

SEMINAR SUMMARY

**Sensory Consumer Experiences and Well-being in Tourism and Hospitality
Management: Opportunities and Challenges**

Dora Agapito

Faculdade de Economia, Universidade do Algarve

Para efeitos de provas de agregação nos
termos da alínea c) do nº2 Art. 8º do DL
239/2007 de 19 de junho



2023

TABLE OF CONTENTS

CONTEXTUALIZATION	1
1. Introduction	5
2. Senses, well-being and consumer behavior.....	7
3. Senses, tourist experiences and well-being.....	12
3.1. Representative empirical studies	19
4. Research opportunities and challenges	24
5. Conclusion.....	27
REFERENCES	30

CONTEXTUALIZATION

This document has been prepared as a partial fulfillment (detailed seminar overview) of the requirements for the Aggregation title (Economic and Management Sciences; specialty in Management), in accordance with Artº 8 (*alínea c*) of Decreto-Lei nº 239/2007, 19th June.

This document is structured as a research paper built upon the candidate's previous publications as a solo author or in partnership with colleagues. The main objective of this overview is to depict research opportunities and challenges around sensory consumer experiences in perceived well-being in hospitality and tourism contexts. A managerial approach is adopted with a focus on marketing. A critical literature review is followed.

Several reasons justify the choice of this topic, which is aligned with the area of Management:

- a) the academic background of the candidate is in Marketing and Tourism Management;
- b) the published research of the candidate evolves around the selected contemporary topic;
- c) teaching activities related to coordination of course' modules have been focusing on areas related to Management (e.g., Marketing Management, Consumer Behaviour, Communication and Image, Distribution and Sales Management, Destination Management, Tourism Management);
- d) the selected topic is aligned with the approach used in the report submitted within the Aggregation documents on Consumer Behaviour in the context of the Master in Tourism Organizations Management;
- e) the candidate is a member of the Direction Boards of the Master in Marketing Management and of the Ph.D. in Tourism at the Faculty of Economics, UAlg;
- f) the candidate coordinates the area of 'Tourism and Hospitality Competitiveness and Governance' at the Research Center for Tourism, Sustainability and Well-being (CinTurs).

The justifications for adopting a theoretical research article structure in this document are two-fold: a) it helps to present a logical rationale based on arguments supported by literature and to show the contemporary relevance of the topic, together with the potential to contribute to theory and practical implications; b) it aids the candidate in the process around the development and future submission of a reflection on opportunities and challenges on the proposed topic to a scientific journal. While a theoretical approach is adopted, practical examples of best practices worldwide are also presented to illustrate and discuss the proposed

approach rationale. This seminar can be delivered to Ph.D. students as a 3-hour research seminar (3-hour seminars are adopted in the Ph.D. programs at the Faculty of Economics, UAlg).

This theoretical approach aims to reflect on the potential of the research topic and not to review extensively specific concepts. Therefore, rather than repeating the exercise, the candidate points the reader to particular references when good reviews or conceptual articles have been produced regarding specific concepts/approaches.

The present document is organized into seven interconnected parts:

- 1) An abstract summarizes the research;
- 2) An introduction presents the research objective and the relevance in studying the role of sensory consumer experiences in well-being outcomes within tourism and hospitality management;
- 3) A first section dedicated to the literature contextualizes the role of the senses in consumer behavior, considering sensory stimuli as preconditions of perception and consumption experiences. Some frameworks in marketing that highlight the sensory dimension in designing satisfying consumption environments are briefly presented;
- 4) A second section on literature contextualizes the senses and well-being within frameworks applied to tourism and hospitality contexts;
- 5) A subsection discusses representative empirical studies addressing some aspects of sensory consumer experiences and hedonic and eudaimonic well-being within hospitality and tourism management;
- 6) A specific section synthesizes and discusses research opportunities and challenges derived from the literature review;
- 7) A conclusion wraps up the manuscript by highlighting contributions to theory and practice.

ABSTRACT

Purpose

This paper explores the opportunities and challenges sensory marketing introduces for hospitality and tourism in managing consumer experiences considering its potential impacts on perceived well-being. The research intends to offer relevant insights for hospitality and tourism organizations management and provides future research directions.

Design/methodology/approach

A critical literature review was undertaken to explore theoretical approaches, conceptual developments, and empirical evidence related to the impact of sensory consumer experiences on hedonic and eudaimonic well-being in tourism and hospitality contexts. Best practices around the world are presented.

Findings

Sensory marketing opens many exciting opportunities for hospitality and tourism and poses some great challenges. Hospitality and tourism organizations need to use multi-sensory stimuli strategically to customize and co-create hybrid virtual and physical experiences before, during, and after the visit. Research opportunities also emerge for adopting and operationalizing a responsible managerial approach to designing sensory consumer experiences.

Research limitations/implications

This paper critically analyzes the early applications of sensory marketing in hospitality and tourism. This research can aid different stakeholders in better understanding the practical implications of sensory experience design in the hospitality and tourism industry, considering consumers' well-being outcomes. By adopting a reflective approach, empirical applications are not conducted at this stage.

Originality/value

The paper reflects on the potential of sensory stimuli in hospitality customer experience and value co-creation, considering its impacts on perceived well-being. Besides putting forward a research agenda for further exploiting its potential for hospitality and tourism organizations management, this paper highlights opportunities and challenges around the topic.

Keywords: Sensory Consumer Experience, Customer Experience Design, Sensory Marketing, Five senses, Responsible Management; Universal Design

1. Introduction

Sensory elements have been emphasized as essential to the co-creation of satisfying, positive, and memorable consumer experiences in general (e.g., Brakus et al., 2009; Krishna, 2012; Pine & Gilmore, 1998; Prahalad & Ramaswamy, 2004; Schmitt, 1999; Lemon & Verhoef, 2006) and in tourism and hospitality in particular (e.g., Agapito; 2020; Buhalis et al., 2023; Mossberg, 2007). The latter perspective has been informed by the experience design approach and sensory marketing, which consider not only visual stimuli (e.g., colors, shapes, and layout) but also non-visual elements such as sounds, scents, flavors, and haptic stimuli within a managerial approach to customer experiences (Agapito, 2020, 2022; Fong et al., 2022; Tussyadiah, 2014). Although in its infancy, recent research is now also concerned with which extent multi-sensory environments can contribute to perceived meaningful experiences that can enhance personal growth and transformation related to well-being outcomes in tourism and hospitality contexts (Agapito, 2020; 2023; Tasci & Pizam, 2020).

The hedonic perspective of well-being has been the center of the experience economy approach to consumption contexts (Holbrook & Hirschman, 1982; Mossberg, 2007), while the eudaimonic perspective goes beyond emotional responses, pleasure and satisfaction obtained from the consumer experience. Therefore, the latter view is associated with meaningful consumer experiences, self-realization, and personal development (Vada et al., 2020).

In early April 2023, a general search in the Scopus database was conducted by the author using the search protocol (TITLE-ABS-KEY(touris*) AND TITLE-ABS-KEY(well-being) OR TITLE-ABS-KEY(well-being)) including no filters. This process resulted in 2,567 publications. These refer to documents that used the searched keywords in the title, abstract, or keywords. The number of documents tackling both well-being and tourism only surpassed 100 per year after 2015. This result indicates an increased interest in researching well-being aspects in tourism contexts in the last decade. A notable increase can be observed after the Covid-19 pandemic.

By examining contributions from several scientific domains, research by Smith and Diekmann (2017), Rahmani et al. (2018), Filep and Laing (2019), and Vada et al. (2020), among others, offers extensive literature on well-being in the proposed contexts. The characteristic of being away from individuals' usual environments and routines (e.g., staying at a hotel in a non-urban

location) offers the ability of tourism and hospitality organizations to promote human well-being (Pearce, 2009; Smith & Diekmann, 2017; Vada et al., 2020).

Literature indicates consumers are turning to vacation travel for wellness purposes (Letho & Letho, 2019). This approach takes into consideration the role of tourism and hospitality providers in promoting and safeguarding individuals' well-being. This idea follows a *salutogenesis* approach based on factors that support human health and wellness rather than centering on disease (Antonovsky, 1979). Letho and Letho (2019) advocate that vacation should be conceptualized as a wellness product, i.e., that contributes to general well-being enhancement.

An emerging body of research on tourism and hospitality emphasizes the relevance of the construct *experiencescapes* (Agapito et al., 2021; Chen et al., 2020; Mossberg, 2007) or *experienscapes* (Tasci & Pizam, 2020). This construct follows the rationale of *servicescape* (Bitner, 1992) and is associated with a holistic approach to external stimuli to the individual that can be partially managed to create the conditions where enhanced consumer experiences can emerge. Multi-sensory elements play a central part in this managerial process.

Agapito (2020) conducted a systematic review exploring the role of human senses in the design of tourism experiences and found that the sensory dimension of tourist experiences has been an increasing topic of interest in the last two decades. Human-geographical and socio-anthropological perspectives typically draw these studies, and more recently, research has been informed by a marketing and management approach, following the experience economy rationale. Research opportunities in the referred review relate to the relationship between the design of sensory consumer experience, sustainability, well-being, and technology.

Fong et al. (2022) developed a critical synthesis and reflection of sensory marketing in hospitality and highlighted multi-sensory environments' role in consumer behavior outcomes. While there is extensive research on how sensory inputs can drive consumer behavior in diverse retail environments (Spence, 2022a), promising knowledge gaps are still to be addressed in hospitality contexts such as restaurants or hotels to understand the theory and

practical implications fully. Fong et al. (2022) also point out the multidisciplinary nature of the sensory marketing approach and its relevance for practitioners and consumers, both seeking optimal and pleasurable experiences.

In light of current research, sensory design plays a vital role in a traveler's perception of well-being, offering numerous occasions for a person–environment exchange beyond one's daily routine (Agapito, 2020; Lehto & Lehto, 2019). However, despite the relevance and research opportunities around the connection between sensory consumer experiences and well-being in tourism and hospitality, empirical evidence is still scarce (Agapito et al., 2021; Ahn et al., 2019; Tasci & Pizam, 2020).

Given the complementary nature of hedonic and eudaimonic approaches in assessing the perception of well-being (Coghlan, 2015; Ryan & Deci, 2001; Su et al., 2020), this paper adopts a critical reflection (Grant & Booth, 2009; Liu-Lastres et al., 2023) on challenges and opportunities in researching the role of sensory experiences in hedonic and eudaimonic consumer outcomes in tourism and hospitality. While adopting a managerial focus on consumer behavior, this perspective also considers the multidisciplinary nature of the human senses and well-being (Agapito, 2023; Agapito et al., 2013). Discussion can inform research and practices in tourism and hospitality management.

2. Senses, well-being and consumer behavior

Human senses refer to sensory systems involved in perception and are the basis of how individuals interact with and perceive their surroundings. The process of gaining meaning from these interactions is mediated by visual and non-visual senses interactions (Goldstein & Brockmole, 2017; Rodaway, 1994). Information received by sensors in the body is deemed a sensation. When the brain interprets the sensation, it becomes a perception with a specific meaning (Marieb & Hoehn, 2018). Therefore, while perception through sensory stimulations is classified as a bottom-up process, top-down processes also impact perception through anticipation, memory, and previous knowledge, which assist individuals in interpreting their surroundings (Goldstein & Brockmole, 2017).

Stimuli are available in the surroundings in diverse forms, such as vibrations, light, chemical elements, temperature, and levels of pressure. These stimuli are experienced as sensations (e.g., colors, sounds, scents, textures), which are interpreted and can generate behavioral responses (see examples of different contexts in Agapito, 2022; Goldstein & Brockmole, 2017; Kim & Fesenmaier, 2017; Madzharov et al., 2015; Solomon et al., 2019). Selective attention prevents the brain from information overload and manages these sensory inputs (Derval, 2022; Solomon et al., 2019). Therefore, how to draw and engage individuals' attention through sensory stimulation has been an important question for marketing professionals and researchers (Spence, 2022a).

Sensory marketing relies on applying the understanding of sensations' impacts on "consumer perception, cognition, emotion, learning, preference, choice, or evaluation" (Krishna, 2012, p.334). From a managerial perspective, sensory cues are informed by the conventional division of five senses (vision, audition, smell, taste, and touch) and can be used as triggers to consumer perceptions of abstract notions related to products in the broad sense (e.g., attributes, personality, etc). As a result, sensory perception and sensory marketing are therefore set as a growing field of study. Considering the complexity of consumer behavior, which involves complex decision-making processes, research opportunities and related challenges are numerous (Fong et al., 2022; Kim et al., 2021; Spence, 2022a).

This approach is informed by cognition grounded in the senses (grounded theory) carved in cognitive psychology and is synthesized by Krishna's (2012) conceptual framework of sensory marketing (Figure 1).

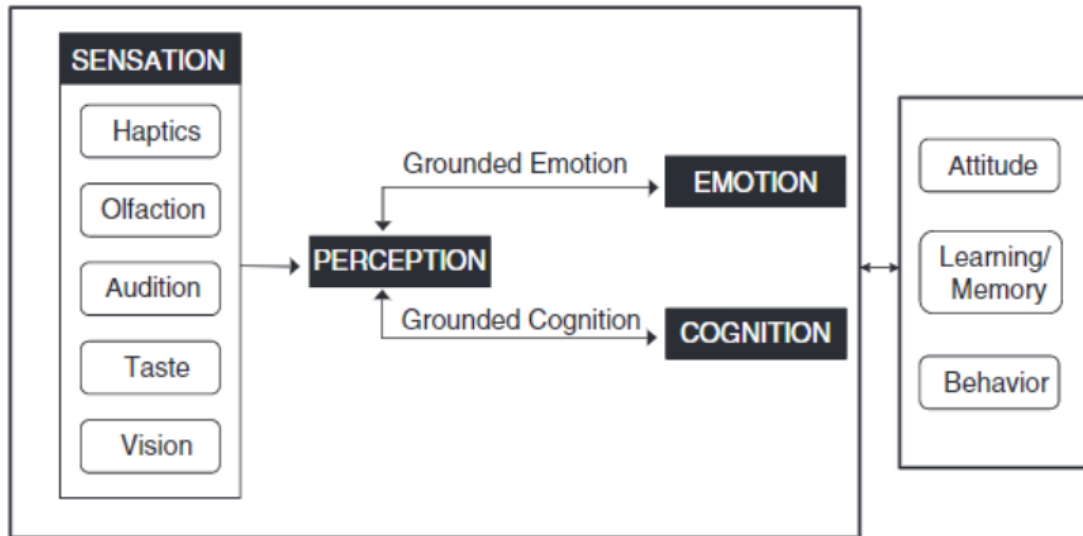


Figure 1 – Sensory marketing framework (Krishna, 2012)

The experience economy paradigm and resulting experiential marketing approaches have stressed sensory cues as central in voluntarily designing customers' experiences deemed engaging around a coherent theme/concept (Pine & Gilmore, 1998; Schmitt, 1999). Specifically, a customer experience can be considered a multidimensional construct and is based on "cognitive, emotional, behavioural, sensorial, and social responses to a firm's offerings during the customer's entire purchase journey" (Lemon & Verhoef, 2006, p. 71). Therefore, multiple stimuli (e.g., sensory) can be designed and managed at different *touch points* with which customers interact.

Noteworthy is that sensory stimuli have been previously approached in marketing as different terminologies. This is the case, for example, of *atmospherics* (Kotler, 1974), *physical evidence* within the 7 P's of services marketing (Booms & Bitner, 1981, 1982; Selem et al., 2023), *tangibles* in SERVQUAL model (Parasuraman, Zeithaml, & Berry), and *ambient conditions* within the *servicescape* framework (Bitner, 1992).

The *servicescape* framework (Figure 2) depicts how the physical surroundings of services (ambient conditions, space/function, signs, symbols, and artifacts) affect the perception of service environments, resulting in employees' and customers' internal positive or negative responses (cognitive, emotional, and physiological), as well as behaviors (approach *versus* avoidance; social interactions). Potential moderators are also depicted, such as situational

factors (Bitner, 1992). This framework is informed by environmental psychology and places sensory elements as central in services marketing. The potential benefits of well-designed environments for customers and service organizations are widely stressed (Wirtz & Lovelock, 2022). As such, this instrument has been extensively used in the context of retail and hospitality, as documented by Tasci and Pizam (2020).

For example, Heide and Grønhaug (2006) adapted the framework regarding the use of the atmosphere to achieve successful hospitality experiences and to understand guests' responses (e.g., satisfaction, intentions to revisit, and recommend the service). A similar approach was proposed by Mattila and Gao (2017) based on atmospherics.

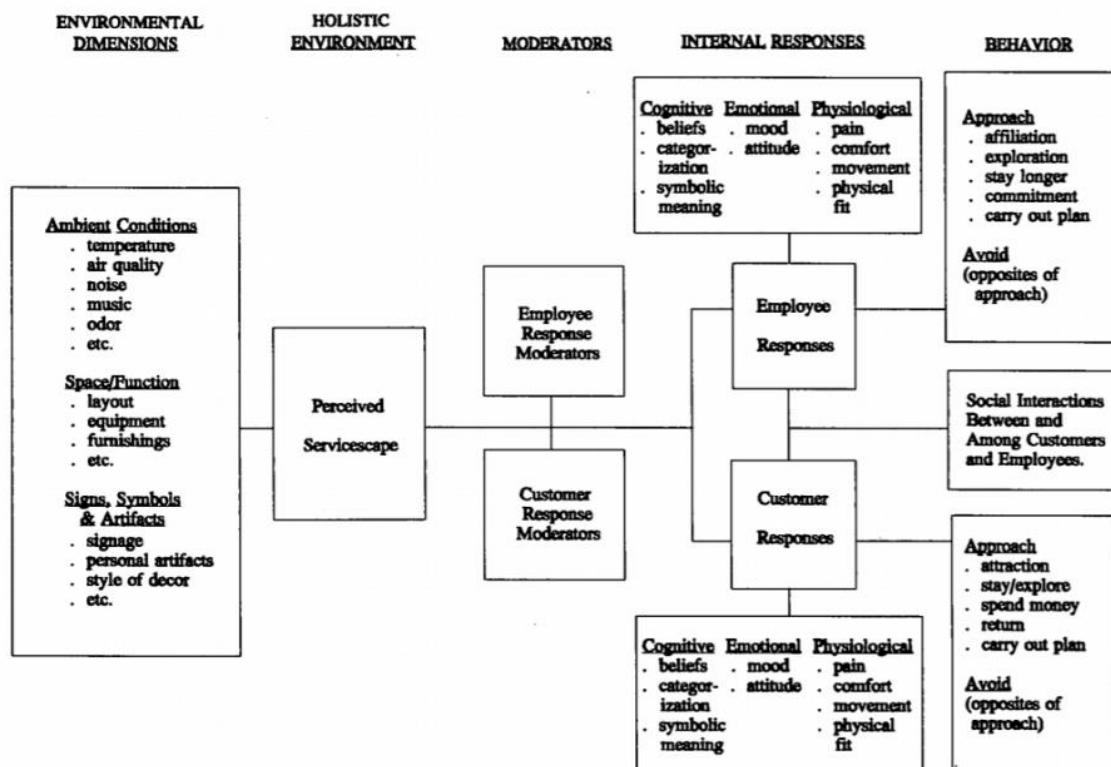


Figure 2 – Framework around *servicescape* (Bitner, 1992)

Rosenbaum and Massiah (2011) proposed an extension of *servicescape* to include social, socially symbolic, and natural components to manage the service surroundings (Figure 3). The first component includes staff and customer interactions and social density stimuli. The socially symbolic stimuli (ethnic signs and symbols, ethnic objects/artifacts) intend to evoke

feelings of comfort and inclusiveness. The natural stimuli are related to nature-based cues connected to restorative outcomes. The biophilia hypothesis (Wilson, 1984) informs the addition of these natural stimuli, which suggests the existence of an innate bond between humans and other living systems, namely nature. In fact, the wellness potential of commercial *servicescapes* that can mimic the natural therapeutic stimuli has been highlighted in research focused on managing compelling consumer experiences (Arnould & Price, 1993). Therefore, studies on the role of natural stimuli in customer-environmental behavior are informed by psychology and medical sciences considering the potential effect of nature on human health (Joye & Dewitte, 2018; Rosenbaum & Massiah, 2011).

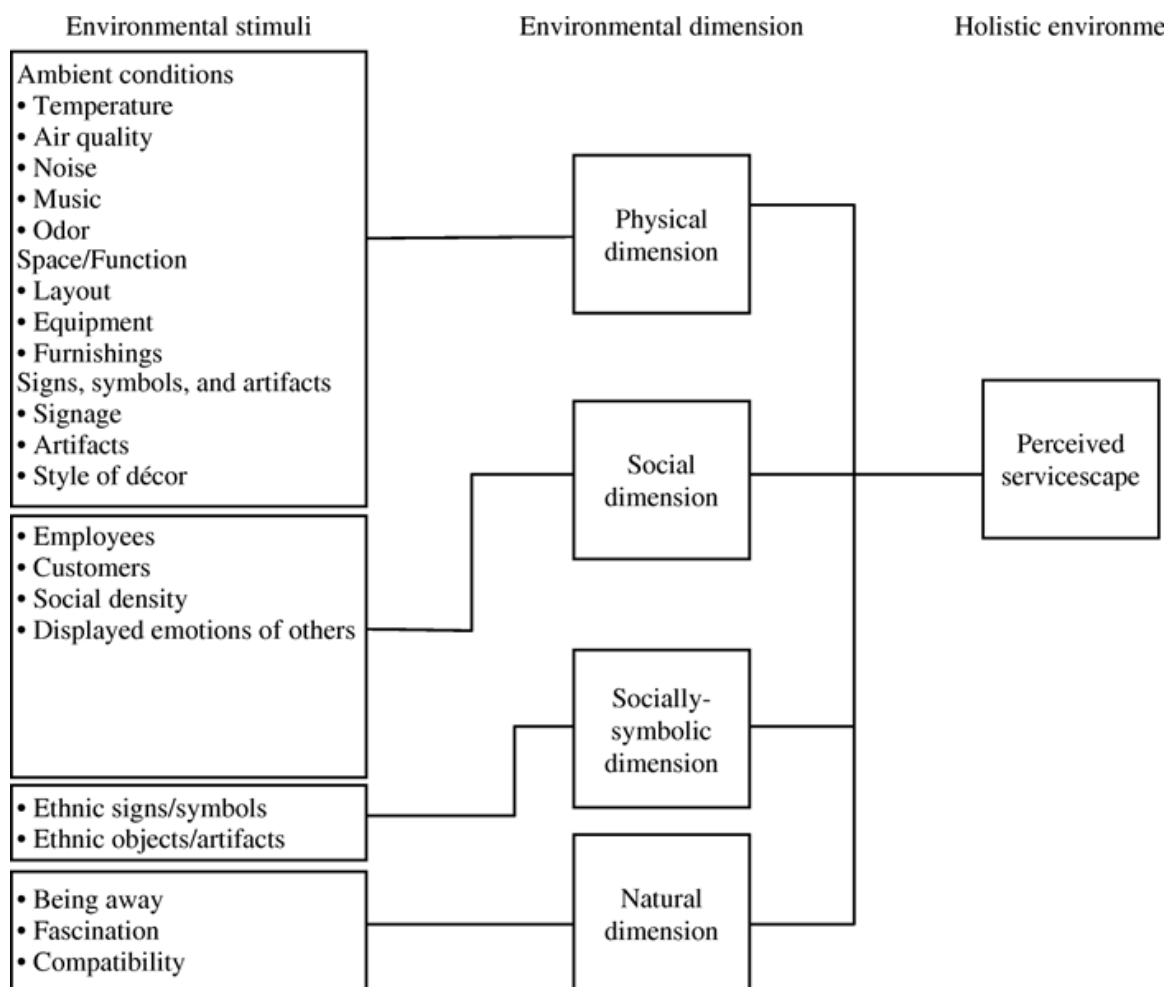


Figure 3 – An extension to *servicescape* (Rosenbaum & Massiah (2011))

It can be concluded that the multidimensional extended *servicescape* (surrounding environment of consumption contexts) is, therefore, more human-centric and highlights sensory elements as central in its measures.

3. Senses, tourist experiences and well-being

The idea of managing *sensescapes* is related to the argument in human geography that human senses mediate visitors' encounters with places and that senses can be spatially ordered (Agapito, 2020; Rodaway, 1994; Urry, 2002). Therefore, *smellscapes*, *soundscapes*, *tastescapes* and *haptiscapes* can be managed as part of an extended vision of *servicescape* in hospitality and tourism contexts (Agapito, 2021; Lin et al., 2022; Qiu et al., 2021; Tasci & Pizam, 2020).

Managerial approaches to sensory aspects in tourism and hospitality have also been centered on five modalities – sight, hearing, smell, taste, and touch (Agapito, 2000; Fong et al., 2022). Other human senses are related to body awareness. This is the case of the senses related to movement and position of the body (proprioception), pain, and temperature (Agapito, 2022; Kim & Fesenmaier, 2017).

After reflecting on the multidisciplinary nature of the human senses, Agapito et al. (2013) follow a marketing approach to tourist experiences proposed by Mossberg (2007). Mossberg (2007) builds upon the *servicescape* framework originally proposed by Bitner (1992), as well as the experiential approach derived from the experience economy (Pine & Gilmore, 1998). Mossberg (2007) stresses that these external factors impact the consumer experience and consider the complex nature of tourism as a composite product. In so doing, the notion of *experiencescape* (O'Dell, 2005) is preferred over *servicescape* as being more holistic and fit for designing/planning the surroundings of tourism consumption contexts.

In this line, Agapito et al. (2013) propose a framework (Figure 4) with a number of factors – external and internal – that influence the tourist experience. In doing so, it includes the *experiencescape* as a composition of external factors to the individual that can positively impact individuals (internal factors) if the stimuli are coherently managed around a theme/concept (Pine & Gilmore, 1998). The framework proposed by Agapito et al. (2013) poses multi-sensory environments as foundational, leveraging tangible and intangible stimuli

related to products and human interactions. The model does not cover well-being in particular but focuses on hedonic aspects of consumption pertaining to emotional and satisfaction states, also considering place attachment as a relevant consumer outcome.

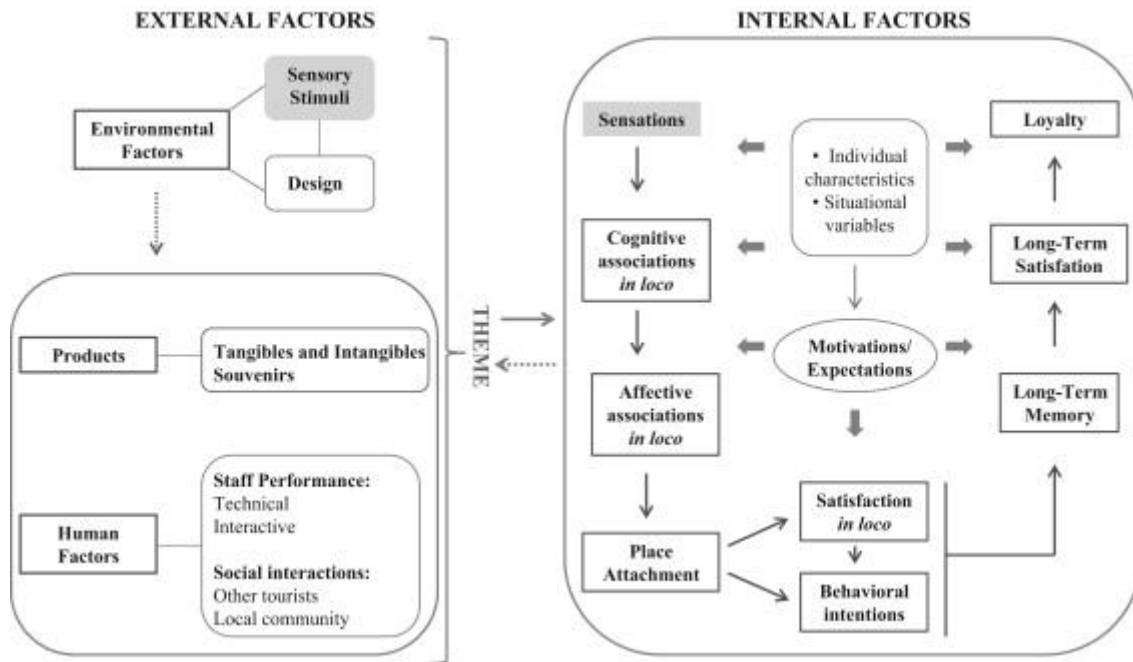


Figure 4 – A framework for understanding the perception of tourist experiences (Agapito et al., 2013)

Agapito et al. (2021) empirically tested part of the latter theoretical framework and found it adequate to be used in a hospitality context. The study was conducted in a set of non-urban accommodations and proposed the notion of *accommodationscape* as follows: "external stimuli that underlie an engaging context of the guest experience in logging units, based on the idea that a holistic approach to stimuli can evoke interest and attention; and, subsequently, act as a drive to positive action" (p.259). The authors show the connections between this second-order construct with satisfaction and behavioral intentions. In their conclusions, the researchers acknowledge the relevance of addressing aspects of well-being, both hedonic and eudaimonic, in future studies. An interesting example in the accommodation sector in using a holistic approach to the sensory and *experiencescape* factors has been implemented by Sofitel Group (Sofitel Luxury Hotels) through the creation of a scent

signature, a pillow menu ("my bed experience"), a color scheme around a rituals theme and French elegance style, signature dishes, ambassadors, symbols, etc (Derval, 2022).

Letho and Lehto (2019) assume that vacation experience design should follow a wellness orientation as an all-encompassing strategy. The authors advocate that tourism and hospitality organizations can manage experiences that support optimal wellness outcomes for consumers and that sensory design of consumer experiences is crucial to achieving vacationer's sense of wellness by aiding processes of: a) strengthening one's wellness resources; b) restoring cognitive resources; c) generating/using creative and productive resources; and d) transformation. In fact, sensory stimuli available in the surroundings can be conducive to creative behavior, and this could be encouraged by co-creative approaches through workshops and co-creative activities.

According to Huta and Ryan (2010), some stimuli trigger individuals' senses leading to hedonia through a) relaxation and comfort, or the state of feeling energy, and b) pleasure derived from experiencing perceived positive activities. Stimuli leading to self-actualization, self-consciousness, and enduring long-term outcomes, which can associate with positive and negative affect, must be perceived as meaningful. In this sense, perceived authentic experiences in tourism based on unique local traits can be a way of gaining self-consciousness and knowing more about the world, leading to eudaimonia (Rahmani et al., 2018).

Based on the idea that the stimuli (conditions) around which consumption experiences emerge can be partially managed, Tasci and Pizam (2020) adopted the notion of *experienscape* (a variant terminology to *experiencescape*) as more inclusive. By considering the multidisciplinary nature of *servicescape*, the authors expand this framework holistically (following Rosenbaum & Messiah, 2011) to embrace different stakeholders and diverse consumption contexts in hospitality. The morphology of this multidimensional construct supports a configuration of *experienscape* based on six components (sensory, functional, social, natural, and hospitality culture). Each of these components has been depicted in the literature regarding its impacts on individuals' cognitive responses (e.g., consumer-based brand equity), affective responses (e.g., immersion, brand love), conative responses (e.g., loyalty), and human-centric outcomes (e.g., quality of life, well-being). The proposed framework around this construct considers the complex nature of consumer behavior.

Research opportunities are supported in the literature and based on relationships informed by the SOR model (Stimuli-Organism-Response) from environmental psychology (Mehrabian & Russel, 1974). Several moderators are proposed (personal and situational). In their extensive literature review, Tasci and Pizam (2020) found that among consumers and other stakeholders, outcomes that have been notable overlook are subjective happiness, subjective well-being, and quality of life (Figure 5).

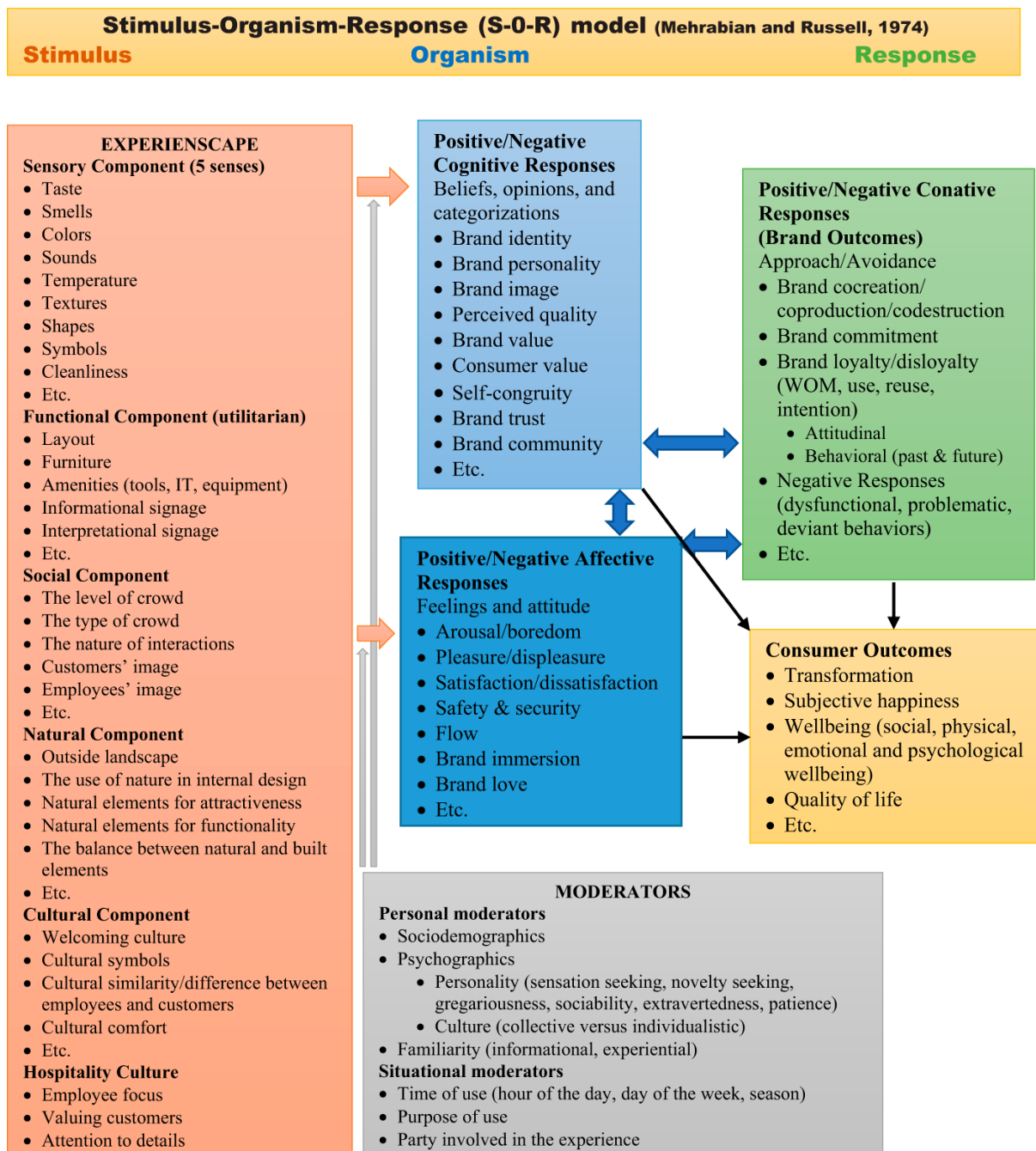


Figure 5 – A framework around experienscape (Tasci & Pizam, 2020)

In a synthesis of the state of the art around senses and tourism, Agapito (2022) proposes a framework (Figure 6) advocating that a responsible managerial approach to the senses (sensory experiences) can contribute to sustainable tourism. This follows the rationale that responsible tourism (practice-related) can aid the process of achieving sustainability objectives (values-based) (Mihalič, 2016). Agapito's (2022) framework is based on specific assumptions derived from the literature.

First, sensory cues can be inspired by unique **local resources** (e.g., music, gastronomy, local products, handicraft, architecture, fauna, and flora). By drawing individuals' attention to particular elements of the built, natural, or environment, senses can be stimulated. Specific colors, shapes, and symbols connected to architecture, traditional attire, native fauna, and flora, together with flags, can activate the sense of sight. Local language, music, hymns, and bird songs can aid hearing stimulation. Taste and smell can be addressed through scents from plants and spices and by stimuli associated with local cuisine. By enabling consumers to touch and interact creatively with items like replicas of local art and heritage, raw materials, and handicraft, haptic senses are stimulated. This approach can be used in multiple contexts (e.g., accommodations, museums, interpretative centers, restaurants, thematic parks, airports, workshops, slow tourism-related activities, and mobile apps) (Agapito et al., 2013; 2014).

A good example is a multi-sensory scenario inspired by Loch Lomond and the Trossachs National Park that was displayed at the international arrival walkway at Glasgow Airport to create the conditions for international visitors to have a taste of sensory experiences that can be lived at the Scottish woodland trail. The aim was to encourage tourists to visit this distinct nature-based attraction. Upon arrival, visitors could hear specific birdsong sounds, visualize wildlife in the park, experience forest-related scents, and sit on wooden benches (Deighton, 2014).

Therefore, sensory stimuli can be aligned with **local identity** or brand identity and address the needs and requirements of different stakeholders. This includes consumers, organizations (e.g., Destination Management Organisations, hotels, restaurants, museums, event organizers, thematic and nature parks), residents, and other local businesses. Among the most important factors influencing the consumers' choice of accommodation during Covid-19, the empirical study from Del Chiappa et al. (2022) highlighted the social and environmental

engagement factor. This component comprises aspects related to the firms' actions to safeguard the environment and support the local residents' economy and well-being. Agapito and Chan (2019, 2020) showed that a multi-sensory approach could be used to responsibly manage visitor experiences in community-based tourism by focusing on interpreting and designing experiences around resources deemed representative of local identity. Good practices in an off-shore island (Yim Tin Tsai) in Hong Kong focused on natural and cultural heritage are discussed. This managerial perspective can contribute to fostering well-being related to pleasure and self-growth outcomes by enhancing perceived meaningful experiences by hosts and guests.

A multi-sensory approach, i.e., integrating multiple stimuli, can encourage partnerships in finding creative and innovative solutions (Agapito, 2020; Mossberg, 2007). This includes the support of contemporary technological developments (including the metaverse), making it possible to experience different phases of a trip in a more accessible and inclusive way (Buhalis et al., 2023; Petit et al., 2019).). Adopting a multi-sensory focus enables the design of enhanced experiences for all, an idea supported by **universal design** (Darcy & Dickson, 2009; Lam et al., 2020). This perspective stresses that efforts in emphasizing non-visual information (auditory, tactile, olfactory, gustatory) can contribute to not only enhanced but accessible and inclusive experiences that can be perceived as more meaningful. In this line, the connection between sensory information and a smart approach is advocated by Agapito and Guerreiro (*forthcoming*) as contributing to sustainable forms of tourism, such as slow tourism, by enhancing the unique qualities of places and making experiences more accessible and inclusive.

This approach postulates that a responsible approach to multi-sensory environments can help achieve human-centric outcomes related to both hedonic (emotional) and eudaimonic aspects of well-being. This rationale is supported by research stressing that extraordinary and compelling experiences can lead to flow and personal transformations related to values and behaviors. This process can positively impact perceived well-being pertaining to personal growth (e.g., see the review conducted by Tasci & Pizam, 2020). Noteworthy, Duerden et al. (2018) associate transformational experiences with meaningful experiences that can lead to "personal changes in values, beliefs, intentions, or self-perceptions." (p.208) and that have the potential to impact behaviors.

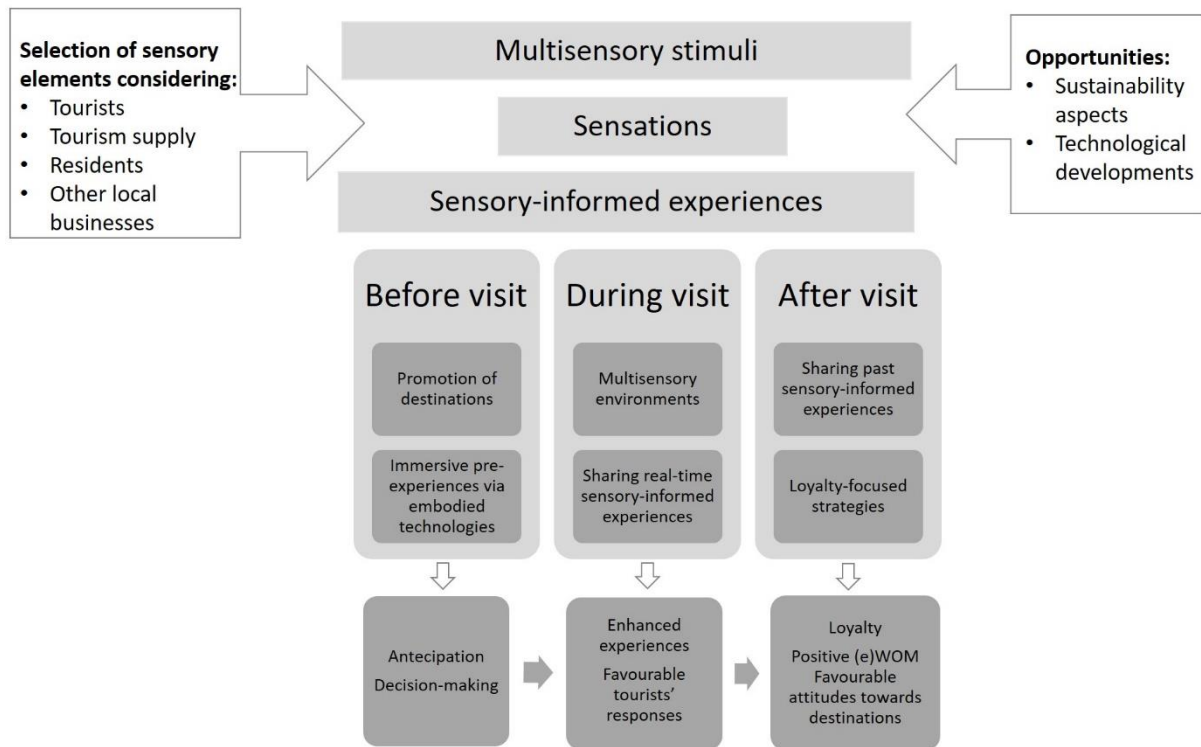


Figure 6. Holistic approach to the senses in tourism management and marketing (Agapito, 2022)

By extending the systematic review conducted by Agapito (2020), who highlighted that important research directions are related to sustainability, well-being and technology, Tran-Ha and Agapito (2022) found that research opportunities around sensory experiences and consumer behavior in tourism depicted in empirical studies published in journal articles between January 2020 and February 2021 and indexed in Scopus are related to: a) exploring cultural differences in sensory experiences in tourism contexts and the impacts on tourists' outcomes; b) considering constructs such as perceived authenticity and well-being in sensory experience models in tourism and hospitality; c) considering moderator variables (e.g., personality traits, cultural background, demographics); d) diversifying the settings for the analysis and including the perspectives of multiple stakeholders; e) collecting data in different seasons of the year and conducting longitudinal studies (different stages of the tourist experience); f) utilizing other forms of data collection other than questionnaires and interviews (experimental design and the use of mixed methods are called for); g) exploring different types of technology to measure and design multi-sensory experiences; h) and testing

multi-sensory scenarios (more than one sensory stimulus) for enhanced experiences. Some of these research avenues are also stressed by Fong et al. (2022), especially the cross-modal correspondence (the influence of a sensory stimulus on other stimuli), the study of congruence/incongruence (perceived coherence) between multiple sensory stimuli, and understanding how technology applications in hospitality contexts (e.g., virtual and augmented reality) can lead to the effective use of different sensory modalities.

3.1. Representative empirical studies

After positioning well-being as a key outcome of sensory consumer experiences in contemporary tourism and hospitality management, it is important to observe representative empirical studies endeavoring to examine this connection. Apart from outcomes (e.g., emotional responses, satisfaction, loyalty) related to a managerial perspective focused solely on hedonic aspects of consumption (e.g., Agapito et al., 2014, 2017, 2021; Lee et al., 2019; Lv et al., 2020; Mehraliyev et al., 2020; Selem et al., 2023), although still limited, some empirical studies have highlighted other variables associated with eudaimonic aspects that sensory stimuli can facilitate (Table 1).

The study conducted by Ahn et al. (2019) revealed that specific consumer experiences play an important role in transforming needs fulfillment into well-being. These researchers measured integrated resort brand experiences through sensory, affective, behavioral, and intellectual dimensions and explored their impact on customer well-being through perceived satisfaction of psychological needs. Using the self-determination theory (SDT), the study addressed both hedonic and eudaimonic aspects. It supports the hypothesis that the sensory dimension of integrated resort experiences significantly affects the customers' satisfaction with their autonomy and competence needs. Other studies have associated sensory aspects of the environment with the dimension of self-determination theory connected to relatedness (La Guardia et al., 2000; Walls et al., 2011).

Hanna et al. (2019) found a link between sensory experience, well-being, and sustainability. The researchers stress that embodied and sensory experiences, such as the ones derived from nature-related stimuli in tourism activities, can be related to processes of reawakening and

appreciation related to psychological well-being, which can offer potential avenues for sustainable tourism practice. These processes can act, therefore, as facilitators. Despite focusing on beauty and aesthetics in hospitality and tourism, a recent systematic literature conducted by Kirillova (2023) acknowledges the multi-sensory nature of aesthetics. It pinpoints the interconnection between the aesthetics of settings and restorative qualities (despite the gap in knowledge around the topic). Therefore, aesthetics is linked to individual-level outcomes such as well-being related not only to the pleasure of appreciation of these aesthetic qualities in hospitality and tourism contexts (which are sensory in nature) but also to "fulfillment, health, good life, and general well-being" (Kirillova, 2023, p. 103553).

The study conducted by Kastenholz et al. (2020) indicates the role of rich sensory-informed experiences in savoring positive emotions and forming positive and long-term ties with places – place attachment. Place attachment is relevant for developing meaningful relationships, and relatedness and attachment have been deemed relevant aspects of well-being (Ryan & Deci, 2001). This empirical study reinforces the conceptual research developed by Yan and Halpenny (2022).

Tan et al. (2020) found that mindfulness can be improved by incorporating multi-sensory media (sound and visual stimuli) in the design of the visitor experience at a heritage site. Mindfulness is related to a state of mind in which information in the environment is actively processed. This process can help increase not only the level of satisfaction but also the level of understanding and learning. The latter can lead to meaningful and transformational experiences (Tan et al., 2020).

Lv and Wu (2021) conducted a longitudinal study stressing how extraordinary sensory experiences affect destination brand love, which is associated with long-term emotional bonds, via momentary happiness and retrospective and long-term happiness by considering both hedonic and eudaimonic aspects of well-being.

Qiu et al. (2021) used grounded theory and attention restoration theory to explore the effects of natural sensescapes (sensory stimuli) on visitors' well-being and found that the interaction of soundscape and visualscape leads to restorative outcomes. In turn, the latter impacts the

perception of quality of life. These links seem to be applicable to diverse natural contexts and are not contextually bound.

Informed by the Stimuli-Organism-Response (SOR) model from environmental psychology, Shapit et al. (2022) found positive effects of the *experiencescape* (stimuli) on memorable wellness experiences (organism), which in turn proved to be positively related not only to behavioral outcomes (revisit intentions) but also to subjective well-being (responses), specifically happiness and satisfaction with life.

These empirical studies suggest that using multi-sensory elements distinctive to particular settings and related to specific resources may contribute to meaningful experiences. This category of experiences, which contrasts with ordinary ones, produces strong subjective reactions associated with emotion and discovery. Experiences with these characteristics are more likely to last in memory (Agapito et al., 2017). This process has the potential to lead to personal transformation by involving change that tourism studies associate with transformational tourism (e.g., Sheldon, 2020).

Table 1 - Representative studies: sensory experience and well-being in hospitality and tourism contexts

Reference	Objective	Data collection	Data analysis	Main Finding	Future research recommendation
Ahn et al. (2019)	Examines the impact of integrated resort brand experiences (IRBEs) on customer well-being through the satisfaction of psychological needs.	Questionnaire	Structural Equation Modeling (SEM)	The sensory dimension of integrated resort experiences significantly affects the customers' satisfaction with both their autonomy and competence needs.	Evaluate demographics as moderators (e.g., gender, age, income, and education).
Hanna et al. (2019)	Evaluate how outdoor adventure tourism facilitates reconnection to nature, offering potential well-being and pro-environmental attitudes and behaviors impacts.	Semi-structured interviews	Thematic analysis	There is a link between sensory experience derived from adventure-based activities, well-being, and sustainability.	Further use of eco-psychological approaches; longitudinal studies to measure the well-being effect before, during, and after engagement in the form of tourism activities.
Kastenholz et al. (2020)	Examine how sensory experiences affect visitors' positive emotions and place attachment.	Questionnaire	SEM	There is a link between sensory experience, emotions, and place attachment.	Consider diverse geographical contexts; factors such as host-tourist relationships, perceived authenticity, and nostalgia can be considered; moderation effects: personality traits, cultural proximity, sensation-seeking; add qualitative studies.
Tan, Noor, Rasoolimanesh, and Mustafa (2020)	Investigate how communication factors (e.g., multi-sensory media) and visitor factors impact individuals' mindfulness at a heritage site.	Questionnaire	SEM	Mindfulness can be improved by incorporating multi-sensory media in the visitor experience design.	Consider other quantitative variables such as visiting durations or expenditure; explore the use of virtual reality or other human-interacting technologies.
Lv & Wu (2021)	How extraordinary sensory experiences affect destination brand love considering both hedonic and eudaimonic aspects of well-being.	Online reviews Questionnaire (longitudinal approach)	Content analysis Co-occurrence analysis Binary logistic regression analysis Factor analysis	Extraordinary sensory experiences affect destination brand love, which is associated with long-term emotional bonds. This process is mediated by momentary happiness and retrospective and long-term happiness.	Consider negative sensory experiences in special contexts (e.g., dark tourism, slum tourism, and war tourism); consider other senses and examine potential different weights of sensory modalities; consider different

Reference	Objective	Data collection	Data analysis	Main Finding	Future research recommendation
			Regression analysis Bootstrap test of serial-mediation (PROCESS)		product positioning and situational variables.
Qiu et al. (2021)	Explores the effects of natural sensescapes on visitors' health and well-being.	User-generated content Questionnaire	Content analysis Principal component analysis t-test SEM Multi-group analysis	The interaction of soundscape and visualscape leads to enhanced restorative effects.	Consider visitors' experience post-Covid-19; include other -scapes; expand to other natural environments or cultural contexts to examine cross-cultural validity and reliability of the proposed model to provide a further understanding of nature-based tourism as a public health resource.
Shapit et al. (2022)	Examines the relationship antecedents, memorable wellness tourism experience, and consumers' responses related to subjective well-being and revisit intentions	questionnaire	Confirmatory Factor Analysis SEM	<i>Experiencescape</i> presents a stronger effect on wellness experience, which in turn impacts subjective well-being and revisit intention, based on the SOR model.	Consider the cultural diversity of samples; study on-site experience; generalization must be taken into consideration and a greater array of research methods; include other variables in the model (e.g., place attachment); address hedonic goals.

4. Research opportunities and challenges

The evolution of frameworks around the design of consumer experiences supports the relevance of exploring the link between sensory consumer experiences and hedonic and eudaimonic well-being in hospitality and tourism management. As the study of multi-sensory environments in consumer experiences in general and in tourism and hospitality, in particular, is relatively recent (Agapito, 2020; Fong et al., 2022), there is much unknown on the role of multi-sensory stimuli in consumer outcomes, especially the ones related to well-being.

The studies presented in Table 1, which endeavor to examine this connection, depict some research avenues that have already been stressed in previous reviews of studies around sensory consumer experiences in tourism and hospitality (Agapito, 2020; Fong et al., 2022; Tran-Ha & Agapito, 2022). Specifically, it is recommended to consider **mediation variables** (e.g., perceived authenticity, nostalgia, place attachment) and **moderators** (e.g., demographics, personality traits, cultural background, sensation-seeking, situational factors) when examining the connection between sensory consumer experience and perceived well-being (Ah et al., 2019; Kastenholz et al., 2020; Lv & Wu, 2021, Shapit et al., 2022; Tan et al., 2020). Diversifying the **contexts of analysis**, such as the type of accommodation, setting, destination, and activities performed, as well as special contexts (negative vs. positive), can contribute to the advance of knowledge (Kastenhoz et al., 2020; Lv & Wu, 2021; Qiu et al., 2021).

Diversifying the **methods for data collection** is also highly recommended in these studies (Kastenholz et al., 2020; Shapit et al., 2022). Apart from questionnaires and interviews, the focus on sensory consumer experiences considering multiple stimuli calls for an array of methods. Mixed methods are suggested (Kastenholz et al., 2020; Shapit et al., 2021). Even in predominant quantitative studies, there is a lack of stabilized scales to measure sensory experience by modality in the proposed contexts. Some notable exceptions are the ones developed by Qiu et al. (2021) and Buzova et al. (2021). Although these are still uncommon due to complexity, cost, and time consumption, experimental studies are called to test causality (Viglia & Dolnicar, 2020). This process can combine laboratory and field studies (Agapito, 2020; Fong et al., 2022; Spence, 2022a).

The biggest challenge is in fact **measuring sensory information** in an accurate manner. Kim and Fensemaier (2017) propose a set of technological devices (e.g., eye-tracking glasses, earbuds, electronic tongues, silicon fingers, wearable clothing and shoes, thermoelectric bracelets) that can aid research to optimize data collection by combining an array of methods. Apart from these non-neuroimaging instruments, neuroimaging tools are also available (Oliveira et al., 2022). Tran et al. (2020) suggest using technology (e.g., virtual and augmented reality) to assess multi-sensory environments and design tourist experiences. This challenge escalates when dealing with metaverse contexts (Buhalis et al., 2023), which makes it more common to encounter hybrid (*phygital*) experiences (corporeal and digital).

Another challenge is to conduct **longitudinal studies** (Hanna et al., 2019), considering the multi-phasic nature of tourist experiences (before, during, after) to understand to which extent specific sensory consumer experiences contribute to long-term well-being (eudaimonic) or only momentary happiness (Lv & Wu, 2021). The proposed connection is also important by considering host-guest relationships (Kastenholz et al., 2020). Agapito (2020) and Tasci and Pizam (2020) highlight the importance of a **stakeholder** approach to fully understand the potential of multi-sensory environments (physical, virtual, or both).

Cross-modality (semantic association) is an important research avenue considering that different sensory modalities (which do not need to be constrained to the conventional five senses) might have different weights and effects on each other and perceived well-being (Lv & Wu, 2021). The study of the interrelation between the senses has been highlighted as one of the most important research gaps around sensory marketing in tourism and hospitality. Therefore, understanding the congruence (perceived coherence) among sensory stimuli is a crucial aspect to be addressed (Agapito, 2020; Fong et al., 2022; Helmefalk et al., 2017; Spence, 2022a; Spence et al., 2017).

The impact of individuals' culture on results has also been a notable knowledge gap since **cross-cultural studies** are rare (Qiu et al., 2021; Shapit et al., 2022). These studies are important in order to understand the potential to generalize results or if some links are culturally and contextually related.

Several **theories** emerge as relevant to the study of sensory consumer experience and well-being in tourism and hospitality. **Stimuli-Organism-Response (SOR) theory** has been one of the most used approaches (Shapit et al., 2022; Tasci & Pizam, 2020). The framework was introduced by Mehrabian and Russell (1974) and suggested that emotions and feelings guide human behavior, i.e., when consumers encounter a particular stimulus, internal states (cognitive and emotional) corresponding to the organism are generated. These internal states impact responses, which can be related to approach or avoidance reactions in consumption contexts (Mehrabian & Russell, 1974). The **experiencescape framework**, informed mainly by the SOR theory following the **servicescape** approach, is also a relevant instrument to address research questions/hypotheses around sensory consumer experiences and perceived hedonic and eudaimonic well-being in tourism and hospitality contexts (Shapit et al., 2021; Tasci & Pizam, 2020).

Grounded theory's pertinence is related to how people perceive their surroundings through their senses (Krishna & Schwarz, 2014). This theory highlights the role of cross-modal role of sensations in human perception, introspection, and action (Qiu et al., 2021). **Cross-modal correspondence** and **congruence** theories are key in managing sensory consumer experiences, especially if **Gestalt theory** is followed, i.e., sensory stimuli are perceived as a composite consumer experience and not in an isolated manner (Agapito, 2020; Fong et al., 2022; Krishna, 2012; Solomon et al., 2019; Spence, 2022a). Cross-modal correspondence refers to a mental abstraction process of semantic association and, therefore, allows understanding the alignment of a sensory stimulus based on connotation meaning for sensory cues. For example, the scent of citrus is mainly associated with cleanliness. Congruence (atmospheric congruence) is related to the match between two or more sensory stimuli.

Although multi-sensory environments offer more possibilities to enhance the experience and positively impact consumers' behavioral responses, the study from Morrin and Chebat (2005) is an example of how a combination of different stimuli (slow music tempo and orange smell) can have a negative impact on consumers' responses (in this case, on sales) as opposed to only using one sensory stimulus (slow music tempo). Some challenges are the risk of mere repetition or, conversely, sensory overload. Different reactions from individuals (staff and consumers) may suggest that specific characteristics can influence individuals' level of tolerance (Fong et al., 2022; Spence, 2022a).

Attention restoration theory (ART) associates with cognitive benefits derived from individuals' interactions with natural settings/elements. Attention restoration itself relates to the regeneration of a depleted decreased capacity to direct attention (Kaplan, 1995). Attentional fatigue is an growing issue in contemporary societies; therefore, the use of specific stimuli that can aid in restoring attention can contribute to subjective well-being in tourism and hospitality contexts (Letho & Letho, 2019; Qiu et al., 2021).

Self-determination theory (STD) is especially helpful in understanding eudaimonic well-being via the level of fulfillment of three universal innate psychological needs of competence (self-efficacy), autonomy (freedom of choice), and relatedness (feeling of belongingness) (Ah et al., 2019; Rahmani et al., 2018; Ryan & Deci, 2001). Unfulfilling experiences can lead to a decrease in well-being or an increase in ill-being (Ryan & Deci, 2001).

5. Conclusion

The present paper reflected on theoretical, conceptual, and empirical studies advocating that sensory consumer experience design can lead to perceived hedonic and eudaimonic well-being outcomes. Furthermore, it was stressed that this rationale could be addressed as a responsible managerial approach aiding the process of managing experiences deemed more sustainable, accessible, and inclusive in hospitality and tourism consumption contexts. This research was based on the notion that all "those involved in tourism have a responsibility to learn how to contribute towards more sustainable forms of tourism" (Bramwell & Lane, 1993, p. 3). Specifically, the proposed rationale intends to contribute to the United Nations Sustainable Development Goals 12 and 3 (<https://www.un.org/sustainabledevelopment/>) by relating responsible production and consumption to good health and well-being.

Research opportunities and challenges around sensory marketing and customer experiences are greatly focused on effectively collecting sensory data. Researchers recommend addressing both virtual and corporeal contexts and complementing traditional research methods with physiological measurement devices and technological equipment, such as wearable devices and smartphones, as well as neuroimaging tools (Fong et al., 2022; Kim & Fesenmaier, 2017; Oliveira et al., 2022; Petit et al., 2019; Tan et al., 2021). Using a plurality of methods rather

than solely utilizing questionnaires or interviews could lead to a more accurate measurement of sensory data. This is crucial to explore better how the senses interact with each other (multi-sensory consumption environments), resulting in different impacts on consumers' responses. Further understanding of optimizing a holistic approach to sensory marketing in the context of sustainable tourism and technological developments is called for (Agapito, 2020; Buhalis et al., 2019). In the context of this approach, discussions around ethics are of utmost importance (Oliveira et al., 2022; Spence, 2020).

Spence (2022a) notes that there is still some resistance in the accommodation sector to using a multi-sensory integration approach in practical implementations. The author stresses that visual dominance is still visible, and improving aspects such as lighting and color schemes is still the primary concern of organizations. Furthering empirical research demonstrating the long-term effects of multi-sensory environments and showing the merit of such managerial interventions can encourage more practical implementations of this approach in the future.

This paper focused on understanding the impacts of sensory stimuli on pleasurable hedonic experiences and long-term perceived well-being (eudaimonic). Questions such as "Which combination of sensory features delivers the desired consumption atmosphere leading to momentary and long-term perceived well-being?" arise. Experimentation regarding the effects of modifying sensory attributes in hospitality and tourism consumption environments in different stages of the customer journey is relevant considering the lack of awareness regarding atmospherics' influence over consumers' perceptions and behaviors in these contexts (Agapito, 2020).

Given the complexity and multidisciplinary nature of human–environment interactional dynamics in consumption contexts, contributions from different disciplines are relevant to researching the effect of sensory consumer experiences on individuals' outcomes, such as well-being. Advances in neuroscience (Oliveira et al., 2022), spatial analysis, epigenetics, psychology and physiological measurements, experimental design, business analytics, and machine learning can contribute to a deeper understanding of the proposed relationship. This is relevant in research regarding positive and pleasurable experiences leading to satisfaction and loyalty, as well as well-being related to long-term happiness, self-actualization, and personal development (Agapito, 2023; Kim & Fesenmaier, 2017).

There are numerous practical implications for tourism and hospitality management (e.g., hotels, restaurants, airports, natural parks, museums, cultural attractions, and destinations). For example, many hotels and destinations currently position themselves as digital-nomads-friendly by providing the right conditions for this market segment's travel purposes, requirements, and lifestyles (Chevtaeva & Denizci-Guillet, 2021). Considering the literature points out that specific sensory stimuli (e.g., natural-based sensory stimuli) can leverage the levels of attention (directed attention) and restore attention (restorative attention theory), the process of managing the optimal multi-sensory environments (Qiu et al., 2021; Spence, 2022b) could aid digital nomads to become more productive and creative. Directed attention is deemed an "effortful process to focus or concentrate on objects or events while at the same time blocking out distracting stimulation" (Joye & Dewitte, 2018, p.2). This approach would allow these customers to further enjoy their experience, leading to higher states of perceived well-being and favorable attitudes and behavior towards organizations and destinations (e.g., loyalty, longer stays, higher expenditures, brand love, positive word of mouth, and responsible behaviors). The same rationale could be applied to the segment of business tourism, as Spence (2022b) poses the question of how a 'hoffice' (hotel plus office) can foster creativity through multi-sensory environments.

The present reflection supports the relevance of studying and leveraging sensory stimuli factors as part of the consumption *experiencescape* in delivering, communicating, and sustaining wellness benefits of travel in the different stages of the customer experience journey. Therefore, it is a meaningful contribution to discussions within tourism and hospitality management.

REFERENCES

- Agapito, D. (2020). The senses in tourism design: A bibliometric review. *Annals of Tourism Research*, 83(July), 102934.
- Agapito, D. (2022). Senses. In D. Buhalis (Ed.), *Encyclopedia of Tourism Management and Marketing* (pp.34-37). Cheltenham: Edward Elgar Publishing.
- Agapito, D. (2023). Tourism, senses and well-being. In Vaz, E. (Ed.), *Geography of Happiness: A Spatial Analysis of Subjective Well-Being* (pp. 161-176). Springer.
- Agapito, D., & Chan, C.-S. (2019). A multi-sensory approach to responsible management in community-based tourism: A case study in Hong Kong. *Journal of Tourism Quarterly*, 1(1), 1-13.
- Agapito, D., & Chan, C.-S. (2020). Perspectives on community involvement in the revitalisation of cultural and natural heritage for sustainable tourism: A case of an island in Hong Kong. In Pinto, P. & Guerreiro, M. (Eds.), *Handbook of Research on Resident and Tourist Perspectives on Travel Destinations* (pp.115-139). IGI Global.
- Agapito, D., & Guerreiro, M. (forthcoming). Slow, Sensory and Smart: A framework for designing accessible tourism experiences. *Enlightening Tourism: Pathmaking Journal*, accepted.
- Agapito, D., Mendes, J., & Valle, P. (2013). Exploring the conceptualization of the sensory dimension of tourist experiences. *Journal of Destination Marketing and Management*, 2(2), 62-73.
- Agapito, D., Pinto, P., Ascensão, M.P., & Tuominen, P. (2021). Designing compelling accommodationscapes: Testing a framework in a rural context. *Tourism and Hospitality Research*, 21(3), 259-274.
- Agapito, D., Pinto, P., & Mendes, J. (2017). Tourists' memories, sensory impressions and loyalty: In loco and post-visit study in Southwest Portugal. *Tourism Management*, 58, 108-118.

- Agapito, D., Ribeiro, M. A., & Woosnam, K. M. (Coord.) (2022). *Handbook on the Tourist Experience: Design, Marketing and Management*. Edward Elgar.
- Agapito, D., Valle, P., & Mendes, J. (2014). The sensory dimension of tourist experiences: Capturing meaningful sensory-informed themes in Southwest Portugal. *Tourism Management, 42*, 224-237.
- Ahn, J., Back, K., & Boger, C. (2019). Effects of integrated resort experience on customers' hedonic and eudaimonic well-being. *Journal of Hospitality and Tourism Research, 43*(8), 1225-1255.
- Antonovsky A. (1979). *Health, stress, and coping*. San Francisco, CA: Jossey-Bass.
- Arnould, E.J., & Price, L.L. (1993). River magic: extraordinary experience and the extended service encounter. *Journal of Consumer Research, 20*(1), 24-45.
- Bitner, M.J. (1992). Servicescape: The impact of physical surroundings on customers and employees. *Journal of Marketing, 56*(2), 57-71.
- Brakus, J. J., Schmitt, B. H. & Zarantonello, L. (2009). Brand experience: what is it? How is it measured? Does it affect loyalty? *Journal of marketing, 73*(3), 52-68.
- Bramwell, B., & Lane, B. (1993). Sustainable tourism: An evolving global approach. *Journal of Sustainable Tourism, 1*(1), 1–5.
- Booms, B.H., & Bitner, M.J. (1981). Marketing Strategies and Organization Structures for Service Firms. In Donnelly, J. H., & George, W. R. (Eds.), *Marketing of Services* (pp. 47-51). Chicago: American Marketing Association.
- Booms, B. H., & Bitner, M. J. (1982). Marketing Services by Managing the Environment. *Cornell Hotel and Restaurant Administration Quarterly, 23*(1), 35–40.
- Buhalis, D., Harwood, T., Bogicevic, V., Viglia, G., Beldona, S., & Hofacker, C. (2019). Technological disruptions in services: Lessons from tourism and hospitality. *Journal of Service Management, 30*(4), 484-506.

- Buhalis, D., Lin, M.S., & Leung, D. (2023). Metaverse as a driver for customer experience and value co-creation: Implications for hospitality and tourism management and marketing. *International Journal of Contemporary Hospitality Management*, 35(2), 701-716.
- Buzova, D., Sanz-Blas, S. & Cervera-Taulet, A. (2021). Sensing the destination: Development of the destination sensescape index. *Tourism Management*, 87, 104362.
- Chen, Z., Suntikul, W., & King, B. (2020). Research on tourism experiencescapes: the journey from art to science. *Current Issues in Tourism*, 23(11), 1407-1425.
- Chevtava, E., & Denizci-Guillet, B. (2021). Digital nomads' lifestyles and coworkation. *Journal of Destination Marketing & Management*, 21, 100633.
- Coghlan, A. (2015). Tourism and health: Using positive psychology principles to maximise participants' well-being outcomes—a design concept for charity challenge tourism. *Journal of Sustainable Tourism*, 23(3), 382–400.
- Darcy, S., & Dickson, T. J. (2009). A whole-of-life approach to tourism: The case for accessible tourism experiences. *Journal of Hospitality and Tourism Management*, 16(1), 32-44.
- Deighton, K. (2014). Event TV: Glasgow Airport arrivals transformed into loch-side woodland. Campaign, 13th August. Available at: <https://www.campaignlive.co.uk/article/event-tv-glasgow-airport-arrivals-transformed-loch-side-woodland/1307682> (Accessed 17th October 2019)
- Del Chiappa, G., Pung, J.M., & Atzeni, M. (2022). Factors Influencing Choice of Accommodation during Covid-19: A Mixed-methods Study of Italian Consumers. *Journal of Quality Assurance in Hospitality & Tourism*, 23(4), 1037-1063.
- Derval, D. (2022). *The Right Sensory Mix: Decoding Customers' Behavior and Preferences*, 2nd ed. Springer.
- Duerden, M. D., Lundberg, N. R., Ward, P., Taniguchi, S. T., Hill, B., Widmer, M. A., & Zabriskie, R. (2018). From ordinary to extraordinary: A framework of experience types. *Journal of Leisure Research*, 49(3–5), 196–216.

- Filep, S., & Laing, J. (2019). Trends and directions in tourism and positive psychology. *Journal of Travel Research*, 58(3), 1–12.
- Fong, L.H., Lei, S.S.I., Chow, C.W.C., & Lam, L. W. (2022). Sensory marketing in hospitality: A critical synthesis and reflection. *International Journal of Contemporary Hospitality Management*. <https://doi.org/10.1108/IJCHM-06-2022-0764>
- Goldstein, E. B., & Brockmole, J.R. (2017). *Sensation and Perception* (10th edition). Boston, MA: Cengage Learning.
- Grant, M. J & Booth, A. (2009). A typology of reviews: an analysis of 14 review types and associated methodologies. *Health Information and Libraries Journal*, 26, 91–108.
- Hanna, P., Wijesinghe, S., Paliatsos, I., Walker, C., Adams, M., & Kimbu, A (2019). Active engagement with nature: outdoor adventure tourism, sustainability and well-being. *Journal of Sustainable Tourism*, 27(9), 1355-1373
- Heide, M., & Grønhaug, K. (2006). Atmosphere: Conceptual Issues and Implications for Hospitality Management. *Scandinavian Journal of Hospitality and Tourism*, 6(4), 271-286.
- Helme Falk, M., & Hultén, B.M. (2017). Multi-sensory congruent cues in designing retail store atmosphere: Effects on shoppers' emotions and purchase behavior. *Journal of Retailing and Consumer Services*, 38, 1-11.
- Holbrook, M.B., & Hirschman, E.C. (1982). The Experiential Aspects of Consumption: Consumer Fantasies, Feelings, and Fun. *Journal of Consumer Research*, 9, 132-140.
- Huta, V., & Ryan, R.M. (2010). Pursuing pleasure or virtue: The differential and overlapping well-being benefits of hedonic and eudaimonic motives. *Journal of Happiness Studies*, 11(6), 735-762.
- Joye, Y., & Dewitte, S. (2018). Nature's broken path to restoration. A critical look at Attention Restoration Theory. *Journal of Environmental Psychology*, 59(October), 1-8.
- Kaplan S. (1995). The restorative benefits of nature: Toward an integrative framework. *Journal of Environmental Psychology*, 15, 169-182.

- Kastenholz, E., Marques, C. P., & Carneiro, M. J. (2020). Place attachment through sensory-rich, emotion-generating place experiences in rural tourism. *Journal of Destination Marketing & Management*, 17, 100455.
- Kim, J. J., & Fesenmaier, D. R. (2017). Measuring human senses and the touristic experience: Methods and applications. In Xiang, Z. & Fesenmaier, D.R. (Eds.), *Analytics in smart tourism design* (pp.47-64). Switzerland: Springer.
- Kim, M., Kim, J., Park, M., & Yoo, J. (2021). The roles of sensory perceptions and mental imagery in consumer decision-making. *Journal of Retailing and Consumer Services*, 61, 1025517.
- Kirilova, K. (2023). A review of aesthetics research in tourism: Launching the Annals of Tourism Research Curated Collection on beauty and aesthetics in tourism. *Annals of Tourism Research*, 100, 103553.
- Kotler, P. (1974). Atmospherics as a marketing tool. *Journal of Retailing*, 49, 48–64.
- Krishna, A. (2012). An integrative review of sensory marketing: Engaging the senses to affect perception, judgment and behavior. *Journal of Consumer Psychology*, 22(3), 332-351.
- Krishna, A., & Schwarz, N. (2014). Sensory marketing, embodiment, and grounded cognition: A review and introduction. *Journal of Consumer Psychology*, 24(2), 159-168.
- La Guardia, J. G., Ryan, R. M., Couchman, C. E., & Deci, E. L. (2000). Within-person variation in security of attachment: A self-determination theory perspective on attachment, need fulfillment, and well-being. *Journal of Personality and Social Psychology*, 79, 367-384.
- Lam, K.L., Chan, C., & Peters, M. (2020). Understanding technological contributions to accessible tourism from the perspective of destination design for visually impaired visitors in Hong Kong. *Journal of Destination Marketing and Management*, 17, 100434.
- Lee, M., Lee, S.(A), & Koh, Y. (2019). Multi-sensory experience for enhancing hotel guest experience: Empirical evidence from big data analytics. *International Journal of Contemporary Hospitality Management*, 31(11), 4313-4337.

- Lehto, X. Y., & Lehto, M. R. (2019). Vacation as a Public Health Resource: Toward a Wellness-Centered Tourism Design Approach. *Journal of Hospitality & Tourism Research*, 43(7), 935–960.
- Lemon K.N., & Verhoef, P.C. (2016). Understanding customer experience throughout the customer journey. *Journal of Marketing*, 80, 69–96.
- Lin, H. Shi, S., & Gursoy, D. (2022). Destination experiencescape: conceptualization and scale development amid COVID-19 pandemic. *Current Issues in Tourism*, 25(24), 4047-4074.
- Liu-Lastres, B., Wen, H., & Huang, W.-J. (2023). A reflection on the Great Resignation in the hospitality and tourism industry. *International Journal of Contemporary Hospitality Management*, 35(1), 235-249.
- Lv, X., Li, C., & McCabe, S. (2020). Expanding theory of tourists' destination loyalty: The role of sensory impressions. *Tourism Management*, 77(April), 104026.
- Lv, X., & Wu, A. (2021). The role of extraordinary sensory experiences in shaping destination brand love: an empirical study. *Journal of Travel & Tourism Marketing*, 38(2), 179-193.
- Madzharov, A.V., Block, L.G., & Morrin, M. (2015). The Cool Scent of Power: Effects of Ambient Scent on Consumer Preferences and Choice Behavior. *Journal of Marketing*, 79, 83 - 96.
- Marieb, E. N., & Hoehn, K. (2018). *Human Anatomy and Physiology*, 11th ed. Pearson.
- Mattila, A. S., & Gao, L. Y. (2017). Atmospherics and the touristic experience. In D. R. Fesenmaier & Z. Xiang (Eds.), *Design science in tourism: Foundations of destinations management* (pp. 151–160). Springer.
- Mehrabian, A., & Russell, J. (1974). *An approach to environmental psychology*. Cambridge, MA: MIT Press.
- Mehraliyev, F., Kirilenko, A. P., & Choi, Y. (2020). From measurement scale to sentiment scale: Examining the effect of sensory experiences on online review rating behavior. *Tourism Management*, 79, 104096.

- Mihalič, T. (2016). Sustainable-responsible tourism discourse – towards 'responsustable' tourism. *Journal of Cleaner Production*, 111, 461–470.
- Morrin, M., & Chebat, J.C. (2005). Person-place congruency: the interactive effects of shopper style and atmospherics on consumer expenditures. *Journal of Service Research*, 8(2), 181-191.
- Mossberg, L. (2007). A marketing approach to the tourist experience. *Scandinavian Journal of Hospitality and Tourism*, 7(1), 59–74.
- O'Dell, T. (2005). Experiencescapes: blurring borders and testing connections. In O'Dell, T. & Billing, P. (Eds), *Experiencescapes: Tourism, Culture, and Economy* (pp. 3-17). Copenhagen: Copenhagen Business School Press.
- Oliveira, P.M., Guerreiro, J., & Rita, P. (2022). Neuroscience Research in Consumer Behavior: A Review and Future Research Agenda. *International Journal of Consumer Studies*. <https://doi.org/10.1111/ijcs.12800>
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1), 12–40.
- Pralhad, C. K., & Ramaswamy, V. (2004). Co-creation experiences: The next practice in value creation. *Journal of Interactive Marketing*, 18(3), 5-14.
- Pearce, P. L. (2009). The relationship between positive psychology and tourist behavior studies. *Tourism Analysis*, 14(1), 37-48.
- Petit, O., Velasco, C., & Spence, C. (2019). Digital Sensory Marketing: Integrating New Technologies into Multisensory Online Experience. *Journal of Interactive Marketing*, 45, 42 - 61.
- Pine, J. B., & Gilmore, J. H. (1998). Welcome to the experience economy. *Harvard Business Review*, 76(4), 97-105.

- Qiu, M., Jin, X., & Scott, N. (2021). Sensescapes and attention restoration in nature-based tourism: Evidence from China and Australia. *Tourism Management Perspectives*, 39, 100855.
- Rahmani, K., Gnoth, J., & Mather, D. (2018). Hedonic and eudaimonic well-being: A psycholinguistic view. *Tourism Management*, 69, 155-166.
- Rodaway, P. (1994). *Sensuous geographies: body, sense and place*. London: Routledge.
- Rosenbaum, M.S., & Massiah, C. (2011). An expanded servicescape perspective. *Journal of Service Management*, 22(4), 471–5818.
- Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonism well-being. *Annual Review of Psychology*, 52, 141-166.
- Schmitt, B. (1999). Experiential marketing. *Journal of Marketing Management*, 15(1-3), 53–67.
- Selem, K. M., Sigala, M., Shoukat, M. H., Shehata, A. E., & Mkheimer, I. M. (2023). Unperplexing the nexus between physical evidence and guest retention at beach resorts: Multiple sequential mediation models. *Journal of Hospitality Marketing & Management*, <https://doi.org/10.1080/19368623.2023.2203182>
- Sheldon, P. J. (2020). Designing tourism experiences for inner transformation. *Annals of Tourism Research*, 83, 102935.
- Smith, M. K., & Diekmann, A. (2017). Tourism and well-being. *Annals of Tourism Research*, 66, 1–13.
- Solomon, M. R., Hogg, M. K., Askegaard, S., & Bamossy, G. (2019). *Consumer behaviour: A European perspective*, 7th ed. Harlow: Pearson.
- Spence, C. (2020). On the ethics of neuro marketing and sensory marketing. In Trempeau-Martineau, J., & Racine, E. (Eds.), *Organizational Neuroethics: Reflections on the Contributions of Neuroscience to Management Theories and Business Practice* (pp. 9-30). Cham: Springer Nature.

- Spence, C. (2022a). Experimental atmospherics: a multi-sensory perspective. *Qualitative Market Research: An International Journal*, 25(5), 662-673.
- Spence, C. (2022b). Sensehacking the guest's multi-sensory hotel experience. *Frontiers in Psychology*, 13, 1014818.
- Spence, C., Puccinelli, N. M., Grewal, D., & Roggeveen, A. L. (2014). Store Atmospherics: A Multisensory Perspective. *Psychology & Marketing*, 31(7), 472-488.
- Sthapit, E., Björk, P., & Coudounaris, D.N. (2023). Towards a better understanding of memorable wellness tourism experience. *International Journal of Spa and Wellness*, 6(1), 1-27.
- Su, L., Tang, B., & Nawijn, J. (2020). Eudaimonic and hedonic well-being pattern changes: Intensity and activity. *Annals of Tourism Research*, 84, 103008.
- Tan, P. L., Noor, S. M., Rasoolimanesh, S. M., & Mustafa, H. (2020). Communication and visitor factors contributing towards heritage visitors' mindfulness. *Journal of Heritage Tourism*, 15(1), 27–43.
- Tasci, A. D. A., & Pizam, A. (2020). An expanded nomological network of experienscape. *International Journal of Contemporary Hospitality Management*, 32(3), 999–1040.
- Tran-Ha, L., & Agapito, D. (2022). Senses, consumer behaviour and tourism experiences design In Agapito, D., Woosnam, K. M., & Ribeiro, M, A. (Eds.), *Handbook on the Tourist Experience: Design, Marketing and Management* (pp. 29-48). Edward Elgar.
- Tussyadiah, I.P. (2014). Toward a theoretical foundation for experience design in tourism. *Journal of Travel Research*, 53(5), 543-564.
- Urry, J. (2002). *The tourist gaze: Leisure and travel in contemporary societies* (2 ed.). London: Sage.
- Vada, S., Prentice, C., Scott, N., & Hsiao, A. (2020). Positive psychology and tourist well-being: A systematic literature review. *Tourism Management Perspectives*, 33, 100631.

Viglia, G., & Dolnicar, S. (2020). A review of experiments in tourism and hospitality. *Annals of Tourism Research*, 80, 102858.

Walls, A., Okumus, F., Wang, Y., & Kwun, D. (2011). Understanding the Consumer Experience: An Exploratory Study of Luxury Hotels. *Journal of Hospitality Marketing & Management*, 20(2), 166-197.

Wirtz, J., & Lovelock C. (2022). *Services Marketing: people, technology, strategy*, 9th ed. New Jersey: World Scientific.

Yan, N., & Halpenny, E. A. (2022). Tourists' savoring of positive emotions and place attachment formation: a conceptual paper. *Tourism Geographies*, 24(2-3), 369-389.