States. They used surveys to do so and found that motivations related to intense emotions (thrill) and a connection with nature generate positive affective responses, which in turn increase destination attachment and promote favorable behaviors, such as the intention to return and positive word of mouth. Similarly, Wang & Wang [27] explored the fundamental role played by adventure recreation pioneers in shaping this tourism discipline. Their study focused on the motivations that drove them to take up whitewater kayaking in Taiwan. Through semi-structured interviews with pioneers, they identified adventurous experiences, a love for nature, and the enjoyment of sharing with like-minded people as their primary motivations. Elements such as the beauty of the rivers and advances in kayaking equipment also boosted their participation.

An additional contribution to this topic is offered by Giddy & Webb [28], who observed the environmental attitudes and motivations of adventure tourists in South Africa, finding that a connection with nature drives participation. In 2019, Araújo Pereira & Gosling conducted a similar study, focusing on the motivations of Brazilian passionate travelers, which highlighted escape, relaxation, and self-development as their primary motivations. They are joined by Jin et al. [29], who focused on the motivations that drive Chinese adventure tourists, evaluating the role of both personality and geographic location. Based on a survey, they identified that avoidance of negative stimuli and information seeking are their main motivational stimuli. Respondents also show a preference for international destinations, perceiving them as safer and better equipped.

Thus, Bichler & Peters [30] focused on hikers' motivation for soft adventure activities, specifically mountain hiking in the European Alps. Combining quantitative methods (exploratory factor analysis and regression) with qualitative methods (semi-structured interviews and template analysis), they identified six motivational factors. The authors highlight that relaxation, socialization, and discovery contribute positively to satisfaction, while recognition has an adverse effect. The value of the study lies in offering a

deep understanding of hiking motivations, differentiating them from those of extreme adventure activities.

In the field of adventure tourism in India, we can mention the work of Mangoch & Jain [31], who conducted a systematic literature review on the main trends, challenges, opportunities, and prospects of this sector, as published in research between 2000 and 2022. The review focused specifically on the Indian context, including an analysis of the pandemic's impact on the country. This work stands out for addressing key topics, including regional balance, ecotourism, and sustainable development.

The literature review we have just conducted reveals that, while the motivations for adventure tourism are diverse, specific common patterns exist. Among the most common are the search for intense emotions (such as risk, fear, or adrenaline), connection with nature, personal challenge, and socialization. These motivations are also complemented by the desire to escape from routine, relaxation, and learning. This multiplicity of factors suggests that adventure tourism does not respond to a single traveler profile; instead, it constitutes a multidimensional experience in which emotional, physical, and social aspects converge. In this context, our research, which begins with the question:

RQ1: What are the motivations for demand in adventure tourism?

2.2. Segmentation of Adventure Tourism

Demand segmentation involves dividing consumers into homogeneous groups based on their needs, preferences, and purchasing behaviors to design more effective strategies [32]. In tourism, this task involves dividing the market into subgroups of travelers with similar characteristics and motivations, thereby personalizing the offer and enhancing their experience [33]. This approach considers their expectations and desires [34], enabling tourism companies to develop more targeted marketing strategies and enhance the competitiveness of destinations [35].

Demand segmentation in adventure tourism is a fundamental tool for classifying tourists based on their motivations, behaviors, and personality traits. This strategy offers a deeper understanding of visitor preferences, enabling the design of targeted offerings that cater to their interests and expectations [36]. Segments can be defined based on variables such as the search for intense sensations, level of prior experience, degree of social interaction, or the desire to connect with nature [37]. It is also relevant to distinguish between casual travelers, experienced explorers, and those pursuing personal goals [38].

According to Lötter [39], effective segmentation must integrate both demographic and psychographic variables, including risk attitudes and emotional connection with the natural environment. Along these lines, Moisa et al. [40] highlight the potential of mobile technologies and fingerprint analysis as tools for identifying personality profiles, which contributes to increasing the competitiveness of tourist destinations.

Specifically in this field, there is relevant prior literature. First, we can mention Sung et al. [41], who analyzed the adventure travel market considering the specific activities that comprise it. Based on surveys of industry suppliers in North America, they propose a typology composed of six activity groups: gentle nature, controlled risk, extreme challenge, wild nature, winter snow, and ambiguous classification (question mark). This categorization highlights the heterogeneity of the sector, suggesting that adventure travelers do not comprise a single audience, but rather multiple niches that respond to different motivations, risk levels, and ways of interacting with nature.

Sung et al. [38] took a different approach, focusing on the consumption and travel behavior of adventure tourists. Using surveys of American travelers, they analyzed their personal characteristics, the factors that influenced their travel decisions, and their perceptions of adventure tourism. Their study identified six subgroups of participants: general

enthusiasts, young people on a budget, moderate adventurers, high-net-worth naturalists, family vacationers, and active solo travelers. Naturally, each of these groups demands differentiated offerings aligned with their motivations, expectations, and travel habits.

From another perspective, Pesonen [42] examined the impact of information and communication technologies (ICTs) on market segmentation within tourism marketing. Through a systematic review of articles published since 2000 in three specialized journals, the study classifies the relationship between ICTs and segmentation into seven categories. The results indicate that, although 58 studies analyzed reflect some influence of ICTs, only three focus specifically on the intersection between segmentation and technology, highlighting a significant gap in the academic literature.

Albayrak & Caber [37] conducted a study focused on Koprulu Canyon National Park in Antalya, Turkey, in which they explored the motivations that drove German tourists to participate in whitewater rafting excursions during their holidays. Using the Leisure Motivation Scale, they identified four key dimensions: intellectual, social, competition/mastery, and encouragement/avoidance; and classified participants into four profiles: active, reluctant, moderate, and challenge seekers.

Another significant study is that of Koshy et al. [36]. They analyzed market segmentation in adventure tourism at Endau Rompin National Park in Malaysia, focusing on the relationships between sociodemographic characteristics, visitation patterns, and customer satisfaction. Based on surveys conducted in two areas of the park, they identified the predominant profiles: young people under 30 years of age, single, with higher education and high incomes, who make the trip primarily motivated by leisure and the search for integration.

Nduna & Van Zyl [43] developed a benefit-based segmentation model for nature tourism destinations, with a specific focus on the Kruger, Panorama, and Lowveld areas of South Africa. By surveying tourists, they identified two predominant segments based on the benefits they seek, such as connection with nature, relaxation, and active experience-seeking. Factor and cluster analyses, as well as logistic regressions, were conducted to establish relationships between observed benefits and activities undertaken, as well as attractions visited. The presented model provides an effective tool for tourism marketing planning, enhancing the adaptation of promotional strategies according to the benefits tourists expect.

Also worth mentioning is the study by McKercher et al. [7], who compared five segmentation techniques: geographic, demographic, behavioral, motivational, and a hybrid. They analyzed the behavior of independent tourists visiting Bali, Indonesia. The analysis indicated that geographic segmentation offered the most robust results, while motivational segmentation was the least reliable. However, the authors emphasize that the choice of the most appropriate method depends on the specific objectives of each research project.

On the other hand, Deb et al. [25] conducted a comprehensive bibliometric analysis of adventure tourism, aiming to identify prevailing trends, gaps in the existing literature, and future projections in this field. The findings indicate a sustained increase in the number of publications on adventure tourism, identifying four key research areas: risk management, tourist motivation, associated experiences, and related product development to adventure tourism.

The studies reviewed show that adventure tourism segmentation has been approached from multiple perspectives, highlighting the diversity of this market. Among the criteria used are activity type, motivations, expected benefits, sociodemographic characteristics, and travel behaviors. Therefore, there is no single segmentation model. In some cases, there is also limited integration of technological tools in this task. Understanding how this

demand is structured is essential for designing more appropriate products and developing more effective marketing strategies. Based on this, the following research question is posed:

RQ2: What are the demand segments in adventure tourism?

2.3. Relationship Between Segmentation and Loyalty in Adventure Tourism

Loyalty is defined as a consumer's ongoing commitment to a brand, service, or destination, as evidenced by their intention to make repeat purchases, recommend those products or services, and maintain a consistent preference despite influences that might prompt them to switch [44]. In the context of tourism, loyalty emerges as a fundamental element for the sustainability of destinations and tour operators, as it is substantially determined by the experience acquired, the perception of value, and the emotional connection with the visited place. Correct demand segmentation in adventure tourism, considering variables such as motivations, degree of involvement, and perception of value, facilitates the creation of more personalized experiences, which in turn enhance customer satisfaction and, therefore, foster visitor loyalty [45].

Tourist motivation, broken down into push (internal) factors and pull (external) factors, has a significant impact on loyalty to both the destination and the tourism experience. This link is influenced by destination satisfaction and perception, suggesting that analyzing tourists' individual motivations as part of the market segmentation process facilitates the formulation of more effective strategies to promote visitor loyalty [46].

Regarding previous literature, the analysis conducted by [47] investigates the correlation between destination attractiveness and tourist loyalty, focusing on an under-traveled area: emerging long-haul destinations, exemplified by South Africa. By conducting a survey targeting tourists from Italy, the study identifies the elements they consider attractive in a destination from a demand-side perspective, as well as the impact of these factors on their willingness to return or recommend that destination. A key finding of the study is the moderating role of prior travel experience, which can enhance or attenuate the relationship between perceived attractiveness and loyalty. This study contributes to the existing literature by demonstrating that loyalty is not solely determined by the objective quality of a destination, but also influenced by subjective, emotional, and experiential factors. This finding is particularly relevant for new or developing destinations aiming to establish a foothold in the international market.

The study by Sato et al. [10] shows that, in adventure tourism, decision-makers (DMs) primarily seek thrills, while non -DMs are more motivated by family needs. Destination loyalty among DMs is related to rafting services and cultural aspects. At the same time, among non-DMs, overall satisfaction depends on the tourist profile, highlighting the need for differentiated strategies.

Vespestad et al. [48] emphasize that the experiential styles associated with adventure tourism activities, such as climbing, exert a considerable influence on tourists' perceptions of value. This perception, in turn, directly impacts the degree of loyalty that tourists show towards both the activity and the destination. The research examines various ways in which tourists experience nature, encompassing aspects such as individual exploration, physical exertion, and aesthetic or spiritual connections. Furthermore, it argues that these variations give rise to demand segments with particular motivational characteristics. Tourists who assign a higher symbolic or emotional value to their experience demonstrate a greater propensity to make repeat visits and recommend the destination, which underscores the importance of integrating experiential styles into segmentation strategies to promote loyalty in the field of adventure tourism.

Hanji et al. [49] have, in turn, conducted creative and novel research, focusing on adventure tours in the metaverse among Generation Z. To achieve this, they utilized data

collected through surveys. The results showed that this generation perceives these virtual experiences as simple, and that their interest is mainly motivated by hedonistic and unique, exciting experiences. Furthermore, the study fills a gap in the literature by focusing on this generational group, providing key information to segment demand and design sustainable strategies adapted to their values and consumption habits.

The research conducted by He et al. [50] contributes to tourism demand forecasting by combining push-pull theory with big data analysis and machine learning models. Using online search data, the authors identify and examine both push and pull factors that influence travel decision-making. This methodology enhances the understanding of tourist preferences and optimizes the application of classical theories from both empirical and computational perspectives. The research not only demonstrates the potential of big data in tourism studies but also proposes new approaches for more accurate predictive models.

The study by Orden-Mejía et al. [51] examines motivations, quality perceptions, and loyalty in adventure tourism in Santa Elena, Ecuador, highlighting their importance within a poorly researched Latin American context. Their work explains 63.5% of the variability in perceived quality and 48.1% of the variability in loyalty, underscoring the importance of analyzing adventure traveler behavior in the post-pandemic context. These results contribute to the theoretical framework of sustainable tourism and offer practical recommendations to enhance competitiveness and tourist retention.

Musa et al. [52], on the other hand, address the factors that foster loyalty in the field of sustainable tourism, highlighting the importance of escapist motivation and perceived affordability at heritage sites such as Borobudur and Prambanan, located in Central Java. Through a quantitative survey study, it is evident that these two variables have a direct impact on the intention to visit sustainable destinations (VSDI), which acts as a mediating factor in the relationship with destination loyalty. The results highlight that the desire to escape from daily routines and the consideration of economic value are key factors in enhancing tourist loyalty, recommendations, and return visits, providing important implications for the marketing and management of sustainable destinations.

Taken together, the reviewed studies lead us to conclude that the relationship between segmentation and loyalty in adventure tourism is complex and multidimensional. This relationship is influenced by variables such as the traveler's previous experience, experiential style, decision-making role, emotional motivations, and generational values. A segmentation that adequately incorporates these factors will not only facilitate a more precise understanding of demand but also enable the design of more effective loyalty strategies tailored to the specific characteristics of each segment. Based on this analysis, the following research question is posed:

RQ3: Which are the most loyal segments in adventure tourism in terms of variables such as return, recommendation, and positive comments about the destination?

2.4. Research Hypotheses

Based on the research questions, the following hypotheses are formulated to provide inferential clarity:

H1. *The multi-motivated segment exhibits higher levels of loyalty than the relaxation-focused segment.*

H2. *Learning motivation has a positive effect on tourist loyalty.*

H3. *Biosecurity motivation positively influences the perception of the destination.*

3. Methodology

3.1. Study Area

The province of Santa Elena is located in Ecuador's coastal region and is the youngest of the current 24 provinces, officially created in 2010. Its capital is the city of Santa Elena and has an area of approximately 3696 km^2, home to approximately 401,178 people, according to recent demographic projections [53]. The provincial economic structure is primarily based on fishing and tourism. However, strategic activities such as oil refining, port and airport operations, and a well-established hotel infrastructure also play a significant role. Furthermore, the province is characterized by its wide range of archeological, historical, natural, and cultural attractions, complemented by extensive beaches and picturesque fishing communities that strengthen its territorial identity.

The province is divided into three cantons: Santa Elena, La Libertad, and Salinas. Among its main tourist destinations are the beaches of Salinas and Montañita, internationally recognized for their high visitor numbers. Montañita, in particular, has gained great prestige as a center of fun and adventure, standing out for its organization of national and international surfing tournaments. In this context, Carvache-Franco et al. [54] identify sun and sand, ecotourism, and socializing as the predominant motivations of visitors to this area.

The province receives an estimated 1.2 million tourists annually, with the majority concentrated during the high season (December–April) and national holidays. For example, approximately 89,000 and 300,000 visitors were reported during the May and November holidays in 2024, respectively [50]. These influxes consolidate Santa Elena's status as one of the country's most popular coastal destinations and position it as the second most visited province in 2024, after Pichincha [55].

From an environmental perspective, Santa Elena is characterized by its year-round warm climate, extensive white-sand beaches, and the presence of valuable marine-coastal ecosystems. Among these, the Puntilla de Santa Elena Marine-Coastal Wildlife Production Reserve stands out. It is a protected area ideal for birdwatching, sea lions, and marine species, as well as for low-impact ecotourism in circuits such as La Chocolatera and La Lobería. This protected area is also one of the primary locations for humpback whale watching in Ecuador, with peak visitation between June and September, reaching 4333 visitors during the November 2024 holiday [50].

Regarding adventure tourism, Santa Elena offers a diverse portfolio of activities that combine active recreation with direct contact with nature. Montañita is the country's icon of surfing, attracting tourists motivated by adrenaline and the beach lifestyle. Ayangue and San Pablo, meanwhile, are renowned for their diving and snorkeling spots, thanks to their coral formations. Communities such as Dos Mangas and Libertador Bolívar have established themselves as destinations for hiking, zip-lining, and other activities in tropical dry forest settings. Additionally, water sports such as parasailing, water skiing, and kitesurfing are practiced at various points along the peninsula's coast [37].

Finally, Santa Elena's gastronomic richness—based on seafood products such as ceviche, seafood rice, and fried fish—constitutes a complementary motivation that enhances the tourist experience [54]. Overall, the province's diverse natural, cultural, and recreational resources position it as an ideal space for sustainable adventure tourism, providing fundamental elements for understanding visitor motivations and behaviors, in line with the objectives of this study (Figure 1).

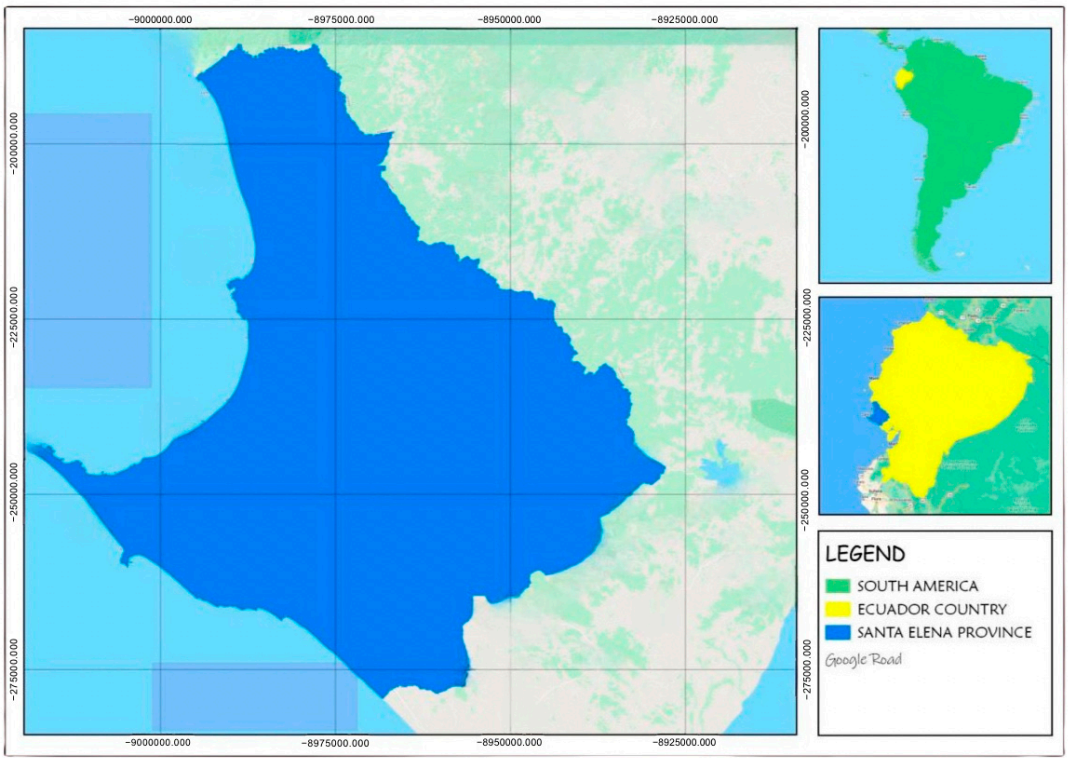

Figure 1. Santa Elena province, Ecuador.

Santa Elena is one of the twenty-four provinces that make up the Republic of Ecuador, located in the western part of the country, in the geographical area known as the littoral or coastal region. Its administrative capital is the city of Santa Elena, while the largest and most populous city is La Libertad. The distance between Santa Elena and José Joaquín de Olmedo International Airport in Guayaquil is approximately 137 km.

3.2. Questionnaire Design, Data Collection, and Analysis

The research was conducted in the province of Santa Elena, located in Ecuador's coastal region. This territory, comprising the cantons of Santa Elena, La Libertad, and Salinas, is characterized by a wide range of adventure tourism activities, including surfing in Montañita, diving in Ayangue, and canopy, paragliding, and other recreational activities that combine contact with the sea and nature. Given the importance of this destination and the scarcity of studies analyzing motivations in the post-pandemic context, it was considered an ideal setting for the development of this study.

The data collection instrument was structured based on an exhaustive literature review and consisted of three blocks. The first collected sociodemographic information through ten closed-ended questions, adapted from the work of Lee et al. [10]. The second block measured motivations toward adventure tourism using 33 items, of which 26 were adapted from Jin et al. [29]. A panel of experts designed 7 additional items to incorporate factors related to biosecurity, a relevant aspect in the context of the COVID-19 health crisis. The third block assessed loyalty through three items focused on return intention, recommendation, and positive communication about the destination, constructed from Kim and Park [26]. Both motivations and loyalty were measured on five-point Likert scales.

The survey was administered virtually between April and June 2021, using Google Forms as the platform, and disseminated through social media channels, including Twitter and Facebook. The questionnaire included a question about whether people practiced adventure tourism, which allowed them to reach the target audience. It is important to note that the data collection period coincided with the post-pandemic context. This timing

may have influenced the salience of certain motivations, particularly biosecurity, social distancing, and outdoor preferences. Therefore, the findings should be interpreted with caution, as some of the observed motivational patterns may reflect temporary conditions specific to the pandemic recovery period, which could limit their generalizability to different temporal contexts.

Inclusion criteria were established: being over 18 years of age and having practiced adventure tourism in Santa Elena in the last three years. Of the 379 responses obtained, 318 questionnaires were validated, constituting the final sample. The sample size was determined under the assumption of an infinite population, considering a margin of error of ±5.5%, a 95% confidence level, and a maximum variance of 50%. However, since the survey was administered online, certain limitations must be acknowledged, such as the potential for uneven representation of tourists depending on internet access and platform usage, as well as a possible self-selection bias. In addition, there is a risk of recall bias, as some participants may not have reported their past experiences or motivations with complete accuracy.

To reduce common method variance, various strategies were employed in the questionnaire design, including precise item wording, separation of predictor and outcome variables, and review of ambiguities. At the statistical level, Harman's one-way test was applied, yielding results that confirmed the absence of significant bias.

Multivariate techniques were used in two phases for data analysis. First, an Exploratory Factor Analysis (EFA) was performed using the maximum likelihood method and Promax oblique rotation to identify the underlying motivational dimensions and eliminate items with factor loadings below 0.40. However, it was decided to retain the item 'Destructure my time' (load = 0.337) within the Relaxing dimension, given that it has strong conceptual relevance in the literature on tourist motivations and contributes to the content validity of the factor. In addition, the dimension showed adequate reliability indices (α and $\omega > 0.80$), which supported its retention despite being below the established statistical threshold.

The KMO value was 0.943, and Bartlett's test of sphericity was highly significant ($\chi^2 = 7565.488$; df = 496; $p < 0.001$), confirming the suitability of the data for factor analysis. The final model retained 32 items distributed across five dimensions, which together explained 62.88% of the total variance. Internal consistency was satisfactory, with Cronbach's alpha values ranging from 0.882 to 0.928, exceeding the recommended threshold of 0.70.

In a second phase, a cluster analysis using the k-means algorithm was applied to segment tourists based on their motivations, identified in the EFA. This technique enabled individuals to be grouped into internally homogeneous and mutually heterogeneous clusters, facilitating the interpretation of behavioral patterns and the identification of distinct demand profiles. To determine the optimal number of clusters, alternative solutions (k = 2 to 4) were tested. The final selection was based on both theoretical interpretability and statistical criteria. Specifically, one-way ANOVAs were applied to verify that mean differences across clusters were statistically significant in the motivational dimensions. The two-cluster solution demonstrated the greatest conceptual coherence, significant F values, clear centroid separation, and satisfactory stability in terms of relative size and inter-cluster distance. Although additional robustness indices such as Silhouette or Calinski–Harabasz scores were not computed, the selected solution provided valid and representative evidence of segmentation patterns in this context.

4. Results

4.1. Exploratory Factor Analysis

An exploratory factor analysis (EFA) was conducted using maximum likelihood extraction and Promax oblique rotation, which are appropriate methodological choices

when assuming correlation between latent dimensions and seeking a parsimonious and interpretable solution. From this procedure, five motivational factors linked to adventure tourism were identified, all with substantive loadings and consistent theoretical meaning.

The first component, labeled "Learning," accounted for the largest proportion of explained variance (42.34%). It encompasses impulses oriented toward cognitive enrichment and the pursuit of novelty, including expanding knowledge, satisfying curiosity about the destination's adventure activities, and discovering unfamiliar experiences, practices, and ideas. This dimension suggests an eminently epistemophilic and exploratory motivation. The predominance of the Learning factor can be explained by the soft-adventure context of Santa Elena, where low-risk activities (such as recreational surfing, short canopy tours, or guided diving) foster epistemic motivations rather than the pursuit of adrenaline. This result contrasts with the hard-adventure contexts reported in previous studies and illustrates how visitor profiles and the post-pandemic search for meaningful experiences amplify the relevance of learning-oriented motivations.

The second factor, "Social," accounted for 8.97% of the variance and reflects motivations for affiliation and self-expression in interpersonal contexts. It includes the need to belong, the interest in gaining recognition and respect from others, and the desire to express thoughts and emotions to the group, all of which position the adventure experience as a space for validation and social connection.

The third factor, "Biosecurity," explained 5.29% of the variance and constitutes the study's most distinctive contribution due to its focus on the pandemic period. It encompasses preventive expectations and behaviors aimed at minimizing the risk of COVID-19 infection, including a preference for outdoor activities, appreciation of health and social distancing protocols in tourist services and attractions, and, in general, the search for environments perceived as safe. Although some items initially displayed minor cross-loadings on other factors, their highest loadings were consistently found within the Biosecurity construct. Following standard practice, the items were retained in the Biosecurity factor, as their cross-loadings were below the acceptable threshold (0.30) and their theoretical meaning clearly aligned with this dimension.

The fourth component, "Relaxation," accounting for 3.95% of the variance, refers to restorative goals in both the physical and psychological spheres. It includes motivations linked to rest, disconnection from the hustle and bustle of daily routines, and relief from stress and tension, positioning adventure as a means of personal recovery.

Finally, the "Competence-Mastery" factor, responsible for 2.43% of the variance, describes an orientation toward achieving and improving skills. It implies the need to demonstrate physical fitness and abilities, as well as the drive to develop them and remain active, highlighting the self-efficacy component inherent in certain adventure practices. The details of these dimensions and their relative contribution to the total variance are presented in Table 1 and Figure 2.

Table 1. Motivations in adventure tourism.

Factor/Measurement Items	Factors Loading	Eigenvalue	Variance Explained %	α
Learning.		13.89	42.24	0.928
To expand my knowledge	0.883			
To use my imagination	0.769			
To satisfy my curiosity	0.765			
To discover new things	0.755			
To explore new ideas	0.753			
To learn about things around me	0.733			

Table 1. *Cont.*

Factor/Measurement Items	Factors Loading	Eigenvalue	Variance Explained %	α
To be creative	0.648			
To learn about myself	0.634			
Social.		3.256	8.97	0.894
To gain a feeling of belonging	0.862			
To gain others' respect	0.808			
To reveal my thoughts, feelings, or physical skills to others	0.721			
To be socially competent and skillful	0.712			
Reduce speed	0.636			
To improve my skill and ability in doing them	0.514			
To develop close friendships	0.444			
Biosecurity.		2.040	5.29	0.906
To be in a destination with a health guarantee	0.910			
To be in a destination with biosecurity protocols	0.847			
To be attended by service personnel with biosecurity implements	0.809			
To be in accommodations and restaurants disinfected and sterilized	0.793			
To visit a destination with distancing in leisure service.	0.665			
To be in a destination with physical distancing in adventures tourist activities.	0.595			
To visit adventure attractions with enough outdoor space	0.476			
Relaxing.		1.633	3.95	0.882
To rest	0.868			
To relieve stress and tension	0.836			
To relax mentally	0.758			
To avoid the hustle and bustle of daily activities	0.741			
To relax physically	0.574			
Destructure my time	0.337			
Competence-Mastery.		1.097	2.43	0.910
To use my physical abilities	0.890			
To develop physical fitness	0.799			
to keep in shape physically	0.765			
To develop physical skills and abilities	0.725			
To be active	0.462			

Bartlett's Test: x^2 = 7565.488; df = 496; $p < 0.001$. Chi-squared Test: value = 823.361; df = 346; $p < 0.001$. Kaiser-Meyer-Olkin Test = 0.943.

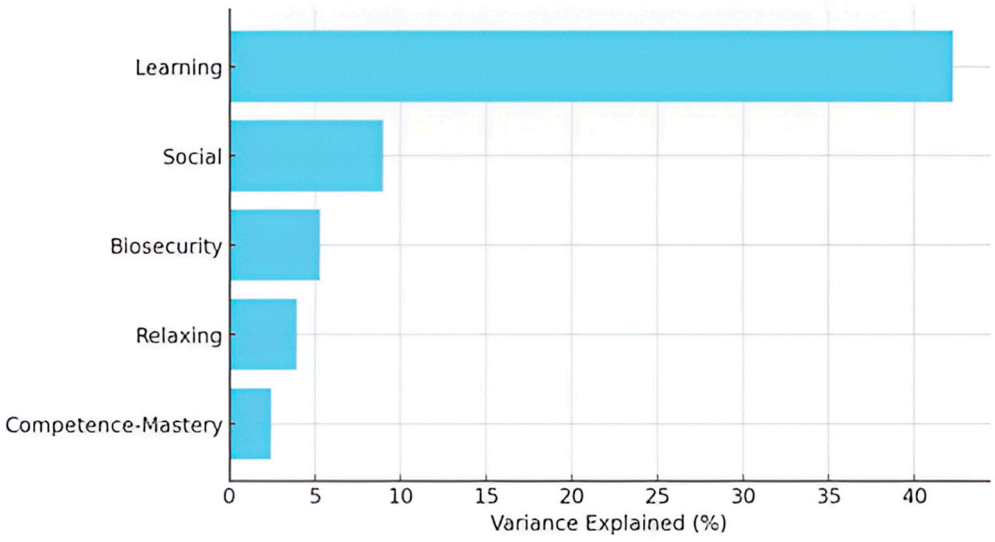

Figure 2. Variance explained by Motivation Factor.

4.2. Segmentation in Adventure Tourism

The K-means segmentation method was used to identify segments related to adventure tourism. See Table 2 and Figure 3. According to Table 2, the first segment was labeled "Relaxation" because it was characterized by high motivation for physical and mental relaxation, stress relief, and rest. Therefore, it was a segment that only sought relaxation, while the other motivations were low. Meanwhile, the second segment was called Multiple Motivations because it had high motivations for all of them simultaneously. Therefore, it was a group that not only sought relaxation but also learning, social skills, and mastery of competence. This segment was motivated by the various activities and services offered at the adventure destination.

Table 2. Segmentation in adventure tourism.

Variable	Relaxation	Multiple Motives
Biosecurity		
Visit destination with facilities for social distancing	3.5	4.1
Being in a destination with safety and protection	3.7	4.3
Be in a destination with transportation	3.1	4.3
Be in a destination with a health guarantee	3.7	4.4
Stay in disinfected accommodations and restaurants	3.8	4.5
Be served by service personnel with safety equipment	3.8	4.5
Be in a destination with enough outdoor space	4.1	4.7
Learning		
Learning about the things around me	3.4	4.6
Satisfy my curiosity	3.5	4.5
Explore new ideas	3.5	4.7
Learn about me	2.9	4.4
Expand my knowledge	3.2	4.6
Discover new things	3.6	4.7
Be creative	3.1	4.5
Use my imagination	2.9	4.5
Social		
Develop close friendships	3.0	4.4
Revealing thoughts, feelings, or physical abilities to others	2.4	4.0
Be socially competent and skilled	2.8	4.3
Gain a sense of belonging	2.7	4.1
Gain respect from others	2.2	3.8
Improve my ability to make them	2.8	4.3
Be active	3.5	4.6
Competence-Mastery		
Develop physical skills and abilities	3.4	4.6
Stay physically fit	3.2	4.5
Use my physical abilities	3.2	4.5
Develop physical fitness	3.2	4.4
Meet new friends	2.5	3.8
Relaxing		
Relax physically	3.7	4.6
Relax mentally	4.0	4.8
Avoid the hustle and bustle of daily activities	3.8	4.6
Rest	4.0	4.7
Relieve stress and tension	4.2	4.8
Deconstructing my time	3.4	4.4

4.3. Segmentation and Loyalty Variables in Adventure Tourism

Pearson's chi-square test was used to analyze significant relationships ($p < 0.05$) between segments and loyalty variables (intentions to return, recommend, and express positive sentiments about the destination). See Table 3 and Figure 4.

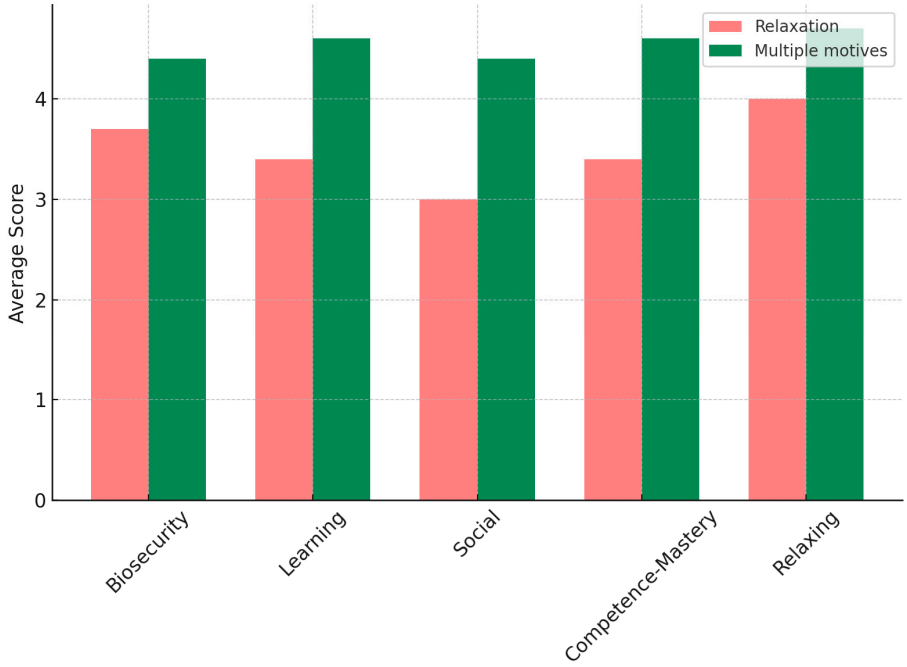

Figure 3. Motivations by segments.

Table 3. Segmentation and Loyalty in Adventure Tourism.

Variable	Relaxation	Multiple Motives	Chi-Square
I intend to revisit a coastal destination	3.88	4.58	$p < 0.05$
I intend to recommend that my friends visit a coastal destination	3.96	4.65	$p < 0.05$
When I talk about coastal destinations after the visit, I will say positive things.	4.03	4.66	$p < 0.05$

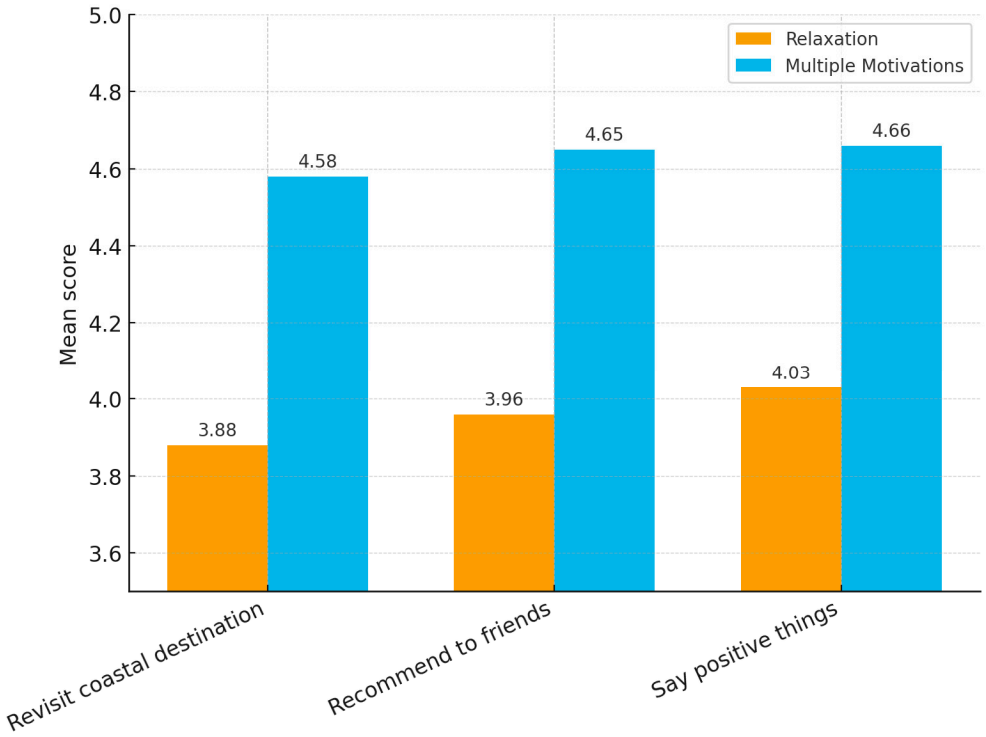

Figure 4. Loyalty by segments.

According to the results in Table 3, the two segments had a significant relationship with respect to the loyalty variables. Therefore, they were clearly differentiated segments in relation to these variables. Analyzing each segment, the Multiple Motives segment had the highest intentions to return, recommend, and speak positively about the adventure destination compared to the other groups. Therefore, a good level of services and activities related to all of these tourists' motivations (relaxation, socializing, learning, and competence-mastery) should continue to be offered, which would increase their level of loyalty. Likewise, the range of services and activities aimed at tourists seeking relaxation should be improved, thus increasing the loyalty variables for this group of tourists.

5. Discussion

The exploratory factor analysis identified five dimensions: learning (42.34% of variance), social (8.97%), biosecurity (5.29%), relaxation (3.95%), and competence-mastery (2.43%). This solution aligns with the multidimensional structure described in the literature, but it also offers three notable nuances.

First, the centrality of learning as the primary source of variance suggests that, in the context analyzed, epistemic and discovery motives have a greater weight than expected compared to other domains. These findings are consistent with those in "soft adventure," where the discovery and interpretation of the environment contribute decisively to satisfaction [30], and with studies linking novelty and knowledge to positive affective responses and loyalty [26]. This prominence may reflect characteristics of the destination and the portfolio of activities offered, the educational profile of the sample, or the way in which the items were operationalized.

Second, the emergence of a biosecurity factor provides a context-specific contribution. The presence of motivations linked to distancing, protocols, and a preference for outdoor activities confirms that the health-environmental space has been incorporated into the motivational repertoire of the post-pandemic adventurer, in line with reviews documenting the influence of exogenous shocks on demand patterns [31]. This result prompts us to reconsider previous taxonomies that did not explicitly consider health security as a distinct motivation.

Nevertheless, it remains to be discussed whether biosecurity constitutes a stable dimension within adventure tourism motivations or rather reflects a situational phenomenon derived from the pandemic. On the one hand, it may represent a transitory motivation, whose intensity will diminish as travel patterns normalize and perceptions of health risk decrease. On the other hand, it is also possible that biosecurity will consolidate as a permanent expectation in the tourist experience, structurally integrating into the demand for outdoor and low-contact activities. This duality poses a challenge for future research, as it will be necessary to observe the evolution of this dimension across different contexts and time horizons.

Third, the identification of relaxation and competence mastery, although with lower variance, aligns with the restoration/challenge duality reported in previous studies. The lower contribution of competence-mastery could be indicative of a predominance of activities with low technical demands or a sample more oriented toward interpretive experiences than physical performance, a pattern consistent with mild adventure segments. Likewise, the absence of a distinctive 'excitement/adrenaline' factor can be explained by several contextual elements. The adventure tourism offer in Santa Elena is primarily oriented toward soft-adventure activities, such as recreational surfing, guided diving, short canopy circuits, and nature-based experiences, which prioritize learning and recreation over risk-taking. In addition, the profile of the surveyed tourists—many of whom were seeking safety and recovery in the post-pandemic context—may have reduced the relevance of adrenaline as a

motivational factor. Finally, although the measurement instrument included items related to challenge and competence, it did not emphasize high-risk experiences, which may have limited the emergence of excitement as an independent factor. These aspects suggest that excitement may not represent a universal dimension of adventure tourism motivations, but rather one that depends on the characteristics of the destination, tourist profiles, and contextual conditions.

The research results identified two main demand segments for adventure tourism in Santa Elena: "Relaxation" and "Multiple Motives." The first group was characterized by motivations focused on physical and mental rest, such as relieving stress, reducing tension, and disconnecting from daily activities. The second group presented a more complex profile, combining motivations related to socializing, learning, contact with nature, skill development, and relaxation.

These findings confirm the heterogeneity of adventure tourism demand, in line with what Sung et al. [38,41] have already pointed out, that this market is composed of multiple subgroups with differentiated motivations and behaviors. Furthermore, the results align with those of Albayrak & Caber [37], indicating that intellectual, social, and competence/mastery factors are key dimensions in segment structuring. In this case, the "Multiple Motives" group clearly reflects this motivational multidimensionality, making it a strategic segment for developing sustainable and diversified tourism products.

The identification of a segment focused solely on relaxation also aligns with the insights of Bichler & Peters [30], who highlight that the pursuit of rest and well-being is a recurring motivation even in mild adventure activities such as hiking. In Latin American contexts, where sun and beach tourism remains predominant, this finding reinforces the need to integrate adventure experiences that cater to both relaxation and physical challenge, thereby generating hybrid proposals that respond to diverse tourist profiles.

Additionally, the "Multiple Motives" segment resembles the profiles described by Nduna & Van Zyl [43], who classified nature tourists according to the benefits they seek (relaxation, connection with nature, active experiences). Similarly, in Santa Elena, this group demonstrates that adventure tourists are not just looking for a specific activity, but rather a set of benefits that integrate emotional, physical, and social aspects, which requires a holistic approach to destination management.

From a sustainability perspective, identifying these segments is a valuable tool for tourism planning and management. As Koshy et al. [36] and McKercher et al. [35] note, effective segmentation enables the design of differentiated strategies that enhance competitiveness and reduce pressure on natural resources by distributing demand across diverse activities and areas. In the case of Santa Elena, this approach translates into the possibility of balancing the tourist influx between highly visited destinations, such as Montañita, and other areas with potential for lower-impact adventure activities, like Dos Mangas or the Puntilla de Santa Elena Reserve.

In short, the empirical results of this study confirm that adventure tourism segmentation in Santa Elena responds to patterns previously identified in the international literature, but also provides novel evidence for the Ecuadorian context. In particular, it demonstrates that the coexistence of segments with motivations focused exclusively on relaxation and other multidimensional segments poses challenges and opportunities for sustainable destination management. Designing tourism products that cater to both profiles will not only increase satisfaction and competitiveness but also consolidate a sustainable tourism development model, consistent with the Sustainable Development Goals (SDGs) and current trends in demand diversification.

Beyond the local context, these results contribute to the economics and sociology of tourism by demonstrating how motivation-based segmentation influences spending

patterns, social interaction, and community participation. By identifying segments such as relaxation-oriented tourists and multi-motivated tourists, the study underscores the need for diversified products that not only generate indirect economic benefits but also promote inclusive social outcomes. This evidence reinforces the conceptual link between segmentation strategies and sustainable tourism, in line with global debates on how to balance growth with social and environmental responsibility.

Theoretical Implications:

The results reinforce the relevance of motivational models that integrate epistemic, social, and restorative domains along with achievement dimensions, and propose biosecurity as a stable component in contexts of perceived health risk. In terms of push–pull theory, learning and relaxation operate as internal push forces, while biosecurity and the availability of outdoor nature function as pull attributes that legitimize the choice of destination and activity. The observed pattern also suggests that intensity/risk is not a necessary condition for activating adventure motivation when the cognitive-interpretive component is strongly present.

The results obtained reinforce the premise that segmentation in adventure tourism is multidimensional, as suggested by the studies by Sung et al. [38] and Albayrak & Caber [37]. The coexistence of a segment focused exclusively on relaxation and another with multiple motivations provides empirical evidence to the academic debate on whether the motivations of adventure tourists respond to specific or rather comprehensive patterns. In this sense, the case of Santa Elena confirms that there is no single profile of the adventure tourist; rather, it is necessary to recognize the diversity of interests that converge in a single destination.

Furthermore, this study contributes to the literature on sustainable tourism by demonstrating that segmentation enables a more efficient allocation of activities and resource supply, which aligns with the arguments of Nduna & Van Zyl [43] that argue that identifying the benefits sought by tourists facilitates the creation of less invasive experiences with a lower environmental impact. Theoretically, it contributes to the field by integrating the sustainability perspective into segmentation analysis, thus expanding the interpretative framework for demand in emerging destinations.

Management Implications:

For product planning, it is advisable to prioritize experiential designs with high-value interpretive content (expert guides, local stories, micro-learning sessions en route), reinforce safe socialization mechanisms (small groups, collaborative dynamics), verifiably communicate biosafety practices (protocols, certifications, outdoor design), and offer itineraries with explicit restorative moments. For segments oriented toward competency and mastery, it is recommended to incorporate skill progressions, performance feedback, and achievement certifications. Communication should align messages with the dominant motivational domains, highlighting learning and safety as value propositions.

From a practical perspective, the findings suggest that destination managers should design differentiated strategies for each segment. For the "Relaxation" segment, it is advisable to prioritize experiences that focus on well-being, rest, and passive engagement with nature, such as whale watching, light hiking, or spa and wellness tours. For the "Multiple Reasons" segment, it is recommended to offer a more varied and engaging range of activities, such as surfing, canopy tours, diving, or ecotourism routes, combined with cultural and culinary experiences that reinforce the social and educational dimensions.

In terms of sustainability, segmentation is a strategic tool for deconcentrating tourist flow. By promoting alternative, less crowded destinations within the province, such as Dos Mangas or San Pablo, pressure is reduced on high-demand areas like Montañita and Salinas, fostering more balanced management of natural and cultural resources.

Finally, managers can use this type of segment to design targeted marketing campaigns, increasing the effectiveness of destination promotion. Clearly identifying these profiles also facilitates public–private cooperation in developing sustainable tourism products, contributing to the achievement of the Sustainable Development Goals (SDGs) related to responsible production and consumption (SDG 12) and climate action (SDG 13).

In more concrete terms, the development of specific products for each segment is recommended. For the 'Relaxation' segment, this could include wellness-oriented packages such as spa and hot spring experiences, light hiking with an emphasis on landscape rather than performance, whale-watching tours, and slow food culinary routes designed to promote disconnection and well-being. In contrast, for the 'Multiple Motives' segment, product design should combine more active adventure options (e.g., surfing lessons, canopy circuits, diving programs, and trekking) with cultural and educational experiences such as local gastronomy workshops, heritage tours, and interactive environmental activities. From a marketing perspective, campaigns for the 'Relaxation' segment should emphasize stress relief, safety, and comfort, while those targeting the 'Multiple Motives' segment should highlight diversity, challenge, and the opportunity to learn and socialize. These differentiated approaches can enhance the destination's competitiveness and better align with the heterogeneous motivations of adventure tourists.

The segmentation results also carry economic implications for destination management. The 'Relaxation' segment, for instance, is likely to generate demand for wellness and low-risk activities with moderate spending patterns, whereas the 'Multiple Motives' segment may produce a greater economic impact through participation in diverse activities such as adventure sports, gastronomy, and cultural tours. These differentiated profiles underscore the importance of aligning product design with expected spending behaviors, thereby enhancing competitiveness and resource allocation. Although direct expenditure data were not collected, the integration of motivational segmentation with economic perspectives lays the groundwork for future research linking tourist profiles to revenue generation and investment priorities.

Study Limitations:

This study presents certain limitations that must be acknowledged. First, the data were collected through an online survey, which may lead to uneven representation of tourists depending on internet access and the use of social media. In addition, potential self-selection bias should be considered, as participation was voluntary and individuals with a greater interest in adventure tourism may have been overrepresented. Recall bias is another possible limitation, since respondents were asked to report past experiences that they may not have remembered with complete accuracy. Moreover, the sample was limited to a coastal province of Ecuador (Santa Elena), which restricts the generalizability of the findings to other destinations and contexts. Finally, the cross-sectional design does not allow for examination of how motivations or loyalty may evolve over time.

While the results suggest an association between motivational structures and loyalty, the cross-sectional design prevents causal inferences from being made. Moreover, although concepts such as perceived value and satisfaction were considered as potential mediators, they were not formally tested in the present study. Future research could expand this model by incorporating satisfaction and value as mediating variables, ideally employing longitudinal designs to assess causal pathways.

Future research recommendations:

Future studies could test this structure through confirmatory factor analysis to validate the dimensionality obtained in this research. It would also be useful to explore measurement invariance according to prior experience, demographic profiles, and type of activity (soft vs. hard adventure). Examining the temporal stability of the biosecurity factor is particularly

relevant, as it is still unclear whether it represents a permanent dimension or a contextual outcome of the pandemic. Comparative research across destinations and cultures would allow for the assessment of the generalizability of the observed motivational hierarchy and for detecting whether hedonic or risk-related motivations re-emerge in different tourism offerings. Finally, longitudinal approaches are recommended to capture changes in tourist motivations and loyalty over time.

6. Conclusions

This study analyzed motivations, demand segmentation, and loyalty in adventure tourism in the province of Santa Elena, Ecuador, providing empirical evidence in an underexplored Latin American context. Using a validated questionnaire and the application of multivariate techniques (EFA and k-means), five motivational dimensions were identified—learning, social, biosecurity, relaxation, and competence/mastery—and two distinct segments: "Relaxation," focused on seeking rest and stress reduction, and "Multiple Motives," characterized by integrating multiple motivations simultaneously.

The results demonstrate that demand heterogeneity is a structural feature of adventure tourism and that the segments exhibit differentiated behaviors in terms of loyalty. The "Multiple Reasons" group exhibits higher levels of intention to return, recommend, and share positive opinions, making it a strategic profile for designing diversified tourism products. In contrast, the "Relaxation" segment demands experiences focused on well-being and relaxation, suggesting the need for more targeted and less risk-intensive offerings.

From a theoretical perspective, this research expands the literature on adventure tourism by incorporating the biosecurity dimension as part of post-pandemic motivations, providing an innovative approach to understanding demand. It also confirms the relevance of segmentation as a tool for interpreting the complexity of tourist behaviors in emerging contexts.

In terms of management, the findings offer guidelines for moving towards the sustainability of adventure destinations: (i) diversify the offer to serve segments with different motivations, (ii) deconcentrate tourist pressure on highly visited spaces by promoting alternative areas, and (iii) design segmented marketing strategies that strengthen loyalty and contribute to territorial competitiveness.

Overall, this study reinforces the notion that adventure tourism does not cater to a homogeneous visitor profile, but rather constitutes a multidimensional phenomenon that requires differentiated and sustainable strategies. Its application in Santa Elena allows not only a better understanding of adventure tourist behavior but also offers applicable recommendations for similar destinations in Latin America and other emerging regions seeking to balance tourism growth and sustainability.

At a global level, the findings are relevant to the economics and sociology of tourism, as they illustrate how the segmentation of adventure demand in emerging destinations can inform policies that balance economic competitiveness with social well-being. By integrating biosecurity, relaxation, and multi-motivation profiles, the study provides perspectives that advance the concept of sustainable tourism, offering pathways for destinations worldwide to design strategies that are both market-responsive and socially responsible.

Furthermore, this research helps to fill the gap in the literature regarding the limited empirical evidence on adventure tourism demand in emerging coastal destinations. Through the case analysis of Santa Elena, Ecuador, the study offers theoretical contributions concerning tourist motivations and loyalty, while also generating practical implications for the sustainable management of adventure tourism in similar contexts

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M.C.-F. and O.C.-F.; validation, M.O.-M., M.C.-F., O.C.-F. and W.C.-F.; investigation, M.O.-M., M.C.-F., P.P.-F., O.C.-F., M.T.-N., W.C.-F. and M.A.-L.; writing—original draft preparation, M.O.-M., M.C.-F., P.P.-F., O.C.-F., M.T.-N., W.C.-F. and M.A.-L.; writing—review and editing, M.O.-M., M.C.-F., P.P.-F., O.C.-F., M.T.-N., W.C.-F. and M.A.-L. All authors have read and agreed to the published version of the manuscript.

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References

1. Future Market Insights. Adventure Tourism Market Analysis: Growth & Forecast 2025 to 2035. 2025. Available online: https://www.futuremarketinsights.com/reports/adventure-tourism-market (accessed on 30 September 2025).
2. Huddart, D.; Stott, T. Adventure tourism: Environmental impacts and management. *Tour. Recreat. Res.* **2019**, *46*, 141–142.
3. Giddy, J.K.; Webb, N.L. The influence of the environment on adventure tourism: From motivations to experiences. *Curr. Issues Tour.* **2018**, *21*, 2132–2146. [CrossRef]
4. Rantala, O.; Rokenes, A.; Valkonen, J. Is adventure tourism a coherent concept? A review of research approaches on adventure tourism. *Ann. Leis. Res.* **2016**, *21*, 539–552. [CrossRef]
5. Akaho, Y. Conceptualizing the adventure tourist as a cross-boundary learner. *J. Outdoor Recreat. Tour.* **2024**, *47*, 100795. [CrossRef]
6. Tkaczynski, A.; Rundle-Thiele, S.; Beaumont, N. Destination Segmentation: A Recommended Two-Step Approach. *J. Travel Res.* **2010**, *49*, 139–152. [CrossRef]
7. McKercher, B.; Tolkach, D.; Eka Mahadewi, N.M.; Byomantara, D.G.N. Choosing the Optimal Segmentation Technique to Understand Tourist Behaviour. *J. Vacat. Mark.* **2023**, *29*, 71–83. [CrossRef]
8. Laškarin Ažić, M.; Suštar, N. Loyalty to holiday style: Motivational determinants. *Tour. Rev.* **2022**, *77*, 239–255. [CrossRef]
9. Nessel, K.; Kościółek, S.; Wszendybył-Skulska, E.; Kopera, S. Benefit segmentation in the tourist accommodation market based on eWOM attribute ratings. *Inf. Technol. Tour.* **2021**, *23*, 265–290. [CrossRef]
10. Sato, S.; Kim, H.; Buning, R.J.; Harada, M. Adventure tourism motivation and destination loyalty: A comparison of decision and non-decision makers. *J. Destin. Mark. Manag.* **2018**, *8*, 74–81. [CrossRef]
11. Chen, W.Y.; Fang, Y.H.; Chang, Y.P.; Kuo, C.Y. Exploring motivation via three-stage travel experience: How to capture the hearts of Taiwanese family-oriented cruise tourists. *Humanit. Soc. Sci. Commun.* **2023**, *10*, 506. [CrossRef]
12. Zhou, M.; Yu, H. Exploring How Tourist Engagement Affects Destination Loyalty: The Intermediary Role of Value and Satisfaction. *Sustainability* **2022**, *14*, 1621. [CrossRef]
13. Seow, A.N.; Foroughi, B.; Choong, Y.O. Tourists' Satisfaction, Experience, and Revisit Intention for Wellness Tourism: E Word-of-Mouth as the Mediator. *Sage Open.* **2024**, *14*. [CrossRef]
14. Santana-Talavera, A. Turismo, un objeto de estudio para la antropología social. *Disparidades Rev. Antropol.* **2020**, *75*, e001a. [CrossRef]
15. Mendoza Tarabó, A.E.; Leon, M.; Leon, P.; Lazo, G.; Musso, L. *Analysis of the Visitor Profile, Perspectives and Tourism Innovation: Case of Santa Elena, Ecuador*; Springer Nature: Cham, Switzerland, 2025; pp. 425–434. [CrossRef]
16. Morin, E. The reform in thinking. In *Homeland Earth: A Manifesto for the New Millenium*; Montuori, A., Ed.; Hampton Press: New York, NY, USA, 1999; pp. 123–132.
17. Matlovič, R.; Matlovičová, K.R.; Matlovičová, K. Polycrisis in the Anthropocene as a Key Research Agenda for Geography: Ontological Delineation and the Shift to a Postdisciplinary Approach. *Folia Geogr.* **2024**, *66*, 5–33.
18. Gössling, S.; Scott, D. Tourism in the polycrisis: A Horizon 2050 paper. *Tour. Rev.* **2025**, *80*, 65–71. [CrossRef]
19. Fodness, D. Measuring tourist motivation. *Ann. Tour Res.* **1994**, *21*, 555–581. [CrossRef]
20. Joseph, J.; Gillariose, J. Revisiting the Push–Pull Tourist Motivation Model: A Theoretical and Empirical Justification for a Reflective–Formative Structure. *Tour. Hosp.* **2025**, *6*, 139. [CrossRef]
21. Khalilzadeh, J.; Kozak, M.; Del Chiappa, G. Tourism motivation: A complex adaptive system. *J. Destin. Mark. Manag.* **2024**, *31*, 100861. [CrossRef]
22. Crompton, J.L. Motivations for pleasure vacation. *Ann. Tour Res.* **1979**, *6*, 408–424. [CrossRef]

23. Yousaf, A.; Amin, I.; Santos, J.A.C. Tourists' Motivations to Travel: A Theoretical Perspective on the Existing Literature. *Tour. Hosp. Manag.* **2018**, *24*, 197–211. [CrossRef]
24. Swarbrooke, J.; Horner, S. *Consumer Behaviour in Tourism*; Routledge: Oxfordshire, UK, 1999. [CrossRef]
25. Deb, R.; Kondasani, R.K.R.; Das, A. Adventure tourism: Current state and future research direction. *Tour. Rev.* **2023**. [CrossRef]
26. Beckman, E.; Whaley, J.E.; Kim, Y. Motivations and Experiences of Whitewater Rafting Tourists on the Ocoee River, USA. *Int. J. Tour. Res.* **2017**, *19*, 257–267. [CrossRef]
27. Wang, P.Y.; Wang, S.H. Motivations of adventure recreation pioneers—A study of Taiwanese white-water kayaking pioneers. *Ann. Leis. Res.* **2017**, *21*, 592–604. [CrossRef]
28. Giddy, J.K.; Webb, N.L. Environmental attitudes and adventure tourism motivations. *GeoJournal* **2018**, *83*, 275–287. [CrossRef]
29. Jin, X.; Xiang, Y.; Weber, K.; Liu, Y. Motivation and involvement in adventure tourism activities: A Chinese tourists' perspective. *Asia Pac. J. Tour. Res.* **2019**, *24*, 1066–1078. [CrossRef]
30. Bichler, B.F.; Peters, M. Soft adventure motivation: An exploratory study of hiking tourism. *Tour. Rev.* **2021**, *76*, 473–488. [CrossRef]
31. Mangoch, S.; Mata, S.; Devi, V.; Jain, D.; Mata Vaishno, S. Factors determining tourist's motivation to visit a place for adventure tourism: A systematic review. *Acad. Mark. Stud. J.* **2022**, *26*, 1–6.
32. Kotler, P.; Bowen, J.T.; Baloglu, S. Marketing for Hospitality and Tourism. 2021. Available online: www.tonnaja.com/Moment/GettyImages (accessed on 30 September 2025).
33. Pike, S. *Destination Marketing: Essentials*; Routledge: Oxfordshire, UK, 2018; p. 344.
34. Dolnicar, S. Market segmentation analysis in tourism: A perspective paper. *Tour. Rev.* **2020**, *75*, 45–48. [CrossRef]
35. McKercher, B. *Tourist Behavior: An International Perspective*; Channel View Publications: Bristol, UK, 2023.
36. Kunjuraman, V.; Mohammad, S.H.; Ramachandran, S.; Matthew, N.K.; Shuib, A. Profiling The Segments of Visitors In Adventure Tourism: Comparison Between Visitors By Recreational Sites. *Int. J. Bus. Soc.* **2019**, *20*, 1076–1095.
37. Albayrak, T.; Caber, M. A motivation-based segmentation of holiday tourists participating in white-water rafting. *J. Destin. Mark. Manag.* **2018**, *9*, 64–71. [CrossRef]
38. Sung, H.H. Classification of Adventure Travelers: Behavior, Decision Making, and Target Markets. *J. Travel Res.* **2004**, *42*, 343–356. [CrossRef]
39. Pomfret, G.; Doran, A.; Cater, C. *Routledge International Handbook of Adventure Tourism*; Routledge: London, UK, 2025. [CrossRef]
40. Moisa, D.G.; Parapanos, D.; Heap, T. The Role of Digital Footprints for Destination Competitiveness and Engagement: Utilizing Mobile Technology for Tourist Segmentation Integrating Personality Traits. *Int. J. Tour. Res.* **2025**, *27*, e70006. [CrossRef]
41. Sung, H.Y.; Morrison, A.M.; O'leary, J.T. Segmenting the Adventure Travel Market by Activities: From the North American Industry Providers' Perspective. *J. Travel Tour. Mark.* **2000**, *9*, 1–20. [CrossRef]
42. Antti Pesonen, J. Information and communications technology and market segmentation in tourism: A review. *Tour. Rev.* **2013**, *68*, 14–30. [CrossRef]
43. Nduna, L.T.; van Zyl, C. A benefit segmentation framework for a nature-based tourism destination: The case of Kruger, Panorama and Lowveld areas in Mpumalanga Province. *Int. J. Tour. Cities* **2020**, *6*, 953–973. [CrossRef]
44. Oliver, R.L. Whence Consumer Loyalty? *J. Mark.* **1999**, *63*, 33–44. [CrossRef]
45. Moisescu, O.I.; Gică, O.A.; Dorobanțu, M.C. Exploring the Drivers of Visitor Loyalty in the Context of Outdoor Adventure Parks: The Case of Arsenal Park in Romania. *Int. J. Environ. Res. Public Health* **2021**, *18*, 10033. [CrossRef]
46. Hoang, S.D.; Pham, T.P.; Tučková, Z. Tourist Motivation as an Antecedent of Destination and Ecotourism Loyalty. *Emerg. Sci. J.* **2022**, *6*, 1114–1133. [CrossRef]
47. Vigolo, V. Investigating the Attractiveness of an Emerging Long-Haul Destination: Implications for Loyalty. *Int. J. Tour. Res.* **2014**, *17*, 564–576. [CrossRef]
48. Vespestad, M.K.; Lindberg, F.; Mossberg, L. Value in tourist experiences: How nature-based experiential styles influence value in climbing. *Tour Stud.* **2019**, *19*, 453–474. [CrossRef]
49. Hanji, S.; Desai, S.; Hanji, S.S.; Navalgund, N.; Tapashetti, R.B. *Digital Frontiers: Gen-Z's Adventure Tourism in the Metaverse*; Springer Nature: Singapore, 2024; pp. 479–490. [CrossRef]
50. He, K.; Yang, Q.; Wu, D.; Zou, Y. Optimizing tourism demand forecasting: An exploration of the combination of push-pull theory, big data analysis and tree-based machine learning models. *J. Travel Tour. Mark.* **2025**, *42*, 578–594. [CrossRef]
51. Orden-Mejía, M.; Carvache-Franco, M.; Palomino, O.; Carvache-Franco, O.; Minchenkova, L.; Núñez-Naranjo, A.; Minchenkova, A.; Carvache-Franco, W. Motivations, Quality, and Loyalty: Keys to Sustainable Adventure Tourism in Natural Destinations. *Sustainability* **2025**, *17*, 5789. [CrossRef]
52. Musa, H.G.; Fatmawati, I.; Nuryakin Suyanto, M. What drives loyalty in sustainable tourism? Escapism and affordability at Central Java's heritage sites. *Cogent Soc. Sci.* **2025**, *11*, 1–18. [CrossRef]
53. INEC. Censo 2020 | INEC. 2020. Available online: https://www.ecuadorencifras.gob.ec/censo-de-poblacion-y-vivienda/ (accessed on 30 September 2025).

54. Carvache-Franco, M.; Contreras-Moscol, D.; Orden-Mejía, M.; Carvache-Franco, W.; Vera-Holguin, H.; Carvache-Franco, O. Motivations and Loyalty of the Demand for Adventure Tourism as Sustainable Travel. *Sustainability* **2022**, *14*, 8472. [CrossRef]
55. Gobierno Autónomo Descentralizado Provincial de Santa Elena. 2025. Available online: https://www.santaelena.gob.ec/ (accessed on 30 September 2025).

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