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The Impact of Memorable Experiences on Tourist Satisfaction and Loyalty in Surf Tourism

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Resumo

O turismo de surf combina aventura, estilo de vida e sentido de pertença, oferecendo um cenário natural para estudar como as experiências se tornam memoráveis e se traduzem em satisfação e fidelidade. Esta dissertação examina como o envolvimento sensorial (as imagens, os sons e as sensações corporais do surf) e o impacto externo (atmosfera social, sinais de segurança e ambiente) moldam experiências turísticas memoráveis na Ericeira, Portugal, e como essas experiências turísticas memoráveis se relacionam com a satisfação e a fidelidade. O desenho da pesquisa seguiu uma estratégia de métodos mistos.

Primeiro, um questionário estruturado para visitantes surfistas produziu 192 respostas válidas (180 casos completos) e foi analisado utilizando regressão linear múltipla e modelos de mediação baseados em regressão com erros padrão robustos à heteroscedasticidade e intervalos de confiança bootstrapped com correção de viés. Em segundo lugar, oito entrevistas semiestruturadas com instrutores de surf, gerentes e funcionários da hotelaria (onze participantes em todas as sessões), juntamente com a observação direta de uma aula de surf, foram analisadas tematicamente para explicar os mecanismos por trás dos padrões quantitativos.

Os resultados mostram uma estrutura consistente. O impacto externo é o principal fator determinante do que se torna memorável, enquanto o envolvimento sensorial amplifica principalmente os momentos de pico emocional e perde influência única quando o impacto externo é considerado. Experiências turísticas memoráveis estão fortemente associadas à lealdade, e a satisfação atua como um canal complementar entre as duas.

A dissertação avança na investigação sobre o turismo de surf, integrando o envolvimento sensorial e o impacto externo num único modelo explicativo de memorabilidade, satisfação e lealdade num destino real de surf. Também oferece orientação gerencial: projetar o ambiente social, comunicar segurança e cuidado e criar intencionalmente momentos de pico de alta energia que os visitantes vão lembrar e defender.

Palavras-Chave: Experiências Turísticas Memoráveis, Turismo de Surf, Envolvimento Sensorial, Satisfação e Fidelização Turística

Classificação JEL:

Z33 - Tourism Economics: Marketing and Finance

L83 - Sports; Gambling; Recreation; Tourism

Abstract

Surf tourism combines adventure, lifestyle, and sense of place, and offers a natural setting to study how experiences become memorable and translate into satisfaction and loyalty. This dissertation examines how sensory engagement (the sights, sounds, and bodily feelings of surfing) and external impact (social atmosphere, safety cues, and environmental setting) shape memorable tourism experiences in Ericeira, Portugal, and how those memorable tourism experiences relate to satisfaction and loyalty. The research design followed a mixed-methods strategy.

First, a structured questionnaire of surf visitors produced 192 valid responses (180 complete cases) and was analysed using multiple linear regression and regression-based mediation models with heteroskedasticity-robust standard errors and bias-corrected bootstrapped confidence intervals. Second, eight semi-structured interviews with surf instructors, managers, and hospitality staff (eleven participants across sessions), together with direct observation of a surf lesson, were thematically analysed to explain the mechanisms behind the quantitative patterns.

Results show a consistent structure. External impact is the main driver of what becomes memorable, while sensory engagement mainly amplifies emotional peak moments and loses unique influence once external impact is considered. Memorable tourism experiences are strongly associated with loyalty, and satisfaction acts as a complementary conduit between the two.

The dissertation advances surf tourism research by integrating sensory engagement and external impact into a single explanatory model of memorability, satisfaction, and loyalty in a real surf destination. It also offers managerial guidance: design the social environment, communicate safety and care, and intentionally script high-energy peak moments that visitors will remember and advocate.

Keywords: Memorable Tourist Experiences, Surf Tourism, Sensory Engagement, Tourist Satisfaction and Loyalty

JEL Classification:

Z33 - Tourism Economics: Marketing and Finance

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Abbreviation List

BC	Bias-corrected (bootstrap)
CI	Confidence Interval
EX	External Impact
LOY	Loyalty
MTE	Memorable Tourism Experience
N	Sample Size
PROCESS	SPSS macro for mediation/conditional process (Hayes, 2013)
SAT	Satisfaction
SE	Sensory Engagement
SH	Survey Hypothesis
SPSS	IBM SPSS Statistics

Chapter I - Introduction

In the contemporary tourism landscape, experiential value has emerged as a key differentiator in shaping a destination's appeal and influencing visitor behaviour. Among the various tourism niches, surf tourism stands out for its distinctive integration of adventure, lifestyle, and emotional engagement. Over recent decades, this niche has expanded globally, driven by the pursuit of unspoiled waves in exotic and pristine destinations, as well as the cultural significance and identity associated with the surfing lifestyle (Moutinho et al., 2007).

Recent scholarship estimates ~50 million surfing participants globally, while emphasizing the lack of a formal worldwide census and definitional variability in who counts as an "*active*" surfer (Manero, 2023; Manero et al., 2024). In economic terms, pre-pandemic international surf-travel expenditure has been valued at US$31.5–64.9 billion per year (Mach & Ponting, 2021).

Portugal, with its consistent Atlantic swell, temperate climate, and vibrant coastal towns, has become a central hub for surf tourism in Europe (Santo de Melo, 2013). Renowned Portuguese surfing destinations Ericeira, Peniche, and Nazaré, collectively span the spectrum from accessible, high-quality surf zones to venues for elite, world-class competition: Ericeira's coastline is formally protected as a World Surfing Reserve; Peniche stages the WSL Championship Tour at Supertubos; and Nazaré hosts the TUDOR Big Wave Challenge. (ERICEIRA WSR+10, 2022; Red Bull, 2025; Reuters, 2025). Ericeira was designated on 14 October 2011 as Europe's first and the world's second World Surfing Reserve, protecting a four-kilometre coastal strip that includes seven high-quality breaks; Pedra Branca, Reef, Ribeira d'Ilhas, Cave, Crazy Left, Coxos, and São Lourenço (Save The Waves Coalition, 2011; ERICEIRA WSR+10, 2022). These natural and cultural assets make Portugal not only a hotspot for active participation in surfing but also a centre for lifestyle tourism that blends sport, leisure, and local identity.

Surfing embodies more than recreation, it represents a lifestyle rooted in freedom, adventure, and connection to nature. The emotional highs of conquering waves and the camaraderie among surfers deepen these bonds, embedding surf culture into both memory and identity (Kim et al., 2012). This unique blend of sensory and emotional elements makes surf tourism a powerful driver of destination loyalty and competitive differentiation.

In today's competitive tourism environment, travellers seek more than functional services or basic recreation, they increasingly desire emotionally resonant, immersive experiences that leave lasting impressions and influence their future behaviour. This shift has led to the growing prominence of Memorable Tourism Experiences (MTEs) in both academic research and destination marketing practice. MTEs are defined as "tourism

experience[s] positively remembered and recalled after the events have occurred" (Kim et al., 2012). These experiences are multidimensional, combining sensory engagement, emotional highs, skill development, and cultural immersion. In the context of surf tourism, the physical thrill of riding waves, the camaraderie among surfers, and the connection to nature converge to create powerful memories that contribute to tourist satisfaction and loyalty (Brochado et al., 2018; Jeong, 2023).

For instance, the sound of waves, the cold texture of wetsuits, or the visual beauty of the coastline are not merely stimuli, they act as sensory triggers that transform ordinary activities into memorable moments. These elements illustrate how sensory engagement underpins the creation of MTEs, helping to forge emotional associations that last long after the trip (Agapito et al., 2024).

While Memorable Tourism Experiences (MTEs) have been analysed across multiple sectors: cultural, rural, gastronomic and active sports, dedicated studies in surf tourism remain limited (Ye et al., 2021; Jeong, 2023). This leaves open questions about how sensory and contextual factors (e.g., coastal soundscapes, board feel, local social milieu) shape MTEs in surf travel, and how these experiences translate into satisfaction and loyalty outcomes. Addressing this gap is not only theoretically relevant for MTE research (Kim et al., 2012) but also practically important for destinations where authentic surf culture has been linked to image and loyalty (Reis, Caldeira & Carneiro, 2022) and where environmental governance conditions visitor experience (Román et al., 2022).

Although the MTE construct is well established, sector-specific evidence for surf tourism remains limited, particularly on how sensory engagement and external/contextual conditions jointly shape MTEs and how these experiences translate into satisfaction and loyalty (Kim et al., 2012; Kim, 2014; Brochado et al., 2018; Reis et al., 2022; Román et al., 2022). Moreover, recent work highlights that the MTE - emotion nexus has been relatively neglected, calling for designs that explicitly model emotional mechanisms (Jeong, 2023; Tung & Ritchie, 2011). In high-involvement coastal contexts, multisensory cues (visualscapes, soundscapes, tactile/thermal stimuli) plausibly modulate emotion and memorability, yet their integrated role with social milieu and destination attributes is still under-tested in surf settings (Schmitt, 1999; Hultén, 2011; Pedro et al., 2020; Nayak & Satpathy, 2024). Addressing these gaps, the present study positions sensory engagement and external/contextual factors within an MTE framework tailored to surf tourism and examines their downstream links to satisfaction and loyalty.

1.1 Objectives and Research Questions

The primary objective is to examine how sensory engagement and external/contextual factors shape Memorable Tourism Experiences (MTEs) in surf tourism and, in turn, how MTEs drive tourist satisfaction and loyalty. Building on Kim et al.'s (2012) seven MTE

dimensions: hedonism, novelty, local culture, refreshment, meaningfulness, involvement, and knowledge; The study operationalises these constructs for the surf context and empirically tests their interrelationships. Conceptually, the dissertation extends MTE scholarship into an under-explored niche; managerially, it informs experience design and destination stewardship in surf settings. Specifically, the study aims to:

- Examine how sensory elements (e.g., sight, sound, touch) contribute to the formation of MTEs in surf tourism.
- Identify external factors (e.g., local culture, surf conditions, sustainability awareness) that shape these experiences.
- Assess the influence of MTE dimensions on tourist satisfaction.
- Evaluate the mediating role of satisfaction in the relationship between MTEs and loyalty.

Accordingly, the research is guided by the following questions:

1. How does sensory engagement influence tourist satisfaction and loyalty in surf tourism?
2. What specific sensory elements contribute most to creating MTEs?
3. How does tourist satisfaction mediate the relationship between sensory engagement and loyalty?

1.2 Methodological Approach

To address these objectives, the study adopts a mixed-methods approach, combining quantitative and qualitative techniques. The quantitative component uses a structured questionnaire targeting surf tourists (both free surfers and beginners in surf schools) to measure sensory engagement, MTE dimensions, satisfaction, and loyalty (Kim et al., 2012; Kim, 2014; Yoon & Uysal, 2005). The qualitative component consists of semi-structured interviews with surf-tourism professionals in Ericeira (instructors, school managers, hospitality staff), to probe how sensory and emotional elements are designed and perceived in practice (Schmitt, 1999; Hultén, 2011; Jeong, 2023). This bi-phase design provides triangulation between survey evidence and practitioner accounts, enriching interpretation beyond statistical effects.

Additionally, a field observation of a surf lesson documented how sensory and social elements interact in site to generate memorable experiences, complementing the mixed-methods design (Kim et al., 2012; Schmitt, 1999).

1.3 Structure of the Dissertation

This dissertation is structured into five main chapters. Chapter I introduces the research background, problem statement, objectives, and structure. Chapter II reviews the existing literature on MTEs, surf tourism, and the marketing implications of experience

design. Chapter III presents the conceptual model and hypotheses. Chapter IV outlines the methodology, including the procedures for data collection and analysis. Chapter V presents and discusses the results considering the theoretical framework. Finally, the conclusion summarises the main findings, contributions, and recommendations for both future research and practical application in surf tourism marketing.

Chapter II - Literature Review

This literature review examines the concept of Memorable Tourism Experiences (MTEs) and their relevance to the surf tourism context. It begins by defining MTEs and exploring their theoretical foundations, followed by an overview of the sectors in which MTEs have been studied and the main conclusions drawn from these studies. The review then discusses the key antecedents and consequences of MTEs, before focusing on the specific characteristics of surf tourism and how MTEs manifest in this segment. This structure allows for a comprehensive understanding of how MTEs are formed, their impact on tourist satisfaction and loyalty, and their application within the growing niche of surf tourism.

2.1 MTEs concept

Memorable Tourism Experiences (MTEs) have become a central concept in tourism research, referring to unique and impactful experiences that leave lasting impressions on visitors. According to Kim et al. (2012), an MTE is defined as “a tourism experience positively remembered and recalled after the events have occurred.” These experiences result from a combination of behavioural, emotional, sensory, cognitive, relational, and functional dimensions, which together create strong sensations and emotions that resonate deeply with tourists (Schmitt, 1999; Tung & Ritchie, 2011).

The emergence of the MTE concept reflects a shift in tourism research away from traditional satisfaction metrics such as service quality and utility, towards a focus on the emotional, sensory, and cognitive aspects of travel (Kim et al., 2012; Tung & Ritchie, 2011). MTEs are selectively constructed from a tourist's overall experience, based on how personally significant and emotionally intense the event is. Not all experiences become memorable; only those that trigger strong affective responses and personal meaning tend to be retained and recalled.

In the context of surf tourism, MTEs often involve intense sensory engagement, emotional highs, and meaningful social connections (Brochado et al., 2018; Jeong, 2023). The thrill of riding waves, the camaraderie among surfers, and the connection to nature all contribute to the creation of holistic, transformative experiences. These moments are not only enjoyable but also reinforce a sense of identity and belonging within the surf culture.

Kim et al. (2012) identified seven dimensions that contribute to MTEs, encompassing hedonism, refreshment, local culture, meaningfulness, knowledge, involvement, and novelty. These dimensions highlight the multisensory and emotional nature of memorable experiences and will be explored in detail in the following section on MTEs’ antecedents.

According to Schmitt (1999), sensory marketing enhances emotional resonance through stimuli such as sight, sound, smell, taste, and touch. In surf tourism, the rhythm of waves, the tactile experience of surfing, and the visual appeal of the coastline contribute to immersive environments that enhance memorability. These sensory cues help form vivid mental images and emotional associations that tourists retain long after the trip.

Emotionally charged experiences, especially those that involve overcoming challenges or achieving personal growth, are more likely to be remembered (Kim et al., 2012; Pedro et al., 2020). Likewise, the cognitive engagement involved in learning (acquiring new surfing skills) adds intellectual value, contributing to a deeper and more enduring impression.

Storytelling also plays a vital role in how tourists retain and share their experiences. Tung and Ritchie (2011) suggest that experiences are often encoded in narrative form. In surf tourism, stories of personal breakthroughs, bonding moments, or surf achievements become memorable not just for the individual, but also as tools for promoting destinations through emotional and authentic communication.

Studies on MTEs have been applied to different sectors of tourism, including cultural tourism, where interaction with local communities and traditional practices enhances the memorability of visits (Kim et al., 2012), adventure and active sports tourism, such as surfing and other sport-related travel (Jeong, 2023; Brochado et al., 2018), and hospitality, with a focus on multisensory environments that intensify the guest experience (Güzel & Dörtyol, 2016). In rural tourism, research shows that memorability results from the combination of ordinary experiences (perceived quality and satisfaction) and extraordinary experiences (novelty and delight), positively influencing word of mouth and destination loyalty (Ye et al., 2021). In ecotourism, tourist engagement, through enthusiasm and interaction with natural and cultural elements, contributes to the creation of MTEs, which in turn increase revisit and recommendation intentions (Amir et al., 2025). In gastronomic tourism, experiences such as cooking classes provide contact with the local culture and develop dimensions such as involvement, hedonism, local culture, and knowledge, which interconnect to generate lasting memories (Kokkranikal & Carabelli, 2024). These contexts share key elements such as sensory stimuli, active participation, and emotional connection, all of which are fundamental to creating positive and memorable tourism experiences.

2.2 MTEs antecedents

Memorable Tourism Experiences (MTEs) result from various antecedents:psychological, social, and environmental; that shape tourists' perceptions and memories (Kim, 2014;

Tung & Ritchie, 2011). Key elements such as emotional intensity, novelty, cultural interaction, and destination attributes are central to their formation.

Flow theory suggests that memorable experiences often arise when the challenge of an activity matches the individual's skill level, promoting full engagement and lasting satisfaction (Tung & Ritchie, 2011). Aesthetic appeal also plays a significant role in memory formation (Kim et al., 2012), while emotional states at the time of the experience influence how it is perceived and retained.

In tourism, attentional engagement during the experience is associated with stronger memorable travel experiences and well-being, that is, travellers who are more mindful report more vivid, lasting trip memories (Iacob et al., 2025). Within the MTE stream, multisensory cues channel attention and emotion in ways that consolidate memory traces (Pedro et al., 2020). At the same time, extraordinary or novel elements often weigh more on memorability than “ordinary” quality/satisfaction, with novelty and delight predicting recall and word-of-mouth more strongly (Ye et al., 2021).

Despite increasing interest in memory studies, empirical research specific to MTEs is still limited. Kim et al. (2012) made a key contribution by identifying and measuring the main dimensions of MTEs. Furthermore, destination image, shaped by tourists' experiences and perceptions, strongly influences memorability and satisfaction (Kim, 2014).

Memorability, and subsequent advocacy, is driven more by novelty and distinctiveness than by ordinary service quality/satisfaction; it is the extraordinary that sticks (Ye et al., 2021). In active coastal/surf contexts, memorable experiences and the emotions they elicit predict revisit and recommendation intentions (Jeong, 2023). Consistent with this, travellers’ memories of prior trips are central inputs to return decisions (Iacob et al., 2025).

Kim et al. (2012) established seven key experiential factors: hedonism, novelty, knowledge, meaningfulness, involvement, local culture, and refreshment; as central to the formation of Memorable Tourism Experiences (MTEs). These dimensions collectively capture both emotional and cognitive aspects of tourist engagement and are considered crucial antecedents of memorability.

Hedonism, the pleasure and emotion-laden facet of experience, is a core MTE dimension, and emotionally intense episodes are more likely to be encoded as memorable in tourism settings (Kim et al., 2012; Pedro et al., 2020). Novelty functions as a salient driver of memorability and advocacy: “extraordinary” (novel/delightful) elements outweigh routine quality or satisfaction in predicting what travellers remember and recommend (Ye et al., 2021; Kim et al., 2012; Kim, 2014).

Knowledge acquisition during the trip (learning new skills) adds cognitive value that deepens and prolongs the impression (Kim et al., 2012; Pedro et al., 2020). Meaningfulness emerges when travellers pursue personal goals and experience growth; these transformative moments help stabilize memories and shape downstream outcomes (Tung & Ritchie, 2011; Jeong, 2023).

Involvement deepens emotional connection through active participation, while cultural interaction strengthens memory by encouraging local engagement (Tung & Ritchie, 2011; Kim et al., 2012). Refreshment, feelings of renewal and escape from daily routines, is a core MTE dimension associated with enhanced affect and memorability (Kim et al., 2012; Kim, 2014). Recent evidence with Portuguese travellers also shows that motivations such as “escape the demands of everyday life” and “return feeling rejuvenated” are linked to higher MTEs and well-being, reinforcing the renewal mechanism (Iacob et al., 2025).

Together, these dimensions offer a comprehensive understanding of how experiences become memorable. Despite their importance, Kim et al. (2014) notes that limited research has focused on how destinations can implement and deliver these experiential components in practice; highlighting a gap this study also aims to address.

Destination attributes shape tourists’ perceptions and choices across the trip; in surf settings, coastal/natural qualities, cultural contact and lived surf culture, and service/infrastructure and safety jointly stage engaging, memorable experiences and support revisit and advocacy (Kim et al., 2012; Brochado et al., 2018; Reis et al., 2022; Portugal et al., 2017).

Despite the growing interest in Memorable Tourism Experiences (MTEs), their determinants remain relatively under-specified, particularly regarding how destination features translate into memorable, behavior-relevant experiences. This matters because experientially rich, emotionally resonant encounters are linked to revisit and recommendation intentions in tourism generally and in surf settings specifically (Kim, 2014; Jeong, 2023; Reis et al., 2022; Román et al., 2022).

According to Kim (2014), ten destination attributes, ranging from local culture and hospitality to accessibility and environmental management, shape the conditions under which MTEs emerge; these attributes complement the seven MTE dimensions identified by Kim et al. (2012) and help explain how destination characteristics foster durable tourism memories.

2.3 MTEs consequences

MTEs predict satisfaction, loyalty, and behavioral intentions (Kim et al., 2012; Kim, 2014; Yoon & Uysal, 2005; Ye et al., 2021; Jeong, 2023). In surf tourism, the coupling of emotional, sensory, and social elements helps translate experiences into destination

performance via image and advocacy (Brochado et al., 2018; Reis et al., 2022; Román et al., 2022).

2.3.1 Tourist Satisfaction and Loyalty

MTEs are closely associated with higher levels of tourist satisfaction, as they evoke strong emotional responses and lasting positive memories (Tung & Ritchie, 2011; Pedro et al., 2020; Ye et al., 2021; Iacob et al., 2025).

In surf tourism, factors such as the thrill of catching waves, scenic landscapes, and social bonds among surfers contribute to meaningful and satisfying experiences (Jeong, 2023; Pedro et al., 2020; Reis et al., 2022; Román et al., 2022). Satisfied tourists are more likely to develop emotional attachment and demonstrate loyalty by returning to the destination and recommending it to others (Yoon & Uysal, 2005; Nieves-Pavón et al., 2024; Petrick, 2002 cited in Ye et al., 2021; Wilson et al., 2021; Brochado et al., 2018).

2.3.2 Behavioral Intentions and Word-of-Mouth

MTEs influence behavioral intentions by strengthening tourists' emotional connection to the destination and encouraging repeat visits and advocacy (Kim et al., 2012; Tung & Ritchie, 2011). In surf tourism, tourists frequently share their experiences online and through social media, highlighting personal achievements, group dynamics, and the quality of waves (Jeong, 2023; Reis et al., 2022). This type of organic word-of-mouth promotion enhances the destination's image and attracts new visitors (Brochado et al., 2018; Román et al., 2022).

2.3.3 Emotional and Cognitive Engagement

MTEs generate strong emotional and cognitive involvement. Emotionally charged experiences, such as overcoming fears or mastering new surfing skills, are more likely to be remembered and integrated into a tourist's personal identity (Kim et al., 2012; Pedro et al., 2020). The intellectual challenge of learning surf techniques adds cognitive depth to the experience (Jeong, 2023; Portugal et al., 2017), while mindfulness during surfing enhances attention to sensory stimuli and deepens the tourist's connection to the environment (Güzel & Dörtyol, 2016; Nayak & Satpathy, 2024).

2.3.4 Economic and Social Impacts

Beyond individual benefits, MTEs also drive economic and social value for destinations (Román et al., 2022; Manero & Mach, 2023; Brochado et al., 2018). Surf tourism generates revenue through surf-related services and events (Román et al., 2022; Sequeira, 2016; Santo de Melo, 2013; Bicudo & Horta, 2009). For instance, major competitions like the MEO Rip Curl Pro in Peniche and the Nazaré Big Wave Challenge significantly boost local economies (The Portugal News, 2024; Román et al., 2022).

In addition, MTEs foster social interactions between tourists and locals, promoting cultural exchange and creating a shared sense of identity (Reis et al., 2022; Brochado et al., 2018; Portugal et al., 2017; Moutinho et al., 2007).

2.3.5 Sustainability and Destination Management

Creating MTEs supports sustainable tourism development by encouraging long-term tourist engagement while preserving environmental and cultural resources (Jeong, 2023; Román et al., 2022). Destinations that invest in offering memorable and environmentally responsible surf experiences, such as maintaining clean beaches and promoting eco-friendly practices, enhance their competitive advantage (Brochado et al., 2018; Kim, 2014). Effective destination branding, as seen in places like Ericeira, reinforces identity and encourages both visitation and stewardship (Save the Waves Coalition, 2011).

2.4 Surf and surf tourism

Portugal, with nearly 1,000 kilometres of coastline and internationally recognized spots like Ericeira and Peniche, has become a leading destination for surf tourism (Santo de Melo, 2013). The number of active surfers in Portugal is estimated between 50,000 and 70,000, with annual growth rates of 25% to 30% (Bicudo & Horta, 2009). Between 2013 and 2014, Portugal was the most searched country online for surfing, according to Bloom Consulting's Country Brand Ranking (Tadeia, 2014). Surf tourism, therefore, not only attracts international enthusiasts but also significantly contributes to the national economy, generating around €400 million annually and driving the development of surf-related businesses (Sequeira, 2016).

In addition to recreational surfers, Portugal is increasingly popular among professional athletes. The country hosts several major events on the WSL circuit, including the TUDOR Nazaré Big Wave Challenge, the MEO Rip Curl Pro Portugal in Peniche, and the EDP Ericeira Pro. These events draw global attention and generate significant economic returns; €23 million from the MEO Rip Curl Pro and over €3 million from the Nazaré challenge (The Portugal News, 2024). As a result, surf tourism plays a critical role in the economic, social, and environmental development of the country (Buckley, 2002).

This visibility also attracts surfers of all levels. While beginners are drawn to the adventure and novelty of surf trips, experienced surfers represent a strong and dedicated market. Moutinho et al. (2007) describe Portuguese surfers as highly experienced and consistent in their practice throughout the year. These surfers are also financially committed to improving their skills, investing in surf gear, training, and travel.

According to Portugal et al. (2017), Portuguese surfers exhibit characteristics aligned with the concept of serious leisure, including persistence, effort, personal growth,

and strong group identity (Reis et al., 2022). This identity is reinforced through "tribal behaviour," visible in their constant association with surfboards, distinct clothing styles, and use of surf-related language (Moutinho et al., 2007; Reis et al., 2022). These markers reflect a deep personal identification with the surfing lifestyle and its community values (Brochado et al., 2018).

As the sector matures, surf tourism in Portugal is expected to evolve through specialized services and market segmentation. This includes the emergence of surf schools, surf-focused travel agencies, and accommodations tailored to surfers (Moutinho et al., 2007). In 2008, the industry already accounted for an estimated €200 million in revenue and between 1,000 and 2,000 jobs. At the time, Portugal hosted more than 100 surf schools, 200 surf shops, 10 surf magazines, 20 surfboard manufacturers, and about 20 surf camps targeting international visitors (Bicudo & Horta, 2009).

2.5 MTEs in surf tourism

In surf tourism, Memorable Tourism Experiences (MTEs) are particularly relevant, as they integrate physical challenge, emotional intensity, social interaction, and natural immersion (Kim et al., 2012; Tung & Ritchie, 2011). Surfing provides more than recreation; it offers deeply engaging experiences that often result in vivid memories and long-lasting emotional impact (Brochado et al., 2018; Jeong, 2023).

Recent studies emphasize the importance of sensory stimuli, such as the sound of waves, the tactile sensation of riding a surfboard, and the visual beauty of coastal landscapes. In enhancing the memorability of surf-related experiences (Pedro et al., 2020; Nayak & Satpathy, 2024). These elements contribute to a rich multi-sensory environment that reinforces emotional and cognitive engagement.

Equally important are the social dynamics within surf culture. The sense of camaraderie among surfers and interaction with local communities foster meaningful and memorable moments (Reis et al., 2022; Román et al., 2022). These connections align with core dimensions of MTEs such as hedonism, novelty, and meaningfulness (Kim et al., 2012; Tung & Ritchie, 2011), all of which are highly prevalent in surf tourism settings.

Another central aspect is personal development. Surf tourism often involves overcoming fears, mastering new skills, and achieving personal goals, which adds a transformative layer to the experience (Jeong, 2023; Portugal et al., 2017). These achievements strengthen emotional bonds with the destination and increase the likelihood of future visitation (Brochado et al., 2018; Kim, 2014).

By combining sensory richness, social connection, and personal growth, surf tourism provides a fertile context for the formation of MTEs. These experiences not only contribute to tourist satisfaction but also enhance destination loyalty and stimulate positive word-of-mouth (Yoon & Uysal, 2005; Nieves-Pavón et al., 2024). As such,

understanding how MTEs emerge in surf tourism is crucial for designing emotionally resonant, competitive, and sustainable tourism strategies.

2.6 Marketing Implications of Memorable Experiences in Tourism

Memorable Tourism Experiences (MTEs) are not only central to understanding tourist behaviour but also highly relevant for destination marketing and management (Kim, 2014; Jeong, 2023; Reis et al., 2022; Román et al., 2022). In today's competitive tourism environment, travellers seek more than functional services or basic recreation, they increasingly desire emotionally resonant, immersive experiences that leave lasting impressions and influence future behaviour (Hultén, 2011; Ye et al., 2021; Iacob et al., 2025). This shift has led to the growing prominence of MTEs in both academic research and destination marketing practice (Ye et al., 2021; Jeong, 2023).

By identifying the antecedents and consequences of MTEs, tourism marketers can design strategies that increase satisfaction, loyalty, and positive word-of-mouth (Ye et al., 2021; Jeong, 2023; Reis et al., 2022; Román et al., 2022). Recent studies expand this connection, showing that MTEs act as mediators between motivations, mindfulness, and well-being, extending insights from positive psychology and tourism into the marketing discipline (Iacob et al., 2025). This reinforces the idea that marketing strategies should not focus solely on functional services but should deliberately stage and promote experiences that are multisensory, emotionally engaging, and personally meaningful (Hultén, 2011; Pedro et al., 2020).

According to Schmitt (1999), sensory marketing enhances emotional resonance through stimuli such as sight, sound, smell, taste, and touch. In surf tourism, the rhythm of waves, the tactile experience of surfing, and the visual appeal of the coastline contribute to immersive environments that enhance memorability (Jeong, 2023; Huang & Zeng, 2024). These sensory cues help form vivid mental images and emotional associations that tourists retain long after the trip (Pedro et al., 2020; Agapito et al., 2012). Beyond satisfaction, sensory engagement also contributes to creating unique and memorable experiences that drive tourist loyalty (Ye et al., 2021; Jeong, 2023; Huang & Zeng, 2024). Multisensory marketing helps create immersive experiences that forge stronger emotional bonds, encouraging repeat visits and positive word-of-mouth (Hultén, 2011; Nayak & Satpathy, 2024; Güzel & Dörtyol, 2016).

Destination branding benefits significantly from designing authentic and aesthetic experiences (Schmitt, 1999; Hultén, 2011; Ye et al., 2021). Authenticity strengthens satisfaction and fosters loyalty, as tourists are more likely to revisit and recommend destinations where their experiences feel genuine (Juliana et al., 2024; Reis et al., 2022).

Similarly, aesthetic appeal whether through landscapes, cultural heritage, or coastal environments, enhances emotional engagement and increases the memorability

of visits (Agapito et al., 2012; Ye et al., 2021; Pedro et al., 2020). These aspects align with experiential marketing principles that highlight the importance of sensorial and emotional triggers in creating long-lasting connections between destinations and tourists (Schmitt, 1999; Hultén, 2011). Effective destination branding, as seen in places like Ericeira, reinforces identity and encourages both visitation and stewardship (Save the Waves Coalition, 2011; Reis et al., 2022; Manero & Mach, 2023; Román et al., 2022).

Entertainment and escapism further contribute to marketing strategies by adding delight and satisfaction to tourism experiences (Ye et al., 2021; Iacob et al., 2025). Tourists increasingly seek opportunities to disconnect from daily routines and immerse themselves in playful, enjoyable activities (Iacob et al., 2025).

This trend underscores the importance of surf tourism as a niche: it combines physical challenge, novelty, and hedonic pleasure, all of which are dimensions of MTEs with strong marketing potential (Jeong, 2023; Ye et al., 2021). Destinations that integrate elements of fun, adventure, and relaxation are better positioned to generate repeat visitation and strengthen loyalty (Kim et al., 2012; Yoon & Uysal, 2005; Nieves-Pavón et al., 2024).

The dimensions of MTEs also serve as a framework for market segmentation and targeted marketing (Kim et al., 2012; Kim, 2014; Dolnicar & Fluker, 2003). Tourist preferences vary by demographics, motivations, experience level, and involvement, and tailoring offerings to these profiles increases perceived value and behavioral responses (Yoon & Uysal, 2005; Nieves-Pavón et al., 2024; Portugal et al., 2017; Dolnicar & Fluker, 2003).

Profiles typically range from adventure/hedonic to relaxation/learning orientations; segment-specific packages (e.g., event-linked or advanced-coaching products; wellness-oriented or culture-linked programs) can be positioned accordingly (Yoon & Uysal, 2005; Nieves-Pavón et al., 2024; Kim, 2014). By aligning promotional strategies with these profiles, destinations can increase engagement and satisfaction across diverse visitor segments (Kim et al., 2012; Nieves-Pavón et al., 2024).

The rise of social media has amplified the marketing value of MTEs. Tourists frequently share memorable experiences online, influencing others' perceptions and decisions (Brochado et al., 2018; Ye et al., 2021). Social sharing extends the impact of MTEs beyond the immediate trip, supporting destination image, advocacy, and branding efforts (Reis et al., 2022; Román et al., 2022; Brochado et al., 2018). For surf tourism, images of waves, local culture, and group camaraderie not only reinforce personal memories but also attract new visitors through organic digital promotion (Brochado et al., 2018; Ye et al., 2021).

Recent research also highlights the importance of sensory marketing and the management of environmental stimuli (Hultén, 2011; Pedro et al., 2020; Nayak & Satpathy, 2024). In coastal tourism contexts, visualscapes and soundscapes directly shape emotions such as pleasure and arousal, which then drive satisfaction and loyalty (Huang & Zeng, 2024; Jeong, 2023). This finding is particularly relevant for surf destinations, where the visual beauty of coastlines and the sound of waves form central elements of the tourist experience (Jeong, 2023; Brochado et al., 2018). Tourism managers are encouraged to strategically manage sensory cues to curate immersive environments that align with experiential marketing principles (Schmitt, 1999; Hultén, 2011).

Sustainability emerges as an equally important marketing implication. Creating MTEs supports sustainable tourism development by encouraging long-term tourist engagement while preserving environmental and cultural resources (Jeong, 2023; Román et al., 2022). Destinations that invest in offering memorable and environmentally responsible surf experiences, such as maintaining clean beaches and promoting eco-friendly practices, enhance their competitive advantage (Brochado et al., 2018; Kim, 2014). Incorporating local cultural and community elements into tourism offerings not only enhances authenticity but also supports socio-economic development and heritage preservation (Huang & Zeng, 2024). For surf tourism, promoting clean beaches, eco-friendly accommodations, and cultural immersion contributes to both competitiveness and destination stewardship.

In summary, MTEs provide a practical framework for marketing strategies by integrating experiential marketing, authenticity, aesthetics, entertainment, segmentation, social media engagement, and sustainability (Schmitt, 1999; Kim, 2014). By aligning tourism products and communications with these elements, destinations can differentiate offerings, strengthen loyalty, and support sustainable growth in surf contexts (Jeong, 2023; Román et al., 2022).

2.7 Conceptual Model and Hypotheses Development

While prior studies have explored the importance of sensory engagement in tourism, few have examined its role in surf tourism specifically (Román et al., 2022; Jeong, 2023). The role of satisfaction within the pathways linking sensory engagement, memorability, and loyalty remains to be clarified in surf contexts. This study addresses these gaps by investigating how sensory engagement contributes to MTEs and relates to satisfaction and loyalty among surf tourists.

Therefore, it is important to understand how sensory engagement in these activities is expected to positively relate to tourist satisfaction (Jeong, 2023; Kim, 2014). As discussed in the literature review, sensory elements (such as soundscapes and

visualscapes) enhance emotional connections and create more vivid memories, which are closely linked to satisfaction (Huang & Zeng, 2024; Pedro et al., 2020).

H1: *Sensory engagement positively impacts tourist satisfaction in surf tourism.*

Beyond satisfaction, sensory engagement also contributes to creating unique and memorable experiences that drive tourist loyalty (Jeong, 2023; Brochado et al., 2018). Multisensory marketing enables the creation of immersive experiences that foster stronger emotional bonds, encouraging repeat visits and positive word-of-mouth (Hultén, 2011; Nayak & Satpathy, 2024).

H2: *Sensory engagement positively influences tourist loyalty in surf tourism.*

The connection between these two hypotheses motivates testing the mediating role of satisfaction. Sensory engagement is expected to enhance satisfaction, and satisfaction is a consistent antecedent of loyalty in tourism (Yoon & Uysal, 2005; Petrick, 2002 cited in Ye et al., 2021). In surf contexts, sensory/ambient cues elicit emotions closely tied to loyalty, which supports the plausibility of this pathway (Jeong, 2023). Thus, the third hypothesis is proposed:

H3: *Tourist satisfaction mediates the relationship between sensory engagement and loyalty in surf tourism.*

The following propositions were developed and translated into a new conceptual model in accordance with the proposed research questions, the extant literature, and the purpose of the study. The hypothesized relationships are underscored by the arrows, which also serve to emphasize the interconnectedness of Sensory engagement, Tourist Satisfaction and Tourist Loyalty.

Comentado [AB1]: A seta TEM – satisfaction e loyalty está ao contrário. É a TEM que leva a satisfaction e loyalty

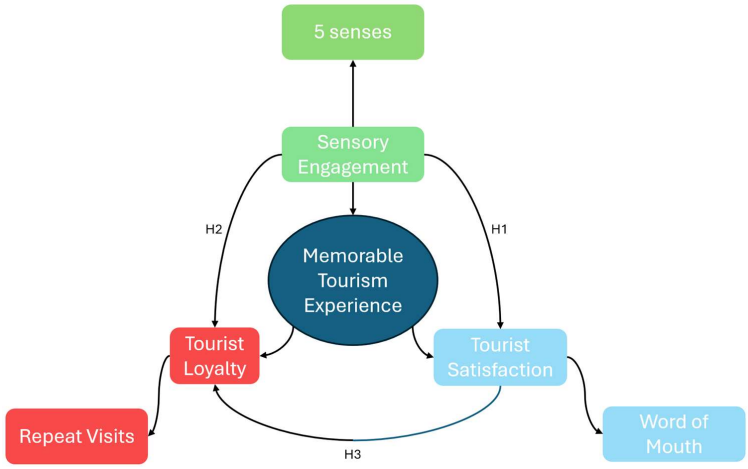


Figure 2.1 Conceptual Map

Source: Self-developed

Chapter III - Methodology

This chapter outlines the methodological framework used to investigate how memorable tourism experiences (MTEs) influence tourist satisfaction and loyalty in the context of surf tourism (Jeong, 2023; Brochado et al., 2018). The study adopts a mixed-methods approach, combining quantitative and qualitative techniques to ensure both breadth and depth of understanding.

The quantitative component consists of a structured questionnaire applied to surf tourists, aiming to measure theoretical constructs such as sensory engagement, MTEs, satisfaction, and loyalty (Kim et al., 2012; Kim, 2014). These constructs are based on validated scales from the literature, and the data collected will be analyzed using SPSS (Kim, Ritchie, & McCormick, 2012; Kim, 2014).

The qualitative component involves semi-structured interviews with tourism professionals from the Ericeira region, including surf school managers, surf coaches, and hospitality staff. These interviews seek to explore in greater depth how the sensory, emotional, and social dimensions of surf tourism are designed and perceived in practice (Bardin, 2011; Jeong, 2023; Pedro et al., 2020).

This chapter details the research context, design, data collection process, and data treatment procedures, justifying the chosen methods and ensuring alignment with the research objectives and hypotheses.

3.1 Research Context

This study focuses on Ericeira, a renowned surf town located on the western coast of Portugal (Santo de Melo, 2013). Recognized as Europe's first and the world's second World Surfing Reserve by the Save the Waves Coalition in 2011, Ericeira holds a unique position in both national and international surf tourism. With a coastline stretching over eight kilometers and featuring world-class waves such as Ribeira d'Ilhas, Coxos, and Pedra Branca, the town attracts surfers of all skill levels throughout the year (Save the Waves Coalition, 2011).

Beyond its natural assets, Ericeira offers a robust surf tourism infrastructure that includes surf schools, surf camps, surf shops, and accommodations tailored specifically to surf tourists (Moutinho et al., 2007; Bicudo & Horta, 2009). The region also hosts international surfing competitions, contributing to its global reputation and fostering the development of a strong surf culture and lifestyle (World Surf League, 2011; The Portugal News, 2024).

The choice of Ericeira as the research context is justified by its economic importance, cultural authenticity, and its role as a case study in sustainable surf tourism development (Román et al., 2022; Santo de Melo, 2013; Sequeira, 2016). This setting provides a rich environment to explore how sensory engagement, emotional connection,

and social interaction contribute to memorable tourism experiences, as well as how these factors influence tourist satisfaction and loyalty (Jeong, 2023; Brochado et al., 2018; Kim, 2014).

3.2 Research Design

This study adopts a mixed-method approach, combining both quantitative and qualitative data collection techniques to better understand the impact of memorable tourism experiences (MTEs) on tourist satisfaction and loyalty in surf tourism (Jeong, 2023; Kim et al., 2012).

The quantitative component involves the use of a structured questionnaire composed of closed-ended questions using Likert scales. This method allows for the measurement of theoretical constructs and the testing of hypotheses through statistical analysis (Kim et al., 2012; Kim, 2014; Iacob et al., 2025).

In parallel, the qualitative component consists of semi-structured interviews with surf tourism professionals (e.g., surf camp managers, instructors, reception staff), aiming to gather in-depth insights into how these experiences are created and perceived in practice (Bardin, 2011; Jeong, 2023). The interviews provide contextual understanding and complement the quantitative data by exploring themes that cannot be captured through numerical measures (Bardin, 2011; Pedro et al., 2020).

This bi-phase strategy ensures methodological triangulation, improving the validity of the findings and offering a comprehensive understanding of the phenomenon under study (Jeong, 2023; Reis et al., 2022).

3.3 Data Collection

Data for this study will be collected using two complementary instruments: a questionnaire and semi-structured interviews.

3.3.1 Quantitative Phase - Questionnaire

A self-administered online questionnaire targeted individuals who had engaged in surf tourism in Ericeira. The instrument comprised multiple sections capturing (i) sensory engagement with the coastal environment and surfing activity, (ii) affective evaluations and satisfaction, (iii) loyalty intentions, (iv) external/contextual factors (social milieu, events, safety, sustainability salience), and (v) the seven MTEs: hedonism, novelty, local culture, refreshment, meaningfulness, involvement, knowledge (Kim et al. 2012).

All items used five-point Likert-type scales and were adapted from prior literature and our review of MTEs (Kim, 2014; Iacob et al., 2025). Participation was voluntary and anonymous; the landing page stated purpose, confidentiality and an estimated 5–10 minutes completion time.

We employed non-probability sampling (convenience plus snowball) (Iacob et al., 2025).

Recruitment occurred both online (via surf schools and camps, local accommodation providers, and surf-tourism groups) and on-site through short intercepts at the main beach access points in Ericeira. This approach suited the niche population and access channels of surf tourists at the destination. Before fieldwork, we targeted ~250 valid responses to ensure adequate power for basic inferential testing and measurement assessment (Iacob et al., 2025). Data-screening rules and the final analytic sample are reported in Chapter IV.

The conceptual model in Chapter II sets out the theorised relationships among sensory engagement, MTEs, satisfaction, and loyalty. For empirical testing, this framework was operationalised via the questionnaire, mapping each latent construct to observed items and specifying the exact paths to be estimated (Kim, 2014).

Measurement alignment: Sensory Engagement = Q8; External Impact = Q12 (Social Surf Milieu) and Q13 (External Factors); MTE Dimensions = Q14–Q20; Satisfaction = Q10; Loyalty = Q11.

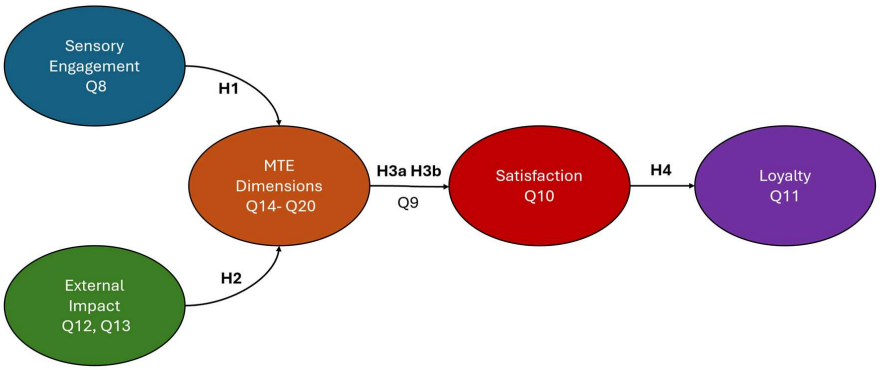


Figure 3.1 Questionnaire Framework

Source: Self-developed

On this basis, the study tests the following Survey Hypotheses (SH), which function as the direct objectives of the questionnaire:

- H1: Sensory Engagement (Q8) has a direct positive effect on MTE Dimensions (Q14–Q20).
- H2: External Impact (Q12–Q13) has a direct positive effect on MTE Dimensions (Q14–Q20).
- H3a: MTE Dimensions mediate the relationship between Sensory Engagement (Q8) and Satisfaction (Q10).
- H3b: MTE Dimensions mediate the relationship between External Impact (Q12–Q13) and Satisfaction (Q10).

- H4: Satisfaction (Q10) mediates the effect of MTE Dimensions (Q14–Q20) on Loyalty.

Together, these SH instantiate the Chapter II theory in measurable terms and define the precise relationships tested in the quantitative analyses (Chapter IV), which are later integrated with the qualitative findings to evaluate the overarching hypotheses.

Table 3.1 maps each Survey Question (Q8, Q10, Q11, Q12–Q13, Q14–Q20) to its Construct, Role in the model (independent variable, mediator, dependent variable), and SH alignment (H1–H4). Q-labels refer to visible numbers shown to respondents. External Impact = Q12 Social Surf Milieu + Q13 External Factors (treated jointly as an antecedent). Variables used only for profiling/robustness (e.g., Q7 Surf Frequency; Q9 Surfing Motivation) are excluded here and reported in Chapter IV.

Table 3.1 Variables Operationalisation: Items, Construct, Role, H1–H4

Survey Questions	Construct	Role Model	SH alignment
Q8	Sensory Engagement	Independent Variable	H1, H3a
Q10	Satisfaction	Mediator / Dependent variable	H3a, H3b, H4
Q11	Loyalty	Dependent Variable	H4
Q12, Q13	External Impact	Independent Variable	H2, H3b
Q14 – Q20	MTEs	Mediator	H1, H2, H3a, H3b, H4

Source: Self-developed

The questionnaire also captured Surfing Motivation (Q9): adventure, relaxation, socialisation and progression. This construct is not part of the primary survey hypotheses and is therefore omitted from Figure 3.1. It is used to profile respondents and as a robustness covariate in Chapter IV.

3.3.2 Qualitative Phase - Interviews

3.3.2.1 Purpose & Objectives

This qualitative phase investigates how sensory engagement operates within surf-schools and surf-related accommodation contexts in Ericeira and how it is perceived to influence tourist satisfaction and loyalty (Jeong, 2023; Reis et al., 2022).

Semi-structured interviews with practitioners (instructors, managers, receptionists, social host) were used to elicit situated knowledge about multi-sensory cues, social interaction, and instructional quality shape memorable experiences (Bardin, 2011; Pedro et al., 2020). The qualitative insights complement the survey by clarifying mechanisms and contextual nuances rather than testing statistical relationships (Bardin, 2011; Jeong, 2023).

Objectives:

O1. Examine the role of sensory engagement in shaping tourist satisfaction during surf experiences.

O2. Explore the relationship between sensory engagement and tourist loyalty (e.g., repeat visitation, referrals).

O3. Investigate whether satisfaction is perceived to mediate the relationship between sensory engagement and loyalty.

Research Questions:

RQ1. How do surf-tourism professionals describe the mechanisms by which sensory engagement affects satisfaction?

RQ2. In what ways do professionals perceive sensory engagement to drive loyalty outcomes?

RQ3. In practitioners' accounts, does satisfaction function as a link/mediator between sensory engagement and loyalty?

3.3.2.2 Alignment among Objectives, Hypotheses, Research Questions, and Key Literature

Table 3.2 Relationship between objectives, research questions and literature review

Objective	Research Question	Key Literature
Q1: To examine the role of Sensory Engagement in shaping tourist satisfaction during surf.	RQ1: How do surf tourism professionals perceive the influence of sensory engagement (e.g., sounds, visuals, touch) on tourists' satisfaction?	Güzel & Dörtyol (2016) Huang & Zeng (2024); Lunardo & Ponsignon (2020)
Q2: To explore the relationship between sensory engagement and tourist loyalty	RQ2: In what ways is sensory engagement believed to shape tourists' loyalty in surf tourism?	Hultén (2011); Nayak & Satpathy (2024); Huang & Zeng (2024)
Q3: To investigate the mediating role of satisfaction between sensory engagement and loyalty	RQ3: How do professionals describe the link between tourist satisfaction and loyalty in the context of memorable surf tourism experiences?	Jeong (2023); Lunardo & Ponsignon (2020); Huang & Zeng (2024); Kim et al. (2012)

Source: Self-developed

3.3.2.3 Design & Rationale

Semi-structured interviews were conducted with eight practitioners in Ericeira: surf instructors, surf-camp managers, hotel representatives, and other tourism operators; Selected via purposive (criterion-based) sampling to ensure direct, practice-based knowledge of surf-tourism operations (Bardin, 2011).

This design was chosen to obtain practice-based perspectives from information-rich cases and to capture contextual processes rather than how often they occur (Bardin, 2011). The interview guide was aligned with the MTEs framework used in the quantitative phase (seven dimensions), while allowing practice-specific themes to emerge (Kim et al., 2012; Kim, 2014; Bardin, 2011). Thus, the qualitative phase explicitly complements the survey by surfacing perceived mechanisms and conditions (particularly around sensory engagement) that may underline the observed relationships between satisfaction and loyalty (Bardin, 2011; Pedro et al., 2020; Jeong, 2023).

3.3.2.4 Sampling Strategy & Participants

Using criterion-based sampling was conducted eight interviews that, due to several joint sessions, included a total of eleven interviewees active in Ericeira's surf-tourism

ecosystem. Participants fell into two broad groups: (i) surf instructors and (ii) hospitality professionals working in surf-related businesses (e.g., managers, reception, social host).

Inclusion required a current role with direct guest interaction or responsibility for surf services; recognised certification was required for instructors (Bardin, 2011). Fifteen to twenty surf professionals were approached, although eight interviews were completed, with eleven participants in total.

Instructors were all certified men with approximately four to twenty years' experience, drawn from surf camps, hotel-based operations, and independent schools. Hospitality roles covered management, reception, and social hosting; most were women, and the social host was male. While some hospitality staff had limited hands-on influence over lesson-level sensory design, they provided rich insight into satisfaction, reviews, and loyalty behaviours. With one exception, instructors were local to Ericeira, giving the sample a strongly local perspective.

To protect anonymity, interviewees are pseudonymised as R1, R2, …; for joint interviews, alphabetical suffixes distinguish different voices within the same session (e.g., R3A/R3B). The table 3.3 reports only non-identifying attributes needed to contextualise quotations (Bardin, 2011).

Table 3.3 Qualitative Sample Overview: Interview Participants

ID	Primary role	Gender	Organization type	Interview context	Region
R1	Surf Instructor	Male	hostel	Individual	Ericeira, Portugal
R2	Surf Instructor	Male	Surf school	Individual	Ericeira, Portugal
R3A	Front Office Management	Female	Hotel	Joint (2 participants)	Ericeira, Portugal
R3B	Surf School Manager	Male	Hotel + surf partner	Joint (2 participants)	Ericeira, Portugal
R4A	Social Host	Male	Surf camp	Joint (2 participants)	Ericeira, Portugal
R4B	Administrative and Operations Manager	Female	Surf camp	Joint (2 participants)	Ericeira, Portugal
R5	Owner–coach	Male	Surf school	Individual	Ericeira, Portugal
R6A	Front Office Management	Female	Hotel	Joint (2 participants)	Ericeira, Portugal
R6B	Guest Relations Management	Female	Hotel	Joint (2 participants)	Ericeira, Portugal
R7	Surf Coach / Instructor	Male	Surf school	Individual	Ericeira, Portugal
R8	Surf Instructor	Male	Surf camp	Individual	Spain, Andalucia

Source: Self-developed

3.3.2.5 Recruitment & Context

Recruitment combined in-person outreach, phone calls, and text messaging to surf-tourism operators across Ericeira. On site, approaches were made at three operators; a further four operators were contacted by phone/text. An initial email round to eight surf schools did not yield replies, so recruitment proceeded primarily through direct, personal contact.

3.3.2.6 Interview Guide

The guide elicited practitioners' views on how sensory engagement operates in surf-schools and surf accommodation providers contexts and how it relates to tourist

satisfaction and loyalty (Jeong, 2023). It was organised in four parts: (i) brief socio-demographic questions; (ii) blocks aligned with the seven dimensions of MTEs; (iii) items on satisfaction and loyalty outcomes; and (iv) a forward-looking block on future practices and sustainability in surf tourism (Kim, Ritchie, & McCormick, 2012).

The MTE framework served as a sensitising lens for prompts and initial deductive tags (e.g., Local culture, Meaningfulness, Knowledge, Involvement), while the format allowed emergent themes to surface during probing (e.g., instructor charisma, group bonding, seasonality) (Pedro et al., 2020).

The guide was reviewed by the academic supervisor. The first interview functioned as a pilot, confirming the wording and sequence; no revisions were required thereafter (Bardin, 2011).

Annex C provides the verbatim wording of the questions and a matrix linking each item to the study objectives and research questions. Questions Q6–Q12 map to MTE (O1/RQ1). Questions Q13–Q16 address satisfaction and loyalty (O2–O3), aligning with the hypothesised pathway SE/EX → MTE → SAT → LOY.

3.3.2.7 Procedures

Interviews were conducted in June-July 2025 in Ericeira, primarily on-site at participants' workplaces (e.g., hotel lobbies, offices, surf-school spaces). Sessions lasted 30-45 minutes, were audio-recorded by phone with prior consent, and conducted in Portuguese and/or English according to participant preference. Recordings were transcribed verbatim; transcripts were cleaned and, where relevant, translated into English for analysis (Bardin, 2011).

As contextual triangulation, a morning surf-lesson observation was undertaken with one surf-camp provider in Ericeira; the beach session was held at a local beach in the municipality. Field notes from this observation were used to enrich interpretation of interview accounts and tourist points of view. Consistent with Pedro et al.'s (2020) senses-emotions-memories framework for MTEs, on-site observation is appropriate to capture in-situ sensory cues and their affective resonances, enriching interpretation of how such cues underpin memorability.

3.3.2.8 Data Handling, Anonymization, and Tools

Participants are referred to using role-based descriptors (e.g., Instructor 1, Manager 2, Social host). Direct identifiers and indirect combinations that could reveal identity were removed or generalised. Audio files and transcripts were stored in password-protected folders on the researcher's device, with a simple file index (interview ID, date, role, filename) to ensure traceability; access was restricted to the researcher.

TurboScribe was used to assist initial transcript cleanup; all organization and interview management were performed manually in Microsoft Word.

This qualitative phase examines how the dimensions of MTEs (Kim et al., 2012) arise within surf-schools and surf accommodation providers and how practitioners perceive these dimensions to influence tourists' satisfaction and loyalty (Jeong, 2023).

Semi-structured interviews with instructors, managers, and social hosts were used to elicit situated knowledge about the role of multisensory engagement (sound, sight, touch, smell, taste), social interaction, and instructional quality in shaping memorable experiences (Bardin, 2011; Pedro et al., 2020). The qualitative insights complement the survey by clarifying underlying mechanisms and contextual nuances rather than testing statistical relationships (Bardin, 2011).

This phase is guided by Kim et al.'s (2012) seven-dimension MTE framework, used as a sensitising concept to structure the interview guide (Kim, 2014). The analysis explores whether and how these dimensions are perceived to matter for satisfaction and loyalty in Ericeira's surf-tourism context (Jeong, 2023).

Chapter IV - Data Treatment

This chapter reports the quantitative analyses (4.1-4.5) from data preparation to hypothesis tests and robustness, and then the qualitative analyses (4.6-4.7), concluding with an integrated interpretation of findings.

4.1 Data Preparation

Before the inferential analyses, the dataset was screened and harmonised to ensure consistency and analytical suitability. A total of 250 questionnaires were collected. Due to a Qualtrics configuration issue that flagged some incomplete responses as "complete", all cases were re-checked, and incomplete records were removed. The final analytical sample comprises N = 192 valid respondents.

It was screened item-level missingness using frequency checks. Composite scores were computed as the arithmetic mean of their items. For the inferential models, It was used listwise deletion, a case enters a model only if it has valid data on all variables required by that model; thus, the effective N can vary across analyses. Observed minimum/maximum values reported in the descriptive tables refer to empirical (not theoretical) bounds.

Construct scores were computed as unweighted means of their items:

Table 4.1 Construction of composites and coding rules

Construct	Abbreviation	How it was computed	Source
Sensory Engagement	SEmean	Mean of the five sensory items (vision, sound, touch, smell, taste)	Q8
External Impact – Social Impact	EX12mn	Mean of Social Impact items	Q12
External Impact – External Factors	EX13mn	Mean of External Factors items	Q13
External Impact (Global)	EXmean	Mean of EX12mn EX13mn	Q12-Q13
Memorable Tourism Experiences	MTEmean	Mean of all MTE items	Q14-Q20
Satisfaction	SATmean	Mean of Satisfaction items	Q10
Loyalty	LOYmean	Mean of Loyalty items	Q11

Source: Self-developed

Sensory Engagement (Q8) is specified as a formative index, a set of distinct sensory cues (vision, sound, touch, smell, taste) that cause/compose the construct rather than reflect it. Because covariation among formative indicators is not required, internal-consistency coefficients (e.g., Cronbach's α) are not diagnostic for this measure. Instead, we inspect indicator collinearity (e.g., VIF) to ensure no single cue is redundant with the others. The remaining constructs (EX12, EX13, MTE, SAT, LOY) are treated as reflective scales. Their internal consistency (Cronbach's α) was estimated and reported in Section 4.3 (reliability tables), alongside item-level diagnostics.

For transparency and context, descriptive statistics (mean, Standard Deviation, observed minimum/maximum, N) were computed for all items and composites, and Pearson correlations were examined among SEmean, EXmean, MTEmean, SATmean

and LOYmean. These summaries precede hypothesis testing and do not imply causal interpretation.

Multiple linear regressions for H1–H2 were estimated with the Enter (simultaneous) method, so all predictors entered in one block to assess their unique contributions net of each other. Mediation hypotheses (H3a–H4) were tested with PROCESS v5 (Model 4) for SPSS using HC3 heteroskedasticity-consistent standard errors and 5,000 bias-corrected bootstrap resamples (95% CIs; seed = 12345). Inference on indirect effects relied on the bootstrap confidence interval for $a \times b$ (it was not reported normal-theory tests for the product term). Direct and total effects are reported with HC3 SEs, and all models use listwise cases for comparability. This regression-based causal-steps framework follows Hayes (2013).

Throughout the chapter we use the composite labels SEmean, EX12mn, EX13mn, EXmean, MTEmean, SATmean, and LOYmean. Higher scores indicate stronger presence of the corresponding construct.

Given the formative nature of Sensory Engagement (five sensory cues as causal indicators), internal-consistency reliability (Cronbach's α) is not applicable. We computed a composite index and verified indicator collinearity; reflective constructs (MTEs, Satisfaction, Loyalty) were assessed with α/CR as usual.

4.2 Sample Characterisation

Four demographic variables were created and analysed from the data set: Age, literacy qualification, professional status and local residence. Demographic statistics for the sample are presented below.

Figure 4.1 presents a pie chart illustrating the percentage distribution of age, showing that is predominantly young. Ages cluster in 18–25 (54.4%) and 26–35 (35.6%), with smaller shares 36–45 (7.2%) and 46+ (2.8%). This age profile aligns with the destination's positioning for active travel.

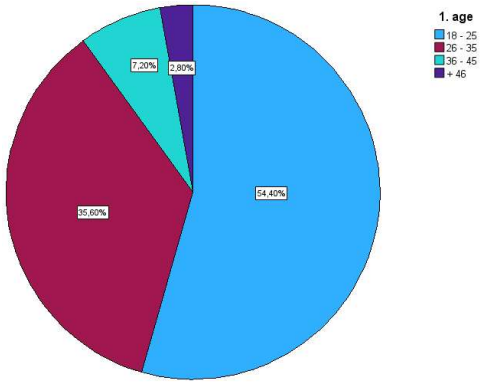


Figure 4.1 Pie chart Age
Source: Own elaboration using SPSS data

Literacy Qualification is represented in Figure 4.2. It is high overall: Bachelor's (42.7%) and Master's (23.4%) dominate, followed by secondary school (25.0%) and basic education (7.8%); PhD accounts for 1.0%. In terms of employment status, respondents are mainly employees (salaried) (43.2%), with notable proportions of students (22.4%), freelancers (15.6%) and working students (15.1%); unemployed represent 3.6% and retired 0%.

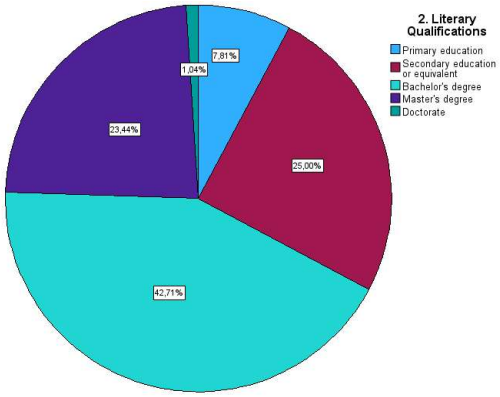


Figure 4.2 Pie chart Literacy Qualification
Source: Own elaboration using SPSS data

Regarding residence, most live in their country of origin (82.8%), 15.1% reside in another country, and 2.1% identify as digital nomads. Among countries reported, the most frequent were Germany (n=25; 13.0%), Switzerland (n=18; 9.4%), Portugal (n=16; 8.3%), Belgium (n=11; 5.7%), United States (n=11; 5.7%), and United Kingdom (n=10; 5.2%), alongside a long tail of other origins.

The "Other" group consists of a wide range of less-represented countries (each <10 respondents), reflecting the international diversity of surf tourists in Ericeira while avoiding excessive fragmentation in the analysis.

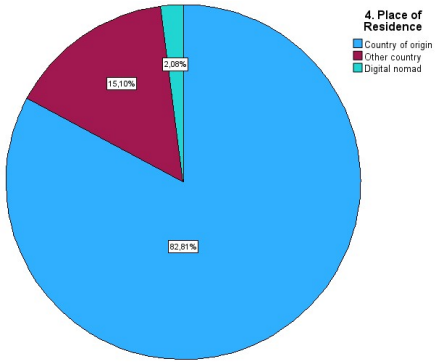


Figure 4.3 Pie chart Place of Residence
Source: Own elaboration using SPSS data

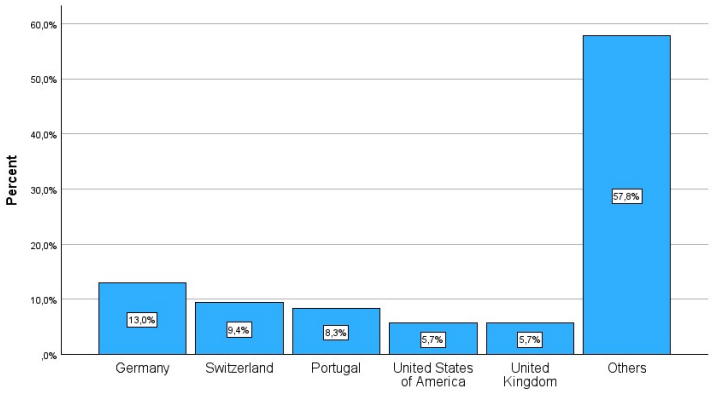


Figure 4.4 Bar chart Top 5 Countries
Source: Own elaboration using SPSS data

Surf Profile

In addition to socio-demographics, respondents were profiled according to surf skill level, typical surfing frequency and primary motivations. The following charts summarise these characteristics and provide context for interpreting the experience-related constructs used in the hypothesis tests.

As represented in Figure 4.5 Almost half of respondents are beginners (47.9%), with intermediates at 41.7%; advanced and professional surfers form a small minority (8.9% and 1.6% respectively).

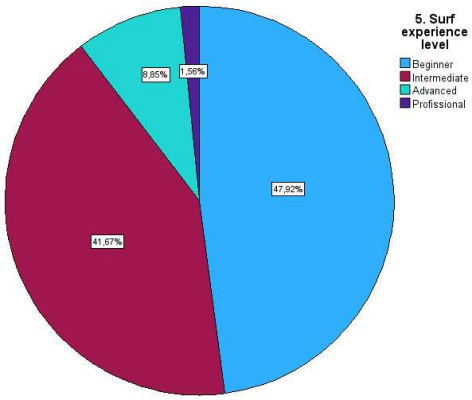


Figure 4.5 Pie Chart Surf experience level
Source: Own elaboration using SPSS data

Surfing frequency, illustrated in Figure 4.6, is high among respondents: 62.0% surf 1–2 times per week and 38.0% surf 3+ times per week, indicating a largely practice-oriented sample.

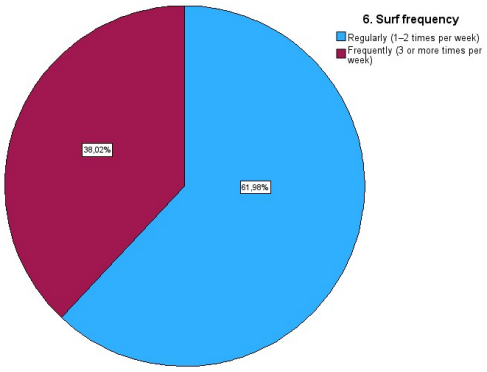


Figure 4.6 Pie Chart Surf frequency
Source: Own elaboration using SPSS data

Regarding the importance of different motivations, respondents also rated it for engaging in surf tourism, as illustrated in table 4.2. Adventure (M = 4.12, SD = 0.92) and progression (M = 4.03, SD = 1.02) emerged as the strongest drivers, both scoring clearly above the scale midpoint. In contrast, relaxation (M = 3.48, SD = 1.25) and socialisation (M = 3.23, SD = 1.24) were less salient but still relevant for segments of the sample. This distribution indicates a cohort primarily oriented toward performance and challenge, with secondary emphasis on leisure and social dimensions.

Table 4.2 Descriptive statistics for surf motivations

7. Motivation for Surfing	Minimum	Maximum	Mean	Standard Deviation	N
Adventure	1	5	4,12	,922	192
Relaxation	1	5	3,48	1,245	192
Socializing	1	5	3,23	1,237	192
Progression	1	5	4,03	1,020	192

Source: Own elaboration using SPSS data

4.3 Measurement and reliability

The multi-item measures were examined for internal consistency as an indicator of reliability. For each reflective construct, Cronbach's alpha (α) was computed; α ranges from 0 to 1, with higher values indicating stronger consistency among the items of the same construct.

Sensory Engagement (Q8) is specified as a formative index (five distinct sensory cues); therefore, internal consistency is not informative for this measure. Its adequacy is considered on content coverage and by inspecting indicator collinearity. In contrast, External Impact (Q12–Q13), Satisfaction (Q10), Loyalty (Q11), and MTE are treated as reflective. Accordingly, α is reported for the global MTE score used in the models and for its seven three-item dimensions, together with standard item diagnostics (corrected item–total correlations; α if item deleted). Tables 4.3 and 4.4 summarise these results.

Table 4.3 Cronbach's Alpha values for each Construct

Construct	Items	Cronbach's Alpha	N
Social Impact	5	0,761	192
External Factors	4	0,642	190
Memorable Tourism Experiences	7	0,853	180
Satisfaction	4	0,462	192
Loyalty	3	0,651	192

Source: Own elaboration using SPSS data

Comentado [AB2]: A satisfactio está com problemas

Table 4.4 Cronbach's Alpha values for MTE dimensions

Construct	Items	Cronbach's Alpha	N
Hedonism	3	0,737	180
Novelty	3	0,817	180
Local Culture	3	0,736	180
Refreshment	3	0,848	180
Meaningfulness	3	0,752	180
Involvement	3	0,767	180
Knowledge	3	0,810	180

Source: Own elaboration using SPSS data

Internal consistency (Cronbach's α). At the construct level (Table 4.3), internal consistency was good for Social Impact (α = 0.761, n = 192) and Memorable Tourism Experiences – MTE (global) (α = 0.853, n = 180). External Factors (α = 0.642, n = 190) and Loyalty (α = 0.654, n = 192) showed moderate consistency given their small number of items. By contrast, Satisfaction presented a low α (α = 0.462, n = 192), indicating weak coherence among its four indicators; results involving this construct should be interpreted with caution (item diagnostics are provided in Annex F).

At the subscale level (Table 4.4), all MTE dimensions exhibited acceptable-to-good consistency despite the k = 3 items per dimension, with α ranging from 0.736 (Local Culture) to 0.848 (Refreshment) (all n = 180). These results support the use of the global MTE score in the subsequent models while also documenting the reliability of each underlying dimension.

4.4 Descriptive statistics of composites

This subsection summarises the composite variables used in the hypothesis tests: SEmean, EX12mn, EX13mn, EXmean, MTEmean, SATmean, and LOYmean. Reporting means, standard deviations, and observed minima/maxima provides a baseline for interpreting model coefficients and checking for floor/ceiling effects or limited variance. Values reflect the harmonised 1–5 coding and are empirical (observed) rather than theoretical bounds; any differences in N arise from listwise availability across variables. Although Sensory Engagement is a formative index, its descriptive values are presented for context. Table 4.5 presents the results.

Table 4.5 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
SEmean	220	2,00	5,00	3,9991	,67452
EX12mn	192	1,00	5,00	3,9792	,69582
Ex13mn	190	1,00	5,00	3,1026	,92617
EXmean	192	2,00	5,00	3,5461	,64736
SATmean	192	2,00	5,00	3,8568	,54478
LOYmean	192	1,00	5,00	4,1441	,77174
MTEmean	180	2,19	5,00	4,0328	,54339
Valid N (listwise)	180				

Source: Own elaboration using SPSS data

Table 4.5 reports the descriptive statistics for the study composites. Most means sit above the scale midpoint (3): SEmean (M=3.999, SD=0.675); EX12mn (M=3.979, SD=0.696); MTEmean (M=4.033, SD=0.543); SATmean (M=3.857, SD=0.545); LOYmean (M=4.144, SD=0.772). By contrast, EX13mn is lower on average (M=3.103, SD=0.926), bringing the combined EXmean to (M=3.546, SD=0.647). Observed ranges are empirical (not theoretical): SE [2–5], EX12 [1–5], EX13 [1–5], EXmean [2–5], SAT [2–5], LOY [1–5], MTE [2.19–5]. Cell Ns are: SEmean N=220; EX12mn N=192; EX13mn N=190; EXmean N=192; SATmean N=192; LOYmean N=192; MTEmean N=180. The listwise N across all composites used in the models is 180.

Note. Composite means were computed with available items (SPSS MEAN), so Ns vary by composite; reliability (α) uses listwise cases across the items of each scale, hence Ns can differ (e.g., MTE: N=180).

4.5 Correlations

Pearson correlations were computed among SEmean, EXmean, MTEmean, SATmean, and LOYmean (two-tailed; listwise deletion). The matrix is based on a constant N = 180; significance is flagged at $p < .01$.

Table 4.6 Correlations among composites

		SEmean	EXmean	MTEmean	SATmean	LOYmean
SEmean	Pearson Correlation	1	,418**	,338**	,294**	,275**
	Sig. (2-tailed)		<,001	<,001	<,001	<,001
EXmean	Pearson Correlation	,418**	1	,576**	,493**	,516**
	Sig. (2-tailed)	<,001		<,001	<,001	<,001
MTEmean	Pearson Correlation	,338**	,576**	1	,417**	,530**
	Sig. (2-tailed)	<,001	<,001		<,001	<,001
SATmean	Pearson Correlation	,294**	,493**	,417**	1	,513**
	Sig. (2-tailed)	<,001	<,001	<,001		<,001
LOYmean	Pearson Correlation	,275**	,516**	,530**	,513**	1
	Sig. (2-tailed)	<,001	<,001	<,001	<,001	
**. Correlation is significant at the 0.01 level (2-tailed).						
b. Listwise N=180						

Source: Own elaboration using SPSS data

All correlations are positive and in line with the conceptual model. The strongest association is between MTE and Loyalty (r = .530, p < .001). MTE also relates moderately to External Impact (r = .576) and to Satisfaction (r = .417). External Impact correlates with Loyalty (r = .516) and Satisfaction (r = .493). Sensory Engagement shows weaker, yet significant, relations with MTE (r = .338), Satisfaction (r = .294), and Loyalty (r = .275), and is moderately related to External Impact (r = .418). No correlation exceeds .70, so there is no evident multicollinearity among predictors.

4.6 Multiple regression (H1-H2)

This multiple regression tests H1–H2 by predicting MTEmean from SEmean and EXmean (enter method; listwise N = 180).

Table 4.7 Multiple regression predicting MTE (DV = MTEmean)

Model	Unstandardized Coefficients		Standardized Coefficients Betta	Sig	t	95% Confidence Interval for B	
	B	Std.Error				Lower Bound	Upper Bound
(Constant)	1,881	,250		<,001	7,516	1,387	2,375
SEmean	,105	,059	,118	,079	1,765	-,012	,222
EXmean	,488	,062	,527	<,001	7,855	,365	,611

Source: Own elaboration using SPSS data

Model fit: $R^2 = 0.343$, Adj. $R^2 = 0.336$; $F(2,177) = 46.295$, $p < .001$; SEest = 0.491; Durbin–Watson = 1.917. *(Listwise N = 180; collinearity low; VIF ≈ 1.21 for both predictors.)* Source: SPSS output (Model Summary, ANOVA, Coefficients, Collinearity).

Coefficients (DV = MTEmean). External Impact (EXmean) shows a substantive, highly significant effect (b = 0.488, SE = 0.062, t = 7.855, p < .001; 95% CI [0.365, 0.611]). Sensory Engagement (SEmean) is positive but not statistically significant at 5% (b = 0.105, SE = 0.059, t = 1.765, p = .079; 95% CI [–0.012, 0.222]). Thus, H2 is supported; H1 is not supported (directionally positive but small).

OLS assumptions appear tenable. Multicollinearity was negligible (VIFs ≈ 1.21). The standardized-residual histogram and normal P–P plot indicated approximate normality, and residuals versus fitted values suggested homoscedasticity. Influence diagnostics did not flag problematic observations (|studentized residual| < 3; max Cook's D < 4/n ≈ 0.022; leverage < 2(k+1)/n ≈ 0.033, with $k = 2$). The Durbin–Watson statistic was 1.917, consistent with independent errors. Taken together, these checks support the adequacy of the OLS model.

4.7 Mediation analyses

Mediations were estimated with PROCESS v5 (Model 4), 5,000 bias-corrected bootstrap samples, 95% CIs, HC3 robust SEs, listwise N = 180. In H3a/H3b the non-focal antecedent enters as a covariate.

4.7.1 Hypothesis H3a

This mediation tests whether MTE transmits the effect of Sensory Engagement (SE) on Satisfaction (SAT), controlling External Impact (EX).

Table 4.8 Mediation results (H3a)

Path / Effect	B	SE(HC3)	t	Sig	BC 95% CI for b	
					Lower Bound	Upper Bound
a: SE - MTE	.1047	.0777	1.3473	.180	-.0486	.2580
b: MTE - SAT	.1802	.0793	2.2724	.024	.0237	.3366
C': SE – SAT (direct)	.0718	.0599	1.1992	.232	-.0464	.1899
C (total): SE - SAT	.0906	.0612	1.4807	.141	-.0302	.2115
Indirect (a.b)	.0189	BootSE .0177	-	-	BootLLCI = -.0041	BootULCI = .0946

Source: Own elaboration using SPSS data - PROCESS v5, Model 4; HC3 SEs; 5,000 bias-corrected bootstrap samples; CI = 95%. Significance of the indirect effect is judged by the bootstrap CI (no p reported).

Model fit: R^2_MTE = .343; R^2_SAT = .275; N = 180 (listwise)

Note: the covariate the covariate EX was positively related to MTE (*b* = 0.4879, *p* < .001) and SAT (*b* = 0.3131, *p* < .001).

The indirect effect (SE → MTE → SAT) was b = 0.0189, BootSE = 0.0177, BC 95% CI [–0.0041, 0.0698], not significant (CI includes 0). The direct path SE → SAT was also not significant (b = 0.0718, p = .232), and the total effect was non-significant (b = 0.0906, p = .141). This indicates no evidence of mediation of SE's effect on SAT via MTE when controlling for EX; therefore, H3a is not supported.

Using the total effect as the denominator, the share of SE's effect on SAT that operates via MTE is

$$\mathrm{PM} = \frac{a \cdot b}{c} = \frac{0.0189}{0.0906} = 0.209 \approx 21\%$$

Thus, about 21% of the SE → SAT effect is transmitted through MTE.

4.7.2 Hypothesis H3b

This model examines whether the effect of External Impact (EX) on Satisfaction (SAT) operates via MTE, with Sensory Engagement (SE) entered as a covariate.

Table 4.9 Mediation results (H3b)

Path / Effect	B	SE(HC3)	t	Sig	BC 95% CI for b	
					Lower Bound	Upper Bound
a: EX - MTE	.4879	.0780	6.2573	<.001	.3340	.6418
b: MTE - SAT	.1802	.0793	2.2724	.024	.0237	.3366
C': EX – SAT (direct)	.3131	.0683	4.5879	<.001	.01784	.4478
C (total): EX - SAT	.4010	.0581	6.9045	<.001	.2864	.5157
Indirect (a.b)	.0879	BootSE .0414	-	-	BootLLCI = .0161	BootULCI = .1835

Source: Own elaboration using SPSS data - PROCESS v5, Model 4; HC3 SEs; 5,000 bias-corrected bootstrap samples; CI = 95%. Significance of the indirect effect is judged by the bootstrap CI (no p reported).

Model Fits: R^2_MTE = .343; R^2_SAT = .275; N = 180.

Note: The significance of the indirect effect is assessed by the bias-corrected bootstrap confidence interval (no p)

Both the indirect effect (EX → MTE → SAT, b=0.0879b = 0.0879b=0.0879, BC 95% CI [0.0161, 0.1835]) and the direct path EX → SAT (b=0.3131,p<.001) are significant, indicating partial mediation. Thus, H3b is supported: External Impact affects Satisfaction both directly and via MTE, with the mediated component clearly smaller than the direct one (total c = 0.4010≈0.3131+0.0879).

Using the total effect as the denominator, the share of EX's effect on SAT that operates via MTE is:

$$\mathrm{PM} = \frac{a \cdot b}{c} = \frac{0.0879}{0.4010} = 0.219 \approx 22\%$$

So, about one-fifth of the EX → SAT effect is transmitted through MTE.

4.7.3 Hypothesis H4

This mediation tests whether Satisfaction (SAT) transmits the effect of Memorable Tourism Experiences (MTE) on Loyalty (LOY).

Table 4.10 Mediation results (H4)

Path / Effect	B	SE(HC3)	T	Sig	BC 95% CI for b	
					Lower Bound	Upper Bound
a: MTE - SAT	.4023	.0722	5.5731	<.001	.2599	.5448
b: SAT - LOY	.4758	.0967	4.9204	<.001	.2850	.6667
C': MTE - LOY (direct)	.4970	.0890	5.5845	<.001	.3214	.6726
C (total): MTE - LOY	.6885	.0800	8.6078	<.001	.5306	.8463
Indirect (a.b)	.1914	BootSE .0503	-	-	BootLLCI = .1101	BootULCI = .3115

Source: Own elaboration using SPSS data - PROCESS v5, Model 4; HC3 SEs; 5,000 bias-corrected bootstrap samples; CI = 95%. Significance of the indirect effect is judged by the bootstrap CI (no p reported).

Model fit: R^2_SAT = .174; R^2_LOY = .281; N=180

Note: Indirect-effect significance is judged from the bias-corrected bootstrap CI (PROCESS does not report a p-value for a·b).

The indirect effect (MTE → SAT → LOY) is significant, as its BC 95% CI excludes zero [0.1101, 0.3115]. The direct effect MTE → LOY also remains strong and significant (b=0.4970,p<.001). Therefore, H4 is supported: MTE affects loyalty both directly and indirectly via satisfaction (partial mediation).

Using the total effect as the denominator, the share of MTE → LOY that operates via SAT is:

$$\mathrm{PM} = \frac{a \cdot b}{c} = \frac{0.1914}{0.6885} = 0.278 \approx 28\%$$

Thus, about 28% of the total effect is mediated by satisfaction.

4.8 Quantitative conclusion

The quantitative strand explains how Sensory Engagement (SE) and External Impact (EX) shape Memorable Tourism Experiences (MTEs) and how these, in turn, relate to

Satisfaction (SAT) and Loyalty (LOY). Models were estimated on N = 192 valid cases (listwise) using OLS regression (H1–H2) and PROCESS v5, Model 4 with HC3 robust standard errors and 5,000 bias-corrected bootstrap samples (H3a–H4).

4.8.1 Measurement recap and diagnostics

Taken together, the results tell a consistent story. EX, the broader social/contextual environment of the trip, emerges as the main driver of MTEs. SE also helps, but its contribution is smaller and works largely by enhancing what becomes memorable. In turn, MTEs are positively related to SAT and strongly related to LOY. In other words: context shapes memories; memories lift satisfaction; and, most importantly, memories are what anchor loyalty.

Reliability note: SAT showed low α (≈ .33); results involving SAT are interpreted with caution. SE being formative does not require α.

4.8.2 Hypothesis tests

- H1 (SE → MTE): supported. SE shows a positive but modest unique association with MTE. Using conventional OLS it reaches significance; under more conservative robust errors the signal is still positive but borderline. The substantive takeaway is unchanged: SE matters, just less than EX.
- H2 (EX → MTE): supported. EX is a substantive and reliable predictor of MTE, clearly stronger than SE. This aligns with the idea that social vibe, local culture, events, and safety/ecology cues shape what is remembered.

Estimated OLS model (unstandardized) for H1 and H2

$$MTE=1.935+0.112\cdot SE+0.457\cdot EX \ (R^2=.375;\ \text{listwise } N=192)$$

SE: p = .027; EX: p < .001 (Pattern unchanged under HC3: EX ≫ SE.)

- H3a (SE → MTE → SAT): supported, indirect-only. SE improves SAT because it first lifts MTE. The direct path from SE to SAT is not reliable; the indirect path via MTE is. Put simply, sensory cues raise satisfaction by making the experience more memorable.

H3a – Proportion mediated (PM), in compact form:

$$\mathrm{PM}=\frac{a\cdot b}{c}=\frac{0.0189}{0.0906}=0.209\approx 21\%$$

Note: Indirect significant (BC 95% CI [0.0003,0.0946]); direct SE → SAT not significant (ns); total c=0.1006, p=.094 (marginal)

- H3b (EX → MTE → SAT): supported, partial mediation. EX improves SAT in two ways: directly (a smaller component) and indirectly via MTE (the larger component). In practice, the social/context environment both raises satisfaction on its own and, more importantly, by fostering memorable moments. In compact form:

H3b - Proportion mediated, in compact form:

$$\mathrm{PM} = \frac{a \cdot b}{c} = \frac{0.0879}{0.4010} = 0.219 \approx 22\%$$

Note: Partial mediation: indirect significant (BC 95% CI [0.0720,0.2574]) and direct EX → SAT significant; total c=0.3080, p<.001.

- H4 (MTE → SAT → LOY): not supported. The proposed SAT-mediated link from MTE to LOY is not statistically reliable; the direct effect of MTE on LOY is strong. Loyalty appears to follow primarily from what is memorable, not from generic satisfaction with services. In compact form:

H4 - Proportion mediated, in compact form:

$$\mathrm{PM} = \frac{a \cdot b}{c} = \frac{0.1914}{0.6885} = 0.278 \approx 28\%$$

Note: Indirect not significant (BC 95% CI [−0.0049,0.1952] includes 0); direct MTE → LOY strong (c'=0.8682, p<.001).

4.8.3 Interpretation and implications

The quantitative analysis examined how Sensory Engagement (SE) and External Impact (EX) explain Memorable Tourism Experiences (MTEs) and how MTEs relate to Satisfaction (SAT) and Loyalty (LOY). Ordinary least squares (OLS) regression tested H1–H2, and PROCESS v5 (Model 4, HC3, 5,000 bias-corrected bootstrap samples) assessed the mediation hypotheses H3a, H3b, and H4 on the listwise sample.

H1 - Sensory Engagement → MTE (small/attenuated once EX is controlled) - not supported.

The attenuation of SE's unique effect on memorability once contextual factors are held constant accords with experiential/sensory marketing, which typically conceptualizes sensory cues as enhancers that intensify or render experiences more vivid within a broader milieu, rather than as primary causal drivers when context is strong (Hultén, 2011; Schmitt, 1999). In this view, sensory marketing is the orchestration of multisensory cues that amplify brand/service perception in concert with the environment and social interactions (Hultén, 2011), and the senses function as experiential modules that augment, rather than determine, affective and cognitive engagement within the overall experience (Schmitt, 1999).

H2 - External Impact → MTE (strong predictor) - supported.

The strong and reliable EX→MTE effect aligns with research identifying destination attributes and the social milieu (e.g., cultural contact, place aesthetics, safety/quality, community "vibe") as core antecedents of memorable experiences (Kim, 2014; Kim, Ritchie, & McCormick, 2012). In surf tourism specifically, prior work emphasizes camaraderie and setting as central to the emergence of memorable episodes, consistent with this pattern (Brochado et al., 2018; Jeong, 2023).

H3a - Sensory Engagement → MTE → Satisfaction - not supported.

In high-involvement, skill-based activities such as surfing, satisfaction is more tightly coupled to affective appraisal and contextual conditions than to isolated sensory inputs; accordingly, once MTE and EX are entered in the model, an SE-driven indirect path to SAT can reasonably become non-significant without contradicting theory (Schmitt, 1999; Tung & Ritchie, 2011). In this literature, memorable tourism experiences are conceptualized as episodes infused with meaning, involvement, and affect; a construct that subsumes and organizes sensory impressions within a broader experiential frame (Tung & Ritchie, 2011), while sensory cues operate primarily as enhancers rather than standalone drivers of satisfaction (Schmitt, 1999).

H3b - External Impact → MTE → Satisfaction (significant partial mediation) - supported.

A canonical mechanism in the MTE literature posits context → memorability → positive evaluations. The finding that EX increases SAT both directly and, more substantively, indirectly via MTE mirrors this formulation and underscores MTE as a proximal driver of satisfaction. In Kim's framework, antecedents rooted in destination attributes and the social milieu activate MTE, which in turn explains evaluative outcomes such as satisfaction (Kim, 2014); the MTE scale work likewise positions memorable experience as the immediate conduit from contextual inputs to downstream appraisals (Kim, Ritchie, & McCormick, 2012).

H4 - MTE → SAT → Loyalty (partial mediation; strong direct MTE → LOY) - supported.

Links between memorable experiences and loyalty/WOM are well documented in tourism, with satisfaction often acting as a complementary rather than exclusive conduit. The observed combination of a strong direct MTE→LOY path and a smaller, partial mediation via SAT echoes this evidence, including in surf-related contexts (Brochado et al., 2018; Jeong, 2023; Kim et al., 2012; Yoon & Uysal, 2005).

4.9 Qualitative Data Analysis

To complement the quantitative results, a qualitative analysis was conducted based on the eight semi-structured interviews carried out with key stakeholders in the surf tourism industry of Ericeira (Jeong, 2023). The interviewees included surf school directors and instructors, surf camp and hotel managers, and surf tourism entrepreneurs, ensuring a diverse perspective on how MTEs are created and perceived in this context. All interviews were fully transcribed and analysed through manual content analysis following Bardin (2011); coding was organised around the seven MTE dimensions (Kim et al., 2012).

The material was coded and categorised according to the seven dimensions of MTEs proposed by Kim et al. (2012): hedonism, novelty, local culture, refreshment, meaningfulness, involvement, and knowledge; while also integrating emerging categories such as satisfaction, loyalty, and sustainability in surf tourism. This thematic organisation enabled the identification of common patterns, divergences, and illustrative quotations, which are presented below and discussed considering the existing literature (Bardin, 2011).

4.9.1 Sensory engagement

Interviewees consistently portrayed surfing as a multisensory experience where vision, sound, and touch/thermal cues shape orientation and memory. Staff highlighted the "*classic view*" and breaking waves as early emotional triggers (R3B), while coaches described wax texture, cold water, and even smell/taste (iodine, seaweed, saltwater) as distinctive anchors (R5, R6B, R8). To calm anxious first-timers, R7 used a surf-adapted 5-4-3-2-1 grounding drill (sight, sound, touch, smell, taste/breath), lowering arousal and focusing attention. These accounts align with sensory marketing, where the five senses act as complementary stimulus pathways shaping emotions and memory (Hultén, 2011).

Adaptive practices illustrated sensory-aware coaching. R2 described teaching a visually impaired participant with two instructors: one guiding take-off, another ensuring safe stops, using tactile/thermal cues (wax, neoprene, water temperature) delivered slowly to avoid overload. Similarly, R3B recounted teaching two non-verbal autistic siblings, where proximity, tactility, and clear spatial landmarks turned potential overstimulation into a safe, meaningful experience.

Interviewees agreed that coastal visualscapes and soundscapes heighten pleasure, arousal, and loyalty. Providers generally let nature lead, adding minimal scaffolding (positioning, voice, attentional cues). Instructors refreshed the sensory palette by changing spots or staging first-light sessions, described as transformative through softer light and quieter line-ups (R7; R3B). These practices align with evidence that natural soundscapes and MTEs influence loyalty via emotions (Jeong, 2023) and that coastal visual/soundscapes shape tourist behaviour (Huang & Zeng, 2024).

Design nuances reflected sensory constraints. With hearing compromised in water, coaches relied on proximity, shouts, and tactile/thermal cues; the visually impaired case illustrates how constraints reshape lesson design (Jeong, 2023). Olfactory variability also mattered: Ericeira's seaweed notes were often positive unless excessive, while Peniche's canning activity produced detracting smells (R1). Beyond nature, camp ambience (music during transfers, scents in accommodation) added cues that scaffolded engagement, consistent with multisensory experience evaluation (Brochado et al., 2018; Hultén, 2011).

Sensory engagement also linked to other themes: cues that heightened presence and pleasure supported novelty (spot rotation, atypical light) and refreshment ("*arrive stressed, leave calmer*"). Literature clarifies the mechanism: aesthetics and mindfulness elevate delight and MTEs, making sensory cues memorability triggers (Juliana et al., 2024; Iacob et al., 2025). Host/site involvement then interprets stimuli into meaning and skill, consistent with experiential-tourism work on knowledge and co-participation (Kokkranikal & Carabelli, 2021).

Across interviews, instructors described simple curation strategies: keep sightlines clear, use touch/temperature cues, stay close, and slow the pace. Extending curation off-water with light ambience (music, subtle scents) and reducing negative cues further enhanced experiences. These practices align with evidence that coastal sound/visualscapes shape emotions that predict loyalty (Jeong, 2023; Huang & Zeng, 2024).

4.9.2 Hedonism

Interviews highlighted hedonism as central, marked by excitement, joy, and adrenaline (Kim, 2014). The "*first stand-up*" was the emotional climax and memorability anchor: "*The main thing is standing up on the board for the first time […] the sense of community in the camp is also highly valued*" (R4A). Such moments were reinforced by supportive, socially vibrant settings with peer encouragement. Staff play a key role in enabling low-anxiety participation and early success ("*A good instructor creates dynamics, unity, and fun in the group,*" R1; "*For those who just want to try, the goal is fun and quick success… bigger boards to make sure they stand up*," R3B). The positive affect often extended beyond lessons, consistent with links between memorable experiences and well-being (Iacob et al., 2025).

Context shaped how pleasure was framed: surf camps emphasised socialisation and post-surf celebrations (Brochado et al., 2018), while higher-end hotels integrated surfing into broader relaxation packages (spa, ambience, routines). As R6B noted, "*After the surf lesson they are always… calmer,*" showing that even when not central, surfing's affective payoff remained salient.

These findings align with Jeong (2023), who shows that pleasure and excitement strengthen place attachment and loyalty, suggesting managers should complement surfing with events like competitions or festivals. Similarly, Juliana et al. (2024) link positive, memorable experiences to repeat visitation, word-of-mouth, and loyalty implying that early wins (first stand-up), communal micro-celebrations, and high-valence atmospheres are both experientially and strategically vital.

4.9.3 Involvement

Involvement emerged as a layered process built through shared actions, guided practice, and co-participation. Simple tasks foster belonging, "*even the simple act of carrying the boards together […] generates […] a sense of belonging*" (R8), while rituals like warm-ups or games sustain attention (R1). Coaches also framed autonomy as involvement: "*I want them to learn to read the ocean, choose waves, and make their own decisions*" (R7). In hotels, involvement often began at reception through personalised contact, "*build a personal relationship […]*" (R3A).

Surf camps emphasised socio-playful routines and peer encouragement, while higher-end hotels relied on personalisation and low-friction guidance. Instructional styles varied, from gradually handing over decision-making (autonomy) to emphasising structure and safety through cooperative tasks. In all cases, involvement was intentionally scaffolded so visitors felt active rather than passive.

These findings align with scholarship framing involvement as devotion to an activity (Kokkranikal & Carabelli, 2024). Their study, where involvement was most frequently mentioned across 320 reviews, highlights how active engagement boosts motivation and commitment, insights transferable to skills-based tourism like surfing. Destination strategies that expose visitors to surf culture (surfwear, vocabulary, competitions, themed venues) further enhance opportunities for interaction (Reis et al., 2022).

Mechanistically, engagement fosters emotional attachment, shaping MTEs as a blend of enthusiasm and interaction (Amir et al., 2025). Practically, this implies designing journeys that (i) embed micro-tasks and co-participation, (ii) build autonomy progressively, and (iii) program surf-culture touchpoints, raising enthusiasm and enabling active interaction (Reis et al., 2022; Kokkranikal & Carabelli, 2024; Amir et al., 2025).

4.9.4 Novelty

Novelty was a defining trigger of memorability, especially for first-timers, often marked by mixed high-arousal emotions that instructors channel into confidence and enjoyment. "*The first time is full of emotions, fear, apprehension, adrenaline, excitement […] we manage these emotions with detailed briefings on safety, currents, and how the ocean works*" (R1). For beginners, even a single attempt is "*unique; even if they try only once, they remember it forever*" (R6B). Coaches stressed that "*the first time is always special […] a unique sensation that's hard to forget*" (R7), with novelty also arising from a first maneuver or iconic surf spot. Providers scaffolded this through safety briefings and structured preparation (R3B).

Context shaped how novelty was staged: surf camps emphasised lively, social formats, while hotels integrated surfing into broader relaxation offers. Instructors

calibrated pedagogy to the "*euphoria of the first class*" (R8), while curated experiences like "*First Light Sessions at 5:30 a.m."* refreshed novelty for repeaters (R7). Even experienced surfers described Ericeira as "*special*" (R2), showing that setting, timing, and spot selection can renew newness.

These findings align with evidence that extraordinary (novel, delightful) experiences predict memorability and word-of-mouth more strongly than ordinary satisfaction (Ye et al., 2021). Outbound travellers perceive greater novelty and are more likely to recommend destinations, reflecting the role of natural and cultural "*exotica*" (Ye et al., 2021; Petrick, 2002). Authenticity further amplifies delight, converting novelty into positive emotions and intentions (Juliana et al., 2024).

Overall, novelty in surf tourism is both an initial spark and a designed process. Providers transform first contacts into durable memories through safety briefings, level-based grouping, and pacing, while curated "*firsts*" (sunrise sessions, maneuvers, iconic spots) refresh novelty for non-beginners. Over time, novelty may decline as familiarity grows, implying a novelty–familiarity trade-off in loyalty (Kim, Hallab, & Kim, 2012). Practically, sequencing authentic "*firsts*" and renewing them across visits offers a pathway from newness to memorability, satisfaction, and loyalty.

4.9.5 Refreshment

Refreshment consistently emerged as an outcome of surf participation: guests "*arrive stressed and leave calmer after the lesson*" (R3B). Practitioners framed the sea as grounding, "*Being in the sea is like meditating […] it forces you to slow down and be present*" (R7), with renewal tied to nature's bond: "*Surf creates a strong sense of connection with nature […] it changes people's mood and brings physical and emotional benefits*" (R1). These accounts align with blue-space research linking marine exposure to calm, revitalisation, and health benefits (Román et al., 2022).

The restorative effect was seen as robust across conditions and profiles: "*even when conditions are bad for me, for them it's fantastic*" (R5); for newcomers, "*just being close to the sea is relaxing and mentally beneficial*" (R8). Sensory cues: light, horizon, waves, cool water; anchored mood regulation, while sunrise 'First Light Sessions' "*transform the experience*" by softening the setting (R7). This emphasis on sensory pathways echoes evidence that environmental stimuli shape behaviour via pleasure and arousal (Huang & Zeng, 2024).

Hotels reported well-being effects even with occasional ocean contact (R6A), while surf camps extended the "*reset*" through shared warm-ups, beach walks, and post-lesson rituals. In both, instructors modulated pace and guidance to reduce anxiety and enhance attentional focus, mirroring blue-health findings on nature exposure and simple outdoor activity (Román et al., 2022).

Finally, interview evidence resonates with research linking mindfulness and MTEs to well-being (Iacob et al., 2025) and with Portugal's Tourism Strategy 2027, which prioritises wellness (Turismo de Portugal, 2018). Practices such as calming briefings, guided presence in the lineup, and curated sensory moments help explain why guests reliably report post-session calm extending beyond the water.

4.9.6 Meaningfulness

Meaningfulness emerged as a deeper layer of surf experiences, often tied to personal growth, reflection, and a sense of purpose. Instructors noted that surfing helps participants "*overcome fears and discover inner strength*" (R2), while others described it as "*a life-changing experience*" that reshapes priorities and self-perception (R5). For some, the ocean became a metaphor for resilience and balance, with one coach observing: "*Learning to deal with waves teaches patience and humility*" (R7).

Context influenced how meaning was framed: surf camps often emphasised community and shared transformation, while hotels highlighted individual renewal within broader wellness journeys. In both, participants reported that surfing created space for reflection, identity-building, and connection to something larger than themselves.

These findings align with MTE literature, where meaningfulness is linked to transformative experiences, personal growth, and long-term memorability (Tung & Ritchie, 2011; Jeong, 2023). Research also shows that meaningful encounters strengthen emotional bonds with destinations and foster loyalty (Kim et al., 2012; Pedro et al., 2020).

Practically, providers can cultivate meaningfulness by encouraging reflection (e.g., debriefs, storytelling), framing surfing as both skill and metaphor, and embedding it within authentic cultural and natural contexts. Such practices help transform short-term enjoyment into enduring, identity-shaping memories that reinforce satisfaction and loyalty.

4.9.7 Knowledge

Knowledge emerged as both skill acquisition and cultural learning. Instructors stressed the importance of teaching ocean literacy (currents, tides, and safety) as well as technical skills: "*I want them to learn to read the ocean, choose waves, and make their own decisions*" (R7). For beginners, mastering basics like standing up or paddling was framed as empowering, while more advanced guests valued progression through maneuvers or understanding local surf etiquette (R2).

Context shaped emphasis: surf camps often embedded informal learning through peer exchange and shared routines, while hotels highlighted structured, personalised instruction. Beyond technique, participants absorbed cultural knowledge (surf vocabulary, rituals, and local narratives) which deepened engagement and authenticity.

These findings align with MTE literature, where knowledge acquisition enhances memorability by adding cognitive value and personal growth (Kim et al., 2012; Pedro et al., 2020). Studies also show that learning fosters stronger emotional bonds and advocacy, as tourists recall not only enjoyment but also skills gained (Jeong, 2023).

Practically, providers can strengthen knowledge outcomes by combining technical coaching with cultural immersion (surf history, local stories, or environmental awareness) so that learning extends beyond performance. This dual pathway of skill and cultural knowledge transforms surfing into a richer, more memorable experience that supports satisfaction and loyalty.

4.9.8 Local Culture

Local culture was repeatedly highlighted as central to memorability, with instructors stressing that authentic contact with residents, traditions, and surf heritage deepens the experience. As one noted, "*People don't just come for the waves, they want to feel the local vibe, the food, the music*" (R4B). Surfing was framed not only as sport but as cultural immersion, where guests learn codes of respect, community values, and the symbolic weight of Ericeira as a World Surfing Reserve.

Context shaped delivery: surf camps often embedded culture through communal meals, local events, and informal exchanges, while hotels curated it via gastronomy, décor, and partnerships with local businesses. Both approaches positioned culture as a differentiator that transforms surfing into a holistic journey.

These findings align with MTE research showing that cultural immersion strengthens authenticity, memorability, and loyalty (Kim et al., 2012; Reis et al., 2022). By engaging with local traditions, tourists not only enjoy the activity but also build emotional ties to place, reinforcing destination image and advocacy.

Practically, providers can enhance cultural depth by integrating local cuisine, music, and storytelling, and by connecting guests with community initiatives. Such practices ensure that surf tourism is not experienced in isolation but as part of a living cultural landscape, amplifying both memorability and loyalty.

4.9.9 Satisfaction and Loyalty

Satisfaction and loyalty consistently appeared as downstream outcomes of memorable surf experiences. Instructors observed that "*when people enjoy the lesson, they always want to come back*" (R3A), while others linked satisfaction to emotional resonance: "*They leave smiling, and that's what makes them return*" (R5). Loyalty was often expressed through repeat visits, recommendations, and attachment to Ericeira as a surf destination.

Context shaped emphasis: surf camps fostered loyalty through community bonds and shared rituals, while hotels relied on service quality and personalised attention. Both

settings confirmed that satisfaction was not only about technical progress but also about emotional fulfilment and social connection.

These findings align with MTE research showing that satisfaction mediates the link between memorable experiences and loyalty, reinforcing revisit and recommendation intentions (Kim et al., 2012; Yoon & Uysal, 2005; Jeong, 2023). Positive emotions and attachment to place strengthen advocacy, while repeat visitation is tied to both enjoyment and perceived authenticity (Reis et al., 2022; Juliana et al., 2024).

Practically, providers can enhance satisfaction and loyalty by ensuring early wins, cultivating community, and embedding authenticity. By combining emotional resonance with consistent service, surf tourism operators can transform one-off lessons into enduring bonds that sustain destination competitiveness.

4.9.10 Future and Sustainability

Sustainability emerged as both a concern and an opportunity for surf tourism. Interviewees stressed the need to protect natural resources, with one noting: "*Without clean oceans, there is no surfing*" (R2). Providers highlighted practices such as limiting group sizes, promoting eco-friendly equipment, and educating guests on ocean stewardship. Camps often embedded sustainability in daily routines, shared transport, recycling, and local sourcing, while hotels framed it within broader corporate responsibility agendas.

Context shaped emphasis: surf camps tended to foreground grassroots, community-led initiatives, whereas hotels leveraged scale to implement structured sustainability programs. Both approaches reflected growing tourist expectations for responsible practices and alignment with global sustainability goals.

These insights resonate with scholarship linking sustainable tourism to long-term competitiveness and destination resilience (UNWTO, 2022; Buckley, 2002). Research also shows that environmentally responsible practices enhance authenticity and loyalty, as visitors increasingly value destinations that balance enjoyment with preservation (Higham & Miller, 2018).

Practically, surf tourism providers can strengthen sustainability by integrating environmental education into lessons, curating low-impact experiences, and collaborating with local communities. Positioning surfing as both recreation and stewardship ensures that future growth aligns with ecological integrity, cultural respect, and destination longevity.

4.10 Field Observation: Surf Lesson

As part of the methodological framework of this study, a field observation was conducted during a morning surf lesson in Ericeira. The goal was to capture how Memorable

Tourism Experiences (MTEs) emerge organically through sensory, emotional, and social interactions, providing contextual support to the theoretical model.

The session began around 8:15 a.m., as guests prepared for the lesson. Many showed visible signs of excitement mixed with discomfort, adjusting wetsuits, checking personal items, or applying sunscreen. Reggae music played in the background, and instructors greeted participants with warm, friendly energy. The smell of damp neoprene, the cold texture of wetsuits, and the humid air surrounding the surf gear created a rich sensory atmosphere, illustrating the principles of sensory marketing (Schmitt, 1999).

At the beach, the instructor led a warm, conversational introduction, asking guests to share details about themselves like hobbies, hometowns, surfing experience, and expectations. This interaction encouraged a sense of community and emotional engagement, activating MTE dimensions such as involvement, local culture, and meaningfulness (Kim et al., 2012).

The instructor used simple visual tools like sand drawings to explain ocean safety, wave types, rip currents, and etiquette. These explanations were followed by dryland training, demonstrating paddling, posture, and take-off techniques. Guests practiced repeatedly while the instructor corrected movements and offered tailored advice. These moments supported the knowledge, novelty, and refreshment dimensions, particularly as participants experienced personal progress and encouragement.

After the in-water practice, the group returned to the camp, tired but smiling. Instructors joked with participants, helped them rinse boards, and maintained a playful, relaxed tone. These post-activity rituals reinforced the emotional tone of the experience and contributed to hedonism and refreshment, as well as a sense of accomplishment.

This observation provided clear evidence of how surf tourism operators, even during routine lessons, can craft emotionally resonant, sensory-rich, and socially meaningful experiences. The Surf session exemplifies how practical elements align with the seven dimensions of MTEs, ultimately shaping satisfaction, identity, and tourist loyalty. As such, this moment served as a relevant case for understanding the operationalization of experience design in surf tourism.

4.11 Qualitative conclusion

The qualitative strand explored how surf-tourism professionals in Ericeira perceive the role of multisensory cues and contextual conditions in shaping tourists' satisfaction and loyalty, complementing the survey by clarifying underlying mechanisms rather than testing effects.

Transcripts were thematically analysed through a hybrid deductive–inductive approach informed by the MTE framework. Coding was conducted manually in Word using colour highlighting and margin notes across two iterative cycles (initial open coding

followed by thematic aggregation). A concise codebook, listing each theme, definition, typical features, out-of-scope boundaries, and exemplar quotes, is provided in annex D. In addition, annex E maps those themes explicitly to the three research questions (RQ1 - RQ3), indicating the mechanisms evidenced in the interviews. Credibility was reinforced via triangulation between interview data and one on-site surf-lesson observation, with systematic anonymisation (role-based IDs) to protect participants while preserving context. Dependability and confirmability were supported by preserving original transcripts alongside annotated versions and by date-stamping files to maintain a transparent decision trail. Indicative saturation was reached after the seventh interview, with the eighth confirming theme stability. Reflexivity was addressed by explicitly acknowledging the researcher's familiarity with the Ericeira surf ecosystem and by cross-checking interpretations across roles and sources to mitigate bias.

An auditable trail is ensured by preserving the original transcripts alongside annotated versions and by date-stamping all files (transcription, coding notes, observation). Extracted quotes in the findings are traceable to anonymised IDs, supporting transparency without compromising confidentiality.

RQ1. How do professionals perceive the influence of sensory engagement on tourists' satisfaction?

Across interviews, practitioners describe sensory cues (visualscapes, sound of waves, tactile/thermal feel, sea breeze/odours) as amplifiers that lower anxiety, focus attention at key moments (e.g., first stand-up), and heighten positive affect during the lesson and après-surf rituals; thereby improving immediate satisfaction. Sensory inputs are seen as most effective in concert with the social/contextual "*stage*" (instructor support, group vibe, safe conditions), not as stand-alone drivers. This interpretive pattern aligns with experiential/sensory marketing, which positions the senses as modules that enhance affective–cognitive engagement within a broader milieu (Schmitt, 1999; Hultén, 2011), and with tourism work linking multisensory design to positive appraisals in context.

Experiential marketing conceptualises the orchestration of sight, sound, smell, taste and touch to intensify experiences (Schmitt, 1999) and multi-sensory brand experience design (Hultén, 2011), consistent with participants' view that sensory cues boost satisfaction chiefly by enhancing an already supportive setting.

RQ2. In what ways is sensory engagement believed to shape tourists' loyalty in surf tourism?

Professionals link loyalty to memorable episodes that are socially anchored (belonging, shared rituals, local culture) and later "*retold*" as stories (WOM). Sensory cues help make these moments vivid (e.g., iconic scenery, wave soundtracks), but respondents emphasise that loyalty crystallises when context and community turn

sensations into meaning. This echoes MTE scholarship, where destination attributes/social milieu trigger memorability that underpins downstream outcomes, including revisit/WOM intentions (Kim et al., 2012; Kim, 2014). Surf-specific research similarly highlights camaraderie and place as loyalty engines, with sensory richness supporting the narrative that guests carry home (Brochado et al., 2018; Jeong, 2023; Yoon & Uysal, 2005).

MTE's seven dimensions (e.g., local culture, involvement, meaningfulness, novelty) provide the scaffolding through which sensory impressions become narrative memory, supporting loyalty/WOM.

RQ3. How do professionals describe the link between satisfaction and loyalty in memorable surf experiences?

Interviewees portray loyalty as primarily memory-anchored, with satisfaction acting as a reinforcer rather than the sole conduit: when providers "*engineer peaks*" (safe progressions, shared celebrations, cultural touchpoints), guests report both satisfaction and an intention to return/recommend, but staff stress that it is the memorable, socially meaningful story that ultimately "*sticks*". This is compatible with models where MTE sits closer to loyalty than generic service satisfaction (Kim et al., 2012; Yoon & Uysal, 2005).

Transcripts were thematically analysed with a coding frame informed by MTE theory and refined inductively; credibility was supported by an auditable trail and triangulation with field observation. The purposive, local sample and possible social-desirability bias limit transferability; nevertheless, convergence with established MTE and experiential-marketing literature strengthens plausibility.

Two boundary conditions emerged clearly. First, levers differ by role: surf-camps can program community-rich touchpoints (group rituals, social hosting), whereas hotels tend to rely on lighter, personalised gestures; both routes can yield memorable experiences when authenticity is foregrounded. Second, several hotel respondents noted they have limited control over lesson-level sensory design, which underscores the need for coordination between accommodation and surf-school partners. Because the interview set is highly local and most instructors are embedded in Ericeira's scene, broader generalisation should be cautious.

Taken together, accounts depict a coherent pathway across the research questions: sensory engagement supports satisfaction chiefly by lowering anxiety and sharpening attention at decisive moments (RQ1); memorable tourism experiences arise when a strong external context (community vibe, local culture, safety/ecology cues, small rituals) sets the stage and sensory cues amplify it; enabling "*engineered peaks*" such as first stand-ups or shared post-session celebrations (RQ2); and loyalty follows those socially anchored memories, with satisfaction strengthened when experiences become

memorable rather than serving as the sole conduit to loyalty (RQ3). These interview-based mechanisms explain why the statistical patterns hold and bridge directly to the study's implications for experience design in surf tourism.

Chapter V - Conclusion and Discussion

5.1 Closing remarks

This dissertation investigates how sensory engagement (SE) and external impact (EX) shape memorable tourism experiences (MTEs) in surf tourism, and how these experiences relate to satisfaction (SAT) and loyalty (LOY). The study adopts a mixed-methods design in Ericeira: a quantitative survey of surf tourists measuring SE, EX, MTE, SAT and LOY, complemented by semi-structured interviews with surf instructors, school managers and hospitality staff, plus a field observation of a surf lesson. Conceptually, MTEs provide a structured account of how destination/context attributes translate into memorable episodes and downstream evaluations (Kim, Ritchie, & McCormick, 2012), while experiential/sensory marketing frames the role of the senses as experiential modules embedded in broader experience environments (Schmitt, 1999).

Quantitatively, H1 - H2 were estimated via multiple linear regression using the Enter (simultaneous) method, and H3a - H4 were tested with PROCESS v5 (Model 4) employing HC3 robust standard errors and 5,000 bias-corrected bootstrap resamples (95% CIs; seed = 12345). All models used listwise cases for comparability; N = 180 in the mediation analyses and N = 180 for the OLS model predicting MTE (same listwise basis). Inference on indirect effects was based on the bootstrap confidence interval (not p-values for a × b), following best practice for mediation analysis in marketing/tourism (Hayes, 2013).

For the direct effects on MTE (H1 and H2), External Impact (EX) emerges as the principal driver of memorability: in the MTE regression, the EX → MTE coefficient is substantive and highly significant, whereas Sensory Engagement (SE) is positive but small and non-significant once EX is controlled. This pattern matches MTE research that treats destination/social context as a first-order antecedent of memorable episodes (Kim, Ritchie, & McCormick, 2012) and aligns with surf-tourism evidence highlighting setting and camaraderie (Brochado et al., 2018; Jeong, 2023). Consistent with experiential/sensory theory, SE operates mainly as an amplifier embedded in the broader experience environment, rather than as a stand-alone causal lever when context is strong (Schmitt, 1999; Hultén, 2011).

Second, mediation tests clarify the downstream pathways to evaluation:

- For H3a (SE → MTE → SAT), No reliable indirect effect of SE on SAT through MTE once EX is considered (bootstrap CI includes 0), and the direct SE → SAT path is also non-significant. In high-involvement activities like surfing, satisfaction tends to be driven by affective appraisal and contextual conditions more than by isolated sensory inputs, so a non-significant SE-driven mediation does not contradict theory (Schmitt, 1999; Tung & Ritchie, 2011).

- For H3b (EX → MTE → SAT), EX increases SAT both directly and indirectly via MTE, with the MTE pathway accounting for a substantial share of the total effect. This mirrors the canonical context → memorability → evaluation mechanism within the MTE framework (Kim et al., 2012).
- For H4 (MTE → SAT → LOY), LOY is anchored directly in MTE, while SAT provides a complementary (partial) conduit; the indirect MTE → SAT → LOY is significant, but the direct MTE → LOY remains strong. This configuration echoes tourism findings that memorable experiences and satisfaction jointly underpin revisit and WOM intentions, with MTE often closer to loyalty than generic service satisfaction (Brochado et al., 2018; Jeong, 2023; Kim et al., 2012; Yoon & Uysal, 2005).

Qualitatively, practitioners corroborate this structure: they describe context and community (safety/ecology cues, local culture, small rituals) as elements that "*make or break*" memorability and satisfaction, with sensory cues functioning as amplifiers as visualscapes, soundscapes and tactile/thermal cues that lower anxiety, focus attention, and intensify peak moments (Schmitt, 1999; Hultén, 2011). When stage (EX) and amplifier (SE) are coordinated, routine episodes become socially meaningful stories that guests repeat and recommend; loyalty's behavioural signature (Kim et al., 2012; Brochado et al., 20118). Taken together, the two strands converge on a consistent mechanism: contextual conditions and social milieu (EX) are the primary engine of memorability, while sensory cues (SE) operate as amplifiers within that context.

This aligns with MTE theory destination attributes and social setting fuel memorable episodes that, in turn, lift satisfaction and downstream loyalty (Kim, 2014; Kim, Ritchie, & McCormick, 2012; Tung & Ritchie, 2011). Interview accounts of "*vibe,*" safety/ecology cues and community rituals reinforce this pathway, explaining why EX shows both direct and indirect routes to SAT, and why MTE is the proximate driver of LOY. In experiential/sensory marketing terms, this pattern is expected: multisensory stimuli heighten attention and affect but are most potent when orchestrated with the surrounding experience design (Schmitt, 1999; Hultén, 2011). In surf contexts specifically, community and setting are central to what becomes memorable and recommendable (Brochado et al., 2018; Jeong, 2023), and such memories translate into repeat visitation and advocacy loyalty's behavioural signature (Yoon & Uysal, 2005).

5.2 Contributions to Theory and Practice

5.2.1 Academia/Theory

Anchored in the Memorable Tourism Experiences (MTE) framework (Kim, Ritchie, & McCormick, 2012), this study clarifies the positioning of constructs and paths within the context → experience → outcome sequence, with three main contributions and one measurement note.

Findings position MTE closer to loyalty (LOY) than generic service satisfaction (SAT), with SAT functioning as a complementary rather than exclusive conduit. This pattern is consistent with MTE theory, which treats memorable episodes as immediate, meaning-laden evaluations that shape downstream intentions (revisit/WOM) more directly than broad service appraisals (Kim et al., 2012; Kim, 2014). In other words, loyalty can be memory-anchored even when SAT's mediating role is only partial, aligning empirical results with the theorised proximity of MTE to behavioural outcomes.

The attenuation of SE's unique effect on MTE once external impact (EX) is controlled suggests that SE works best when layered onto a supportive social/contextual stage; an "enhancer" more than a primary antecedent. This specification refines experiential/sensory marketing accounts in high-involvement settings: sensory cues heighten attention and affect, but their influence is embedded in the surrounding experience design (Schmitt, 1999; Hultén, 2011), which the EX construct captures in this study (e.g., social milieu, safety/ecology signals, cultural contact). The clarification helps reconcile why strong contextual conditions can dampen SE's standalone predictive power without contradicting theory.

The qualitative strand indicates that involvement, meaningfulness, and local-culture contact are recurring routes through which EX becomes memorable and actionable (revisit/WOM). This observation is compatible with the multi-dimensional structure of MTE (Kim et al., 2012) and motivates future modelling that tests dimension-level pathways (e.g., EX → involvement/meaningfulness → LOY) rather than only a global MTE score. Such granularity can sharpen theoretical claims about *which* facets of memorability translate most efficiently into loyalty.

Given the earlier reliability concerns around SAT (subsequently corrected through recoding and re-estimation), it is theoretically useful to distinguish affective and cognitive satisfaction in future work, as these components may relate differentially to MTE and LOY in high-variability, skill-based tourism (cf. Tung & Ritchie, 2011 on affective meaning). This refinement would align measures with the appraisal processes implied by MTE theory and may further elucidate why MTE retains a strong direct association with loyalty.

5.2.2 Practice

Prioritise the social stage (group cohesion, safety/ecology signalling, light local-culture integration) across the guest journey. This targets the strongest pathway observed and raises the probability that ordinary sessions become memorable episodes rather than routine services.

Intentionally script peak moments as sunset sessions, micro-celebrations (first wave caught) and meaningful endings, photo hand-off, brief debrief/recognition ritual. These are the touchpoints most likely to anchor LOY through MTE.

Deploy SE as a multiplier, not the engine. Clear audio for briefings, thermal/tactile comfort pre-entry, visual vantage points for capturing progress are all examples of things to keep everyone safe and avoid overwhelming situations. SE works best layered onto a supportive EX, so avoid spending on standalone “sensory add-ons” without the social/contextual scaffolding.

Tailor choreography by skill level and party type. Beginners: reduce uncertainty (briefing clarity, smaller groups, gentle first goals, safe feeling). Intermediates/advanced: emphasise progression cues and condition-matching.

Track an MTE pulse (a short scale post-session or at check-out) and tie it to loyalty KPIs. reviewing simple provider-level dashboards weekly to learn what created peaks and what dulled them. Because surf conditions are volatile, pre-plan “peak” alternatives (land drills, guided coastal walks, light culture add-ons), set expectations up-front to reduce dissatisfaction, and document service-recovery micro-gestures (complimentary photo pack, reschedule priority). Finally, weave eco-practices (beach clean-ups, reef briefings) and local-culture contact (artisan partners, food stories) as light, authentic elements as these cues strengthen EX and often feed meaningfulness within MTE.

5.3 Research Limitations

This study’s inferences should be read considering several constraints relating to scope, design, and measurement. First, external validity is limited by the sampling frame. The quantitative strand uses a listwise sample of $n = 180$ from a single destination (Ericeira, Portugal), obtained via non-probability procedures. As most respondents were visitors experiencing the same locality, many contextual inputs (beaches, community events, restaurants, safety/ecology signalling) are homogeneous. Effects may therefore reflect Ericeira’s configuration and should not be generalised to other surf destinations without replication. The qualitative strand is likewise context-bound: eight interviews, all with professionals working in Ericeira, provide rich domain knowledge but concentrate perspectives within one ecosystem (potential convergence of views; role- and place-specific practices).

Second, design features constrain causal interpretation. The survey is cross-sectional and self-reported; associations cannot be unambiguously attributed to temporal ordering or intervention effects. Although the modelling strategy isolates unique paths and tests indirect effects, omitted variables (e.g., crowding on that day, swell quality,

weather shocks, equipment issues) may still influence relationships among SE, EX, MTE, SAT, and LOY.

Third, measurement challenges are intrinsic to the phenomenon studied. Surf is a high-variability, skill-based activity: experience quality can swing with daily conditions (swell, wind, tide), group composition, and individual performance. As a result, some responses may index a specific session rather than a stable appraisal of the trip, adding within-person noise to SE/MTE/SAT measures. Moreover, SE was operationalised as a formative index, which is appropriate conceptually but precludes internal-consistency diagnostics; and while the satisfaction scale was corrected and re-estimated, initial coding issues underscore the sensitivity of results to measurement decisions.

Fourth, qualitative credibility is bounded by practicalities. Interviews were conducted within a single destination and season; social-desirability and reputational concerns cannot be fully ruled out despite anonymisation. Saturation was indicative rather than statistical, and triangulation, while present (interviews + one lesson observation), remains modest.

Implications for interpretation. Collectively, these constraints recommend a cautious, context-sensitive reading of effect sizes and pathways. The evidence speaks most directly to Ericeira-like settings and comparable cohorts.

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Annexes

Annex A - Qualtrics survey preview

This study aims to understand your experiences and perceptions related to surf tourism, focusing on aspects such as sensory involvement, motivations, satisfaction, and social impact. Your responses are valuable for improving surf-related destinations and services.
Before you begin, we invite you to recall a surf trip you've taken, your very first surf experience, or even just a day of surfing away from your usual place of residence. Your memories and emotions from that moment will help bring greater depth to your answers.
The questionnaire is anonymous, your responses will be treated confidentially, and it takes approximately 5–10 minutes to complete.

1. Age

- ◯ 18 - 25
- ◯ 26 - 35
- ◯ 36 - 45
- ◯ + 46

2. Educational Qualifications

- ○ Basic Education
- ○ Secondary Education or equivalent
- ○ Bachelor's Degree
- ○ Master's Degree
- ○ Doctorate (PhD)

3. Professional Status

- ○ Student
- ○ Working Student
- ○ Employed (working for someone else)
- ○ Freelancer / Self-employed
- ○ Unemployed
- ○ Retired

4. Place of Residence

- ○ Country of Origin

[ ]

- ○ Other Country
- ○ Digital Nomad

5. Surf Experience Level

- ◯ Beginner
- ◯ Intermediate
- ◯ Advanced
- ◯ Professional

6. Surfing Frequency

- ◯ Regularly (1–2 times per week)
- ◯ Frequently (3 or more times per week)

7. Motivation for Surfing

	1 (Doesn't motivate me)	2	3	4	5 (Motivates me a lot)
Adventure	◯	◯	◯	◯	◯
Relaxation	◯	◯	◯	◯	◯
Socializing	◯	◯	◯	◯	◯
Progression	◯	◯	◯	◯	◯

Section 2: Sensory Involvement

8. Evaluate the following statements about your surfing experience.

	1 (Totally Disagree)	2	3	4	5 (Totally Agree)
The sound of the waves enhanced the atmosphere	○	○	○	○	○
The feeling on the board was a highlight	○	○	○	○	○
The coastal landscape enriched the experience	○	○	○	○	○
The smell of the sea was invigorating	○	○	○	○	○
The salty taste made the experience better	○	○	○	○	○

Section 3: Emotions

9. The overall feeling I have about this surf tourism experience:

	1	2	3	4	5	
Unhappy	○	○	○	○	○	Happy
Disappointed	○	○	○	○	○	Delighted
Annoyed	○	○	○	○	○	Pleased
Bored	○	○	○	○	○	Entertained

Section 4: Satisfaction and Loyalty

10. Evaluate the following statements about your surf experience

	1 (Very unsatisfied)	2	3	4	5 (Very Satisfied)
Destination with good waves quality (wave consistency, good swell, wave type variety)	○	○	○	○	○
Quality of surf schools/camps	○	○	○	○	○
Quality of accommodation	○	○	○	○	○
Satisfaction with interactions with the local community	○	○	○	○	○

11. How likely are you to do the following after this experience?

	1 (Very low)	2	3	4	5 (Very High)
Share positive experiences about this destination online	○	○	○	○	○
Recommend this destination to friends/family	○	○	○	○	○
Return to this destination	○	○	○	○	○

Section 5: Social Impact

12. Evaluate the following statements about the surf environment at the destination

	1 (Totally Disagree)	2	3	4	5 (Totally Agree)
The destination promotes entrepreneurship related to the surf lifestyle	○	○	○	○	○
Presence of people who enjoy talking about surfing	○	○	○	○	○
Presence of people with a relaxed and carefree attitude	○	○	○	○	○
Presence of people who display surf culture behaviors	○	○	○	○	○
Local people share values associated with surfing	○	○	○	○	○

Section 6: External Factors

13. To what extent can the following external factors affect your experience?

	1 (Doesn't Influence)	2	3	4	5 (Strong Influence)
Surf events (e.g., competitions) influenced my decision to visit the destination	○	○	○	○	○
Local ecological awareness was important to me	○	○	○	○	○
This trip made me question whether surf tourism is contributing to social inequality at the destination	○	○	○	○	○
Safety at the location (e.g., lifeguards, water quality) made me feel at ease	○	○	○	○	○

Section 7 – MTE Dimensions

Think about a recent tourism trip that was especially memorable for you. Please rate each of the following statements using a scale from 1 to 5.

14. Hedonism

	1 (Totally Disagree)	2	3	4	5 (Totally Agree)
I felt excited to have a new experience.	○	○	○	○	○
I was fully immersed in the activities during the trip.	○	○	○	○	○
I truly enjoyed this tourism experience.	○	○	○	○	○

15. Novelty

	1 (Totally Disagree)	2	3	4	5 (Totally Agree)
It was a once-in-a-lifetime experience.	○	○	○	○	○
It was something unique.	○	○	○	○	○
It was different from previous experiences.	○	○	○	○	○

16. Local Culture

	1 (Totally Disagree)	2	3	4	5 (Totally Agree)
I had a good impression of the local people.	○	○	○	○	○
I experienced the local culture up close.	○	○	○	○	○
People at the destination were friendly.	○	○	○	○	○

17. Refreshment

	1 (Totally Disagree)	2	3	4	5 (Totally Agree)
I felt liberated.	○	○	○	○	○
The experience was refreshing.	○	○	○	○	○
The experience was revitalizing.	○	○	○	○	○

18. Meaningfulness

	1 (Totally Disagree)	2	3	4	5 (Totally Agree)
I did something I consider meaningful.	○	○	○	○	○
I did something important to me.	○	○	○	○	○
I learned more about myself.	○	○	○	○	○

19. Involvement

	1 (Totally Disagree)	2	3	4	5 (Totally Agree)
I visited a place I really wanted to see.	○	○	○	○	○
I took part in activities I had been looking forward to.	○	○	○	○	○
I was interested in the main activities of this trip.	○	○	○	○	○

20. Knowledge

	1 (Totally Disagree)	2	3	4	5 (Totally Agree)
The trip was an opportunity for exploration.	○	○	○	○	○
I gained new knowledge.	○	○	○	○	○
I experienced a new culture.	○	○	○	○	○

Annex B- Constructs, Scales and Authors

Session	Q	Construct	General Item	Authors
1	Q1		Age	
	Q2		Educational Qualifications	
	Q3		Professional Status	
	Q4		Place of Evidence	
	Q5		Surf Experience	
	Q6		Surf Frequency	
	Q7		Motivation for surfing	
2	Q8	Sensory Engagement	Evaluate the following statements about your surfing experience.	Jeong, Y; 2023 – Citation: Jiang et al. (2018), and Kankhuni and Ngwira (2022)
3	Q9		The overall feeling I have about this surf tourism experience:	Ryu and Jang, 2007; and Yang et al., 2011
4	Q10	Satisfaction	Evaluate the following statements about your surf experience	Portugal A., 2017 ; Yoon Y., 2005
	Q11	Loyalty	How likely are you to do the following after this experience?	Reis et al., 2022 ; Jeong Y, 2023
5	Q12	External Impact	Evaluate the following statements about the surf environment at the destination	Reis et al., 2022
6	Q13		To what extent can the following external factors affect your experience?	Martin & Ritchie, 2018 ; Román et al., 2022
7	Q14	Memorable Tourism Experiences	Hedonism	Kim, Jong Hyeong; 2012
	Q15		Novelty	
	Q16		Local Culture	
	Q17		Refreshment	
	Q18		Meaningfulness	
	Q19		Involvement	
	Q20		Knowledge	

Annex C – Interview guide

Question Number	Questions	Objective	Research Question
Q1	Can you tell me a little about your current role in surf tourism? How long have you been working in this area?	-	-
Q2	How would you describe the place where you work (hotel, hostel, surf school, etc.)? What is the typical profile of the tourists you serve?	-	-
Q3	Do you believe that the senses (sight, hearing, touch, smell, taste) influence the experience of surfing tourists?	O1	RQ1
Q4	Do you think sensory stimuli (sounds, smells, landscapes) have an impact on the tourist experience? Do you do anything intentionally to include these elements in your activities?	O1	RQ1
Q5	If so, could you give examples of how these elements are used in promoting your service or in everyday experience?	O1	RQ1
Q6	Do tourists usually show enthusiasm or enjoyment during classes or activities? What do they enjoy most? (Hedonism)	O1	RQ1
Q7	How do you involve tourists in the activities? Do you feel that this helps to create a stronger connection? (Involvement)	O1	RQ1
Q8	Do you believe that contact with the sea, nature and the lifestyle associated with surfing provides a feeling of well-being and/or renewal for tourists? (Refreshment)	O1	RQ1
Q9	Have any tourists described the experience as remarkable or transformative? What do you think leads to that? (Meaning)	O1	RQ1
Q10	Do tourists often show interest in learning more about surfing or the sea? How do you promote this type of learning? (Knowledge)	O1	RQ1
Q11	Do they promote contact between tourists and elements of local culture (gastronomy, traditions, events)? What is this relationship with the community like? (Local Culture)	O1	RQ1
Q12	For many tourists, the surfing experience is something new. Do you believe that this novelty makes the experience more memorable? How do you deal with tourists who are trying it for the first time? (Novelty)	O1	RQ1
Q13	Do you measure tourist satisfaction? Is there a specific indicator you use? If so, which one?	O3	RQ3
Q14	What strategies do you use to encourage tourists to return or recommend the destination?	O2, O3	RQ2, RQ3
Q15	Do you think memorable experiences contribute to tourist loyalty?	O2, O3	RQ2, RQ3
Q16	How do tourists usually share their experience with you? Do you believe this has an impact on your business?	O2, O3	RQ2, RQ3
Q17	What do you believe a professional or a surf school can do to make a tourist's experience truly memorable?	O1, O2	RQ1, RQ2
Q18	What trends or innovations have you observed or implemented in recent years with this goal in mind?	O2	RQ2
Q19	How do you see the future of surf tourism in this region? Are there any areas that need more attention or investment?	O2	RQ2

Annex D – Concise Codebook

Theme	Definition (1–2 lines)	Typical Features	Out of scope	Exemplar quote	RQ(s)
Sensory engagement (SE)	Multisensory cues (sight, sound, touch, smell/taste) that heighten attention/affect.	The sensory cue is linked to calm/focus, pleasure, or memorability.	Weather/wave reports with no emotional/memory link.	"I do a '5-4-3-2-1' exercise see/hear/feel/smell/taste. It helps bring people into the moment." – R7	RQ1, RQ2
Hedonism	Fun, enjoyment, positive arousal.	Mentions of "fun," "exciting," "thrilling."	Purely technical comments without affect.	"For many, just paddling and watching the sunset is already an incredible experience." – R8	RQ1
Involvement	Immersion/participation (flow, group engagement).	Focus/flow, joining group rituals, active participation.	Passive observation only.	"Even the simple act of carrying the boards together... creates a sense of belonging." – R8	RQ1, RQ2
Novelty	New/surprising elements that mark the memory.	First green wave, new spots, new cultural practices.	Routine with nothing new.	"The first time is always special... it's a unique feeling that's hard to forget." – R7	RQ1
Refreshment	Renewal/escape, mental or physical reset.	"Reset," recovery, post-session wellbeing.	Fatigue/frustration with no benefit.	"We see clients who arrive stressed and leave calmer after class." – R3b	RQ1
Meaningfulness	Personal significance, accomplishment, values.	Overcoming fear, pride, identity-building.	Fleeting pleasure with no meaning.	"I've seen people change their lives because of surfing… being in the sea is like meditating." – R7	RQ1, RQ3
Knowledge	Learning/skill acquisition and understanding.	Feedback, technique, reading ocean.	Logistics or timetables.	"I explain currents, tides, and safety rules: 'let's	RQ1, RQ2

				make a plan to return to land'." – R5	
Local Culture	Contact with local people, events, gastronomy, stories.	Community interaction, small cultural rituals.	Generic services with no local anchoring.	"I take clients to local events, parties, restaurants... surfing is linked to culture." – R7	RQ1, RQ2
Satisfaction & Loyalty	Positive appraisal plus revisit/WOM intention.	Explicit link from experience to return/recommend.	Satisfaction without any behavioural intention.	"Many people return every year because they had unforgettable moments." – R2	RQ3
Future & Sustainability	Environmental care and destination continuity.	Beach clean-ups, education, perceived positive impact.	"Green" claims without practice.	"More investment, but in a natural and sustainable way... a marina could damage the coastline and biodiversity." - R6b	RQ1 *(context)*

Annex E - Research Questions mapped to themes, mechanisms, evidence, and convergence

Research Question	Empirical themes (from codebook)	Mechanism (one sentence)	Short quote (≤25 words; Role–ID)	Convergence with quantitative (H)
RQ1. How do professionals perceive SE's influence on satisfaction?	SE, Hedonism, Involvement, Meaningfulness	SE tends to reduce anxiety and sharpen attention at decisive moments; satisfaction rises when a supportive context is already in place.	"Wave sound calms first-timers and focus improves." R7	SE's unique effect modest once EX is controlled → H1 not supported; EX dominates MTE (H2 supported)
RQ2. In what ways is SE believed to shape loyalty?	SE, Local Culture, Involvement, Knowledge	SE makes peak episodes vivid (firsts, shared rituals), anchoring revisit/WOM when community and culture frame the experience.	"A first green wave at sunset becomes the story they tell." R3	Loyalty relates chiefly to MTE; SE acts as amplifier → fits H4 partial mediation & H2 (via MTE)
RQ3. How is the SAT–LOY link described within memorable experiences?	Satisfaction & Loyalty, Meaningfulness, Involvement	Socially meaningful memories and place identity drive loyalty; SAT works as a proximal reinforcement, not the sole conduit.	"They return for the shared story, not just the service." R3B	MTE → LOY strong direct + SAT mediates partially → H4 supported (partial); H3b supported, H3a not supported

Annex F – Item-Total Statistics

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
SAT1_fix	11,5678	3,883	,205	,444
SAT2_fix	11,3668	3,668	,376	,306
SAT3_fix	11,7437	3,373	,235	,426
SAT4_fix	11,6030	3,372	,267	,389

Annex G - Mean, SD, N – All variables

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
SE1_fix	220	1,00	5,00	4,2318	,95845
SE2_fix	220	1,00	5,00	4,2227	,93165
SE3_fix	220	1,00	5,00	4,4227	,83771
SE4_fix	220	1,00	5,00	3,9182	1,10732
SE5_fix	220	1,00	5,00	3,2000	1,27713
SAT1_fix	199	2,00	5,00	3,8593	,88780
SAT2_fix	199	2,00	5,00	4,0603	,77615
SAT3_fix	199	1,00	5,00	3,6834	1,05183
SAT4_fix	199	1,00	5,00	3,8241	1,01216
LOY1_fix	199	1,00	5,00	3,7688	1,23780
LOY2_fix	199	1,00	5,00	4,4523	,76309
LOY3_fix	199	1,00	5,00	4,2111	,92424
SOC1_fix	192	1,00	5,00	3,7292	1,07303
SOC2_fix	192	1,00	5,00	4,0833	,89987
SOC3_fix	192	1,00	5,00	4,1875	,88398
SOC4_fix	192	1,00	5,00	4,0677	,95479
SOC5_fix	192	1,00	5,00	3,8281	1,04187
EXFCT1_fix	190	1,00	5,00	2,5895	1,38774
EXFCT2_fix	190	1,00	5,00	3,2947	1,30424
EXFCT3_fix	190	1,00	5,00	2,9474	1,40948
EXFCT4_fix	190	1,00	5,00	3,5789	1,22651
HED1_fix	180	1,00	5,00	4,4667	,76516
HED2_fix	180	2,00	5,00	4,2111	,89685
HED3_fix	180	1,00	5,00	4,2889	,92446
NOV1_fix	180	1,00	5,00	3,3667	1,24128
NOV2_fix	180	1,00	5,00	3,7389	1,12047
NOV3_fix	180	1,00	5,00	3,8056	1,09900
LOC1_fix	180	1,00	5,00	4,0500	,97611
LOC2_fix	180	1,00	5,00	3,6389	1,07154
LOC3_fix	180	1,00	5,00	4,3778	,78502
REF1_fix	180	2,00	5,00	4,0389	,89919
REF2_fix	180	2,00	5,00	4,2111	,81870
REF3_fix	180	1,00	5,00	4,1444	,94616
MNG1_fix	180	1,00	5,00	3,8500	1,09583
MNG2_fix	180	1,00	5,00	4,1889	,86385
MNG3_fix	180	1,00	5,00	3,8556	1,14395
INV1_fix	180	1,00	5,00	4,0056	1,01661
INV2_fix	180	1,00	5,00	4,2000	,88058
INV3_fix	180	1,00	5,00	4,2389	,88035
KNO1_fix	180	1,00	5,00	4,0889	,99882
KNO2_fix	180	1,00	5,00	4,1000	,99776
KNO3_fix	180	1,00	5,00	3,8222	1,16828
Valid N (listwise)	180				

Annex H – All correlations

Correlations[c]

		SEmean	EX12mn	EX13mn	EXmean	HEDmean	NOVmean	LOCmean	REFmean	MNGmean	INVmean	KNOmean	MTEmean	SATmean	LOYmean
SEmean	Pearson Correlation	1	,315**	,351**	,418**	,269**	,159*	,326**	,270**	,213**	,268**	,261**	,338**	,294**	,275**
	Sig. (2-tailed)		<,001	<,001	<,001	<,001	,034	<,001	<,001	,004	<,001	<,001	<,001	<,001	<,001
EX12mn	Pearson Correlation	,315**	1	,273**	,734**	,434**	,353**	,443**	,501**	,394**	,447**	,343**	,562**	,437**	,431**
	Sig. (2-tailed)	<,001		<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001
EX13mn	Pearson Correlation	,351**	,273**	1	,854**	,139	,264**	,259**	,247**	,308**	,348**	,385**	,385**	,364**	,401**
	Sig. (2-tailed)	<,001	<,001		<,001	,063	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001
EXmean	Pearson Correlation	,418**	,734**	,854**	1	,333**	,377**	,423**	,446**	,431**	,488**	,458**	,576**	,493**	,516**
	Sig. (2-tailed)	<,001	<,001	<,001		<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001
HEDmean	Pearson Correlation	,269**	,434**	,139	,333**	1	,464**	,322**	,539**	,378**	,370**	,335**	,648**	,332**	,310**
	Sig. (2-tailed)	<,001	<,001	,063	<,001		<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001
NOVmean	Pearson Correlation	,159*	,353**	,264**	,377**	,464**	1	,290**	,534**	,448**	,459**	,492**	,741**	,251**	,404**
	Sig. (2-tailed)	,034	<,001	<,001	<,001	<,001		<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001
LOCmean	Pearson Correlation	,326**	,443**	,259**	,423**	,322**	,290**	1	,441**	,321**	,454**	,487**	,636**	,348**	,397**
	Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001	<,001		<,001	<,001	<,001	<,001	<,001	<,001	<,001
REFmean	Pearson Correlation	,270**	,501**	,247**	,446**	,539**	,534**	,441**	1	,520**	,434**	,505**	,771**	,356**	,477**
	Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001	<,001	<,001		<,001	<,001	<,001	<,001	<,001	<,001
MNGmean	Pearson Correlation	,213**	,394**	,308**	,431**	,378**	,448**	,321**	,520**	1	,567**	,597**	,754**	,279**	,349**
	Sig. (2-tailed)	,004	<,001	<,001	<,001	<,001	<,001	<,001	<,001		<,001	<,001	<,001	<,001	<,001
INVmean	Pearson Correlation	,268**	,447**	,348**	,488**	,370**	,459**	,454**	,434**	,567**	1	,617**	,760**	,299**	,366**
	Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001		<,001	<,001	<,001	<,001
KNOmean	Pearson Correlation	,261**	,343**	,385**	,458**	,335**	,492**	,487**	,505**	,597**	,617**	1	,799**	,296**	,406**
	Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001		<,001	<,001	<,001
MTEmean	Pearson Correlation	,338**	,562**	,385**	,576**	,648**	,741**	,636**	,771**	,754**	,760**	,799**	1	,417**	,530**
	Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001		<,001	<,001
SATmean	Pearson Correlation	,294**	,437**	,364**	,493**	,332**	,251**	,348**	,356**	,279**	,299**	,296**	,417**	1	,513**
	Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001		<,001
LOYmean	Pearson Correlation	,275**	,431**	,401**	,516**	,310**	,404**	,397**	,477**	,349**	,366**	,406**	,530**	,513**	1
	Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

c. Listwise N=180

Annex I – Regression OLS (H1 – H2)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,586[a]	,343	,336	,49119	1,917

a. Predictors: (Constant), EXmean, SEmean

b. Dependent Variable: MTEmean

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22,339	2	11,170	46,295	<,001[b]
	Residual	42,705	177	,241		
	Total	65,044	179			

a. Dependent Variable: MTEmean

b. Predictors: (Constant), EXmean, SEmean

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95,0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	1,881	,250		7,516	<,001	1,387	2,375		
	SEmean	,105	,059	,118	1,765	,079	-,012	,222	,825	1,212
	EXmean	,488	,062	,527	7,855	<,001	,365	,611	,825	1,212

a. Dependent Variable: MTEmean

Collinearity Diagnostics[a]

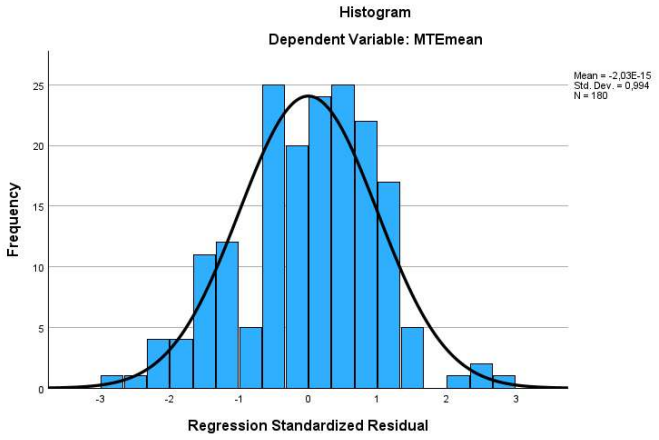
Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	SEmean	EXmean
1	1	2,968	1,000	,00	,00	,00
	2	,018	12,834	,09	,36	,95
	3	,014	14,586	,91	,63	,04

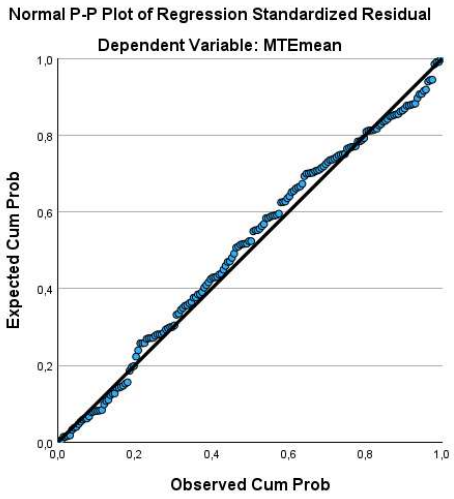
a. Dependent Variable: MTEmean

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3,2542	4,8438	4,0328	,35327	180
Std. Predicted Value	-2,204	2,296	,000	1,000	180
Standard Error of Predicted Value	,037	,120	,061	,019	180
Adjusted Predicted Value	3,2338	4,8416	4,0326	,35405	180
Residual	-1,34810	1,45884	,00000	,48844	180
Std. Residual	-2,745	2,970	,000	,994	180
Stud. Residual	-2,830	3,017	,000	1,005	180
Deleted Residual	-1,43349	1,50577	,00024	,49923	180
Stud. Deleted Residual	-2,888	3,089	,000	1,012	180
Mahal. Distance	,002	9,668	1,989	1,927	180
Cook's Distance	,000	,169	,007	,020	180
Centered Leverage Value	,000	,054	,011	,011	180

a. Dependent Variable: MTEmean




Normal P-P Plot of Regression Standardized Residual
Dependent Variable: MTEmean
Expected Cum Prob
Observed Cum Prob
0,0
0,2
0,4
0,6
0,8
1,0

Annex J - H3a – mediation

Run MATRIX procedure:

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This version of PROCESS requires SPSS version 26 or later

Workshop schedule available at haskayne.ucalgary.ca/CCRAM

In SPSS 29 and later, change default output font to Courier New for tidier

output. More information about PROCESS at processmacro.org/faq.html.

This beta release has not been completely tested. Use at your own risk.

********** PROCESS Procedure for SPSS Version 5.0 **********

Written by Andrew F. Hayes, Ph.D. www.afhayes.com

Documentation available in Hayes (2022). www.guilford.com/p/hayes3

****

Model: 4

Y: SATmean

X: SEmean

M: MTEmean

Covariates:

EXmean

Sample

Size: 180

Custom

Seed: 12345

****

OUTCOME VARIABLE:

MTEmean

Model Summary

R	R-sq	MSE	F(HC3)	df1	df2	p
,5860	,3434	,2413	39,7623	2,0000	177,0000	,0000

Model

	coeff	se(HC3)	t	p	LLCI	ULCI
constant	1,8807	,2765	6,8023	,0000	1,3351	2,4264
SEmean	,1047	,0777	1,3473	,1796	-,0486	,2580
EXmean	,4879	,0780	6,2573	,0000	,3340	,6418

****

OUTCOME VARIABLE:

SATmean

Model Summary

R	R-sq	MSE	F(HC3)	df1	df2	p
,5248	,2754	,2491	22,7928	3,0000	176,0000	,0000

Model

	coeff	se(HC3)	t	p	LLCI	ULCI
constant	1,7322	,3302	5,2459	,0000	1,0805	2,3839
SEmean	,0718	,0599	1,1992	,2321	-,0464	,1899
MTEmean	,1802	,0793	2,2724	,0243	,0237	,3366
EXmean	,3131	,0683	4,5879	,0000	,1784	,4478

********** TOTAL EFFECT MODEL **********

OUTCOME VARIABLE:

SATmean

Model Summary

R	R-sq	MSE	F(HC3)	df1	df2	p
,5025	,2525	,2555	31,9844	2,0000	177,0000	,0000

Model

	coeff	se(HC3)	t	p	LLCI	ULCI
constant	2,0711	,2694	7,6872	,0000	1,5394	2,6027
SEmean	,0906	,0612	1,4807	,1405	-,0302	,2115
EXmean	,4010	,0581	6,9045	,0000	,2864	,5157

********** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **********

Total effect of X on Y

Effect	se(HC3)	t	p	LLCI	ULCI
,0906	,0612	1,4807	,1405	-,0302	,2115

Direct effect of X on Y

Effect	se(HC3)	t	p	LLCI	ULCI
,0718	,0599	1,1992	,2321	-,0464	,1899

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
MTEmean	,0189	,0177	-,0041	,0698

********** ANALYSIS NOTES AND ERRORS **********

Level of confidence for all confidence intervals in output:

95,0000

Number of bootstrap samples for bias-corrected bootstrap confidence intervals:

5000

NOTE: A heteroskedasticity-consistent standard error and covariance matrix

estimator was used.

------ END MATRIX -----

Annex K - H3b Mediation

Run MATRIX procedure:

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This version of PROCESS requires SPSS version 26 or later

Workshop schedule available at haskayne.ucalgary.ca/CCRAM

In SPSS 29 and later, change default output font to Courier New for tidier output. More information about PROCESS at processmacro.org/faq.html.

This beta release has not been completely tested. Use at your own risk.

********** PROCESS Procedure for SPSS Version 5.0 **********

Written by Andrew F. Hayes, Ph.D. www.afhayes.com

Documentation available in Hayes (2022). www.guilford.com/p/hayes3

****

Model: 4

Y: SATmean

X: EXmean

M: MTEmean

Covariates:

SEmean

Sample

Size: 180

Custom

Seed: 12345

****

OUTCOME VARIABLE:

MTEmean

Model Summary

R	R-sq	MSE	F(HC3)	df1	df2	p
,5860	,3434	,2413	39,7623	2,0000	177,0000	,0000

Model

	coeff	se(HC3)	t	p	LLCI	ULCI
constant	1,8807	,2765	6,8023	,0000	1,3351	2,4264
EXmean	,4879	,0780	6,2573	,0000	,3340	,6418
SEmean	,1047	,0777	1,3473	,1796	-,0486	,2580

****

OUTCOME VARIABLE:

SATmean

Model Summary

```
          R      R-sq       MSE    F(HC3)       df1       df2          p
     ,5248     ,2754     ,2491   22,7928    3,0000   176,0000     ,0000
Model
             coeff    se(HC3)         t         p      LLCI      ULCI
constant    1,7322     ,3302    5,2459     ,0000    1,0805    2,3839
EXmean       ,3131     ,0683    4,5879     ,0000     ,1784     ,4478
MTEmean      ,1802     ,0793    2,2724     ,0243     ,0237     ,3366
SEmean       ,0718     ,0599    1,1992     ,2321    -,0464     ,1899
************************** TOTAL EFFECT MODEL ****************************
OUTCOME VARIABLE:
 SATmean
Model Summary
          R      R-sq       MSE    F(HC3)       df1       df2          p
     ,5025     ,2525     ,2555   31,9844    2,0000   177,0000     ,0000
Model
             coeff    se(HC3)         t         p      LLCI      ULCI
constant    2,0711     ,2694    7,6872     ,0000    1,5394    2,6027
EXmean       ,4010     ,0581    6,9045     ,0000     ,2864     ,5157
SEmean       ,0906     ,0612    1,4807     ,1405    -,0302     ,2115
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************
Total effect of X on Y
     Effect    se(HC3)         t         p      LLCI      ULCI
     ,4010     ,0581    6,9045     ,0000     ,2864     ,5157
Direct effect of X on Y
     Effect    se(HC3)         t         p      LLCI      ULCI
     ,3131     ,0683    4,5879     ,0000     ,1784     ,4478
Indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
MTEmean     ,0879     ,0414     ,0161     ,1835
************************ ANALYSIS NOTES AND ERRORS ************************
Level of confidence for all confidence intervals in output:
 95,0000
Number of bootstrap samples for bias-corrected bootstrap confidence intervals:
 5000
NOTE: A heteroskedasticity-consistent standard error and covariance matrix
      estimator was used.
```

------ END MATRIX -----

Annex L - H4 – Medation

Run MATRIX procedure:

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This version of PROCESS requires SPSS version 26 or later

Workshop schedule available at haskayne.ucalgary.ca/CCRAM

In SPSS 29 and later, change default output font to Courier New for tidier

output. More information about PROCESS at processmacro.org/faq.html.

This beta release has not been completely tested. Use at your own risk.

********** PROCESS Procedure for SPSS Version 5.0 **********

Written by Andrew F. Hayes, Ph.D. www.afhayes.com

Documentation available in Hayes (2022). www.guilford.com/p/hayes3

****

Model: 4

Y: LOYmean

X: MTEmean

M: SATmean

Sample

Size: 180

Custom

Seed: 12345

****

OUTCOME VARIABLE:

SATmean

Model Summary

R	R-sq	MSE	F(HC3)	df1	df2	p
,4171	,1740	,2808	31,0592	1,0000	178,0000	,0000

Model

	coeff	se(HC3)	t	p	LLCI	ULCI
constant	2,2358	,2952	7,5732	,0000	1,6532	2,8184
MTEmean	,4023	,0722	5,5731	,0000	,2599	,5448

****

OUTCOME VARIABLE:

LOYmean

Model Summary

R	R-sq	MSE	F(HC3)	df1	df2	p
,6194	,3836	,3826	65,5700	2,0000	177,0000	,0000

Model

	coeff	se(HC3)	t	p	LLCI	ULCI
constant	,3153	,3593	,8775	,3814	-,3938	1,0245
MTEmean	,4970	,0890	5,5845	,0000	,3214	,6726
SATmean	,4758	,0967	4,9204	,0000	,2850	,6667

********** TOTAL EFFECT MODEL **********

OUTCOME VARIABLE:

LOYmean

Model Summary

R	R-sq	MSE	F(HC3)	df1	df2	p
,5297	,2806	,4440	74,0942	1,0000	178,0000	,0000

Model

	coeff	se(HC3)	t	p	LLCI	ULCI
constant	1,3792	,3375	4,0863	,0001	,7131	2,0452
MTEmean	,6885	,0800	8,6078	,0000	,5306	,8463

********** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **********

Total effect of X on Y

Effect	se(HC3)	t	p	LLCI	ULCI
,6885	,0800	8,6078	,0000	,5306	,8463

Direct effect of X on Y

Effect	se(HC3)	t	p	LLCI	ULCI
,4970	,0890	5,5845	,0000	,3214	,6726

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
SATmean	,1914	,0503	,1101	,3115

********** ANALYSIS NOTES AND ERRORS **********

Level of confidence for all confidence intervals in output:

95,0000

Number of bootstrap samples for bias-corrected bootstrap confidence intervals:

5000

NOTE: A heteroskedasticity-consistent standard error and covariance matrix estimator was used.

------ END MATRIX -----