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Published version:

Agapito, D., Mendes, J., & Valle, P. (2013). Conceptualizing the sensory dimension of tourist experiences. *Journal of Destination Marketing & Management*, 2(2), 62-73.

Exploring the conceptualization of the sensory dimension of tourist experiences

Abstract

This paper aims to contribute to the conceptualization of the sensory dimension of tourist experiences by discussing its theoretical underpinnings. A multidisciplinary approach to the human senses shows their importance to the individual's experience and perception of the surrounding world, recommending the appropriateness of a holistic analysis of *sensescapes* in tourism. A review of empirical studies conducted under the experiential paradigm of tourism on the five human senses (sight, hearing, smell, taste, and touch) evinces the use of both qualitative and quantitative methodologies, which depends on research purposes, but also the practical implications of findings and data analysis to destination marketing and management. The paper discusses the role of the senses in designing tourist experiences, and identifies important topics regarding the study of the sensory dimension of tourist experiences, considering future research opportunities.

Keywords: sensory experience; tourist experience; experiential paradigm; *sensescapes*; destination marketing

1. Introduction

Experiences, whether ordinary or extraordinary, transform lives, acting as a means to construct reality (Carù & Cova, 2003). Viewing tourists as peak consumers (Wang, 2002), seeking fantasies, feelings and fun (Holbrook & Hirschman, 1982), the facilitation of extraordinary experiences has become a desired goal in the tourism industry (Walls, Okumus, Wang & Kwun, 2011a). In this context, the study of the sensory dimension of tourist experiences has recently been pointed out as crucial to supporting decision-makers in enhancing tourist experiences (Gilmore & Pine, 2002; Gretzel & Fesenmaier, 2003, 2010; Pan & Ryan, 2009). This goal is informed by the experiential paradigm which poses memorable experiences as a source of competitive advantage for destinations. Memorable experiences can be designed by stimulating all the human senses, leading to personal engagement (Pine & Gilmore, 1998; Schmitt, 1999).

The contribution of the senses to human knowledge has been a topic of reflection since the early days of philosophy (Aristotle, 2001; Plato, 2003) and more recently new philosophical approaches have assisted in the renewal of debate (Merleau-Ponty, 2002 [1945]). In the 20th century, due to paradigm changes occurred in the scientific foundations of psychological research, empirical studies conducted on the physiological

basis of human perception have demonstrated the importance of the senses to the building of meaning about the world (Gibson, 1966; Goldstein, 2010). Further developments in research have attracted the attention of the subject among many disciplines, covering a wide range of academic fields, namely sociology (Dewey, 1934; Simmel, 1997; Vannini, Waskul & Gottschalk, 2011; Veijola & Jokinen, 1994); anthropology (Howes, 1991, 2005; Classen, 1997; Erlmann, 2004); history (Corbin, 2005; Jütte, 2005; Smith, 2007); media studies (MacLuhan, 1994 [1964]); literature (Roberts, 2006; Vinge, 1975); geography (Casey, 1996; Crouch, 2002; Rodaway, 1994; Porteus, 1985; Tuan, 1977); urban studies (Degen, 2008); design (Bonapace, 2002); management (Pine & Gilmore, 1998); marketing (Hultén, Broweus & Dijk, 2009; Krishna, 2010; Lindstrom, 2005; Schmitt, 1999; Schmitt & Simonson, 1997); neuroscience and neurology (Damásio, 2009 [1995], 2010; Sacks, 2005).

Indeed, places and individuals' surrounding environments have been described as multi-sensory, constituted not only by visual impressions, but also by the associated sounds, smells, tastes and touch (Ackerman, 1991; Bitner, 1992; Casey, 1996; Heide & Grønhaug, 2006; Howes, 2006; Macnaghten & Urry, 1998; Porteus, 1985; Rodaway, 1994; Tuan, 1977; Urry, 2002). While tourism studies have been systematically centred on a Western view of the tourist experience, based on the ocular attributes (Pan & Ryan, 2009), researchers currently stress the importance of addressing and understanding the role of the body in the tourist experience, focusing on a holistic approach to *sensescapes* (Dann & Jacobsen, 2003; Ellis & Rossman, 2008; Gretzel & Fesenmaier, 2003; Govers, Go & Kumar, 2007; Kastenholz, Carneiro, Marques & Lima, 2012; Pan & Ryan, 2009; Urry, 2002; Veijola & Jokinen, 1994). Thus, although the classification of the human senses is not consensual (Rodaway, 1994; Vannini et al. 2011), the traditional division into five senses, attributed to Aristotle (2001), has been useful to operationalizing methodologies aiming to analyze the multi-sensory dimension of tourist experiences and determine managerial implications.

Nevertheless, tourism studies empirically addressing the role of the five human senses in tourist experiences are still scarce. Thus, more research is needed in order to conceptualize the sensory dimension of tourist experiences and to understand its relationship with the other dimensions of tourist experiences suggested in the literature. To this end, this research seeks: a) to understand the importance of the body to the individual's perception of the surrounding world, in a multidisciplinary approach; b) to contextualize the role of the bodily senses under the experiential paradigm; c) to analyse the role of the five human senses in the models used for staging tourist experiences; d) to identify the methodologies used in empirical research on the role of the five human senses in the overall tourist experience and resulting managerial implications to destinations; and e) to suggest future research opportunities in this area.

2. Senses: a multidisciplinary state of the art

There is a complementary and dynamic interaction between the *bottom-up pathway* – the external reality that reaches individuals through the senses – and the *top-down pathway* – the internal realm that influences individuals' perception of the surrounding world, comprising learning, memory, emotions and desires (Martínez, 2012; Zimbardo, Johnson & Hamilton, 2011). The dynamics of external and internal processes lead to selective attention, a phenomenon which can be exemplified in the saying of the Chinese writer Lin Yutang: “Half of the beauty of a landscape depends on the region

and the other half on the man looking at it” (cited in Martínez, 2012, p. 28). Thus, when an individual is in contact with a specific environment, “interactions occur that entail exchanges of energy” (Martínez, 2012, p.168), and inferences from the stimuli begin to emerge.

Carù and Cova’s (2003) and Walls et al. (2011a) identify diverse definitions of the concept of experience, resulting from multiple disciplinary approaches. Since the senses are seen as crucial to both having and staging the experience, a multidisciplinary approach also seems pertinent in order to gain a better understanding of the complexity of the relationship between human senses and the individual’s experiences and perception of the surrounding world. In fact, despite the traditional classification into five senses, there is no consensus on the number of existing human senses, which is explained partially by multidisciplinary research and the complexity of the subject itself (Vannini et al., 2011).

2.1. The senses in philosophy

Divergent philosophical approaches originate from different historic periods regarding the relationship of the senses and the mind. Plato’s idealism posits that the mind is a synonym of thinking and reasoning. In the *allegory of the cave*, which can be found in *The Republic*, the Athenian philosopher (2003) suggests that true reality lies in the unchanging world of ideas, arguing for the existence of universal concepts. The surrounding physical world reaching individuals through the senses is seen as inaccurate, hence deceptive. Following the opposite line of thought, the 18th century empiricist David Hume claims that knowledge is ultimately derived from sensory impressions. In this context, he states that individuals only know things that they experience directly, rejecting the existence of innate ideas (Morris, 2011).

Aristotle (2001) adopts a balanced position, claiming that knowledge begins with sense perception, through the apprehension of the external world. Then, an abstraction process allows the essence of objects to be captured. The classical division and hierarchy of the senses into sight, followed by hearing, smell, taste and touch are attributed to the philosopher. In a sixteenth century work, Spinoza develops his theory based on Aristotle’s line of thought, stating that the mind is linked to the human body and cannot be detached from it, highlighting the role of affect in consciousness (Damásio, 2003a). Under the Enlightenment paradigm, philosophers such as Kant also defended the idea that knowledge of the world begins with the senses, evolving however through understanding and reasoning. A basic assumption of Kant’s transcendental approach is the notion that the external reality inside the mind (*phenomenon*) differs from reality in itself, the “thing in itself” (*noumenon*). Scholars view Kant’s theory as a compromise between rationalism (*a priori* knowledge of the world, based on reason) and empiricism (*a posteriori* knowledge of the world, based on experience), arguing the existence of *a priori synthetic judgments*, judgments determined by space and time, the *pure forms of sensible intuition* under which individuals perceive the world, but meeting the requirements of universality and necessity (Deleuze, 1994; Vancourt, 1982). Husserl’s work, dating from the second half of the 1800s, focuses the attention on the role of the phenomenon created by the interactions between individuals and the world, founding the philosophical school of Phenomenology (Welton, 1999). In *Phenomenology of Perception*, Merleau-Ponty (2002 [1945]) stresses the role of the body in perception, stating that the world is perceived by the individual’s body, rejecting the Cartesian

dualism of mind and body. Thus, the body is seen as a form of consciousness, its interactions with the world being what constitutes mental states and activities.

2.2. The senses in neuroscience

The paradigm of embodiment, which supports the integration of the body and mind, is in line with the latest findings in neuroscience. In *Descartes's Error*, Damásio (2009 [1995]) claims that the factual knowledge that is needed for reasoning and decision-making comes to mind in the form of images. These images appear in all sensorial varieties, not just visual, but sounds, textures, smells, tastes, pains and pleasures, and refer to any object (e.g., person, place, machine) or action that is being processed in the brain, either actually present or to be remembered or imagined. Therefore, during the perception process of events, individuals form *perceptual images* through external sensory stimuli captured by the human sensory sensors. Recalling involves not only assessing these perceptual images, but a reinterpretation and reconstruction of the lived events (Damásio, 2010). The perception, whatever the sensory modality, is the result of the mapping skills of the brain, which produce a mind. Damásio (2010) also claims that subjectivity, as defined by sentiments, creates the self, which is crucial for having a conscious mind.

Apart from the five human senses (sight, hearing, smell, taste and touch), which provide information on the external environment (*exteroceptive* senses), neuroscience proposes that the sensory signals received by the brain can also derive from the internal body, pertaining to body awareness (*interoceptive* senses). The interoceptive system includes the *proprioceptive* sense (deriving *kinesthesia*, the sense of movement, via the musculoskeletal system), the vestibular sense (balance), the visceral sense, and the sense of the *internal milieu* (pain, temperature) (Craig, 2003; Damásio, 2003b).

2.3. The senses in psychology

Krishna (2010, p. 11) stresses that much neuroscience is undertaken to investigate some interesting findings of psychologists, demonstrating why, from a brain's perspective, the identified effects occur. Sensory Psychology considers that sensation involves mental processes necessary for the basic detection of the surrounding world, by which a stimulated sensor receptor creates a pattern of neural messages that represent the stimulus in the brain, initiating the individual's experience of the stimulus. Perceptual Psychology relates perception to the mental processes responsible for interpreting and giving personal meaning to the incoming sensory patterns. Thus, psychologists approach the human senses assuming they are important aspects of the individual's experiences and behavior (Davis & Palladino, 2000; Goldstein, 2010; Zimbardo et al., 2011). Some researchers point out that people are affected by the senses in different ways, and there may be differences regarding people's ability to imagine different sensory patterns, resulting in different responses to sensory stimuli (Sheehan, 1967, cited in Krishna, 2010). Furthermore, profound perceptual deprivations, such as blindness, can enhance the other senses, offering for those who become blind a new way of experiencing the world constructed by the non-visual senses (Sacks, 2005).

Rejecting the senses as merely a channel for sensations, either as proposed by physiological and neuroscience theories or as explained by the activities of the brain, generally suggested by psychology models, the *ecological model* proposed by Gibson (1974) highlights the environment as a crucial determinant of what is perceived, becoming a source of rich and accurate structured information, which is captured by the senses. Thus, based on the assumption that the senses are more active rather than passive, the psychologist proposes five inter-related perceptual systems: the basic orientating system, the auditory system, the haptic system, the taste-smell system, and the visual system (Gibson, 1966).

2.4. The senses in human geography

In *Sensuous Geographies*, Rodaway (1994) argues that the human senses are mediators in geographical experiences, and thus, in understanding space, place and time. The senses provide information about the environment around individuals (the source of information) and actively structure the information (making-sense of the world). Borrowing from MacLuhan's (1994 [1964]) terms, the senses are both the *medium* through which information is gathered and the *message*, since each sense offers a distinct perspective of the world. Rodaway (1994) explains that although everyday classification relates each sensory impression to specific sense organs, this distinction is not always possible due to the complexity of sense organs. The geographer highlights this complexity by explaining that, for example, tactile sensations involve different regions of body receptors and that it is difficult to distinguish between taste and smell, since these senses always operate closely together. Under this assumption, the author puts forward the idea that the five perceptual systems suggested by the psychologist Gibson (1966) pursue greater accuracy with regard to actual everyday experiences (see section 2.3).

To analyze the relationship between body, people and places, the geographer Porteus (1986) devises the term *sensescapes*, arguing that, similar to the notion of landscapes, with its primarily visual connotations, other senses can be spatially ordered or place related; therefore it would be appropriate to consider also *smellscapes*, *soundscapes*, *tastescapes*, or *geographies of touch* (Urry, 2002). Several researchers in human geography reject the hegemony of vision, highlighting the role of non-visual senses in environmental perception, arguing that "what might first appear to be visual perception may on closer inspection be seen to include important auditory, olfactory, and tactile components" (Rodaway, 1994, p.26). This suggests multiple sensory experiences in geographical encounters (Degen, 2008; Rodaway, 1994), which is the case with tourism destinations (Crouch, 2002).

Therefore, besides the paradigm of embodiment, which implies the integration of mind and body (Damásio, 2009 [1995]; Merleau-Ponty, 2002 [1945]), it becomes important to understand the paradigm of *emplacement* and *sense of place*. This paradigm suggests the sensory interrelationship between body, mind and environment (Tuan, 1977), which is physically, socially, and culturally embedded (Casey, 1996). Accordingly, the senses seem to have an important contribution to *place attachment*, which has been described as the affective bond between an individual and a particular spatial setting (Hidalgo & Hernandez, 2001; Williams, Patterson, Roggenbuck & Watson, 1992).

2.5. The senses and the socio-anthropological approach

According to several researchers (Vannini et al., 2011), the sociological and the anthropological approaches to the senses are related; the body receptors are seen not as passive, but rather as active receptors, which culturally connect individuals to social existence (Dewey, 1934; Howes, 2005; Simmel, 1997). Thus, the study of the senses has been addressed in both social and cultural dimensions.

Degen (2008) explains that regardless of the relationship between body and experience, place experiences are also linked to cognitive processes that are not “merely a subjective activity”, since “the meanings are shared by groups of people as these cognitive structures are expressed in language”, originating “different spatial imaginaries” (Degen, 2008, p.41). Feld (2005, p.179) denotes the sensuous reaction of individuals to place through the expression *sense of place*, arguing that, conversely, places are *sensed* and the senses are *placed*. The researcher suggests the concept of *acoustemology*, claiming that local soundscapes can be culturally embodied, using the example of the Kaluli people’s experiences in Bosavi, Papua New Guinea. In 1844’s *Economic and Philosophic Manuscripts*, Marx highlights the supremacy of the senses and its social construction, influencing the work and life conditions of the proletariat, claiming that “the forming of the five senses is a labor of the entire history of the world down to present” (Marx, 1987, p.109). Thus, the studies on the cultural and social dimensions of the senses stress the fact that perception stems from a learned behavior, apart from being physically related (Classen, 1997; Howes, 1991, 2005, 2006) and hostage to place and time (Corbin, 2005; Jütte, 2005; Smith, 2007). The historian Smith (2007, p.3) claims that “senses are historical, that they are not universal but, rather, a product of place and, especially, time so that how people perceived and understood smell, sound, taste, and sight changed historically.”

2.6. The senses in marketing management

The so-called five human senses are of crucial importance to the individual’s experience of different purchase and consumption processes. As the literature reveals, it is through the senses that individuals perceive organizations, products and brands (Hultén et al., 2009). Schmitt (1999) postulates that consumer experiences can be characterized by five strategic experience modules: sensory (sense), affective (feel), creative cognitive (think), physical/behaviors and lifestyles (act), and social-identity (social). These modules are circumscribed but are connected and interact with each other. In this context, while acknowledging the multidimensionality of consumer experiences, empirical studies show the pivotal role of the sensory component comparing with other components of consumption experiences (Gentile, Spiller & Noci, 2007). Brakus, Schmitt & Zarantonello (2009) confirm the existence of different experience dimensions by developing and validating a brand experience scale that focuses on the sensory component, apart from the affective, intellectual, and behavioral dimensions. The authors suggest further investigation into the concept of experience within different industries and reinforce the fact that research has shown that increasing and decreasing intensity of experiences can affect their evaluation.

Some researchers claim that the importance of human senses has been neglected for a long time, in spite of their relevance in clarifying brand identity and brand image, and their contribution to providing value to the customer (Krishna, 2010; Lindstrom, 2005;

Schmitt & Simonson, 1997). Furthermore, there is a “coordinated role of senses in enhancing positive experiences” (Zurawicki, 2010, p.80), which influences consumer behavior (Derval, 2010). In this line of thought, sensory marketing has the purpose of recognizing “how a firm, through different sensory strategies and sense expressions, can create brand awareness and establish a brand image that relates to the customer’s identity, lifestyle, and personality. A firm’s sensory marketing approach should, for that reason, be deliberately and strategically based on the five human senses” (Hultén et al., p.6). Krishna (2012, p.332) synthesizes this new approach and broadens the concept into “marketing that engages the consumer’s senses and affects their perception, judgment and behavior”. The synergetic relationship between neuroscience, cognitive psychology, neuroendocrinology and marketing research has generated new insights into the role of the human senses in consumer behavior (Derval, 2010; Krishna, 2010; Zurawicki, 2010).

2.7. The senses in tourism studies

Since cultural, social, and geographical factors have historically determined shifts in sensory perception (Classen, 1997; Howes, 2005; Rodaway, 1994; Smith, 2007; Tuan, 1977; Urry, 2008), tourist experiences have been focused on specific senses in different periods (Adler, 1989). Additionally, body, gender and sensuality have attracted some attention in tourism research, in the exploration of the experience in tourism as a corporeal and social construction (Pritchard, Morgan, Ateljevic & Harris, 2007). Tourism studies have been systematically centred on the visual component of the tourist experience (Pan & Ryan, 2009), mainly focusing on the western-based concept of *tourist gaze* developed by Urry (1990), which has been emphasized by the advent and popularization of cameras and by the practice of mass tourism operators in marking sites to be seen (Ryan, 2003). This does not necessarily mean an ocular predominance in tourist experiences (Adler, 1989; Markwell, 2001; Pocock, 2002), since geographical encounters suggest multiple sensory experiences (Degen, 2008; Rodaway, 1994; Tuan, 1977). Hence, tourists are bodily engaged in sense making of their encounters with destinations (Crouch, 2002). Current literature, including Urry’s (2002) analysis, points to the role of all the bodily senses in understanding global tourist experiences, highlighting the need for a holistic approach to *sensescapes*, i.e., adding to *landscapes* other kinds of *scapes*, such as *soundscapes*, *tastescapes*, *haptiscapes* and *smellscapes* (Agapito, Valle & Mendes, 2012; Dann & Jacobsen, 2003; Ellis & Rossman, 2008; Govers et al., 2007; Gretzel & Fesenmaier, 2003; Kastenholz et al., 2012; Pan & Ryan, 2009; Veijola & Jokinen, 1994).

3. The senses as a dimension of tourist experiences

Carù and Cova (2003) and Walls et al. (2011a) extensively review the ways in which the concept of experience has been approached by a variety of academic disciplines, distinguishing general experiences from consumer experiences. While the former occur inside the person and refers to a diversity of encounters, employing a unique combination of cognitive and emotional elements, the consumer experience is the total outcome of an individual’s encounters with products, services and businesses (Lewis & Chambers, 2000). In this context, *staging* the experience (Pine & Gilmore, 1998, 1999), *designing* the experience (Ek, Larsen, Hornskov & Mansfeldt, 2008), *managing* the experience (Morgan, 2010), *choreographing* the experience (Walls et al., 2011b),

engineering the experience (Carbone & Haeckel, 1994), *sculpting/crafting* the experience (Ooi, 2005) are common expressions informed by the experiential paradigm, which postulates that the inputs generated by products, services and the surrounding environment can be systematically and voluntarily managed in order to create the conditions for a positive consumer experience that lasts in memory. In fact, according to Larsen (2007, p.15) “a tourist experience is a past personal travel-related event strong enough to have entered long-term memory.” In this context, and considering that tourists experience destinations, by means of a composite consumption of products and services (Otto & Ritchie, 1996), it becomes pertinent to understand how to bridge the economic experiential paradigm and tourism (Mossberg, 2007; Oh, Fiore & Jeoung, 2007). With this view, the frameworks for staging tourist experiences have raised the importance of stimulating the senses, in order to reach the heart and the mind of tourists (Mossberg, 2007; Pine & Gilmore, 1998; Schmitt, 1999; Walls et al., 2011a).

3.1. The senses in the experiential paradigm

The experience economy paradigm views experiences as a distinct economic offer, occupying a central role in society, and holding a premium position on the four-stage *continuum* of the progression of economic value, after commodities, goods and services (Pine & Gilmore, 1998). In fact, current research shows consumers’ preferences for experiences when interacting with products and services, which somewhat dilute the importance of the product itself (Holbrook, 1999; Holbrook & Hirschman, 1982; Hirschman & Holbrook, 1982; Jensen, 1999). Findings in neuroscience and in consumer behavior suggest that consumers are less driven by functional arguments than by internal sensory and emotional elements (Zaltman, 2003), derived from the total experience of consumption events (Carbone, 1998). Since experiences have been described as personal, existing in the mind of an “individual who has been engaged on an emotional, physical, intellectual, or even spiritual level” (Pine & Gilmore, 1998, p.99), they can be staged in order to engage individuals. Thus, as experiences are personal, i.e. occurring inside the individual’s body and mind, the outcome depends on how the consumer, contextualized by a specific situation and mood, reacts to the staged encounter (Csikszentmihalyi & LeFevre, 1990; Mossberg, 2007; Pine & Gilmore, 1999; Walls et al., 2011a).

Thus, contrasting with the information-processing models, based on the utilitarian dimension, the experiential view focuses on the symbolic, hedonic and esthetic nature of consumption (Holbrook & Hirschman, 1982; Vogt, Fesenmaier & MacKay, 1993). This form of pleasure-orientated consumption shows that individuals seek positive feelings and sensory stimulation, both associated with hedonic elements. Therefore, this “experiential perspective supports a more energetic investigation of multisensory psychophysical relationships in consumer behavior” (Holbrook & Hirschman, 1982, p.134). Managerial implications follow from the fact that engaging consumers in positive physical and social aspects facilitates positive emotional states, satisfaction and loyalty to environments (Bitner, 1992), in which consumers are more likely to spend time and make purchases (Mehrabian & Russell, 1974; Walls et al., 2011b).

3.2. The senses in the tourist experience models

Tourism constitutes one of the pioneering examples of the experience economy (Quan & Wang, 2004) as a consumption experience (Woodside, Crouch, Mazanec, Opperman & Sakai, 2000) of a composite product, comprising lodging, food, transportation, souvenirs and leisure activities (Mossberg, 2007; Otto & Ritchie, 1996). Since “everything tourists go through at a destination can be experience” (Oh, Fiore & Jeoung, 2007, p.120), a multi-sensory nature for tourism products is suggested (Gretzel & Fesenmaier, 2003). In this context, Mossberg (2007) prefers the use of the *experiencescape* concept (O’Dell, 2005) as an extension of the *servicescape* concept (Bitner, 1992). The latter refers to the physical features around a service production, influencing individuals’ internal responses and behavior, while the former focuses on the tourists’ global consumption, which includes a destination as an experience environment.

Walls et al. (2011a) develop a framework for the composition of hospitality and tourism consumer experiences, combining both business and consumer perspectives of the experience. A business creates and choreographs the experience via physical environment and emotional/human interaction dimensions, creating the opportunity for an experience, while consumers add the final link, by their choices, motives and inner dispositions related to individual and situational variables. This managerial perspective of orchestrating an environment and circumstances highlights the importance of stimulating the five human senses, as the environment involves physical dimensions that impact on the senses of consumers (Walls et al., 2011a) and support social interactions (Walls et al., 2011b). Accordingly, Carbone and Haeckel (1994) identify two types of context cues able to enhance the consumer experience: *mechanics*, related to the five senses, and *humanics*, emanating from people. Regarding the impact of *mechanics* (sensory impressions), the authors state the importance of using new technologies, which can be applied to trigger appropriate *humanics* clues, as the latter is seen by the researchers as most effective when integrated with *mechanics*.

Inspired by Pine and Gilmore’s work (1998), Ellis and Rossman (2008) introduce a conceptual model for staging tourism and recreation experiences, by integrating principles postulated in the literature on customer service and quality management. Thus, the model proposes that attention should be given to two components: the technical performance factors and the artistic performance factors. The former component is drawn from the SERVQUAL model (Parasuraman, Zeithaml & Berry, 1988), including technical skills, setting and interpersonal performances. The artistic dimension includes the use of a theme, features that provide a multi-sensory performance and an unanticipated value performance. Thus, the authors focus on the value of consumer experiences in the process of purchasing products and services, because experiences should be memorable. Mossberg (2007) stresses the importance of the physical environment in the consumption experience in the context of tourism, by focusing on the relevance of the stimulation of the five senses, apart from other factors such as the personnel performance, the presence of other tourists, the availability of products and memorabilia and the existence of a theme.

In recent work, Cutler and Carmichael (2010) propose a tourist experience conceptual model based on an extensive literature review, combining the personal realm (motivation, expectation, satisfaction/dissatisfaction, knowledge, memory, perception, emotion and self-identity), the influential factors (physical environment, social aspects, and products and services) and the phasic nature of the tourist experience (anticipation, travel to site, on-site activity, return travel and recollection). In this context, the senses

play an important role in the different phases of the tourist experiences, before, during and after the travel. According to Hirschman and Hoolbrook (1982), individuals not only respond to multi-sensory impressions from external stimuli but also generate multi-sensory images within themselves. The internal multi-sensory images can be of two types: *historic imagery* and *fantasy imagery*. The former involves recalling an event that actually occurred, while the latter is generated when the consumer responds by producing a multi-sensory image not drawn directly from prior experience, but drawn from known sensory elements that are brought together in a particular configuration (Singer, 1966). Thus, the imagination process involves also the access to sensory information that is subjected to reconstruction (Damásio, 2010). Accordingly, imagery has been described as a way of processing and storing multi-sensory information in memory, creating a mental picture, not only visual, but including all the sensory impressions in a holistic way (MacInnis & Price, 1987).

3.2.1 Factors influencing the perception of the overall tourist experience

Taking into account the models of tourist experiences and the theoretical underpinnings referred above, figure 1 proposes a conceptual framework which depicts the main external and internal factors that interact and influence the perception of the overall tourist experience, i.e., the process in which the sensory inputs regarding the tourist experience are processed, organized and interpreted (Larsen, 2007). It is adopted the experiential approach which focuses on the external elements that can be partially staged by the destination but also on the internal factors influencing tourist's perception. In the proposed theoretical framework, the knowledge of internal factors is seen as fundamental to efficiently manage the external ones.

The external component encompasses the environmental factors, which comprehend sensory stimuli (visual, auditory, olfactory, gustatory and tactile) and design. The latter tangibilize sensory stimuli through solutions regarding layout, functionality, signs, symbols, and artifacts (Bitner, 1992; Heide & Grønhaug, 2006), which in a destination can be materialized, for example, into driving directions, roads and parking lots design, architectural traces and functionality of accommodation. The environmental factors constitute the setting where the consumption of products (in the broader sense) takes place - tangible products, intangible products (services) and souvenirs, the latter having the specific function of acting as reminders of the tourist experience (Mossberg, 2007). The surrounding environment is also a facilitator of human interactions (Bitner, 1992; Walls et al., 2011a, 2011b). Human factors integrate employees' performance, related to technical and interactive skills, and social interactions with other tourists (Mossberg, 2007), and with locals at the destination (Nickerson, 2006). Moreover, since the environment involving destination experiences can be both physical and virtual, the experience *in loco* could be enhanced by integrating the notion of the multi-phase nature of tourist experiences, the idea of co-creation and the potential of Information Communication Technologies (ICTs) (Neuhofer, Buhalis & Ladkin, 2012). Hence, stimuli can be managed in both physical and virtual environments thus influencing the perception of the overall tourist experience. Furthermore, since the experiential paradigm poses that the existence of a theme is a requisite for turning a service into a consumer experience (Pine & Gilmore, 1998), facilitating the integration of a destination experiential offering, the external factors partially controlled by the destination should be coordinated around a theme (Mossberg, 2007).

In the internal process of perceiving the overall tourist experience, there is initially an activation of the sense organs by sensory stimuli, named in Psychology as sensations (Goldstein, 2010). Individuals' sensory limitations (e.g., the deprivation of a sense) affect the course of sorting and interpreting the sensory information, through which tourists make cognitive associations and relate positive or negative feelings to the destination. In this individual dynamic process, the cognitive (intellectual) and affective (emotional) associations lead the development of a bond with the destination (place attachment), influencing the outcomes of satisfaction/dissatisfaction during the experience and, consequently, the *in loco* tourist's intentions to recommend and return to the destination (Bigné, Andreu & Gnoth, 2005; Hwang, Lee & Chen, 2005; Prayag & Ryan, 2012; Walls et al., 2011a).

After returning home, these perceptual images can be modified, since stories are created, told and compared with those of family, friends and conveyed by other sources of information, such as advertising, websites or social networks. This is a dynamic process leading to long-term satisfaction and loyalty. In fact, many tourists continue to enjoy the pleasure of their experience in the form of dinner-table stories, souvenirs, photo sharing, reconstructing the experience and transforming it in memories that last (Crouch, Perdue, Timmermans & Uysal, 2004; Larsen, 2007). Motivations and expectations regarding future destination experiences are impacted by the level of familiarity, expertise and involvement with the destination (Fluker & Turner, 2010); all these aspects influence the perception of the overall tourist experience. It is important to note however that motivations and expectations are updated during the actual experience (Larsen, 2007).

Moreover, individual characteristics, such as personality, cultural background, knowledge, self-identity (Cutler & Carmichael, 2010), physiological specificities (Derval, 2010; Krishna, 2010) and situational variables, such as trip companion (e.g. family, friends, coworkers, partner), nature of the destination (e.g. rural, urban), performed activities, and mood (Walls et al., 2011a) have an impact on perceptual processes and behavioral responses. In this context, the internal factors "determine a person's disposition" (Gnoth, 1997, p.288) towards the destination, explaining why even exposed to the same external stimuli, individuals can interpret and react to their experiences differently. Nevertheless, monitoring the existence of patterns in long-term memory, satisfaction and loyalty is a key activity in the management and marketing of themes around destination experiences and corresponding environmental stimuli.

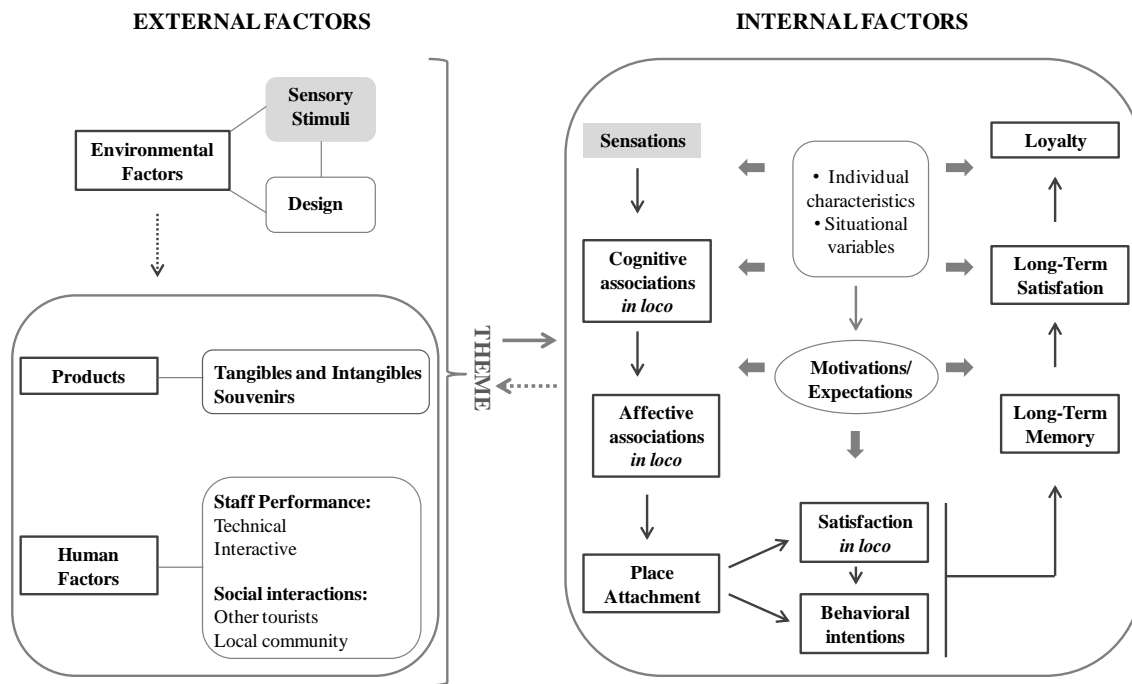


Figure 1 – Factors influencing the perception of the overall tourist experience: conceptual framework

4. The senses and tourist experiences: empirical studies

Currently, as shown in sections 2 and 3, the tourism literature pinpoints the importance of visual and non-visual senses to the tourist experience. Nevertheless, while some research has paid more attention to specific senses, such as sight (Adler, 1989), hearing (Pilcher, Newman & Manning, 2009), smell (Dan & Jacobsen, 2003), taste (*cuisine*) (Hjalager & Richards, 2002) and touch (Pocock, n.d.), there is still a lack of empirical studies addressing holistically the multi-sensory dimension of the global tourist experience, suggesting specific managerial implications for destinations.

As outlined in table 1, empirical research adopting a holistic approach to the senses in tourist experiences uses methodologies varying from qualitative methods (Kastenholz et al., 2012; Markwell, 2001; Richards, Pritchard & Morgan, 2010) to an integration of qualitative and quantitative methods (Agapito et al., 2012; Dann & Dann, 2011; Govers et al., 2007; Gretzel & Fesenmaier, 2003, 2010; Pan & Ryan, 2009; Small, Darcy & Packer, 2012; Son & Pearce, 2005). The studies argue that the embodied cognition approach reflects the process of construction of tourist experiences better than the cognitive approach, assuming that consumer experiences largely derive from patterns of sensory inputs (Gretzel & Fesenmaier, 2003).

Since some researchers pose that much of consumer's thinking occurs unconsciously, whose contents can be elicited through metaphors and stories (Zaltman, 2003), Gretzel and Fesenmaier (2010) suggest the use of elicitation techniques in order to analyze the sensory dimension of the tourist experience. According to the researchers, while quantitative analysis is unable to assess information that is not easily accessible in the consumer's mind, such as that pertaining to sensory experiences, qualitative methods cannot be used for larger-scale studies to extract the dominant experience dimensions necessary to design tourist experiences and develop marketing strategies aimed at

specific segments. The authors create a *Sensory Experience Elicitation Protocol* (SEEP), proposing the use of self-administered questionnaires, arguing that this methodology, while effectively eliciting embedded knowledge, can also be applied to a larger sample of respondents. With a similar view, Govers et al. (2007) defend a phenomenographic post-positivist approach, with the use of a narrative format for obtaining sensory information. The researchers suggest a content analysis of a large amount of qualitative data collected in online surveys using artificial neural network software, followed by a quantitative analysis based on perceptual maps. These methodologies are in line with the idea that greater involvement of individuals in hedonic consumption provides meaningful data regarding perception. Thus, the use of projective techniques in questionnaires, followed by the performance of multivariate methods and statistical hypothesis testing, seems to be adequate (Holbrook & Hirschman, 1982). Accordingly, Agapito et al. (2012), Gretzel and Fesenmaier (2003), and Son and Pearce (2005) use self-administered questionnaires with open-ended questions in order to obtain sensory information, followed by a quantitative analysis. Pan and Ryan (2009) perform a content analysis of travelogues, and design a quantitative analysis with the use of multivariate techniques. A first-person reflexive account is used in particular in the study by Dann and Dann (2011), which is subjected to a quantitative analysis allowing a comparison between the positive and the negative sensory experiences by continents.

Other researchers adopt a qualitative analysis, using semi-structured interviews (Kastenholz et al., 2012), focus groups and in-depth interviews (Richards et al., 2010; Small et al., 2012) or, in other cases, complementing in-depth interviews with participant's diaries, postcards, photographs and other textual and visual material, such as tour brochures, published tour guides and interpretive signs (Markwell, 2001). Observation and personal experience are also indicated as being crucial in interpreting data (Dann & Dann, 2011; Markwell, 2001; Richards et al., 2010; Small et al., 2012).

The phasic nature of tourist experiences plays an important role in the research on the sensory dimension of tourist experiences. Some researchers choose to study the sensory impressions *in loco*, while the tourist is visiting the destination (Agapito et al., 2012; Kastenholz et al., 2012; Markwell, 2001; Son & Pearce, 2005), others ask tourists to describe *a priori* the imagined or desired tourist experience in specific destinations (Govers et al., 2007; Gretzel & Fesenmaier, 2003, 2010), and others analyze the tourist experience *a posteriori* (Dann & Dann, 2011; Pan & Ryan, 2009; Richards et al. 2010; Small et al., 2012), according to the different purposes of the research and the managerial implications.

In general, studies' findings show that, in the overall tourist experiences no single sense seems to dominate constantly and that different sensory information can be bundled together, forming themes in order to communicate destinations and enhance and stage specific experiences sought by groups of tourists with different profiles (Agapito et al., 2012; Gretzel & Fesenmaier, 2003, 2010). Since Pan and Ryan (2009) found shifts of senses in the tourist's perception of different destinations that are mainly induced by spatial changes, the researchers postulate that it is possible to stimulate different senses through the performance of different activities in the destinations, and design sensory itineraries addressed to different tourists' profiles with specific motivations, including travel journalists. With this in view, the improvement of sensory experiences for visually impaired or deaf-blind visitors is sought by recent studies, highlighting the importance for destinations of addressing non-visual senses, offering accessible tourist

experiences for all (Dann & Dann, 2011; Richards et al., 2010; Small et al., 2012). The design of sensory itineraries may also encourage small destinations with similar *sensescaples* to find niches and to promote themselves together (Pan & Ryan, 2009). Additionally, empirical research shows that rather than focusing on the communication of functional attributes, destination marketing websites should include sensory information, such as colors, scents and sounds, in a holistic way. Since people seem to create coherent themes out of sensory experiences, this information can be used for the purpose of experience-based destination marketing on the Internet, by exploring the new technologies available (Gretzel & Fesenmaier, 2003).

Markwell (2001) examines the interactions between tourists and nature and concludes that the body plays a crucial role in lived nature-based experiences. Since the senses are products of culture and history as well as biology, the author postulates that both visual and non-visual senses help tourists to make sense of a place and to arrive at a better understanding of it. The author concludes that the body interferes in the desired nature-based experiences, in both positive and negative ways, suggesting that tour operators should find the equilibrium in mediating the experience. Furthermore, aural, olfactory and tactile senses seem to be more related to natural than to urban environments (Pan & Ryan, 2009), and that multi-sensory elements related to *rurality* and nature should be included carefully and responsibly in the design of appealing and memorable rural tourist *experiencescaples* (Kastenholz et al., 2012).

Table 1 – Empirical research on the multi-sensory dimension of tourist experiences

Authors	Senses	Data	Statistical methods	Managerial implications
Agapito et al. (2012)	Sight, hearing, smell, taste and touch	Self-administered questionnaire to tourists	Content analysis Frequency analysis Chi-square tests	All the five human senses are important in experiencing rural areas, thus sensory information can be used to design, communicate and boost tourist experiences in rural destinations
Dann & Dann (2011)	Non-visual senses	Poems of the deaf-blind author Recorded experiences of the author	First-person reflexive account Frequency analysis Chi-square tests	Industry and investigation into tourism should approach tourist experiences from the point of view of deaf-blind individuals, since their motivations relates to other than the visual sense.
Govers et al. (2007)	Sight, hearing, smell, taste and touch	Online survey applied to individuals who were asked to describe their image of one of seven case study destinations that they had never visited before, in a narrative format. The central question was formulated through a Delphi-type discussion with eight scientific	Content analysis Perceptual maps	The use of artificial neural software and a phenomenographic post-positivist perspective based on multi-sensory interactive narrative allows an alternative measurement technique that can contribute to destination image research and compare destinations

		experts		and consequently their management.
Gretzel & Fesenmaier (2010)	Sight, hearing and smell	Online survey of individuals who had requested information on Northern Indiana in the Midwest United States – Elkhart County. The survey uses the Sensory Elicitation Protocol (SEEP)	Content analysis Frequency analysis Chi-square tests Cluster analysis	Sensory information bundled into themes is important when designing tourism and leisure experiences and creating effective marketing tools to promote them. Elicitation techniques show potential for making sensory impressions accessible in the minds of consumers, providing a new way of potentially segmenting the market.
Gretzel & Fesenmaier (2003)	Sight, hearing and smell	An online survey was sent to persons who had requested travel information from a Northern Indiana tourism office. Individuals were asked to imagine a desired trip to a destination in the Midwest United States)	Content analysis Frequency analysis Factor analysis K-means cluster analysis	Sensory information can be bundled in meaningful ways. These sensory themes can be used in the context of online destination marketing, such as the websites of destinations.
Kastenholz et al. (2012)	Sight, hearing, smell, taste and touch	The analysis of the sensory dimension of the tourists was part of a global study including different stakeholders. Semi-structured interviews with open-ended questions were used.	Content analysis, validated by a triangulation approach Comparative analysis	Multi-sensory elements related to <i>rurality</i> and nature should be included carefully in the design of appealing and memorable rural tourist <i>experiencescapes</i> .
Markwell (2001)	Sight, hearing, smell, taste and touch	Content, semiotic and textual analyzes of the data and self-reflection on participant observation. A researcher-as-tour-leader approach to data collection was used.	Content, semiotic and textual analyzes of the data and self-reflection on participant observation. A researcher-as-tour-leader approach to data collection was used.	Sometimes the body interferes in the desired experience in a nature-based context, thus some tourists may desire and be willing to pay for a less mediated experience, with fewer interventions through the tour operator. Nevertheless, a less mediated experience may contribute to greater environmental damage in nature-based contexts.
Pan & Ryan (2009)	Hearing, smell, taste and touch	Travel journalist’s reports of New Zealand (199 travelogues)	Content analysis Two-way contingency table analysis Correspondence analysis	Development of sensory itineraries for travel journalists, enriching the travel experience and leading to the production of richer travelogues that stimulate potential tourists. The methodology can also

			Senses square analysis	be applied to the online traveler's reviews. Regions with similar <i>sensescapes</i> can promote themselves together.
Richards et al. (2010)	Non-visual senses	Focus groups with visually impaired persons	Audio-tape transcriptions analysis in order to find the main themes. After the transcriptions were analyzed, the groups were met again in order to obtain their feedback	Under the "hopeful tourism scholarship" emerging paradigm, the researchers contribute to an agenda for tourism researchers working on disability and citizenship. Non-visual senses should be addressed responsibly by national and local agencies responsible for tourism, in order to facilitate positive tourist experiences for impaired people.
Small et al. (2012)	Non-visual senses	People with visual impairment In-depth interviews and focus groups	Inductive, qualitative and iterative approach Audio-tape transcriptions were analyzed for emergent themes in a three-stage process. Organizations and participants were involved in the analysis	The tourism industry should address the multi-sensory nature of the tourist experience in order to design quality accessible experiences, not only for visual impaired, but also for sighted tourists.
Son & Pearce (2005)	Sight, hearing, smell, and touch	Self-administered questionnaires distributed to international students. Visual impressions were assessed using 12 photographs. Open-ended questions were used to capture non-visual impressions	Content analysis Frequency analysis Chi-square tests	Since food can be one of the main parts of the travel multi-sensory experience, and Australian food is seen has disappointing experiences for international students, cuisine should be addressed by marketing strategies, and further image studies related to this component should be developed.

Govers et al. (2007) and Son and Pearce (2005) focus on the importance of including a sensory dimension in destination image studies. Since travel experiences are multi-sensory, Son and Pearce (2005) propose a conceptual framework based on cognitive, affective and multi-sensory components. Researchers' findings show that the differences identified between sensory impressions can be explained by the differences between the socio-cultural profiles of the tourists. Govers et al. (2007) present an

alternative to the attribute-based traditional destination image frameworks based on multi-sensory narratives around which perceptual maps can be constructed, allowing the comparison of destinations and consequently boosting their marketing strategies.

5. Discussion

A brief multidisciplinary approach to the human senses shows that the knowledge of places and surrounding environments originates in bodily experience, generating multiple sensory experiences constituted not only by visual impressions, but also by the associated sounds, smells, tastes and touch (Bitner, 1992; Casey, 1996; Heide & Grønhaug, 2006; Howes, 2006; Macnaghten & Urry, 1998; Porteus, 1985; Rodaway, 1994; Tuan, 1977; Urry, 2002). Accordingly, recent work in tourism studies is informed by the embodiment paradigm, which is now widely accepted in science, positioning the body as central to the empirical research on tourist experiences.

This line of thought assumes that stimulating the human senses is crucial to engaging consumers emotionally and intellectually when interacting with products and services (Pine & Gilmore, 1998). Moreover, research points out the surrounding environment as a critical factor in defining the nature of social interactions (Bitner, 1992; Carbone & Haeckel; 1994; Walls et al., 2011b). Accordingly, the models for staging tourist experiences link the embodiment paradigm, the experiential paradigm, and tourism, seeking to understand and operationalize instruments that assist destinations in creating the conditions that enhance the global tourist experience, supporting effective management and marketing strategies (Morgan, Elbe & de Esteban Curiel, 2009; Mossberg, 2007; Ritchie & Hudson, 2009; Tung & Ritchie, 2011; Volo, 2009; Walls et al., 2011a). This managerial approach presupposes that although experiences are individual and internal, comprised of a constant flow of conscious thoughts and feelings (Carlson, 1997), they can be designed (Stamboulis & Skayannis, 2003) and co-created by the visitor and the supplier (Binkhorst & Dekker, 2009; Prahalad & Ramaswamy, 2004), making the experience more valuable to the consumer and, consequently, benefiting the provider and the destination (Scott, Laws & Boksberger, 2009).

Most of the empirical studies on the sensory component of global tourist experiences use qualitative methodologies or an integration of qualitative and quantitative analysis according to the purpose of the research, both strategies proving to contribute with important managerial insights for destinations. In the former, the researchers focus on a deep analysis, particularly directed towards exploratory studies using small groups in responsible tourism research, aiming, for example, at drawing the attention of researchers and the tourism industry to ethical concerns, addressing the issue of accessible tourist experiences for all. This includes the study of the role of non-visual senses in the tourist experiences of visually impaired persons, which is in line with the literature stressing that profound perceptual deprivations imply a new way of experiencing the world (Sacks, 2005). Indeed, a careful reading of the book *A Sense of the World: How a Blind Man became History's Greatest Traveler* (Roberts, 2006) leads the reader to a unique and rich sensory realm of traveling without sight. The results of these groups of studies highlight the need to staging accessible and rich tourist experiences, stressing the potential of new technologies in the performance of destinations. Some advanced examples in the literature are the creation of tactile maps based on sensory information (Gardiner & Perkins, 2005, p. 84) and the use of potential derived from the multiple representational capabilities of mobile electronic devices and

multimedia, adapting them to the user's needs at specific moments (Brown & Perry, 2002).

Research using quantitative methodologies shows empirical evidence that sensory themes can be found in the articulation of the different senses (Gretzel & Fesenmaier, 2003, 2010), and that different destinations are associated with specific *sensescapes* (Pan & Ryan, 2009). In this context, it seems relevant to analyzing the benefits of predictive segmentation tools for delivering multi-sensory experiences (Derval, 2010). In a managerial view, for example, gastronomy can be explored as a multi-sensory experience and addressed as a potential niche market (Daugstad, 2008; Everett, 2008; Hjalager & Richards, 2002; Kivela & Crofts, 2006; Quan & Wang, 2004). Since many destination organizations have insufficient budgets to develop marketing strategies with a significant impact in order to contribute to memorable visitor experiences, private and public sector collaboration is needed and synergies between regions should be sought (Morgan, 2010). Thus, destinations with similar *sensescapes* can promote themselves together or create multi-sensory itineraries providing integrated sensory experiences in neighboring regions (Pan & Ryan, 2009).

Furthermore, traditional forms of communicating destinations should be revised and new technologies and the Internet could assist in the design and development of themes based not only on visual stimuli, but also on non-visual stimuli with optional inclusion of verbal descriptions (Gretzel & Fesenmaier, 2003; Stamboulis & Skayannis, 2003). Since *advergaming* is seen as an opportunity to interactively engage users while promoting destinations (Çeltek, 2010), fun *advergame* experiences about the destination can be created, exploring the synergies between the different types of sensory signals (Zurawicki, 2010). Destinations websites or mobile phones with GPS technology can bring great benefits, providing experiences before, during and after travel (Neuhofer et al., 2012). Additionally, multi-sensory information might be useful in designing personalized geographical technologies, derived from geographical information systems (GIS), which can be used to stimulate and enhance tourist experiences (Brown & Perry, 2002).

Other methodologies, embedded in knowledge of neuroscience, cognitive psychology and neuroendocrinology may prove useful in the future for a deep analysis of the role of sensory stimuli in tourists' emotions and preferences. Moreover, other senses, such as the sense of movement, can be analyzed in addition to the so-called five external senses, in specific tourist experiences, using GPS technology. Nevertheless, the use of digital technologies should be taken as potentially influencing the tourist experience itself.

The existence of few empirical studies embracing a holistic approach of the sensory dimension of tourist experiences proves that there are research gaps future studies should address. In fact, an extensive theoretical research imbedded in a multidisciplinary view is available, but there is lack of empirical studies supporting theoretical frameworks. An experiential view on the role of the five external senses aiming at desired tourist experiences calls for a holistic approach to the topic. Furthermore, empirical research is needed on the relationship between environmental factors and other external factors, on the relationship between the internal factors themselves, and on the relationship between external factors and internal factors. Although experimental studies in sensory marketing reveal the influence of sensory stimuli in consumer behavior (Krishna, 2010), experimental research is needed in order to understand the role of the human senses in tourist behavior and how individual

specificities influence responses. Indeed, insights on internal factors influencing the multi-stage process of the perception of the overall tourist experience are crucial in order to guide efforts in innovative marketing management of sensory stimuli addressed to desired targets, since this is considered fundamental to the sustainability and competitiveness of destinations.

Furthermore, a review of empirical research shows there are more studies addressing urban environments, as already pointed out by Dann and Jacobsen (2003), despite non-visual impressions being related more to rural than to urban areas (Pan & Ryan, 2009). Indeed, few studies focus on the *rurality* of destinations as a central component in the analysis of tourist sensory experiences (Agapito et al., 2012; Gretzel & Fesenmaier, 2010; Kastenholtz et al., 2012). Regardless of this tendency, the richness of the endogenous resources associated with rural areas is ideal for a variety of activities addressing different tourists' motivations (Kastenholtz, Davis & Paul, 1999; Pan & Ryan, 2009; Roberts & Hall, 2004). In this context, the rural environment, featuring many specific characteristics, can play an important role in conceptualizing appealing tourist experiences, by stimulating a variety of senses (Kastenholtz et al., 2012).

6. Conclusion

This paper aimed to discuss the theoretical underpinnings of the sensory dimension of tourist experiences, and to examine the methodologies and managerial findings of the empirical research, following a holistic approach to the human senses in terms of the destination overall experience.

In this study it is argued that the analysis of the sensory dimension of tourist experiences is relevant, since: a) human senses are crucial to the individual's perception of the world; b) sensory stimuli influence consumer behavior; and c) places and environments, such as destinations, are multi-sensorial, providing multi-sensorial encounters. Therefore, multi-sensory information regarding tourist experiences seems to be important in destination marketing and management.

Nevertheless, several authors indicate the need to preserve the autonomy of participants, pointing to the motivational factors that have a pivotal role in the individual experience and in its evaluation (Binkhorst & Dekker, 2009; Ellis & Rossman, 2008; Prahalad & Ramaswamy, 2004). Volo (2009) stresses that the challenges for destination marketing and management involve, therefore, transforming the designed experience offerings into personalized experiences. In this context, sensory stimuli can be explored not only in physical environments but also in virtual environments, using the potential of ICTs in the different moments of travel (Neuhofer et al., 2012), enhancing the actual experience of the destination itself, resulting in more positive responses.

Depending on the purpose of the research, authors follow qualitative methodologies or use both qualitative and quantitative methodologies. Studies particularly seeking managerial implications for staging tourist experiences prefer the use of mixed methods, as a qualitative approach is able to make a better assessment of complex sensory information, while a quantitative approach can be used for larger samples, in order to extract significant sensory information necessary for tourist segmentation and to design tourist experiences and manage and marketing the destination.

Although conceptual frameworks for staging memorable tourist experiences include the sensory component, pertaining to the environmental factors, there is still a lack of empirical studies particularly on: a) the relationship between the sensory and the other external factors for staging tourist experiences; b) the comparison of the role of human senses in the different moments of the travel; c) the influence of specific internal factors on the perception of tourist sensory experiences d) the influence of sensory stimuli on internal factors of tourist experiences; e) the relationship between the external human senses, understanding how stimulating one sense will affect the others; f) the influence of the activities performed in destinations on the tourist sensory experiences; g) the differences between the urban and the rural multi-sensory experiences; h) the role of human senses in designing experiences for impaired tourists; and i) the tourists' segmentation based on sensory experiences.

While acknowledging that more efforts in conceptualization and empirical evidence are needed, this paper argues that the multi-sensory component of the tourist experience is set on the tourism research agenda, posited as vital for designing positive overall destination experiences. The interplay of the human senses actively mediates tourist experiences and intimately links to the life of the emotions of the experiential paradigm, which has dethroned the intellect as central in the studies on consumption.

ACKNOWLEDGMENTS

This paper is partially financed by FCT – Foundation for Science and Technology. The authors gratefully acknowledge suggestions and enlightening comments on the areas of psychology and neuroscience by Hugo Almeida and Jorge Costa, researchers and lecturers at the University of Aveiro, and on philosophy by Ana Cláudia Campos, researcher and lecturer at the Faculty of Economics, University of Algarve. The authors also acknowledge the contributions of anonymous reviewers and editors from *Journal of Destination Marketing & Management* in order to improve the paper.

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