

Sustainable Dimensions of Wellness Tourism: Exploring Environmental Sensitivity, Tourist Engagement, and Life Satisfaction

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Abstract

Wellness tourism is increasingly recognized as a sector that intersects personal well-being with sustainable tourism goals. This study examines the links between environmental sensitivity, tourist engagement, satisfaction, loyalty, and life satisfaction, focusing on wellness tourists in Greece. A structured survey was conducted to 487 visitors who had engaged in wellness tourism activities during the peak season. Key constructs were measured through validated scales, and the hypothesized relationships were tested using linear regression analysis. Findings reveal that environmentally sensitive tourists report higher satisfaction with wellness tourism and stronger loyalty intentions, underscoring the role of sustainability values in shaping consumer behavior. Frequent participation not only strengthens loyalty but also significantly enhances life satisfaction, suggesting that ongoing engagement produces cumulative well-being benefits. Moreover, satisfaction with wellness tourism positively predicts life satisfaction, confirming a spillover effect from tourism experiences to broader quality-of-life assessments. The results position wellness tourism as a strategic tool for sustainable development, capable of fostering ecological responsibility while delivering meaningful well-being outcomes. For Greece, leveraging its natural assets and wellness heritage through sustainable practices and loyalty-building strategies offers a competitive pathway to becoming a leading Mediterranean wellness destination. This research advances understanding by integrating environmental psychology, tourism behavior, and well-being theory into a unified empirical model, offering both conceptual insights and practical guidance for developing sustainability-aligned wellness tourism.

Keywords: environmental sensitivity; satisfaction; sustainable tourism; tourism; wellness tourism.

1. Introduction

In recent years, wellness tourism has emerged as a dynamic and rapidly expanding sector, driven by shifting values toward personal well-being, health optimization, and sustainable lifestyles (Voigt & Pforr, 2014). As travelers increasingly seek experiences that promote both physical and psychological health, the wellness tourism market has grown to encompass a broad spectrum of services, ranging from spa treatments and mindfulness retreats to nature-based experiences and integrative health practices (Smith & Puczkó, 2014). This evolving form of tourism not only reflects changing consumer behavior but also raises significant questions about its contribution to broader sustainability agendas (Drosos & Skordoulis, 2018).

Although wellness tourism has traditionally been framed in terms of individual health and leisure (Steiner & Reisinger, 2006), recent scholarship emphasizes its potential to align with sustainable development principles. Specifically, the growing intersection between wellness tourism and environmentally conscious behavior has introduced a more nuanced understanding of this niche, positioning it as a vehicle for promoting sustainable consumption and responsible travel (Chen & Liu, 2025; Han *et al.*, 2018). In this light, tourists' environmental sensitivity, their patterns of engagement in wellness experiences, and the associated psychological outcomes, such as life satisfaction, emerge as key dimensions that warrant empirical investigation.

Environmental sensitivity, which is broadly defined as an individual's concern for ecological issues and willingness to support pro-environmental behaviors, is found to influence tourist decision-making and preference formation (Chiu *et al.*, 2014; Kang & Moscardo, 2006). In the context of wellness tourism, it is argued that individuals with high environmental values are more likely to select destinations and services that reflect sustainable practices and low-impact experiences (Han & Kim, 2010). Moreover, such environmentally oriented individuals often exhibit higher levels of satisfaction and loyalty when these values are reinforced by the tourism experience (Boley & Uysal, 2013). These findings suggest that environmental sensitivity is not only a predictor of initial engagement but also a determinant of long-term commitment to wellness travel.

Simultaneously, the frequency of participation in wellness tourism has been linked to enhanced subjective well-being and life satisfaction. According to Ryan & Deci (2001), recurring involvement in health-promoting travel can cultivate enduring benefits that extend beyond the trip itself, contributing to an overall sense of vitality and psychological balance. These effects are particularly relevant in the post-pandemic era, where travel is increasingly perceived as a means of recovery and resilience (Chen & Petrick, 2013). Life satisfaction, therefore, serves as a critical outcome variable that encapsulates the broader impacts of wellness tourism at the individual level.

Despite this emerging theoretical foundation, empirical research examining the behavioral and psychological underpinnings of wellness tourism in relation to sustainability remains limited, especially within Mediterranean contexts such as Greece. This study seeks to address this gap by empirically examining three interrelated constructs: environmental sensitivity, tourist engagement (frequency of participation), and life satisfaction. Through this lens, the paper aims to identify whether wellness tourism practices are correlated with sustainable development values.

The significance of this research lies in its integrated approach to wellness tourism as both a personal and socio-environmental phenomenon. While prior studies have addressed the psychological benefits of wellness travel or the role of environmental values in tourism behavior (Han *et al.*, 2018), few have simultaneously examined how these constructs interact within a unified framework that links environmental sensitivity, tourist engagement, and life satisfaction. Even fewer studies have sought to empirically validate these relationships through robust statistical modeling in real-world tourism settings. By addressing these conceptual and methodological gaps, the present study introduces a novel behavioral model that reflects the multidimensionality of wellness tourism as a sustainability-aligned travel practice.

Furthermore, this research provides timely insights in the context of Greece, a country with growing strategic interest in positioning itself as a leading destination for wellness and medical tourism (Tsekouropoulos *et al.*, 2024). Despite its rich natural landscapes, therapeutic heritage, and increasing investment in wellness infrastructure, the Greek tourism sector remains underexplored in academic literature concerning sustainable behavioral patterns among wellness travelers. By focusing on wellness tourism practices in Greece, this study not only enriches the international discourse with evidence from a Mediterranean context but also offers region-specific implications for tourism development, environmental policy, and public health promotion.

From a theoretical standpoint, the research advances existing models of sustainable tourism behavior by integrating constructs from environmental psychology, tourism marketing, and well-being science. At the same time, its empirical focus on psychological variables such as environmental sensitivity and life satisfaction enhances our understanding of the micro-level mechanisms that may underpin broader sustainability goals, particularly in tourism segments that are often overlooked in mainstream sustainable tourism debates.

In terms of practical contribution, the findings of this study provide destination managers, wellness providers, and policymakers with actionable knowledge on how to design and promote wellness experiences that not only meet consumers' expectations for well-being but also foster deeper ecological awareness and responsible consumption habits. In this way, wellness tourism is not merely positioned as a response to individual lifestyle trends, but as a strategic component in the sustainable transformation of tourism economies.

2. Literature review and research hypotheses development

2.1 Environmental sensitivity in wellness tourism

Environmental sensitivity, broadly conceptualized as an individual's awareness of environmental issues and their willingness to engage in behaviors that support ecological preservation, has been widely recognized as a determinant of sustainable consumption patterns (Chiu *et al.*, 2014; Dunlap *et al.*, 2000). Within the tourism literature, environmental sensitivity is often discussed in connection with pro-environmental behavior and responsible travel choices (Higham & Cohen, 2011). Tourists with heightened environmental sensitivity tend to be more selective in choosing destinations and services that align with low-impact practices, renewable resource use, and preservation of natural and cultural assets (Boley & Uysal, 2013; Han & Kim, 2010).

In the context of wellness tourism, environmental sensitivity assumes particular significance. Wellness tourism experiences frequently depend on pristine natural settings, clean air and water, and access to landscapes conducive to restorative and health-promoting activities (Voigt & Pforr, 2014). Eco-friendly spa resorts, yoga retreats in natural environments, and wellness programs integrated into protected areas are examples where the quality of the experience is inherently linked to the preservation of environmental integrity (Smith & Puczkó, 2014). Consequently, environmentally sensitive individuals may perceive higher value and satisfaction in wellness tourism products that visibly embed sustainability into their design and delivery. This theoretical perspective underpins the following research hypothesis:

H₁: Environmental sensitivity positively affects satisfaction with wellness tourism.

Empirical evidence supports the proposition that environmental sensitivity is positively associated with satisfaction levels in sustainable tourism experiences. Boley & Uysal (2013) demonstrated that when destination management strategies visibly align with tourists' environmental values, tourists report higher satisfaction and a greater sense of alignment between personal values and travel experiences. This alignment not only enhances satisfaction but can also foster stronger affective bonds between tourists and destinations (Han *et al.*, 2018). Such bonds may translate into loyalty behaviors, including repeat visitation, positive word-of-mouth, and willingness to pay price premiums for experiences perceived as environmentally responsible (Skordoulis *et al.*, 2024a).

The implications of environmental sensitivity extend beyond satisfaction to the development of loyalty toward wellness tourism. Loyalty in tourism is often conceptualized as a multidimensional construct encompassing behavioral intention (e.g., revisit intentions), attitudinal commitment, and advocacy behaviors (Oppermann, 2000; Zhang *et al.*, 2014). Environmentally sensitive tourists are more likely to demonstrate these loyalty behaviors when their sustainability expectations are met or exceeded. This is particularly relevant for destinations aiming to cultivate niche markets in wellness tourism, where differentiation through sustainability credentials can strengthen competitive positioning.

Furthermore, in linking environmental sensitivity to wellness tourism, recent scholarship has begun to consider the role of sustainable lifestyle orientations (Chen *et al.*, 2023). Environmentally sensitive wellness tourists often integrate their travel choices into a broader pattern of sustainable consumption, encompassing food choices, mobility preferences, and resource use. As a result, their tourism behavior reflects not only hedonic motivations but also eudaimonic values where personal well-being is sought in conjunction with environmental stewardship (Brown & Kasser, 2005). This shift toward value-based consumption patterns aligns wellness tourism with the broader sustainable development agenda. This relationship forms the theoretical basis for the following research hypothesis:

H₂: Environmental sensitivity positively affects loyalty to wellness tourism.

In summary, environmental sensitivity represents a pivotal construct in understanding both satisfaction and loyalty within wellness tourism. The empirical and theoretical evidence suggests that wellness tourism providers and destination managers can enhance tourist satisfaction and long-term engagement by embedding tangible environmental practices into their offerings. By doing so, wellness tourism can not only

meet the experiential expectations of its clientele but also contribute to the transformation of tourism toward more sustainable and responsible forms.

2.2 Tourist engagement and behavioral outcomes in wellness tourism

Tourist engagement, reflected through the frequency of participation in specific tourism activities, is a central behavioral construct in tourism studies. Engagement extends beyond mere participation; it encompasses an enduring relationship with the experience, repeated involvement, and an ongoing search for value within a particular form of tourism (Brodie *et al.*, 2011). In the wellness tourism domain, engagement can manifest in recurrent visits to spa resorts, regular attendance at yoga or meditation retreats, or repeated participation in wellness programs designed to promote physical and mental well-being (Voigt *et al.*, 2010).

The frequency of participation serves as both an indicator and a driver of behavioral loyalty. The more frequently tourists engage with wellness experiences, the more likely they are to develop familiarity, emotional attachment, and a strong preference for the product or destination. This dynamic supports the following hypothesis:

H₃: The frequency of participation in wellness tourism positively affects loyalty to it.

Empirical research on leisure and tourism behavior reinforces this relationship: repeat visitation is closely associated with satisfaction, perceived value, and a deepening sense of place attachment (Oppermann, 2000; Alegre & Juaneda, 2006). Such loyalty can be behavioral or attitudinal, in the form of recommending the experience to others and expressing a willingness to return despite competing alternatives or price increases (Zhang *et al.*, 2014).

The process by which repeated engagement translates into loyalty can be explained through the investment model of commitment (Rusbult, 1980), which emphasizes satisfaction, perceived alternatives, and investment size as determinants of commitment. In wellness tourism, a higher frequency of participation can be seen as an increasing “investment” of time, resources, and personal identity into the experience. This investment often generates sunk costs, both tangible (e.g., financial) and intangible (e.g., emotional connections, skills developed), which increase the likelihood of continued engagement and loyalty.

2.3 Life satisfaction as a psychological outcome of wellness tourism

Life satisfaction is defined as a person’s global, cognitive appraisal of the quality of their life according to self-selected standards (Bowden, 2009). It constitutes the evaluative component of subjective well-being and integrates both hedonic (pleasure, enjoyment) and eudaimonic (meaning, self-realization) dimensions (Ryan & Deci, 2001). Within tourism studies, travel has been shown to contribute to life satisfaction through psychological restoration, social connection, and opportunities for personal growth (Neal *et al.*, 2004; Uysal *et al.*, 2016). In wellness tourism, where experiences are explicitly designed to promote holistic health, life satisfaction is a particularly relevant downstream outcome.

In this study, life satisfaction is conceptualized consistently with the Satisfaction With Life Scale (SWLS), which captures a stable, global evaluation rather than a transient affective state (Diener *et al.*, 1985). We posit that wellness tourism can shape this global judgment via two complementary pathways: (a) the frequency of engagement in wellness experiences and (b) the evaluative satisfaction derived from those experiences.

First, repeated engagement in wellness practices accumulates physiological and psychological benefits that extend beyond the travel context (Voigt *et al.*, 2011). The broaden-and-build theory (Fredrickson, 2001) provides a robust explanation: recurrent positive emotions elicited by restorative wellness experiences broaden momentary thought-action repertoires and, over time, build enduring personal resources (e.g., emotion regulation, social bonds, health behaviors). These durable resources, in turn, are reflected in higher life satisfaction. Empirical work in leisure and health tourism corroborates that habitual participation in well-being activities relates to better stress management, healthier routines post-trip, and improved global life evaluations months after the experience (McCabe & Johnson, 2013; Voigt *et al.*, 2011). Thus, the following research hypothesis is supported:

H₄: The frequency of participation in wellness tourism positively affects life satisfaction.

Second, satisfaction with wellness tourism should also positively influence life satisfaction. Drawing on spillover theory (Sirgy *et al.*, 2011), positive evaluations in the leisure domain can transfer to broader life assessments when the experience is meaningful and aligned with personal values. Wellness travel is explicitly value-laden: it touches self-care, health goals, and identity work toward “living well.” When travelers perceive high service quality, authenticity, and goal attainment in wellness settings, these appraisals spill over into their global evaluation of life. Evidence from wellness and spa contexts indicates that satisfaction with program quality, staff competence, ambiance, and perceived health gains is associated with elevated post-visit life satisfaction (Chen & Petrick, 2013). This mechanism is further reinforced by the alignment between wellness experiences and eudaimonic well-being: experiences that support autonomy, competence, and relatedness tend to produce deeper, longer-lasting effects on life satisfaction (Ryan & Deci, 2001).

Thus, the following research hypothesis is supported:

H₅: Satisfaction with wellness tourism positively affects life satisfaction.

Importantly, the two pathways are interrelated rather than mutually exclusive. Higher frequency of participation often strengthens satisfaction by fostering familiarity, realistic expectations, and perceived fit with one’s wellness goals; conversely, satisfying experiences motivate future engagement, creating a virtuous cycle that consolidates well-being gains (Alegre & Juaneda, 2006). From a destination and provider perspective, this implies that interventions encouraging regularized engagement (e.g., multi-visit programs, follow-up digital coaching, seasonal memberships) and experience quality (e.g., evidence-based treatments, personalization, tranquil and nature-connected settings) are likely to yield measurable improvements in visitors’ life satisfaction.

3. Research methodology

This study empirically tests a set of behavioral and psychological relationships in wellness tourism, focusing on the links between environmental sensitivity, tourist engagement (operationalized as frequency of participation), satisfaction with wellness experiences, loyalty, and life satisfaction among visitors in Greece. The research adopts a quantitative, cross-sectional survey design to evaluate the following hypotheses developed in the literature review.

Data were collected in Greece from July 1 to December 1, 2024, to capture current and diverse wellness behaviors. The target population comprised of tourists who engaged in wellness-related activities during their trip (e.g., spa treatments, thermal springs, yoga/meditation retreats, nature-based wellness, hotel wellness programs). To ensure respondents’ relevance to the constructs of interest, we used non-

probability purposive sampling, while the questionnaire was distributed online at selected hotels with wellness facilities. The abovementioned non-probability purposive sampling technique was employed to ensure that participants had indeed engaged in wellness-related tourism activities.

Inclusion criteria required that respondents (a) were 18+ and (b) had actually participated in at least one wellness activity during their trip. After data screening for completeness and logic checks, 487 valid questionnaires remained for analysis.

A structured, closed-ended questionnaire was designed based on established scales and adapted to the wellness tourism context. The first part of the questionnaire referred to the demographics and trip profile. The next parts included the following constructs:

1. Environmental sensitivity. Measured with items adapted from the New Ecological Paradigm (NEP) scale (Dunlap *et al.*, 2000). Items covering limits to growth, balance of nature, anti-anthropocentrism, and human exemption from nature's constraints were included; negatively worded statements were reverse-coded (Ntanos *et al.*, 2019). An overall environmental sensitivity index was computed as the mean of items (higher scores = greater sensitivity).
2. Satisfaction with wellness tourism. Measured using the Multicriteria Satisfaction Analysis (MUSA) framework, which aggregates participant evaluations across multiple service dimensions into an overall satisfaction index. Respondents rated statements adapted from service/tourism satisfaction literature, with results subsequently processed according to the MUSA model specifications.
3. Loyalty to wellness tourism. Conceptualized as loyalty intentions (revisit intent, positive word-of-mouth/recommendation, preference over alternatives), using standard items from tourism services research (Oppermann, 2000; Zeithaml *et al.*, 1996; Zhang *et al.*, 2014).
4. Life satisfaction. Measured with the Satisfaction With Life Scale (SWLS) (Diener *et al.*, 1985), a five-item global cognitive evaluation of one's life, widely validated across tourism and well-being studies.

All attitudinal items used a five-point Likert scale (1 = strongly disagree/very dissatisfied, 5 = strongly agree/very satisfied). To minimize misclassification, the questionnaire opened with a concise definition and examples of "wellness tourism" (e.g., spa/thermal therapies, mind-body practices, nature-based restorative activities).

The questionnaire was pilot-tested with $n = 20$ wellness tourists (not included in the final sample) to refine clarity, remove ambiguities, and confirm completion time; minor wording and ordering adjustments were made.

Data were screened for missingness, outliers, and inconsistent patterns. For multi-item constructs, items were oriented so that higher scores reflect more of the latent trait; negatively keyed NEP items were reverse-coded. Scale scores were computed as the mean of their items when at least 80% of the items were present.

Internal consistency was assessed with Cronbach's alpha for all multi-item scales, targeting an alpha value equal or higher than 0.70 as acceptable reliability. Content validity was supported through adaptation from well-established scales (NEP; SWLS; satisfaction and loyalty items used in tourism/service research) and expert review for contextual fit in wellness settings (Smith & Puczkó, 2014; Voigt & Pforr, 2014). Construct validity was further supported conceptually by aligning indicators with their intended theoretical domains (environmental psychology, service satisfaction, loyalty intentions, well-being).

Participation was voluntary, with informed consent obtained before survey completion. Respondents were informed about the study's purpose, the anonymous and confidential treatment of data, and their right to discontinue at any point. No personal identification information was collected. The study complied with institutional and national ethical guidelines for research in the social sciences.

4. Research results

4.1 Sample demographics

The demographic profile of the survey participants, which is provided in the following Table 1, provides important insights into the characteristics of wellness tourism consumers.

Table 1: Sample demographics

Variable	Category	% Percent
Gender	Male	31.48
	Female	68.52
Age group	18-35	43.2
	36-45	22.2
	46-55	26.5
	56-65	7.4
	Over 66	0.6
Annual income	Less than 10,000€	25.9
	10,001€-20,000€	44.4
	20,001€-30,000€	19.1
	30,001€-40,000€	3.7
	More than 40,000€	6.8
Profession	Unemployed	3.09
	Public sector	25.31
	Private sector	44.44
	Self-employed/entrepreneur	13.58
	Retired	1.28
	Student	12.35
Educational level	Secondary education	4.32
	Associate's degree	15.43
	Bachelor's degree	50
	Master's degree	25.31
	Doctorate	4.94

Regarding gender distribution, 31.48% of participants were male and 68.52% female, reflecting a broader trend in which women display greater interest in wellness-promoting activities. As Smith & Puczkó (2014) note, women constitute the majority of wellness tourists, a fact linked to heightened awareness of health and well-being issues.

In terms of age, the largest proportion belonged to the 18–35 age group (43.2%), with 91.9% of participants aged up to 55 years. These findings suggest that wellness tourism appeals particularly to younger adults.

With respect to annual individual income, the largest segment (from those who have chosen wellness tourism) reported earnings between €10,001 and €20,000. This challenges the perception that wellness tourism is exclusive to higher-income groups, indicating its accessibility to middle-income individuals. The global middle class increasingly seeks experiences that promote health and well-being, driving market growth (Skordoulis *et al.*, 2025). Furthermore, shifting consumer lifestyles towards healthier living and the growing demand for experiences enhancing physical and mental health are expected to contribute to the sector's expansion (Thapa *et al.*, 2024).

Occupationally, 44.44% of wellness tourists in the sample were private sector employees, 25.31% public sector employees, and 13.58% self-employed or entrepreneurs, while the smallest group comprised non-employed individuals (3.09%).

In terms of educational attainment, half of the respondents were university graduates, and 25.31% held a postgraduate degree.

Overall, the wellness tourist profile emerging from the sample is predominantly female, young to middle-aged, middle-income, employed mainly in the private sector, and highly educated. This combination points to a dynamic and discerning consumer group, likely to demand personalized, high-quality, and innovative wellness services. As educated, economically active, and well-informed individuals regarding health and well-being, these consumers are expected to seek elevated service standards, potentially influencing trends and developments in the wellness tourism sector.

4.2 Travel profile of respondents

The travel behavior of respondents provides valuable insights into the structure and nature of wellness tourism demand in Greece. Thus, beyond basic demographics, the participation patterns of respondents in wellness tourism reveal important behavioral tendencies.

Among those with previous experience in wellness tourism, 82.5% had engaged in such services within the last five years, indicating that the study's findings reflect relatively recent consumer experiences.

Regarding familiarity with wellness tourism, 22.84% reported low familiarity, 43.83% moderate familiarity, and 9.26% high familiarity. Low familiarity rates suggest a need for increased awareness and education on the topic, while the moderate familiarity segment may represent the most promising target audience for future promotional strategies. High familiarity reflects a niche audience that could serve as early adopters in expanding wellness tourism. As Smith & Puczkó (2014) emphasize, tailoring strategies to different familiarity levels is crucial, while Voigt *et al.* (2011) note that education and promotion can effectively increase demand.

Based on the following Figure 1, participation frequency was most often reported as “sometimes” (45.06%) or “rarely” (38.27%), with fewer respondents indicating “often” (11.73%) or “very often” (3.09%). The low frequency of engagement may be linked to limited accessibility, economic constraints, or insufficient awareness of wellness tourism benefits. Travelers with limited knowledge of wellness opportunities are less likely to incorporate them into their trips, while inadequate specialized marketing strategies may further limit participation.

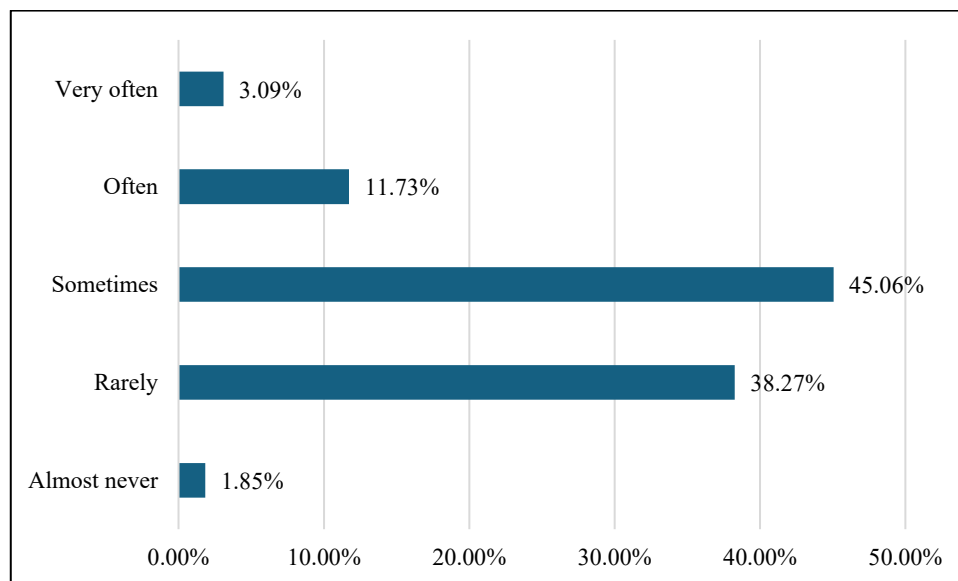


Fig. 1: Frequency of participation in wellness tourism.

Regarding travel companions, nearly half (47.5%) preferred traveling as a couple, followed equally by family (24.1%) and friends (24.1%), with only 3.70% traveling alone. This aligns with Bushell's (2009) findings that wellness activities can strengthen interpersonal relationships. Conversely, the low share of solo travelers may reflect insufficient tailored packages for this group, as noted by Gössling & Hall (2021).

The findings presented in the following Figure 2 indicate that wellness tourism holds high perceived value for many travelers. The largest proportion of respondents (41.4%) expressed willingness to pay an additional 5%–10% for wellness-related services. Furthermore, 27.8% were willing to pay 10%–15% and 11.7% more than 15%, meaning that a total of 39.5% accepted a premium of 10% or more. In contrast, 10.5% would pay up to 5% and 8.6% would pay nothing extra (19.1% in total for a premium of 5% or less). This distribution suggests a high perceived value of wellness services and is consistent with literature linking demand to the pursuit of improved mental and physical health (Smith & Puczkó, 2014). However, the group unwilling to pay any additional cost (8.6%) may reflect a need for more affordable options or the presence of different priorities in their travel expenditures.

Overall, the participation profile of wellness tourists in this study depicts a consumer group that engages in wellness activities relatively infrequently but values them highly, prefers to travel with companions, and is willing to invest financially in such experiences. These characteristics, combined with their demographic traits, underscore the importance of targeted marketing, diversified travel packages, and the development of innovative offerings tailored to different familiarity and engagement levels.

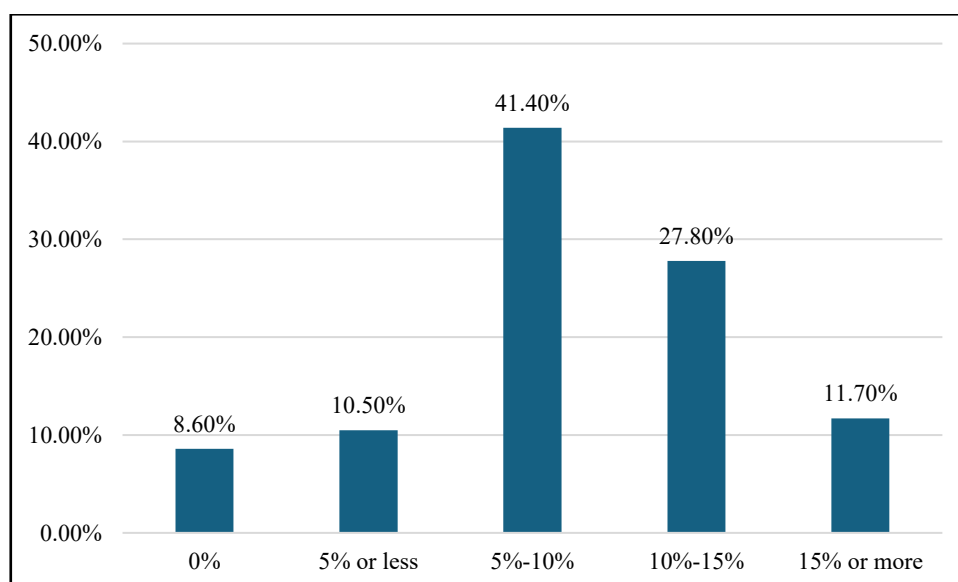


Fig. 2: Willingness to pay additional for wellness tourism services.

4.3 Environmental sensitivity, satisfaction with wellness tourism, and loyalty to wellness tourism

As already mentioned, environmental sensitivity was measured using the NEP scale. In the following analysis, the mean score of environmental sensitivity as measured by the NEP scale is used as the independent variable, while tourists' global satisfaction measured by the MUSA method is used as the dependent variable.

The regression analysis results indicated that environmental sensitivity has a statistically significant positive effect on satisfaction with wellness tourism ($\beta = 0.308$, $p < 0.001$). The adjusted R^2 value of 0.195 shows that environmental sensitivity explains 19.5% of the variance in satisfaction levels.

Table 2: Regression results – Environmental sensitivity and satisfaction with wellness tourism

	Unstandardized coefficients		Standardized coefficients	Sig.
	B	Std. Error	Beta	
(Constant)	3.083	0.239		0.000
Environmental sensitivity	0.248	0.061	0.308	0.000
	Test		Value	Sig.
	Adjusted R ²		0.195	
	Durbin Watson		1.976	
	ANOVA			0.000

This finding directly addresses Research Hypothesis H₁, which posited that environmental sensitivity positively affects satisfaction with wellness tourism. The statistically significant positive coefficient confirms this hypothesis, indicating that individuals with greater awareness and concern for environmental issues tend to experience higher satisfaction with their wellness tourism experiences.

The result is consistent with the theoretical expectation that environmentally sensitive tourists place greater value on services and destinations that visibly integrate sustainability practices. This alignment between personal environmental values and the tourism experience appears to enhance the perceived quality and meaningfulness of the trip.

Referring to loyalty to wellness tourism, this was measured by loyalty, using standard items from tourism services research. In the following analysis, the component derived from the corresponding principal components analysis is used as the independent variable, while tourists' global satisfaction measured by the MUSA method is used as the dependent variable.

The results revealed a statistically significant positive relationship between environmental sensitivity and loyalty to wellness tourism ($\beta = 0.267$, $p < 0.001$). The adjusted R^2 value of 0.166 shows that environmental sensitivity explains 16.6% of the variance in loyalty levels.

Table 3: Regression results – Environmental sensitivity and loyalty to wellness tourism

	Unstandardized coefficients		Standardized coefficients	Sig.
	B	Std. Error	Beta	
(Constant)	2.273	0.339		0.000
Environmental sensitivity	0.316	0.090	0.267	0.000
	Test		Value	Sig.
	Adjusted R ²		0.032	
	Durbin Watson		2.102	
	ANOVA			0.000

This analysis tests Research Hypothesis H₂, which proposes that environmental sensitivity positively affects loyalty to wellness tourism. The hypothesis is supported by the data: tourists who hold stronger environmental values express higher loyalty, reflected in their intentions to revisit and to recommend the destination or services. This suggests that the reinforcement of sustainability practices within the wellness tourism experience not only improves satisfaction (as shown in H₁) but also fosters long-term behavioral commitment to such experiences.

4.4 Frequency of participation and loyalty to wellness tourism

The regression analysis showed that the frequency of participation in wellness tourism significantly predicts loyalty ($\beta = 0.263$, $p < 0.001$), with an adjusted R^2 of 0.163.

This directly relates to Research Hypothesis H₃, which stated that the frequency of participation in wellness tourism positively affects loyalty to it. The data confirm this hypothesis, indicating that repeated engagement with wellness activities strengthens familiarity, emotional attachment, and a sustained preference for the service or destination.

This finding aligns with the investment model of commitment, in which higher personal investment, measured here through frequency of participation, leads to greater loyalty behaviors.

Table 4: Regression results – Frequency of participation and loyalty to wellness tourism

	Unstandardized coefficients		Standardized coefficients	Sig.
	B	Std. Error	Beta	
(Constant)	2.823	0.189		0.000
Frequency of participation	0.226	0.066	0.163	0.000
	Test		Value	Sig.
	Adjusted R ²		0.163	
	Durbin Watson		1.863	
	ANOVA			0.000

4.5 Frequency of participation and life satisfaction

The analysis confirmed that the frequency of participation in wellness tourism has a significant positive effect on life satisfaction ($\beta = 0.172$, $p < 0.001$), with an adjusted R² value of 0.123.

This addresses Research Hypothesis H₄, which posited that the frequency of participation in wellness tourism positively affects life satisfaction. The hypothesis is supported: tourists who engage more frequently in wellness experiences tend to report higher overall life satisfaction, reflecting both the immediate benefits of the activities and their longer-term integration into personal well-being.

The result highlights the role of wellness tourism as not only a leisure activity but also a contributor to sustained psychological and lifestyle benefits.

Table 5: Regression results – Frequency of participation and life satisfaction

	Unstandardized coefficients		Standardized coefficients	Sig.
	B	Std. Error	Beta	
(Constant)	3.030	0.204		0.000
Frequency of participation	0.157	0.071	0.172	0.000
	Test		Value	Sig.
	Adjusted R ²		0.163	
	Durbin Watson		1.960	
	ANOVA			0.000

4.6 Satisfaction with wellness tourism and life satisfaction

Finally, the results indicate that satisfaction with wellness tourism is a strong and significant predictor of life satisfaction ($\beta = 0.241$, $p < 0.001$), with an adjusted R² of 0.152.

This corresponds to Research Hypothesis H₅, which proposed that satisfaction with wellness tourism positively affects life satisfaction. The hypothesis is confirmed by the analysis: higher satisfaction with wellness tourism experiences is associated with higher evaluations of overall life satisfaction.

The finding supports spillover theory, suggesting that positive experiences in the leisure and tourism domain can transfer to global life assessments when they are meaningful and aligned with personal values.

Table 6: Regression results – Satisfaction with wellness tourism and life satisfaction

	Unstandardized coefficients		Standardized coefficients	Sig.
	B	Std. Error	Beta	
(Constant)	2.022	0.462		0.000
Frequency of participation	0.356	0.113	0.241	0.000
	Test		Value	Sig.
	Adjusted R ²		0.152	
	Durbin Watson		2.026	
	ANOVA			0.000

5. Discussion and conclusions

This study examined the interrelationships among environmental sensitivity, tourist engagement, satisfaction with wellness tourism, loyalty, and life satisfaction, focusing on the Greek wellness tourism context. By integrating constructs from environmental psychology, tourism behavior, and well-being literature, it sought to position wellness tourism within the broader sustainability discourse.

The findings provide robust support for the hypothesized positive relationship between environmental sensitivity and satisfaction with wellness tourism (H₁). Tourists exhibiting higher environmental concern reported significantly higher satisfaction with wellness experiences, aligning with previous studies suggesting that value congruence between tourists' environmental orientations and the sustainability credentials of the destination enhances overall satisfaction (Han *et al.*, 2018). In the Greek context, where wellness tourism offerings often leverage natural landscapes and heritage-based spa resources, the compatibility between tourists' ecological values and the product attributes appears particularly influential.

Environmentally sensitive tourists demonstrated greater intention to revisit and recommend wellness tourism services. This result echoes Chen & Tung (2014) and reinforces the idea that sustainability-oriented tourists translate positive experiences into repeat visitation and advocacy, thereby supporting a virtuous cycle of sustainable consumption within tourism.

The results also proposed that a higher frequency of participation in wellness tourism predicts stronger loyalty. Consistent with the investment model of commitment and findings in leisure tourism (Alegre & Juaneda, 2006), repeated engagement fosters familiarity, emotional

bonds, and perceived identity alignment with wellness tourism experiences. For Greece, this implies that fostering repeat visitation through loyalty programs and curated seasonal packages can strengthen the market base.

Moreover, the study found that the frequency of participation in wellness tourism significantly and positively influenced life satisfaction. This is consistent with the broaden-and-build theory (Fredrickson, 2001) and prior tourism research (Voigt *et al.*, 2011), which suggests that repeated exposure to restorative experiences yields cumulative well-being benefits. The Greek wellness context, with its combination of natural, cultural, and therapeutic resources, appears well-positioned to deliver such benefits.

Examining the relationship between satisfaction with wellness tourism and life satisfaction pointed out that satisfaction appears to spill over into broader life evaluations (Sirgy *et al.*, 2011), particularly when the experiences align with deeper personal values of health, self-care, and environmental stewardship. This underscores the holistic value of wellness tourism as a lifestyle-aligned form of travel.

The research advances the literature on wellness tourism by integrating environmental sensitivity and life satisfaction into a unified behavioral model. It demonstrates that wellness tourism can act as a conduit for sustainable consumption, connecting individual well-being with pro-environmental orientations. This dual focus extends existing models of sustainable tourism behavior, which often address either psychological outcomes or environmental behaviors in isolation.

The findings of this study carry substantial implications for wellness tourism managers, destination marketing organizations, and policy makers, particularly within the Greek context. The strong influence of environmental sensitivity on both satisfaction and loyalty suggests that sustainability should not be treated as an ancillary marketing element but as a core value proposition embedded throughout the design and delivery of wellness tourism experiences. Managers should therefore prioritize the integration of visible and credible sustainable practices, such as eco-certified facilities, locally sourced organic products, and conservation-oriented programming, not only to meet environmental goals but also to strengthen customer satisfaction and long-term commitment (Skordoulis *et al.*, 2020; Skordoulis *et al.*, 2022).

Equally important is the demonstrated role of engagement frequency in enhancing both loyalty and life satisfaction. This underscores the need for strategies that encourage repeat visitation and sustained involvement in wellness activities. Wellness providers can achieve this by developing structured multi-visit programs, seasonal wellness packages, loyalty incentives, and personalized service plans that cater to the evolving needs of returning guests. Such initiatives not only foster customer retention but also deepen the personal relevance and perceived value of wellness experiences over time.

The positive link between satisfaction and life satisfaction points to an opportunity for providers to position wellness tourism not simply as a leisure option, but as a transformative lifestyle component. By emphasizing the long-term health and well-being benefits of their services, operators can differentiate themselves in a competitive market and cultivate a deeper emotional connection with their clientele.

For Greece in particular, these results indicate a strategic pathway to positioning the country as a leading Mediterranean hub for wellness tourism grounded in sustainability. Leveraging its rich natural landscapes, therapeutic heritage, and cultural resources, Greek destinations can design wellness offerings that not only appeal to global well-being trends but also align with sustainable consumption patterns. This dual emphasis has the potential to attract high-value markets, extend tourism seasonality, and contribute to the country's broader sustainable development goals.

Ultimately, the managerial challenge lies in harmonizing commercial objectives with authentic sustainability commitments (Matsali *et al.*, 2025). The evidence from this study suggests that such alignment is not only feasible but also mutually reinforcing: when environmental stewardship and personal well-being are integrated into the tourism experience, both the business and the visitor benefit in enduring ways. Our results show that environmentally sensitive visitors report higher satisfaction and stronger loyalty have direct revenue consequences for wellness providers. Evidence from hotel markets indicates that credible sustainability signals (e.g., green certifications) are associated with improvements in operating several KPIs, such as occupancy, implying upside for unit revenues when sustainability is embedded in the offer mix (Bianco *et al.*, 2023). In parallel, guests at green properties often exhibit a measurable willingness to pay a premium ($\approx 4\text{--}6\%$ in several contexts), which converts value congruence into price tolerance, particularly when satisfaction is high (Damigos, 2023). Taken together, the satisfaction–loyalty mechanisms identified here map onto top-line gains through both volume (revisit intentions) and price (premium acceptance), strengthening expected ROI for sustainability-aligned wellness offerings.

From a management accounting standpoint, firms can track these gains and the related costs with Environmental Management Accounting (EMA), which extends conventional cost systems to capture energy, water, waste, and compliance costs at the activity or product level (UNDESA, 2001). Case evidence in hotels shows EMA-supported initiatives help identify low-cost savings and prioritize investments during financially constrained periods, improving cost visibility and decision quality (Nyide, 2017; Xanthopoulou *et al.*, 2024). For wellness contexts, we recommend recording resource intensities per occupied room and per treatment (e.g., kWh, m³ water, consumables), allocating them to service lines, and evaluating eco-investments (e.g., heat-recovery for pools, grey-water reuse, local-organic inputs) with NPV/payback while monitoring post-investment variances in unit costs and margins.

Moreover, the loyalty effects documented in the paper can and should be translated into cash-flow terms via customer lifetime value (CLV). CLV provides a bridge from marketing outcomes to firm value and is widely recommended for resource allocation; research shows CLV is strongly correlated with firm valuation and is useful for prioritizing retention vs. acquisition spending (Gupta *et al.*, 2006). In hospitality specifically, loyalty programs interact with revenue management to influence repeat purchase and yield, underscoring the need to track retention rate, repeat-revenue share, program cost per member, and CLV/CAC ratios at the segment level (Lentz *et al.*, 2021). Embedding these measures in routine reporting allows managers to quantify whether sustainability-led loyalty increments deliver acceptable ROI after program and certification costs.

At a strategic level, literature in tourism consistently links corporate social responsibility/sustainability to stronger financial and non-financial performance, including for hotels (Inoue & Lee, 2011). Positioning wellness offerings around credible environmental practices, therefore, creates intangible assets (reputation, trust) that complement efficiency gains captured by EMA and customer-equity gains captured by CLV. We encourage managers to integrate these indicators into a sustainability-enhanced management control system (e.g., a balanced scorecard with sustainability, loyalty/CLV, and RevPAR-based financial targets) to align decision-making with long-term profitability and sustainable development goals.

Despite its contributions, the study is not without limitations. First, the use of non-probability purposive sampling limits the generalizability of findings to the wider wellness tourism population. Second, data were collected within a single peak season (from July to December 2024), which may not capture seasonal variations in travel behavior and satisfaction. Third, all measures were self-reported, introducing potential common method bias and social desirability effects. Fourth, while the study was conducted in Greece, cultural and contextual specificities may limit the applicability of findings to other geographic regions.

Future studies could address these limitations by employing longitudinal designs to assess changes in engagement, satisfaction, and life satisfaction over time. Cross-cultural comparisons would be valuable in understanding how different socio-cultural contexts moderate the relationships identified (Skordoulis *et al.*, 2024b; Skordoulis *et al.*, 2024c). Additionally, qualitative research could deepen understanding of the experiential and value-based drivers of loyalty and well-being in wellness tourism. Finally, exploring the role of digital wellness

services as complements or substitutes for physical wellness tourism could provide insights into evolving consumption patterns in the post-pandemic era.

This study provides empirical evidence that wellness tourism in Greece can simultaneously promote individual well-being and support sustainability objectives. Environmental sensitivity emerges as a significant driver of both satisfaction and loyalty, while frequent engagement enhances loyalty and life satisfaction. Satisfaction itself acts as both an outcome and a mechanism, magnifying the life-enhancing benefits of participation. These findings position wellness tourism not merely as a personal leisure pursuit but as a strategic component in advancing sustainable consumption and tourism development agendas.

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References

- [1] Alegre J & Juaneda C (2006), Destination loyalty: Consumers' economic behavior. *Annals of tourism research* 33, 684–706.
- [2] Bianco S, Bernard S & Singal M (2023), The impact of sustainability certifications on performance and competitive action in hotels. *International Journal of Hospitality Management* 108, 103379.
- [3] Boley BB & Uysal M (2013), Competitive synergy through practicing triple bottom line sustainability: Evidence from three hospitality case studies. *Tourism and Hospitality Research* 13, 226–238.
- [4] Bowden JH (2009), The process of customer engagement: A conceptual framework. *Journal of marketing theory and practice* 17, 63–74.
- [5] Brodie RJ, Hollebeek LD, Jurić B & Ilić A (2011), Customer engagement: Conceptual domain, fundamental propositions, and implications for research. *Journal of service research* 14, 252–271.
- [6] Brown KW & Kasser T (2005), Are psychological and ecological well-being compatible? The role of values, mindfulness, and lifestyle. *Social indicators research* 74, 349–368.
- [7] Bushell R (2009), Quality of life, tourism, and wellness. In: Bushell, R. and Sheldon, P.J. (Eds.) *Wellness and Tourism: Mind, Body, Spirit, Place. Cognizant Communication Corporation*.
- [8] Chen KH, Huang L & Ye Y (2023), Research on the relationship between wellness tourism experiencescape and revisit intention: A chain mediation model. *International Journal of Contemporary Hospitality Management* 35, 893–918.
- [9] Chen F & Liu S (2025), How Confucian values activate tourist environmentally responsible behavior? An activated perspective of planned behavior. *Asia Pacific Journal of Tourism Research* 30, 517–536.
- [10] Chen CC & Petrick JF (2013), Health and wellness benefits of travel experiences: A literature review. *Journal of Travel Research* 52, 709–719.
- [11] Chen MF & Tung PJ (2014), Developing an extended theory of planned behavior model to predict consumers' intention to visit green hotels. *International journal of hospitality management* 36, 221–230.
- [12] Chiu YTH, Lee WI & Chen TH (2014), Environmentally responsible behavior in ecotourism: Antecedents and implications. *Tourism management* 40, 321–329.
- [13] Damigos D (2023), How much are consumers willing to pay for a greener hotel industry? A systematic literature review. *Sustainability* 15, 8775.
- [14] Diener ED, Emmons RA, Larsen RJ & Griffin S (1985), The satisfaction with life scale. *Journal of personality assessment* 49, 71–75.
- [15] Drosos D & Skordoulis M (2018), The role of environmental responsibility in tourism. *Journal for International Business and Entrepreneurship Development*, 11, 30–39.
- [16] Dunlap RE, Van Liere KD, Mertig AG & Jones RE (2000), New trends in measuring environmental attitudes: measuring endorsement of the new ecological paradigm: a revised NEP scale. *Journal of social issues* 56, 425–442.
- [17] Fredrickson BL (2001), The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American psychologist* 56, 218.
- [18] Gössling S & Hall CM (2021), *The Sustainable Chef: The Environment in Culinary Arts, Restaurants, and Hospitality*. Routledge.
- [19] Gupta S, Hanssens D, Hardie B, Kahn W, Kumar V, Lin N, Ravishanker N, Sriram S (2006), Modeling customer lifetime value. *Journal of service research* 9, 139–155.
- [20] Han H, Yu J, Kim HC, Kim W (2018), Impact of social/personal norms and willingness to sacrifice on young vacationers' pro-environmental intentions for waste reduction and recycling. *Journal of sustainable tourism* 26, 2117–2133.
- [21] Han H & Kim Y (2010), An investigation of green hotel customers' decision formation: Developing an extended model of the theory of planned behavior. *International journal of hospitality management* 29, 659–668.
- [22] Higham JE & Cohen SA (2011), Canary in the coalmine: Norwegian attitudes towards climate change and extreme long-haul air travel to Aotearoa/New Zealand. *Tourism Management* 32, 98–105.
- [23] Inoue Y, Lee S (2011), Effects of different dimensions of corporate social responsibility on corporate financial performance in tourism-related industries. *Tourism management* 32, 790–804.
- [24] Kang M & Moscardo G (2006), Exploring cross-cultural differences in attitudes towards responsible tourist behaviour: A comparison of Korean, British and Australian tourists. *Asia Pacific Journal of Tourism Research* 11, 303–320.
- [25] Lentz M, Berezan O, Raab C (2021), Uncovering the relationship between revenue management and hotel loyalty programs. *Journal of revenue and pricing management* 21, 306.
- [26] Matsali C, Skordoulis M, Papagrigoriou A & Kalantonis P (2025), ESG Scores as Indicators of Green Business Strategies and Their Impact on Financial Performance in Tourism Services: Evidence from Worldwide Listed Firms. *Administrative Sciences* 15, 208.
- [27] McCabe S & Johnson S (2013), The happiness factor in tourism: Subjective well-being and social tourism. *Annals of Tourism Research* 41, 42–65.
- [28] Neal JD, Sirgy MJ & Uysal M (2004), Measuring the effect of tourism services on travelers' quality of life: Further validation. *Social Indicators Research* 69, 243–277.
- [29] Ntanos S, Kyriakopoulos G, Skordoulis M, Chalikias M & Arabatzis G (2019), An application of the new environmental paradigm (NEP) scale in a Greek context. *Energies* 12, 239.
- [30] Nyide CJ (2017) The role of environmental management accounting and voluntary self-regulatory initiatives in improving resource efficiency in South African hotels. *Business and Economic Horizons* 13, 30–41.
- [31] Oppermann M (2000), Tourism destination loyalty. *Journal of travel research* 39, 78–84.
- [32] Ryan RM & Deci EL (2001), On happiness and human potentials: a review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology* 52, 141–166.
- [33] Sirgy MJ, Kruger PS, Lee DJ & Yu GB (2011), How does a travel trip affect tourists' life satisfaction? *Journal of Travel research* 50, 261–275.
- [34] Skordoulis M, Kavoura A, Stavropoulos AS, Zikas A & Kalantonis P (2025), Financial stability and environmental sentiment among millennials: A cross-cultural analysis of Greece and the Netherlands. *International Journal of Financial Studies* 13, 64.
- [35] Skordoulis M, Kyriakopoulos G, Ntanos S, Galatsidas S, Arabatzis G, Chalikias M & Kalantonis P (2022), The mediating role of firm strategy in the relationship between green entrepreneurship, green innovation, and competitive advantage: the case of medium and large-sized firms in Greece. *Sustainability* 14, 3286.

- [36] Skordoulis M, Ntanos S, & Arabatzis G (2020), Socioeconomic evaluation of green energy investments: Analyzing citizens' willingness to invest in photovoltaics in Greece. *International Journal of Energy Sector Management* 14, 871–890.
- [37] Skordoulis M, Panagiotakopoulou K, Manolis D, Papagrigoriou A & Kalantonis P (2024a), Perceptions of environmental sustainability and luxury: Influences on organic food buying behavior among Millennials and Generation Z in Greece. *Global NEST Journal* 26, 06067.
- [38] Skordoulis M, Patsatzi O, Kalogiannidis S, Patitsa C & Papagrigoriou A (2024), Strategic management of multiculturalism for social sustainability in hospitality services: The case of hotels in Athens. *Tourism and Hospitality* 5, 977–995.
- [39] Skordoulis M, Stavropoulos AS, Papagrigoriou A & Kalantonis P (2024c), The strategic impact of service quality and environmental sustainability on financial performance: A case study of 5-star hotels in Athens. *Journal of Risk and Financial Management* 17, 473.
- [40] Smith M & Puczkó L (2014), Health, tourism and hospitality: Spas, wellness and medical travel. *Routledge*.
- [41] Steiner CJ & Reisinger Y (2006), Understanding existential authenticity. *Annals of tourism research* 33, 299–318.
- [42] Thapa K, Ntanos S, Kyriakopoulos GL, Skordoulis M & Getzner M (2024), Visitors' environmental attitudes and willingness to pay for nature conservation: The case of Langtang National Park in the Himalayas. *Global NEST Journal* 26, 05717.
- [43] Tsekouropoulos G, Vasileiou A, Hoxha G, Dimitriadis A & Zervas I (2024), Sustainable approaches to medical tourism: Strategies for Central Macedonia/Greece. *Sustainability* 16, 121.
- [44] Voigt C & Pforr C (2013), Wellness tourism: A destination perspective. *Routledge*.
- [45] Xanthopoulou A, Skordoulis M, Kalantonis P, Arsenos P (2024), Integrating corporate governance and forensic accounting: A sustainable corporate strategy against fraud. *Journal of Governance and Regulation/Volume* 13, 327–338.
- [46] Zeithaml VA, Berry LL & Parasuraman A (1996), The behavioral consequences of service quality. *Journal of marketing* 60, 31–46.
- [47] Zhang H, Fu X, Cai LA & Lu L (2014), Destination image and tourist loyalty: A meta-analysis. *Tourism management*, 40, 213–223.