VOLUME IX | Issue 4 | 2021 | CINTURS

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Editor-in-Chief: Patrícia Pinto

Journal of Spatial and Organizational Dynamics

Experiences in Destinations: From Souvenirs to Fulling Experiences

TECHNICAL INFORMATION

Volume IX, Issue 4, 2021

JOURNAL OF SPATIAL AND ORGANIZATIONAL DYNAMICS

Experiences in Destinations: From Souvenirs to Fulling Experiences

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Open Access Policy:
This is a blind peer-reviewed journal.
Articles submitted to this journal should not have been published before in their current or substantially similar form.
The JSOD is diffused by all links related to the Research Center for Tourism, Sustainability and Well-being and is continually online (https://www.jsod-cieo.net/journal/index.php/jsod)
This journal is supported by the Portuguese Foundation for Science and Technology (FCT).

Indexation:
RePec-Ideas
Directory of Open Access Journals
Emerging Sources Citation Index (ESCI) - Thomson Reuters
Latindex
Academia.edu
Google Scholar

Networking and Indexing: Silvia Fernandes
Editorial Assistant: Marlene Fernandes
Design and Cover Concept: Bloco D, Design e Comunicação

Quarterly Edition
ISSN: 2183-1912
CinTurs, Faro, Portugal

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A SYSTEMATIC REVIEW: MINDFULNESS APPLIED ON THE FIELD OF TOURISM

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ABSTRACT

More advanced systematic reviews and traditional literature reviews have been an important point in assessing the epistemological progress of any field.

Mindfulness has been described as a process of bringing attention to moment-by-moment experience. In recent years, some researchers have established the influence of mindfulness on the tourists' experience, and it has been gaining a growing interest. Several studies revealed numerous psychological benefits including mental ease, tranquility, relaxation, and well-being when tourists embrace a mindfulness state. Despite this, a systematic review of this topic has not been conducted. Our main goal is to synthesize the existing studies about mindfulness in the tourism area, to provide an overview of how mindfulness has been conducted, and to explore what are the main outcomes.

A literature search was undertaken using four electronic databases, namely Science Direct, PsycInfo, PubMed, and Web of Science. Quantitative and qualitative studies were included. All studies in the review used the mindfulness concept applied in the field of tourism.

Using PRISMA guidelines, from a total of 517 records initially identified, 16 studies were selected for the review (n = 4240 participants).

The reviewed literature suggested that mindfulness is effective in improving positive travel experiences, satisfaction, loyalty, happiness, well-being, and positive psychological and physical benefit. Mindful tourists are more responsive to sustainability practices and tend to be more connected to heritage sites.

Mindfulness can be considered as a relevant concept that provides positive outcomes and may help to better understand the benefits derived by the tourists from traveling. Still, more research is needed to determine the efficacy and to clarify the contribution of processes of mindfulness to observed outcomes.

Keywords: Systematic Review, Mindfulness, Tourism, Tourist.

JEL Classification: I12, I13

1. INTRODUCTION

In recent decades mindfulness theory has been employed to understand the tourists' experiences (e.g., Barber & Deale, 2014; Rubin et al., 2016; Jiang et al., 2018; Taylor &

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Norman, 2019; Tan et al., 2020). This concept showed to be adopted to help identify some of the complexities of the alert mind.

The postmodern society has been described by work orientation, isolation, and stress related disorders such as depression (Vizniuk et al., 2021). Some individuals prefer to engage informal and unstructured means of travel to get relief from everyday stress and to seek spiritual fulfilment. Several activities during informal travel are increasingly being recognized as a potentially effective means of increasing physical relaxation and stress reduction, contributing to physical and mental health (Kroesen & DeVos, 2020). Also, travel has been defined as an opportunity that allows an individual to move from their daily work life. Leisure activities are considered to promote mindfulness and to develop spiritual and creative transformation. The changes can occur at physical or spiritual levels and can involve achieving greater skills and values to nurture self-esteem, self-confidence, and well-being (Chen & Petrick, 2013). Cavender and colleagues (2020) states that traveling could positively transform anyone at some degree. It seems that travel often embodies a break from daily life, with a level of stimulation and change that may produce positive outcomes.

Mindfulness is an inherent human capacity that can be cultivated through a variety of techniques (Tortella-Feliu et al., 2020). This concept can be defined as "the awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding of experience" (Kabat-Zinn, 2013, p. 28). From this definition, mindfulness is regularly associated with levels of consciousness through daily activities such as learning, moving, and eating (Gupta, 2020).

There are several different perspectives of the mindfulness concept in the literature. For instance, Behmer (2019) states that mindfulness and meditation reveal a relationship between the two terms. She revealed that mindfulness is an approach to meditation and meditation is the "most focused form of self-observation" (p. 64). Van Dam and colleagues (2018) document mindfulness as a term used to characterize many practices, processes, and characteristics, largely defined in relation to the capacities of attention, awareness, acceptance, and memory. Mindfulness, understood as a cognitive style (Sternberg, 2000), is argued to positively affect various outcomes of adult development such as creativity, physical well-being, and psychological well-being (Brown & Ryan 2003; Langer 2005, 2009).

In tourism, mindfulness concept has emerged in two perspectives, socio-cognitive mindfulness (SCM) and mindfulness meditation (MM) (e.g., Chen et al., 2017; Ling et al., 2018; Loureiro et al., 2020).

Socio-Cognitive Mindfulness supports a dual information-processing model, which contrasts mental states of mindfulness or mindlessness (Langer, 2000). The SCM approach varies from the meditative method because it typically includes the social, external, and material context of individual participants (Pirson et al., 2018). Langer (2000, 2021) defines Mindfulness as a process of consciously making use of relevant information to the situation and interventions, described as introducing novelty and drawing distinctions to overcome mindlessness, as so, mindfulness is the act of noticing new things (Maymin & Langer, 2021). Langer's perspective focuses on how these states emerge in daily life and represents the interest in thinking and solving problems. So, improving mindfulness suggests a change in a person's awareness, becoming more open to novelty, involved in the present, and aware of multiple perceptions (e.g., Maymin & Langer, 2021). Mindfulness has been applied to enhance the experience of tourists, which in turn, supports the promotion and marketing of destinations (Moscardo, 2009). Moscardo's (1996) mindfulness model of visitor behavior has been used in different settings to explain the effects of mindfulness on tourist experience and behavior. "Mindful tourists will be more likely…to enjoy their visits" (Moscardo, 1996, p. 382), which appear to be good predictors of overall satisfaction (Taylor & Norman, 2019) and loyalty (Rubin et al., 2016). In line with this perception, mindfulness has been

referred to as a forecaster of psychological well-being, behavioral and emotional regulation, and health (Langer & Moldoveanu, 2010). Presently, thinking about and exploring tourism settings, well-being appears as a key element (Garcês et al., 2020).

The Buddhist practice, Mindfulness Meditation described by Kabat-Zinn (1988, 2014) considers the individuals' attention to internal and external stimuli, introspection, and awareness of thought processes, and the assumption of a nonjudgmental attitude. MM is more rather than trying to get to some special meditative state or condition, the cultivation of mindfulness involves not trying to get anywhere else, or to experience some special mindful state, but rather to fully occupy the moment as it is. This perspective invites people to learn to emerge in their own awareness and over time, come to trust their intrinsic insightfulness and kindness (Kabat-Zinn & Kabat-Zinn, 2021).

From this point of view, tourists are described as being more aware of their self, thoughts, and emotions (Jiang et al., 2018). Some studies indicate that mindful consumers, compared to those who are less mindful, tend to show higher levels of trust, satisfaction, and commitment (Rubin et al., 2016). Also, is important to understand the factors that allow the tourist to engage and have a meaningful experience of the destination (Kang et al., 2008). As a result of Pine and Gilmore's (1999) study, has been given increased attention to the concept of experience as something that can be sought, bought, and consumed. The interest in the concept of an experience as a driver for consumptions results both in more research focused on the factors that contribute to satisfactory experiences from the participant perspective, and in the use of a variety of concepts from different sectors of psychology, in attempts to develop theories to explain and predict the consumer behavior. The search for authenticity and meaningful lives also produces a new set of tourists who no longer want only to sit and relax but who wish to explore and interact the new places that they visit (Garcês et al., 2020).

Indeed, mindful tourists will approach a destination with motives and preferences that make them more receptive to mindfully oriented activities and services (Frauman & Norman, 2004). Mindfulness can influence the way individuals interpret an experience and resulting feelings of happiness or unhappiness (e.g., Brown & Ryan, 2003; Ryan & Deci, 2008) because mindfulness requires openness and attention to constant interaction with the experience. Also, contemporary societies are trying to apply a new way of being to their daily routine and not only to a free time, so they are in search for better and healthier lifestyles. Actuality, people are exploring new paths for equilibrium between work and relaxation time (Nunes et al., 2020).

As different approaches have been applied to mindfulness in the field of tourism, it is important to identify the main outcomes of mindfulness. This systematic review aims to provide an overview of how mindfulness has been conducted in the field of tourism and to explore the effectiveness of mindful applications. Our review question is "What are the existing frameworks that approach mindfulness theory in tourism research?"

2. METHODS

This systematic review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines (PRISMA; Page et al., 2020).

2.1 Inclusion Criteria

2.1.1 Types of Studies

All studies evaluating associations between mindfulness and tourism. The following inclusion criteria were used: a) search terms or related included on the title, abstract, and keywords;

b) articles that were in English or had an available published English translation; and c) empirical studies that focused mindfulness and tourism.

Exclusion criteria were applied to further refine the collected data, namely research notes, dissertations, conference abstracts, trends reports, books, book chapters, book reviews, and editorials were excluded.

2.1.2 Types of Participants

All studies that include tourists with mindfulness components, were eligible.

2.1.3 Types of Outcomes

Qualitative, quantitative, and mixed-methods studies that evaluated mindfulness levels, mindful experiences, well-being, and positive outcomes related to mindfulness and tourists were eligible.

2.2 Literature Search

A systematic literature search was conducted on articles listed in the Web of Science, PsycInfo, PubMed, and Science Direct databases. The dates selected were from the start of the database records to 2021, after setting exclusion and inclusion criteria. The first stage was a keyword search for relevant studies in the four databases. The search terms were "mindful and mindfulness" and "tourism, tourist or visitor". The Boolean operator 'AND' was used between terms, ensuring both were included in the search. In all crossings, the truncation symbol '*' was used (mindful*) allowing the inclusion of words with the same origin. The following search formula was used in an attempt to capture a broad variety of terms and phrases used in titles, abstracts and keywords: (tourist* OR tourism* OR visitor*) AND (mindful*). The Boolean operator 'AND' ensured that the studies with a relationship between tourism demand and mindfulness were identified, and the Boolean operator 'OR' captured studies using different terminology. The same applies to the use of asterisks, which help search for all varieties of words (e.g. tourism, tourist and tourists). The second stage involved a manual check of the relevant journals in the fields of tourism and mindfulness. It was conducted a manual search of reference lists of identified papers that approach mindfulness and tourism.

2.3 Extraction and Synthesis

All articles identified were imported to the reference management program Mendeley, a specific software for managing bibliographies. After the search strategy was run all duplicates were removed. Microsoft Excel software was used to create a summary table in which the bibliographic details of the 16 peer-reviewed articles were tabulated. The categories were coded by information on the author, publication information (country, year, article title, and journal-title) methodological frameworks (quantitative, qualitative, and mixed methods), research context, and characteristics of research samples. The title of the articles was screened. Then, the abstract was read and assessed based on the inclusion or exclusion criteria. Full articles were reviewed if the available data suggests that the research meets the inclusion criteria. The exclusion reasons are described in the PRISMA flow diagram. Any disagreement that occurred between reviewers was resolved through discussion, until consensus.

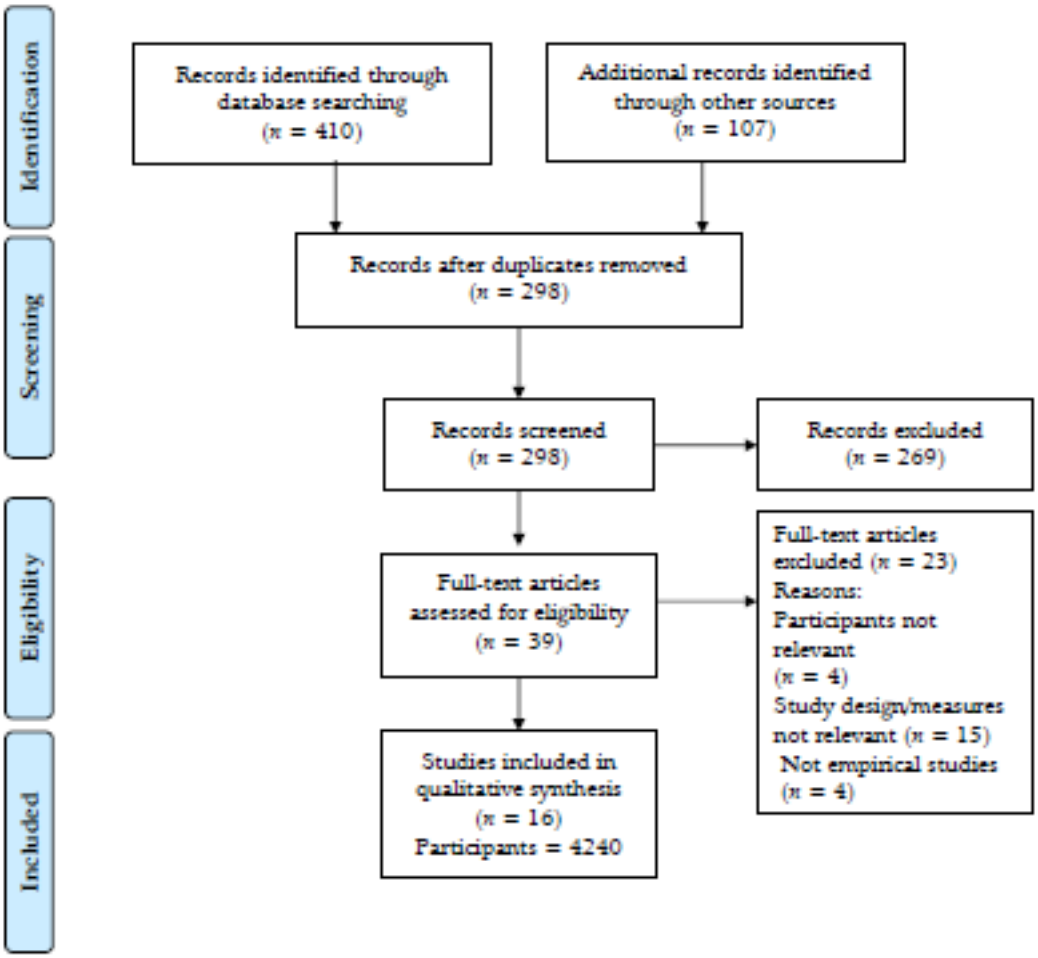
A synthesis of mindfulness on tourism was conducted including all types of tourism that meet the inclusion criteria and that are identified in the review. The results are presented using a summary table (Table 1) regarding sample characteristics, study purpose, and main findings. Besides, the results are summarized using a narrative synthesis.

3. RESULTS

3.1 Study Selection

A total of 517 records were identified, 298 after the removal of duplicates. The title and abstract of the 298 records were screened for adequacy, and 269 were excluded; excluded studies included reports and other documents than journal articles. Finally, 39 full-text articles were assessed for eligibility. Of these, 23 articles were excluded because they did not evaluate mindfulness outcomes of tourists, the sample did not include tourists as participants, and there were no empirical studies. Sixteen studies were included in the review. Figure 1 presents the flowchart of the study selection process.

Figure 1. Flowchart of the Study Selection Process



Source: Reproduced from Page et al. (2020) (p.36).

3.2 Study Characteristics

The 16 studies included were all empirical, including experimental, cross-sectional, and exploratory research, with 13 quantitative and 3 qualitative studies. The studies carried out were divided into different parts of the world. With the highest prevalence in the USA with three studies and China also with three, two studies were conducted in Malaysia, and the rest on Austria, Taiwan, Thailand, United Arab Emirates, Croatia, Australia, Fiji island, and Portugal/Spain. Most studies focus on analyze how mindfulness affects tourists' experiences, other studies analyzed the influence of mindfulness on tourists', emotions,

motivations, satisfaction, familiarity, loyalty, happiness, communication and visitor factors, and sustainable behaviors. Some studies also tried to understand how mindfulness may affect the travel anticipation phase and influence heritage sites. Other studies conducted tried to identify mindful segments and their application to the management of visitors.

3.3 The influence of Mindfulness on Tourists'

3.3.1 Main Outcomes

Mindfulness represents a state of mind expressed by actively processing available information within the surrounding environment. One research tried to develop a further understanding of the construct of mindfulness and its application in managing visitors to natural, cultural, or historically based tourism destinations. Three groups, "not very mindful," "mindful," and "very mindful," were identified. Significant differences were found among the three groups concerning benefits sought, preference for services, and participation in nature-oriented activities, with the very mindful group standing apart from the other two (Frauman & Norman, 2004).

3.3.2 Sustainable Behavior

Two studies identified that mindfulness may influence the sustainable behavior of tourists. Namely, one study indicated that highly mindful individuals were more concerned for others and society as a whole and search for products and services that have high emotional and environmental benefits. The authors suggest that understanding guests' mindfulness, may help visitors to engage in sustainable behavior (Barber & Deale, 2014).

Another study states that mindful participants are more aware of the environmental and cultural consequences of their decisions. The results highlight the positive impacts of mindfulness on individual and social well-being and focusing on the tourism context in which mindfulness and sustainability are showing important applications as well as consequences (Chan, 2019).

3.3.3 Tourists' Experiences

Tourists' experiences in touristic learning settings are largely informed by their cognitive participation, where mindfulness plays a critical role. One study aimed to understand how mindfulness affects tourists' experiences while holidaying and found that mindfulness was a likely occurrence and could impact what visitors remembered and why (Dutt & Ninov, 2016).

Loureiro and colleagues (2019) suggest that rural tourism experience dimensions are positively and significantly associated with happiness, and memory can act as mediators, at least partially, between rural tourism experience and happiness. Another study tried to analyze the effect of tourists' mindfulness in the perceived value of travel experience, through destination image components and tourist experiences. The results show the important role of mindfulness in shaping all dimensions of destination image (Loureiro et al., 2020).

3.3.4 Anticipation Phase

Previous studies have established the influence of mindfulness on the tourists' experience when they are on-site at an attraction or in a destination. However, the travel experience begins during the anticipation phase when tourists embark on the vacation planning process. Taylor and Norman (2019) researched the influence of mindfulness during the anticipation phase. The main result was to establish that mindfulness during the anticipation phase influenced the travel experience (Taylor & Norman, 2019).

3.3.5 Tourists' Motivation

The research developed by Ying and colleagues (2020) analyzed the impact of motivation and familiarity on mindfulness, and the results revealed that cognitive and psychological familiarity, intrinsic motivation each positively influence mindfulness and that the effect of familiarity can be moderated by motivation (Ying et al., 2020).

Another study analyzed the motivation of tourists on staying at Zen retreats. This research clarified four themes in knowledge growth, three themes in spiritual growth, and two mechanisms to foster knowledge and spiritual growth. Also proposed a categorization of Buddhist tourism, into Zen tourism, Zen lifestyle, and Zen retreat by the level of involvement (Wang et al., 2021).

Table 1. Main Characteristics of the Studies Included in the Review

Study	Population	Characteristics	Purpose/Outcome variables	Results
Frauman & Norman, 2004	Visitors (n = 378)	Visitors at four southeastern coastal state parks	Develop a further understanding of the construct of mindfulness and its application regarding the management of visitors to natural, cultural, or historically based destinations.	Three groups, "not very mindful," "mindful," and "very mindful," were identified. Significant differences were found among the three groups concerning benefits sought, preference for services, and participation in nature-oriented activities, with the very mindful group standing apart from the other two. The application of mindfulness principles may provide a framework for tourism destinations in meeting visitor needs while also aiding resource management efforts.
Barber & Deale, 2014	Hotel guests (n = 563)	Consumers who respond to an online survey of U.S. hotel guests.	Identify mindful segments, by seven mindfulness measures as the cluster analysis variables.	Assessing guests' mindfulness helps hoteliers make those guests aware of and responsive to hotels' sustainability practices. Highly mindful individuals were more concerned for others and society as a whole and search for products and services that have high emotional and environmental benefits.
Dutt & Ninov, 2016	Tourists (n = 205)	Tourists visiting Dubai	Understand how mindfulness affects tourists' experiences while holidaying in a popular tourist destination, such as Dubai.	Mindfulness was a likely occurrence regardless of visitor demographics and would impact what visitors remembered and why.
Rubin et al., 2016	Tourists (n = 234)	Tourists at two Coral Coast Hotels, a hotel in Nadi, and the departure lounge of the Nadi Airport.	(1) The antecedent concepts to mindfulness (novelty seeking motivation and mindful oriented services) and mindfulness, (2) mindfulness and tourist's emotions, and (3) the influence of tourist's emotions on tourist's satisfaction and destination loyalty.	Individuals' emotions influence destination loyalty intention is mediated by satisfaction with the destination, and that tourist's emotion is likely not the only indicator of satisfaction.
Chen et al., 2017	Backpackers (n = 43)	21 female and 22 male Taiwanese backpackers aged from 23 to 45.	Examine the relationship between MM and tourist experience and explore the role of mindful mental states in producing experiential outcomes. Dimensions: Attention; present moment; non -judgment; antecedents and consequences.	Links between MM and its antecedents are proposed, with nature-based tourism settings and specific activities. Links between MM and its positive psychological and physical benefit. Mental ease and well-being are like the outcomes of formal mindfulness practices, such as a state of tranquility and relaxation.
Jiang et al., 2018	Skilled meditation practitioners (n = 39)	Meditation tourists at camps in Nuonatayuan and Hongfa Temples.	Examine what motivates tourists to experience Zen meditation in Chinese temples, and how they shape those experiences.	Two main forms of experience occur through meditation tourism (secular, and sacred). The tourist context of separation from daily life, the landscape values of the locations, the temple atmosphere, the sharing of experiences with like-minded individuals, contact with monks and mentors all contribute to the sense of personal wellness that participants obtain.
Ling et al., 2019	Tourists' (n = 12)	Visitors to George Town heritage sites	Understand the influence at heritage sites, by two categories of factors that contribute to mindfulness, (1) visitor factors; (2) communication factors	Novelty emerged as the communication factor most associated with the state of mindfulness, then, also variety and perceived visitor control. Mindfulness is strongly influenced by the connection made by visitors between self and the heritage setting.
Chan, 2019	Students (n = 413)	Australian students from upper-level business courses and who had never visited Uluru before.	Analyze if mindfulness can promote sustainable behaviors in a tourism context.	Being mindfully made participants more aware of the environmental and cultural consequences of their decisions. Positive impacts of mindfulness on individual and social well-being.

Taylor & Norman, 2019	Tourists' (n = 397)	Some tourists had recently arrived at the destination while other tourists happened to take the survey near the end of their trip.	The influence of mindfulness during the travel anticipation phase; traveler's confidence that they chose the best destination for the trip; satisfaction with the trip; and loyalty to the destination.	Mindfulness during the travel anticipation phase had significant positive influences on confidence, satisfaction, and loyalty, suggesting the potential benefits for destinations to encourage mindfulness in future visitors as they plan their trip.
Loureiro et al., 2019	Rural tourists' (n = 204)	Located in farms in Dalmatia.	(1) Effect of mindfulness as a moderator on the relationship between rural experience economy and happiness (2) influence of rural experience (agritourism) on behavioral intentions through happiness and memory creation.	Rural tourism experience dimensions are positively and significantly associated with happiness. Mindfulness does not fully influence the strength or direction of the relationship between the rural experience and happiness. Happiness and memory can act as mediators, between rural tourism experience and happiness.
Choe & O' Regan, 2020	Western tourists' (n = 10)	From Western developed countries including the USA (8), New Zealand (1), and Australia (1).	Why Western tourists without religious affiliation, but with individual faith, travel to a destination with religious heritage sites, to engage in mindfulness practices.	The informants all experienced spiritual practices such as mindfulness back home. Their faith in mindfulness led them to a destination where Buddhist heritage, history, and culture are concentrated but also consumed.
Loureiro et al., 2020	Tourists' (n = 370)	Travelers departing from Lisbon International airport towards Spain.	Effect of tourists' mindfulness on the perceived value of travel experience (PVTE) through destination images (cognitive, affective, and conative) and tourist experiences.	An important role of mindfulness in shaping all dimensions of the destination image. Tourist experience acts as a mediator between destination images and PVTE.
Ying et al., 2020	Tourists' (n = 363)	Visitors of Zhejiang Provincial Museum	Impact of familiarity and motivation on mindfulness.	Cognitive familiarity, psychological familiarity, intrinsic motivation each positively influence mindfulness; the effect of familiarity can be moderated by motivation.
Cervinka et al., 2020	Forest visitors (n = 99)	Adult forest visitors in the Hallerwald, an Austrian community forest.	Changes in mood state perceived stress, restoration, connectedness, and mindfulness before and after visiting the forest.	Positive affect, restoration, connectedness with nature and the forest, and mindfulness increased pre- versus post-visits, whereas negative affect and perceived stress decreased.
Tan et al., 2020	Tourists' (n = 390)	Local and international tourists at George Town, Penang (Malaysia)	Effect of communication factors and visitor factors on visitors' mindfulness.	Significant effect of both communication factors and visitor factors on mindfulness.
Wang et al., 2021	Zen retreat participants (n = 520)	Tourists who stayed at Donghua Zen Temple	Identified motivations, and three outcomes of, staying at Zen retreats.	Clarified four themes in knowledge growth, three themes in spiritual growth, and two mechanisms to foster knowledge and spiritual growth. Also proposed a figure demonstrating Zen practitioners' lifelong journey, and a figure categorizing tourists in Buddhist tourism into Zen tourism, Zen lifestyle, and Zen retreat by the level of involvement.

Source: Own Elaboration

3.3.6 Communication and Visitor Factors, and Heritage Sites

One study tried to understand the influence of two categories of factors that contribute to mindfulness namely, visitor and communication factors, on heritage sites. The study has revealed that the connection of heritage sites to self (self-connectedness) underscores tourists' mindfulness at heritage sites (Ling et al., 2019). Similarly, another research analyzed the effect of communication and visitor factors on visitors' mindfulness. The results demonstrate the significant effect of both communication factors and visitor factors on mindfulness (Tan et al., 2020).

The study conducted by Choe and O'Regan (2020) aimed to understand why Western tourists travel to a destination with religious heritage sites, to engage in mindfulness practices. The results show that all participants experienced spiritual practices such as mindfulness back home, and their faith in mindfulness led them to a destination where Buddhist heritage, history, and culture are concentrated but also consumed (Choe & O'Regan, 2020).

3.3.7 Mental Effects

Past literature has suggested that being mindful helps increase positive mental effects. One study explored changes in mood states, perceived stress, restoration, connectedness, and mindfulness on tourists' visiting the forest. Positive affect, restoration, connectedness

with nature and the forest, and mindfulness increased after the visit, whereas negative affect and perceived stress decreased (Cervinka et al., 2020).

Another research also reveals several psychological and physical benefits including mental ease, tranquility, relaxation, well-being, and response flexibility, when adopting a mindfulness state during the travel (Chen et al., 2017). Other studies emphasize the positive impacts of mindfulness on individual and social well-being (Chan, 2019), including the positive influences on confidence, satisfaction, and loyalty (Taylor & Norman, 2019), and happiness (Loureiro et al., 2019).

4. DISCUSSION

The systematic review findings provided further evidence that mindfulness has been increasing its application in the field of tourism in recent years. Since no previous systematic review on this theme was found, we chose to analyze all the studies that appeared in the literature. It could be of interest to note that of the studies found, the oldest was from 2004, and it was verified that studies on this theme have begun to be carried out in the last few years. This review provided a view of the path that mindfulness has been tracing in tourism. There are several areas of notable strengths when considering the existing literature about mindfulness applied to the field of tourism.

From this review, 16 studies provided insight into the state of the field. Most studies reporting quantitative findings (n = 13) observed at least one significant, positive relationship linking mindfulness to tourism. Additionally, the studies reporting qualitative results (n = 3) reported at least one observed benefit related to mindful tourists. Thus, findings from this systematic review show that mindful tourists are typically associated with positive outcomes. These outcomes supported notions that mindfulness can generate a positive shift in perspective and an ability to view one's life experiences more positively. Many studies used large sample sizes with the average study including over 100 subjects, except the two qualitative researches that used smaller samples. Samples of this size allow for more assurance that analyses are adequately powered to detect potential effects.

As noted in the results, several promising outcomes may explain the benefits of mindful tourists. However, some of the studies included in the review do not use a theory or are exploratory. There is a clear need to not only use existing theory in research but to continue to develop new theories and build upon existing theories. As found by our analysis, the most used was Langer's theories (Frauman & Norman, 2004; Barber & Deale, 2014; Dutt & Ninov, 2016; Rubin et al., 2016; Ling et al., 2019; Taylor & Norman, 2019; Loureiro et al., 2019, 2020; Tan et al., 2020; Ying et al., 2020) that are based on socio-cognitive mindfulness (SCM) from social psychology. SCM and meditative mindfulness (MM) reflect different theoretical frameworks (Mikulas, 2011). SCM is based on a dual information-processing model which contrasts opposing mental states of mindfulness or mindlessness (Langer, 1992). Just a few studies approached MM (Chen et al., 2017; Jiang et al., 2018; Choe & O'Regan, 2020; Wang et al., 2021), as training that avoids associative thinking, allowing an individual to be aware of their inner experiences, thoughts, and emotions (Weick & Putnam, 2006; Kabat-Zinn, 2014). Both concepts are related to awareness and attention. However, they differ in the process of engagement in the present moment experience they describe.

According to the systematic review, it is possible to identify several benefits by combining mindfulness with tourism. Responding to the changes in post-modern society, consumers are playing an important role in the tourism industry as they are active participants of experiences rather than passive consumers (Taylor & Norman, 2019). The results of the

study conducted by Taylor and Norman (2019) show that the more mindful the tourists are during the anticipation phase, the more positive they rate their satisfaction with the trip and their loyalty to the destination. These results showed an inconsistency with previous research regarding the

influence of mindfulness in the anticipation phase on satisfaction. Previous studies on consumer goods found that an increase in conscious thought resulted in decreased satisfaction of the purchased good (Dijksterhuis & van Olden, 2006).

Attending to Frauman and Norman (2004), level of mindfulness was related to preference for mindfully oriented information services. Also, the level of mindfulness was related to benefits sought while at the destinations, these results are in line with Moscardo's (1992) work examining museum visitors' and level of mindfulness.

The main goal of some studies included in this review was to analyze tourists' experience and the possible effects of mindfulness. Thus, Dutt and Ninov (2016) found that it is a positive relationship between mindfulness and memories. This supports much of the literature which cites the benefits of mindfulness as including improved memory recall (Langer, 1992; Moscardo, 1996). Mental benefits were also identified, for example one research found that health and well-being can be promoted through a forest visit. For the visitors, the recreational forest provides beneficial mental effects such as deepening the connection with nature and the forest, positive affect, stress coping, and mindfulness in addition to physical activities (Cervinka et al., 2020). These conclusions are in line with the findings from a study that suggest that the relationship between nature relatedness and elements of subjective well-being may be in part explained by the nonreactivity and observing facets of dispositional mindfulness (Sadowski et al., 2020).

From the findings of the study conducted by Jiang and colleagues (2018), it was suggested that two main forms of experience occur through meditation tourism. One is a secular experience that enhances the senses and generates an added appreciation of landscape, culture, and the richness of human achievement. The other is a sacred experience as if reaching a sense of the divine and being able to better understand the purpose of life. Cui, Xu, and Yang (2014) pointed out that the experience of Tibetan tourism is a secular pilgrimage, belief has become a landscape and the tourists do not believe in God.

The study developed by Loureiro and colleagues (2020) has gone further to explore the influence of mindfulness on destination image, tourist experience, and the perceived value of travel experience. The direct effects of mindfulness on each of the three dimensions of destination image were significant. These results are in line with previous studies, which showed that mindful tourists tend to be more receptive to events, experiences, and realities (Brown et al., 2007) than less mindful tourists and this may lead to them having more positive affective experiences, as Cherie and Dianne (2010) argue.

The association of mindfulness with heritage sites has also been explored by some authors, such as Choe and O'Reagan (2020) who state that spiritual tourists travel to destinations for problem-solving, well-being intervention, spiritual fulfillment, and transformative potential based on their faith. Similarly, the findings of Ling and colleagues (2019) provide strong support for the mindfulness framework as suggested by Moscardo (1996), by confirming the relevance of the framework in explaining the various experiences of visitors at heritage sites.

Some research was conducted to see if mindfulness can promote sustainable behaviors in a tourism context (Barber & Deale, 2014; Chan, 2019). The results suggested that being mindful made participants more aware of the environmental and cultural consequences of their decisions (Chan, 2019). Likewise, another research found that highly mindful hotel guests are open to substantive messages and cues acquired through information sources that address sustainability practices of the hotel and surrounding community (Barber & Deale, 2014). These findings are according to previous research on mindfulness and tourism, that

found mindful tourists more open to innovative information developed to encourage their sustainability practices (Moscardo 1997, 1999).

Most of the studies referred to positive outcomes arising from mindfulness in tourists.

In sum, these conclusions are accordingly to previous research, which states that mindfulness is the process of drawing novel distinctions when evaluating new information and can lead people to experience greater sensitivity to their environment, more openness to new information, and the creation of new categories for structuring perception (Langer & Moldoveanu, 2000; Bishop et al., 2004; Frauman & Norman 2004).

Concluding, this review provided an insight into the evolution of mindfulness studies that have been conducted in tourism in recent decades. More and more studies are focusing on the benefits of mindful tourists. It was possible to identify that there is a great advantage in linking these concepts, to better understand the tourists' behaviors. In turn, this may allow adjustments on touristic offers, that may be essential to meet the specific needs presented by consumers. Mindfulness research may help to better understand the benefits derived by tourists from traveling. Still, more research is needed to determine the efficacy and to clarify the contribution of processes of mindfulness to observed outcomes.

5. CONCLUSION

Despite our systematic search strategy, we cannot declare out that we might have failed to include studies meeting the inclusion criteria. A limitation of a systematic review method is the selection of the research terms and the scope of research. The search terms employed in this review were limited to mindfulness and tourism, tourists and visitor as informed previously. This systematic review was also limited to peer-reviewed articles in English-language, and full text available. So, the financial part of investigations could also be assumed as a limitation. This may have restricted relevant articles published in different languages or other sources such as books.

Some studies used self-reports. Self-reported data should be accompanied by tests of general mental capacity or physiological parameters in future studies. Additionally, this review sheds light on a general lack of longitudinal studies and random samples. The sampling methods used raise issues regarding the study's generalizability. Also, some studies could include previous information about tourists before the travel, to gain a more complete information about all phases of travel. Furthermore, most of studies just approached a specific site, and some samples were collected at a single destination, we consider as a limitation because the results may not be reflected in other sites or countries. Further studies should consider the values, cultures, and resource of other nations. Another limitation was the fact that most of the studies only focused on a specific type of tourism, this could be improved by comparing different types of tourism and explore if there are differences. Although some studies statistically checked for common method bias, potential response bias and some lack of information about respondent may influenced some results. Only a few studies employed pre-post designs (e.g., Cervinka et al., 2020). Studies with these designs can provide stronger evidence to support a relationship between mindfulness and tourists' experiences. Based on the limitations and findings from this review, this study proposes the following areas for future research.

Results from this review indicate that a continuing investigation of mindfulness in tourism is warranted. Future research should begin employing more rigorous methods and more precise research questions to strengthen the argument for using mindfulness in the field of tourism. Further studies may employ alternative sampling methodologies, to help make the study more generalizable. The inclusion criteria may also include non-English

language academic journals and a wider source of materials. Upcoming studies could use more Meditative Mindfulness theories, instead of Socio-Cognitive Mindfulness theory. Also, it would be interesting to explore whether mindfulness episodes occur in different types of tourism contexts, and if they change. Given the growing interest in mindful practices, it would be attractive to explore how mindfulness could be applied in different cultural contexts and compare the results. There is a need for studies with a wider geographical spread of research and the inclusion of more Western research samples. They could also explore the impact of different variables and their effect on mindfulness. Additionally, future studies may distinguish between tourists who make their first visit and those who have visited the destination before. Further research is needed to understand and identify the strategies for enhancing mindfulness in tourists.

ACKNOWLEDGEMENTS

This paper is financed by National Funds provided by FCT- Foundation for Science and Technology through project UIDB/04020/2020.

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UNDERSTANDING TOURISTS' EMOTIONS IN TIME AND SPACE: COMBINING GPS TRACKING AND BIOSENSING TO DETECT SPATIAL POINTS OF EMOTION

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ABSTRACT

The main contribution of the study is to provide a new methodological and analytical approach in conceptualising and measuring spatial points of emotion (SPoE). It contributes to the further development of mobile methods in applied tourism geography. A mixed-methods design, including georeferenced biosensing data and contextual information, such as video data and ex-post interviews, was used to examine positive SPoE. A conceptual framework was developed for measuring SPoE. The results showed that georeferenced biosensing indicators can be used to identify SPoE in a tourism setting. Using a data-driven and episode-driven approach, visitors' points of relaxation at the beach can be identified. However, there are some limitations to the method, as the interpretation of biosensing signals in a real-world situation needs further clarification. Validly identifying positive valences should be a focus in future tourism research.

Keywords: GPS Tracking, Biosensing, Spatio-Temporal Behaviour, Emotion, Tourism Experience, Mixed-Methods.

JEL Classification: Z30, Z32, Z39

1. INTRODUCTION

Emotions fundamentally shape the tourist experience (Aho, 2001; Tussyadiah, 2014; Kim & Fesenmaier, 2015; Bastiaansen et al., 2019). Recently, smart wristbands with improved measurement methods and automated data transmission have made these instruments increasingly suitable for measuring tourists' emotions outside a laboratory. Researchers from geography (Shoval, Schvimer, & Tamir, 2017), tourism (Scuttari, 2019), and spatial planning (Zeile, Resch, Loidl, Petutschnig, & Dörrzapf, 2016) are beginning to exploit these new possibilities to analyse the spatio-temporal behaviour of tourists and their destination experiences. They aim to better understand the interplay between the body and the environment (Shoval & Birenboim, 2019). In this context, people serve as sensors (Goodchild, 2007) as their body functions (e.g. skin conductance) can be read as indicators of emotional arousal. By georeferencing those body functions, new insights into the spatio-temporal behaviour of tourists can be gained on an objective level. Emotional maps of tourist destinations created this way (e.g., Shoval et al., 2017) can provide insights for the design of visitor experiences, for example. These approaches have so far not been widely adopted in tourism research.

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Biosensing methods, understood as methods which capture the unaltered somatic responses to external stimuli, are considered to have great potential for tourism research (Li, Scott, & Walters, 2015; Bastiaansen, Oosterholt, Mitas, Han, & Lub, 2020) and for exploring the tourist experience holistically with innovative methods. Shoval and Birenboim (2019) recently called for a paradigm shift, making use of new digital tools and sensors with a high spatial resolution to understand tourists' on-site experiences. However, research seems to be dominated by studies focusing on human stress and negative responses to the natural and built environment (Pykett et al., 2020). However, happiness and positive emotions are common during the main phases of the tourist experience (Filep & Deery, 2010; Nawijn, 2010; Mitas, Yarnal, Adams, & Ram, 2012; Carneiro & Eusébio, 2019). Hence, further research is needed to better understand if and how positive emotions can be identified from biosensing data. At the same time, there is still a need for research to check whether the data collected with current mobile methods and the data analysis conducted are valid and reliable.

Taking a mixed-methods approach, this paper contributes to the understanding of the interplay between the body and the environment in a tourism context. It improves the use of mobile methods in tourism geography research by using georeferenced biosensing data to advance the understanding of the tourism experience in real-world situations. A mixed-methods research design, combining GPS tracking, biosensing, eye-tracking video, and ex-post interviews, is used to detect spatial points of emotion (SPoE). Like points of interest (POI), which are usually defined based on their status (sights), their function (gastronomy), or visitor interest, SPoE are defined as points in space that trigger positive or negative emotional arousal in tourists. This paper focused on positive SPoE, which are defined as points that have a positive valence.

2. LITERATURE REVIEW

2.1 Emotions and the Tourism Experience

Defining emotions is a difficult task (Scherer, 2005). A large body of literature from different research disciplines investigates emotions. Especially in human geography, the interaction between human senses and space is not a new topic. Researchers investigate in the study of "sense of place experiences" (Tuan, 2001), a "sensuous geography" (Rodaway, 1994) or an "emotional geography" (Davidson, Bondi, & Smith, 2017). One of the earliest attempts to capture perceptions of urban spaces is the work of Lynch (1960), who used cognitive maps to determine the spatial perception of cities. According to his results, sensory perception plays a major role in image formation.

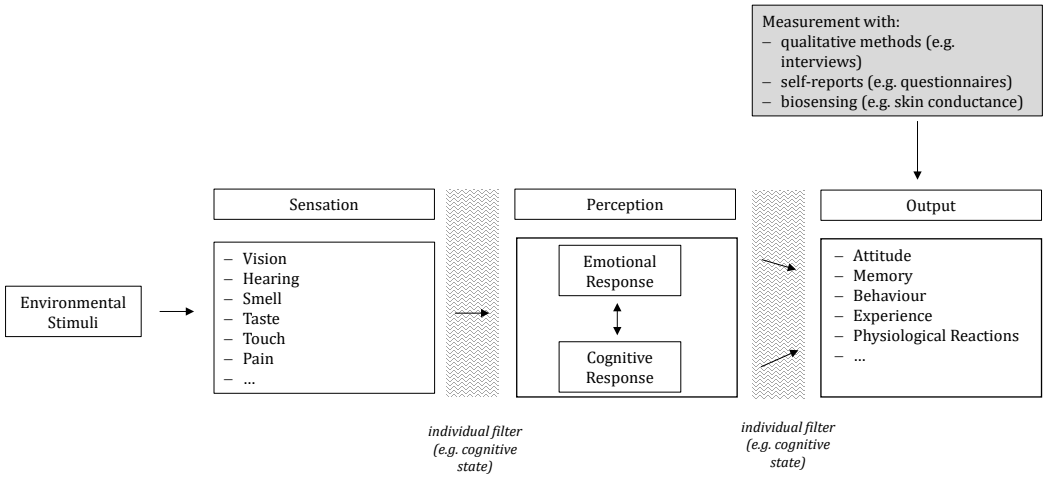
In tourism, which "involves *corporeal* movement" (Urry, 2002, p. 152), the whole body experiences the destination. Human senses are therefore important for the experience and perception of the world (Agapito, Mendes, & Valle, 2013). In addition to the tourist gaze, other scapes must be added to get a holistic idea of the emotional on-site experience. These include sensescapes such as smellscapes (Xiao, Tait, & Kang, 2020), soundscapes, tastescapes, and geographies of touch (Urry, 2002). These strong connections between space, emotions, and the human being can lead to the development of a deep relationship with destinations (Yuksel, Yuksel, & Bilim, 2010) or can even end up in "topophilia" (Tuan, 1961). These few examples from the past show that the study of emotions in tourism is of great importance. The memorable or extraordinary experiences that are becoming increasingly important in the context of an experience economy (Pine & Gilmore, 2011) or a society of singularities (Reckwitz, 2018) and the associated need to create new attractions and positive experiences, make it more important today than ever before to investigate in the emotions of tourists.

From a theoretical point of view, two different approaches are predominant in tourist studies to conceptualise emotions: categorical (or basic emotion) approaches and dimensional approaches (Kim & Fesenmaier, 2015; Li et al., 2015). While the categorical approach tries to conceptualise basic emotions (e.g. joy, love, fear) as distinct categories, the dimensional approach locates emotions in a two-dimensional valence–arousal space, where arousal indicates the emotional intensity (Walters & Li, 2017) and valence indicates the pleasure experienced. The most prominent example is the circumplex model of affect, also known as the pleasure–arousal–dominance model of emotion (Russell, 1980) (Figure 2). The model was applied in tourism research (Chebat & Michon, 2003; Bigné, Andreu, & Gnoth, 2005; Yuksel, 2007) and in studies applying mobile methods (Matsuda et al., 2018; Paül i Agustí, Rutllant, & Lasala Fortea, 2019), and it was shown to be a fruitful framework for categorising emotions based on biosensing (Osborne & Jones, 2017).

Tourist experiences were considered to be individual, socially constructed events (Larsen, 2007) shaped by cognitions and emotions (Kim & Fesenmaier, 2015). Emotions, as the affective component, can be considered the core component of tourist experiences (Bastiaansen et al., 2019). Furthermore, generating tourist experiences can be interpreted as a process (Figure 1): Tourists perceive different environmental stimuli, which, considering several individual filters, induce emotional and cognitive reactions and subsequently influence their attitudes, memories, and behaviour (Kim & Fesenmaier, 2017). In the literature there is largely consensus that

1. Emotions "consist of shortlived responses to situations that are seen as personally relevant" (Bastiaansen, Straatman, Mitas, Stekelenburg, & Jansen, 2020, p. 2);
2. Emotional responses consist of three different elements: (1) subjective experiences, (2) expressive components and (3) physiological arousal (Kleinginna & Kleinginna, 1981); and
3. Physiological arousal comes with subliminal reactions such as facial expressions and electrodermal activities (Li, Walters, & Scott, 2017). The latter can be measured with biosensing methods.

Figure 1. The Role of Emotions in Generating Tourist Experiences



Source: Own Elaboration based on Bastiaansen et al. (2019), Kim and Fesenmaier (2017) and Krishna (2012).

2.2 Measuring Emotions using Georeferenced Biosensing Data

Besides traditional measurements of tourists' emotions based on self-reports (e.g., Nawijn, Isaac, Gridnevskiy, & van Liempt, 2015), which have their limitations (Scuttari & Pechlaner, 2017), attempts were recently made to use research approaches such as mobile biosensing to

detect tourist emotions. However, self-reported measurements remain the most widely used method to detect tourist emotions (Li et al., 2015), usually using Likert scales (Hosany & Gilbert, 2010). In contrast to traditional data collection methods, four major advantages of using mobile psychophysiological measures (e.g. skin conductance, facial electromyography, heart rate, eye tracking) to detect human emotions (Birenboim, Dijst, Scheepers, Poelman, & Helbich, 2019) can be identified:

1. Biosensing data are more objective than self-reports, which could include socially desirable responses.
2. The temporal resolution is more precise, allowing researchers to analyse data on a second-by-second basis or even shorter timespans.
3. Wearable devices reduce the burden on the participants.
4. Applications could be used in real-life situations, "to capture the 'unadulterated' emotional response […] during the experience" (Prayag, 2020, p. 80).

However, biosensing methods cannot be regarded as a substitute for self-reports (Caruelle, Gustafsson, Shams, & Lervik-Olsen, 2019). In a direct comparison between subjective (mental maps) and objective (heart rate variation) measures, Paül i Agustí et al. (2019) concluded that none of the approaches alone can capture the complexity of spatial perception.

From a tourism geography perspective, emotions can be seen as spatio-temporal variables; they are "an affective phenomenon which is associated with a specific time and space and this opens the doors to its study as a mappable spatial variable" (Paül i Agustí et al., 2019, p. 2). Biosensing data can also be enhanced with geoinformation, allowing location-based emotions to be analysed and providing a new level of understanding of the spatio-temporal behaviour of tourists and their interactions with the environment. However, only a few researchers have made use of these new possibilities, especially in tourism research. One of the earliest attempts to measure real-time emotions with skin conductance was the explorative approach by Kim and Fesenmaier (2015). They investigate the electrodermal activity of two female tourists during different activities in Philadelphia and combine these results with retrospective interviews to facilitate data interpretation. However, they do not georeference their data. Georeferencing physiological data was the focus in the studies of Shoval et al. (2017); they combined four methodological approaches to reveal the interplay between emotions and the city of Jerusalem. These are the most complex and, in terms of the number of cases (n=68), the largest studies to date in which real-time emotions were recorded with the aid of biosensing in urban areas. They used locational data, real-time surveying techniques via smartphones, skin conductance and traditional surveying techniques. They conclude that religious sites and areas with security risks seem to be the most emotionally evocative areas.

2.3 Understanding Biosensing Data

Following Osborne and Jones (2017), the term *biosensing data* is used as an umbrella term for different somatic responses to external stimuli, such as electrodermal activity, blood volume pulse and electroencephalograms. Because the research interest is the identification of SPoE in real-world situations, the measurement of biosensing data is restricted through wearable devices. This study focuses on skin conductance, skin temperature and heart rate.

> 1) Skin conductance: The electric conductivity of the skin, known as electrodermal activity (EDA) or skin conductance (SC), measured in microsiemens (μS), is regulated by the sympathetic nervous system. When stimulated by emotional

arousal, sweat glands produce sweat, which is reflected in increased skin conductivity (Dawson, Schell, & Filion, 2017). Skin conductance is divided into two elements: (1) the tonic skin conductance *level* (SCL) reflects the skin conductivity over a specific period of time and (2) the phasic skin conductive *response* (SCR) represents event-related responses in skin conductivity (Stadler, Jepson, & Wood, 2018). Tonic skin conductance can be interpreted as a fixed baseline (e.g. skin conductance when beginning the measurement without the presence of any stimuli), but also as a moving baseline reflecting slow changes over time, independent from ad hoc stimuli. Variations can be direct results of environmental influences; however, non-event deflections are also common in the data (Birenboim et al., 2019). Depending on individual-personal conditions, SCL usually has a value between 2 and 20 microsiemens (Dawson et al., 2017). 2) Heart rate and heart rate variability: While the heart rate (HR) is the number of heart beats per minute, the heart rate variability (HRV) is the variation in the beat-to-beat time (Ernst, 2014). While HR can be derived from summing up beat-to-beat latencies over a given time, HRV is the variation between the beat-to-beat latencies in a given period. It is usually computed based on the time between heart beats (inter-beat interval, IBI, which is either the time between two R-spikes in the QRS complex, RR, or the time between two R spikes, but filtered for normal values, NN) (Appelhans & Luecken, 2006).

To understand the measurement of emotions based on biosensing, it has to be differentiated between two types of data streams:

1. *Static data* represent a measurement *at* a given *time* and *point in space*, such as the skin conductance in μS. Static data can be represented by a simple vector of all measurements at a given time, in this case, SC, skin temperature (ST) and HR.

$$\overline{S_t} = (SC, ST, HR)$$

2. *Dynamic data* represent a measurement *over* a given *spatial–temporal period*, such as the drop in ST in °C. Dynamic data need a time window with a defined start (t_0) and end (t_1) to represent changes in the biosensing data, resulting in a function representing the data dynamic over time. This function could be a simple difference between the vectors in t_0 and t_1, but also a moving average of data between t_0 and t_1 or a regression-based trend line for all the data between t_0 and t_1.

$$\overline{D_t} = f(\overline{S_{t0}}; \overline{S_{t1}})$$

This study employs both, the dynamic and the static approach to measure emotions.

To relate the above-presented measures to the theoretical background of generating tourist experiences, it is helpful to integrate them into the above-mentioned circumplex model of affect (Hogertz, 2010; Osborne & Jones, 2017). The aim here is to use the biosensing data as indicators of valence and arousal. A finding that is generally accepted in the literature is that rising SC can be interpreted as a rising level of arousal, whereas decreasing SC indicates lower arousal levels (Hogertz, 2010). Furthermore, there is consensus that when SC increases and shortly afterward ST decreases (cold sweat), a negative experience has occurred (Kreibig, 2010; Da Silva, Zeile, Aguiar, Papastefanou, & Bergner, 2014; Osborne, 2019). The stress indicator developed by Bergner, Zeile, Papastefanou, and Rech (2011) goes in the same direction: Falling ST together with rising SC is interpreted as stress. The interplay between SC and ST can thus be read as an indicator of a negative valence. With reference to older studies (Harris, 2001; Calderon & Thompson, 2004), Osborne and Jones (2017) also give an indication of the emotional meaning of combining two dynamic indicators:

"Where EDA response indicates arousal, a small rise in skin temperature (flushing) suggests a positive emotional response, whereas a small drop in temperature (cold sweat) can indicate a negative response" (Osborne & Jones, 2017, p. 162). However, this indication is rather weakly based on empirical data and not very detailed. Paül i Agustí et al. (2019) used another approach, measuring arousal by HRV and obtaining the valence using mental maps from the participants.

In a comprehensive bibliometric review, Kreibig (2010) gives an overview of the interplay between different psychophysiological measures and the response to different emotional experiences. She provides a systematic overview of emotion recognition based on physiological signals. 22 emotional states or combinations thereof are discussed and related to four areas of physiological signals: (1) cardiovascular (including HR, HRV and finger temperature), (2) electrodermal (including SC response, nonspecific SC response rate and SCL), (3) respiratory and (4) autonomic nervous system activation components. The responses of indicators of the emotional states are presented below (Table 1).

Table 1. The Relationship between Emotions and Physiological Features (Extract)

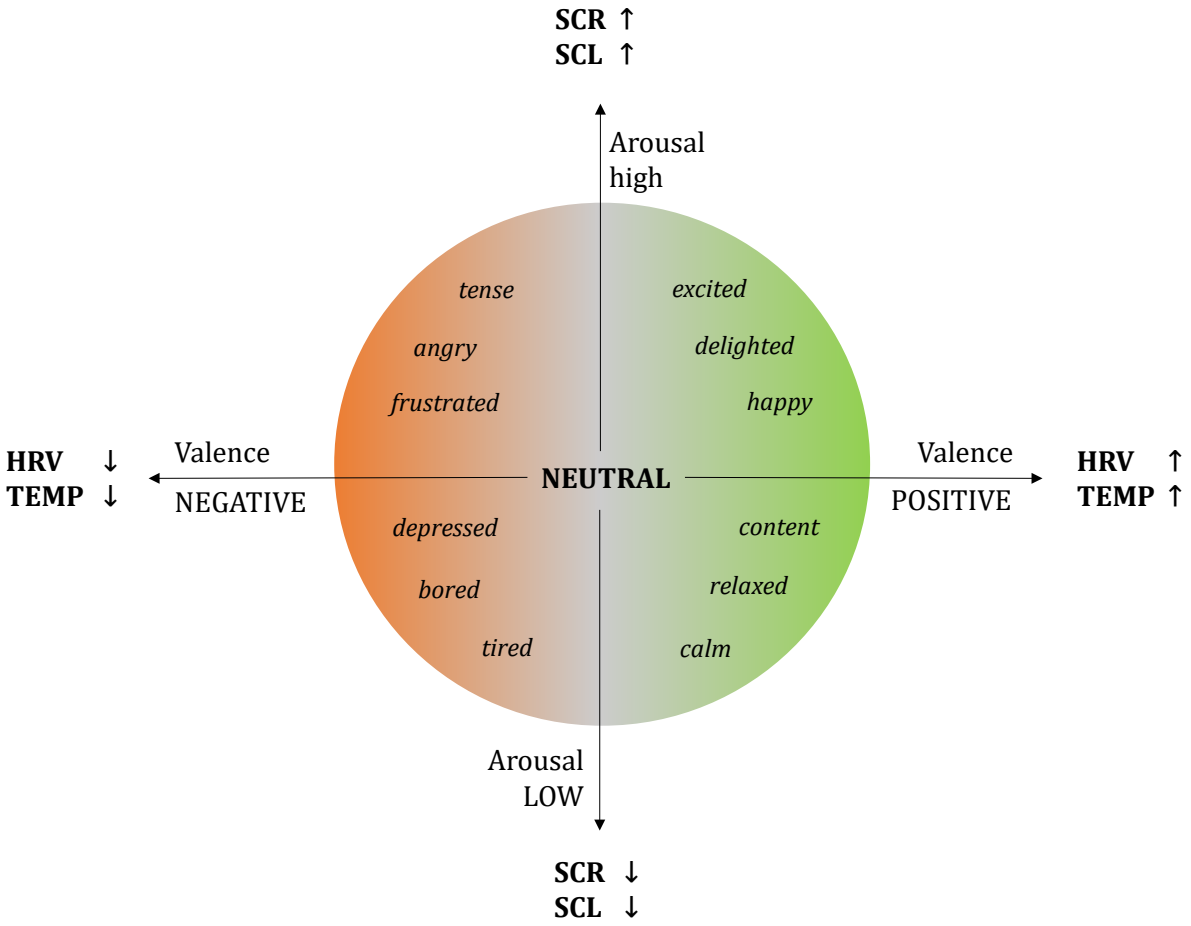
	HR	HRV	FT	SCR	nSRR	SCL
Anger	↑	↓	↓	↑	↑	↑
Anxiety	↑	↓	(↓)	↑	↑	↑
Disgust, contamination	↑--	↑	↓↑	↑	↑	↑
Disgust, mutation	↓	--	↓↑	↑	↑	↑
Embarrassment	↑	(↓)				(↑)
Fear	↑	↓	↓	↑	↑	↑
Fear imminent threat	↓	(--)		↑		↓
Sadness, crying	↑	--	↓		↑	↑
Sadness, non-crying	↓	↓	↓		↓	↓
Sadness, anticipatory	↑	(↓)	↓↑		↑	↑
Sadness, acute	↓	↑ --	↓	↓	↑--	↓
Affection	↓					(↑)
Amusement	↑↓	↑	(--)	↑	↑	↑
Contentment	↓	↓↑		(--)		↓
Happiness	↑	↓	↑		↑	↑--
Joy	↑	(↑)			↑	--
Antic. Pleasure, visual	↓	(↑)	(↑)	↑		↑
Antic. Pleasure, imagery	↑				↑	
Pride	↑↓	(--)				↑
Relief	↑--			↓	(↓)	↓
Surprise	↑		↓↑			(↑)
Suspense	(↓)				(↑)	(↑)

Note: HR=heart rate; HRV=heart rate variability; FT=finger temperature; SCR=skin conductance response; nSRR=nonspecific skin conductance response rate; SCL=skin conductance level. (↑) increase; (↓) decrease; (↓↑) increase and decrease; (−) no change in activation from baseline.

Source: Extract from Kreibig (2010), transposed.

It is evident that EDA related indicators do not seem to differentiate very well. All positive emotions usually involve an *increase* in EDA values (except contentment and relief) and an *increase* in HRV and FT (except happiness). On the contrary, negative emotions usually coincide with a *decrease* in HRV and FT (except disgust and acute sadness). It is noteworthy that identical observations of the data can lead to different interpretations of the emotional meaning. As a preliminary conclusion, there are relatively weak signals for identifying arousal and valence from the physiological data available. Figure 2 shows the result: An increase in phasic or tonic SC (SCR/SCL) indicates a high level of arousal, while an increase in HRV or ST indicates positive valence. The validity and reliability of these indicators could be disputed. Hence, the indicators in Figure 2 might be simplified and may not fully reflect the complexity of measuring the whole range of the valence–arousal continuum.

Figure 2. Selected Physiological Indicators of Emotional Arousal and Valence



Source: Own Elaboration based on Kreibig, 2010; Russell, 1980; Staudt, Grushetskaya, Rangelov, Domanska, & Pinkwart, 2018.

As the valence (e.g. positive or negative) and the present emotion (e.g. tense or excited) are not reflected unambiguously in the biosensing data, other sources must be considered to assess these (Figner & Murphy, 2011; Osborne, 2019). In other words, "biosensing can capture the *what* but not the *why*" (Osborne & Jones, 2017, p. 160). A key takeaway from this is that using additional data sources and combined qualitative methods is fundamentally important for an in-depth understanding of the valence of the tourist emotions measured using biosensing.

3. RESEARCH FRAMEWORK

3.1 Research Questions

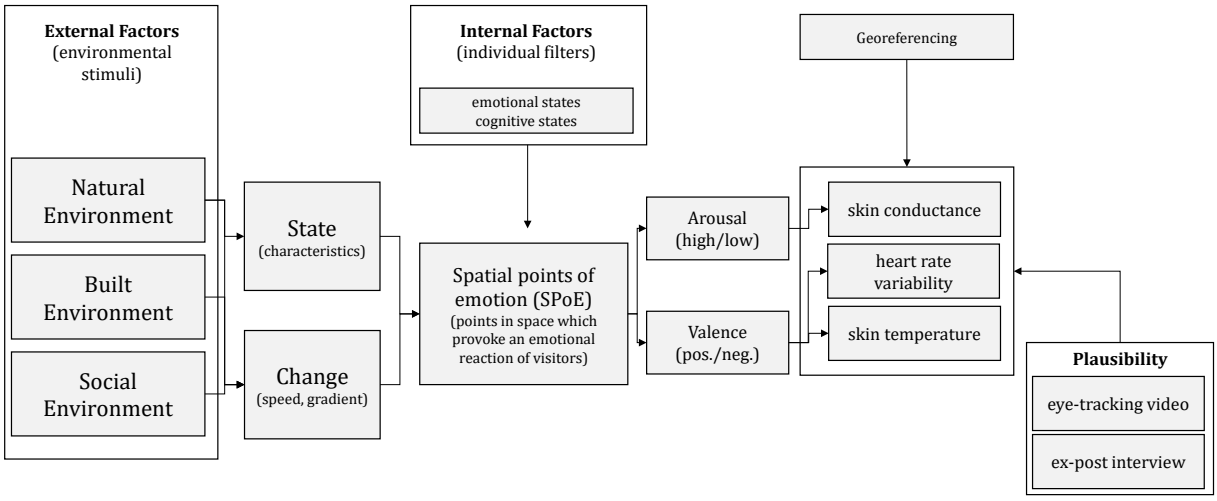
Currently, it is no clear from the literature (a) which data dynamics in the valence–arousal model represents positive emotions, (b) whether mobile measurements in real-world situations are valid and reliable indicators of data dynamics and (c) whether the combination of existing measurement methods is sufficient to capture tourists' emotions in a real-world situation. Against this background, there are three main research questions:

1. How can SPoE be measured in a conceptual framework?
2. What are the limitations of measuring SPoE?
3. What findings can the mixed-methods approach described here contribute to the further development of biosensing methods?

3.2 Conceptual Framework for Measuring Spatial Points of Emotion

The conceptual framework puts the SPoE construct in the centre. On the structure side (left side), it shows that SPoE depend on external factors (primary factors) such as the natural environment (e.g. sea), the built environment (e.g. tourist infrastructure) and social circumstances (e.g. crowding). A distinction can be made between static factors (state), such as the emotional state in a certain environment (e.g. at the sea), and dynamic factors (change), such as the transition between two environments (e.g. the transition between two zones). The focus here is on static factors. On the measurement side (right side) SPoE are operationalised and relate biosensing data to the valence–arousal model. Tourist arousal is measured using SC, while valence is measured by the interplay between HRV and ST. Eye-tracking video and ex-post interviews are used to validate the results (Figure 3).

Figure 3. Conceptual Framework for Measuring Spatial Points of Emotion



Source: Own Elaboration

3.3 Study Design and Data Collection

To detect tourist emotions in a real-world situation, a mixed-methods design was used, combining GPS tracking, biosensing, eye-tracking video and ex-post interviews in a tourist setting. The sample consists of eight female participants who were recruited via an announcement from an academic environment (convenience sample). A small number of test participants is common in psychophysiological studies, given the high effort involved (Bastiaansen, Straatman, et al., 2020). Participants were almost the same age and with the

same cultural background. This was necessary to keep the influence of personal aspects on the measured biosensing data as low as possible. However, results cannot be generalised and are therefore not representative of the tourist experience. Data collection took place in June 2019 with excellent weather conditions (barely cloudy and a maximum temperature of 22.1°C). A pre-test was conducted to check the functionality of the sensors. Participants were equipped with a GPS tracker (QStarz BT-Q1000XT), a biosensing wristband (Empatica E4) and mobile eye-tracking glasses (Tobii Pro 2).

Participants were asked to go for a walk along a pre-defined itinerary through Büsum, a small seaside resort on the North Sea coast of Germany. After a short introduction, all the devices were switched on simultaneously to ensure that the time stamp of each device could be used for data matching. Starting the route at the train station, participants were instructed to act tourist-like and stroll through the city, buy an ice cream and go to the dyke and waterfront. On their way back, they had to pass the harbour and walk through a small residential area back to the train station. The itinerary is separated into eight spatial zones (Figure 4). The boundaries of the zones follow different built and natural environments provided within the zones. "Station" is the starting and end zone including the railway station, while "Transition Zone" is a zone of transition into the pedestrian area. There are two sectors in the pedestrian zone: one is a calmer ("Shopping Street (calm)") and the other is a more frequented zone ("Shopping Street (lively)"). The area extending from the passage between two buildings and opening to the dyke and the beach is "Dyke/Beach/Sea". "Museum harbour/Sea" is an area on the land side of the buildings, but passing along the museum harbour with views of the sea. This is followed by "Fischerkai", a street along another dyke with a view to a part of the harbour. The last zone ("Residential Area") mostly includes residential areas used to get back to the railway station. After finishing the tour, each participant was interviewed (semi-structured interviews). The interview focused on their emotions during the itinerary, their perceptions of the town, any critical incidents during their stroll and where they experienced stress or relaxation.

Figure 4. Stills of the Different Spatial Zones from the Eye-Tracking Videos

Source: Own Elaboration

3.4 Data Processing and Analytical Perspectives

As there are no standardised and generally accepted research standards (Paül i Agustí et al., 2019) or even standardised analytical procedures for combining biosensing data with GPS tracking and other contextual data, the following approach is proposed. Data processing involves the following basic steps, resulting in a tidy data file with georeferenced (z-)values of SC, HR, ST and video codings, where each observation (23,375 seconds) forms a row:

1. Extracting the raw data from the three devices (GPS tracker, Empatica E4 and eye-tracking glasses).
2. Matching biosensing data (SC, ST, HR) and geodata. As GPS trackers usually need some connectivity time, an external trigger after a short time (handclap in front of the test person's eyes) was set, which then was used as a matching reference. After converting all data from Unix time to Coordinated Universal Time, the biosensing data had to be aggregated by calculating the arithmetic mean, as geodata were sampled every second (10 Hz) and the E4 recorded biosensing data four times per second (4 Hz).
3. Following Shoval, Schvimer, and Tamir (2018), z-scores for all the biosensing data were compiled to better compare the participants' measurements.
4. Using an inductive approach, video files were coded by content analysis (Mayring, 2010). Besides personal criteria (e.g. personal disruptive factors, speed of movement), possible irritations (e.g. groups of people, passing cars) and codes that describe the orientation in space (e.g. looking around) were generated out of the material. Altogether, the video material had a total of 3,421 codings.
5. Calculating HRV. HRV can be derived from IBI/RR/NN values using either time–domain or frequency–domain calculations. Time–domain calculations can use a succession of RR intervals and compute (a) the root mean square of successive differences or (b) their standard deviations. The Empatica E4 wristband produces an IBI dataset to produce HRV values in the time domain or in the frequency domain, using specialised software such as Kubios HRV or employing own algorithms. However, the IBI data are the only data produced by the Empatica system that are not sampled. Therefore, in this case, it would have been problematic to match the resulting HRV values to the data format (one line per second). Instead, the already available HR data was used and a moving standard deviation score for every second was calculated. The calculation was done along the lines of moving averages, but the empirical standard deviation was computed instead of the mean value only. A window of nine seconds was used so that not too much information was lost in the beginning and at the end of each sequence.
6. The last step to get the working data is matching the z-scores of biosensing, geodata and HRV with the video codings. Each video code is binary coded (0-1) and, using a syntax script, attached to the existing data file compiled in step (2).

Following the literature review and the conceptual framework, rising values of HRV and ST are interpreted as positive valence indicators. On the contrary, decreasing values of HRV and ST serve as a negative valence proxy. Following a similar approach to that used to identify stressful situations (Bergner et al., 2011) HRV and ST are analysed on a five-second basis and two ternary variables, HRV_TERN and TEMP_TERN, with the values -1 (decrease), 0 (constant) and +1 (increase) were created. Finally, a new binary variable VALENCE was created with 0 = no positive indicator and 1 = positive valence indicator. Since this procedure did not provide any new and statistically significant findings, only HRV was considered as a positive valence indicator in the analysis below.

In line with previous research (Osborne & Jones, 2017; Winz & Söderström, 2020), using both quantitative and qualitative perspectives to examine biosensing data proved to be a fruitful approach. Therefore, a data-driven approach, searching for remarkable patterns in the data, and an episode-driven approach, where video files were coded to identify sequences that would indicate changes in emotional state was used (Table 2). Using a static data approach, a Tourist Arousal Map was created (section 4.2) and the eight spatial zones are used to obtain the psychophysiological differences in the different zones (section 4.3).

Using the video codings, the differences in emotional state during different spatio-temporal settings were analysed.

Table 2. Analytical Perspectives

Analytical Step	Perspective	Data Approach	Biosensing Indicators			Contextual Information		
			(Change in) SC	(Change in) ST	HR/ HRV	GPS location data	Video	Ex-post interview
Tourist Arousal Map	Data-driven	Static	X			X		X
Spatial Analysis	Data-driven	Static	X	X	X	X		X
Spatio-temporal Analysis	Episode-driven	Dynamic	X	X	X	X	X	X

Source: Own Elaboration

4. RESULTS

4.1 Characteristics of the Sample

The eight female participants had an average age of 21.9 years (*SD*=2.20). Six out of the eight participants had already visited the destination before, and an average stroll lasted about 49 minutes. Table 3 shows the means of each participant, showing that the mean EDA of all participants is 2.30 μS and never exceeds the maximum mean of 3.50 μS, the average ST (TEMP) is 30.49 °C and the mean HR is 101.57 Hz.

Table 3. Means of Skin Conductance, Skin Temperature and Heart Rate of each Participant

Subject	Observations	EDA		TEMP		HR	
	(seconds)	Mean	*SD*	Mean	*SD*	Mean	*SD*
#1	3,265	0.83	*0.51*	29.75	*1.25*	100.47	*10.51*
#2	2,568	2.52	*0.73*	29.17	*0.53*	104.84	*15.12*
#3	4,683	2.73	*1.08*	31.14	*1.33*	97.88	*10.47*
#4	1,747	3.31	*1.11*	32.64	*0.34*	89.30	*6.94*
#5	3,684	3.26	*1.24*	29.93	*0.92*	97.38	*8.17*
#6	2,463	1.85	*0.31*	32.22	*0.71*	110.70	*13.85*
#7	2,143	1.02	*0.91*	30.17	*1.15*	105.07	*12.66*
#8	2,822	2.62	*0.41*	29.54	*0.65*	108.40	*15.11*
All	**23,375**	**2.30**	**1.23**	**30.49**	**1.47**	**101.57**	**13.14**

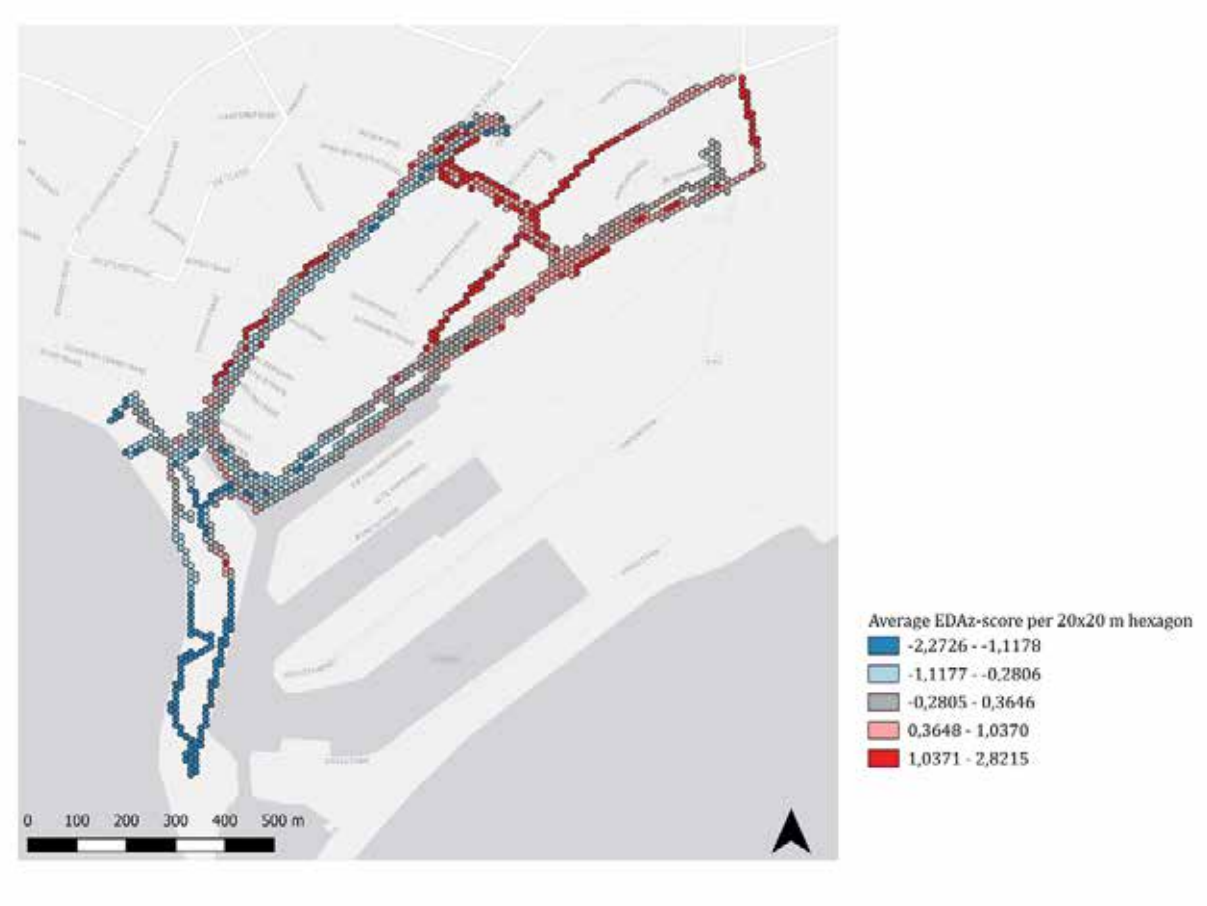
Source: Own Elaboration

The three biosensing indicators are only weakly correlated and correlations are erratic and non-systematic between subjects, with the highest correlations appearing between EDA and ST, while correlations with HR never exceed .5 (All subjects (z-scores): n (obs.) = 23,375; SCL-TEMP r= +.235, p < .001; SCL-HR r= +.153, p < .001; TEMP-HR r= +.137, p < .001). Therefore, there is no reason to believe that the three indicators measure the same or similar conditions, but rather three different dimensions, which is in line with findings from the literature (Kreibig, 2010).

4.2 Tourist Arousal Map

To get a first impression of the emotionally evocative areas during the stroll, a Tourist Arousal Map was plotted (Figure 5). As SC can be read as a proxy for arousal, static data of the z-standardised EDA scores of each participant were used. Based on a hexagon grid with a size of 200 square metres, the average EDA z-score was calculated for all participants crossing the respective polygon. Similar to other studies (Shoval et al., 2017), the map shows where in space people have high or low arousal. The areas during the stroll can be separated from each other relatively clearly. Areas with lower arousal can be found at the sea and harbour (zones: "Dyke/Beach/Sea" and "Museum harbour/Sea"). Areas with higher arousal can be observed on the way back in the residential areas and at the station. However, in the other zones, both high and low arousal hexagons can be identified from the EDAz values.

Figure 5. Tourist Arousal Map of Büsum



Note: Classification—Natural Jenks.

Source: Own Elaboration

What this plot cannot show is whether areas with low arousal signals positive (e.g. relief) or negative valence (e.g. boredom). However, the subjects' statements in the interviews support the idea that there was a form of relaxation in the waterfront areas. Seeing water elicited some kind of relief, as participants #6 and #8 noted for the zone "Dyke/Beach/Sea" (GEO5):

> #6: "I definitely slowed down when I was standing by the sea. I really love that. And then taking a breath, taking in this North Sea air or this wind in general,

and then moving on. But that was somehow a small, beautiful moment of peace that I had then".

#8: "When you come down the shopping street and then just walk towards the water, then you already see it and think like this: Yes! And then I went up there and thought it was something nice. Then I sat on a bench, ate my ice cream, looked out at the water".

On the contrary, areas of high emotional arousal, especially in the "Residential Area", can be interpreted in two ways. Subjects had to walk a predefined path that was marked on a map. On the way back along the dyke and through the residential area, several participants reported that they got lost and thus felt stressed.

#1: "I was walking somewhere in the back where it says 'wedding'-something and then I was at a crossroads and a woman came and helped me because I thought I was in the wrong place and didn't know where to go".

However, another possible explanation for the increase in SC in this area is that the walk was coming to an end and the subjects had to overcome a slight uphill slope (dyke), which was reflected in exertion and sweating that consequently increased SC.

4.3 Spatial Analysis

To obtain statistically significant differences in biosensing indicators besides the areas of high and low arousal, geostatistical analysis was applied. The eight different geozones were used for this purpose. Table 4 shows the descriptives of the main biosensing indicators for the different spatial zones. The data reveal that in the waterfront areas (GEO5 and GEO6), EDAz values are the lowest and HRV is among the highest, indicating areas where the subjects experienced some form of relaxation or contentment. Non-parametric ANOVA tests revealed that the level of the four biosensing proxies differed significantly (EDAz: *Welch's F*(7) 1772.505, $p < .001$; TEMPz: *Welch's F*(7) 1398.238, $p < .001$; HRz: *Welch's F*(7) 513.959, $p < .001$; HRV: *Welch's F*(7) 207.778, $p < .001$). Additionally, post-hoc Scheffé tests were calculated to examine the differences between each of the zones. The results showed statistically significant differences between almost all zones in terms of all four indicator variables. However, between the two waterfront zones GEO5 and GEO6, the results were not significant.

Table 4. Descriptives for Biosensing Indicators by Geozone

Spatial Zone	Code	Observations (seconds)	EDAz (Mean)	TEMPz (Mean)	HRz (Mean)	HRV (Mean)
Station	GEO 1	1,942	0.265	0.796	-0.130	0.527
TransitionZone	GEO 2	2,143	-0.288	0.705	0.477	0.440
Shoppingstreet (calm)	GEO 3	828	-0.302	0.474	0.503	0.234
Shoppingstreet (lively)	GEO 4	4,212	-0.042	0.170	-0.253	0.464
Dyke/Beach/Sea	GEO 5	3,238	-0.933	-0.594	-0.415	0.579
Museum harbour/Sea	GEO 6	1,824	-0.333	-0.610	-0.472	0.557
Fischerkai	GEO 7	3,092	-0.037	-0.697	0.209	0.416
Residential Area	GEO 8	6,031	0.706	0.161	0.240	0.397
All zones		**23,375**	**0.000**	**0.000**	**0.000**	**0.458**

Source: Own Elaboration

4.4 Spatio-temporal Episodes

In a last analytical step, episodes or walking segments during the participants' stroll that allowed a positive or negative emotional reaction to be expected according to the initial results from the Tourist Arousal Map, the spatial analysis and the ex-post interviews were classified. Using the video codings, the focus here was on events where participants saw the sea ("Watching the sea") or had problems finding the way ("Wayfinding").

Table 5 shows that observations where participants watched the sea had lower EDAz, TEMPz and HRz values, but higher HRV values than observations where this was not the case. Non-parametric tests (Mann-Whitney-U) were calculated to show differences in the biosensing indicators between observations with and without watching the sea codings (EDAz: $U = 5486617.500, Z = -31.866, p < .001$; TEMPz: $U = 8721627.500, Z = -17.222, p < .001$; HRz: $U = 90001111.000, Z = -15.957, p < .001$; HRV: $U = 10112228.50, Z = -10.794, p < .001$). The findings were in line with the results above: Watching the sea and walking along the seaside bring relief and contentment.

On the contrary, statistical results from the wayfinding episode do not support the idea that people experience stress in trying to find the right way back (EDAz: $U = 29305324.50, Z = -19.465, p < .001$; TEMPz: $U = 31346141.50, Z = -14.065, p < .001$; HRz: $U = 30056388.00, Z = -17.478, p < .001$; HRV: $U = 33835389.50, Z = -7.184, p < .001$). Therefore, high values at the end of the tour are probably caused by other reasons (e.g. sweating, exhaustion).

Table 5. Descriptives for Spatio-Temporal Episodes

Watching the sea	Observations (seconds)	EDAz		TEMPz		HRz		HRV	
		M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
True (1)	1,126	-0.931	0.730	-0.453	0.479	-0.402	0.849	0.589	0.459
False (0)	22,249	0.047	0.989	0.023	1.014	0.020	1.003	0.452	0.419
Wayfinding									
True (1)	3,733	-0.331	1.114	-0.234	1.014	-0.237	0.928	0.483	0.405
False (0)	19,642	0.063	0.964	0.045	0.989	0.045	1.007	0.454	0.425

Source: Own Elaboration

5. DISCUSSION

Although psychophysiological measurements are already frequently used in laboratory settings (Li, Walters, Packer, & Scott, 2018), those methods have so far only been used sparsely in real-world situations (Shoval et al., 2018). There are various reasons for this:

1. First, sufficient quality ambulatory assessment of biosensing data in real-world situations has only recently become possible, since the development of high-end wearables used for medical reasons.
2. The quality of the biosensing data is reduced when people move, as movement can cause errors in the physiological data.
3. The need to capture contextual information to adequately interpret biosensing data complicates the research design (Birenboim et al., 2019).

These challenges were also evident in this study. Great care was taken to ensure that the wristband fit closely on each participant's wrist; nonetheless, it is possible that motion affected the data. Furthermore, data evaluation and interpretation for tourism purposes (i.e.

positive valence) are associated with significant uncertainties. These result from possible measurement errors of the apparatus in a real-world situation and from the fact that the valence of the measured deflections in biosensing data cannot be assigned unambiguously. Referring again to the quote from Osborne and Jones (2017, p. 162)—"biosensing can capture the *what* but not the *why*"—even understanding the "what" seems to be a challenging task. This study identifies the main challenge and a major drawback of biosensing methods: Signals can be measured reliably, but not validly. Since the algorithm for identifying positive valence from the interaction of HRV and ST did not produce significant results (section 3.4), future research should focus on these "data dynamics" to facilitate the interpretation of biosensing data.

Although the biosensing wristband used in this study is designed for use outside an experimental laboratory setting, the criticism of the method (Jones & Osborne, 2020) is supported. An application of this method in areal-world situation is regarded as critical. People's physical fitness and the weather conditions demonstrate this: People who climb up a dyke can sweat, as in this study here. In this case, the ability of the skin to conduct electricity increases significantly without an emotional event behind it (Osborne, 2019). Additionally, standing at the waterfront, exposed to the wind which cools the skin, can lead to a reduction in sweat production and the corresponding values in the psychophysical data. Furthermore, the use of ST in a real-world setting as opposed to finger temperature in a laboratory setting seems to be another crucial point to discuss in future research.

Possible solutions to overcome the drawbacks identified here could lie in data calibration of each participant before starting data measurement in order to get a baseline. Different impulses such as videos and music can be used. The use of mobile eye-tracking equipment proved to be very invasive. Furthermore, not all potential emotional stimuli in the urban context can be captured by the eye-tracking equipment, especially when stimuli are not in the visual field of the tourist. Smaller, high-resolution cameras or, even better, 360° cameras should be considered for future research in this field. In the case of eye-tracking, the potential of eye movements should be used. In this study here, this was not pursued further, as not all eye movements could always be tracked due to the increased sunlight. As a further method of validating the biosensing data, subjective statements on the emotional state of the participants could be used. In addition to subjective queries about emotional state in the context of push messages via smartphones, participants could use the point of interest button on the GPS tracker to mark particularly relaxing or exciting moments in the data.

6. CONCLUSION

This work contributes to the further development of mobile methods in applied tourism geography by exploring the interplay between the body and the environment using a new methodological and analytical approach. A mixed-methods design, including georeferenced biosensing data and contextual information such as video data and ex-post interviews, was used to examine positive SPoE.

This study found that data from biosensors in combination with location sensors can be used to identify SPoE in a tourism setting. Furthermore, combining these data sources with qualitative data (videos and interviews) can add context to content to enable a better understanding of what the biosensing signals mean. Using this setup, points of relaxation at the beach can be identified. However, the results also show that there are significant limitations to this setup. First, the interpretation of biosensing signals needs further clarification and validity testing. This is true specifically when it comes to validly identifying positive valences, but also when it comes to assessing the reliability of measurements in a

real-world setting. Second, the study did not actually use tourists as subjects, but rather a small ad hoc sample of humans moving in a real-world tourism setting. Using real tourists as subjects and employing larger sample sizes could help to further clarify the questions arising from this setup. Third, a conceptual framework for measuring SPoE was provided and an explorative approach to measure them was used. To support this approach, data were analysed from two angles: data-driven (where can structures in the data and corresponding real situations be identified?) and episode-driven (where can structures be expected in the data if the search is limited to predefined episodes or locations?). Using binary-coded video codings and connecting them to the biosensing data is a promising approach to work with in the future. The recommendation for future research is to focus more on this episode-driven approach, build hypotheses about potential SPoE (e.g. relaxation or stress) and test the data against the hypotheses.

Many new digital methods are still in their infancy and several problems with application occur. Nonetheless, the many studies on the use of Big Data in tourism, the diverse discussions on digital tracking and visitor management solutions during the Covid-19 pandemic and the use of mobile biosensing methods in space and time discussed here illustrate that tourism geography is on the verge of digitalised and data-driven science. Further research is necessary, especially to exploit the potential of the new technical possibilities.

ACKNOWLEDGEMENTS

We would like to thank the participants of our study who gave us an insight into their on-site feelings. We would also like to thank Max Schiller and Nils Kirschstein for their support in the research work and the students Charlotte Bellmann, Michelle Griemsmann, Katharina Hennings, Sven Krüßel and Miriam Schmidt for their support in coding the videos. We would like to thank our colleagues Eric Horster, Anne Köchling and Bernd Eisenstein for the discussions on the data.

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HOW TOURISTS PERCEIVE, CREATE AND ENCODE THE MEMORABLE TOURISM EXPERIENCE

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ABSTRACT

The focus of the study was to understand and clarify the role of the senses, emotions, and memories (SEMs) on the memorable tourism experience (MTE). The main objective of the research was to map the relation between the SEMs within the tourism experience establishment. The tourism experience mapping results showed that SEMs explained part of the MTE establishment and the discovery of three map patterns of the experience based on the emotional states of joy, love, and positive surprise. The research findings are relevant to reinforce the understanding, the design and to implement MTE more effectively, in terms of experiential stage planning and acting (service staff).

Keywords: Senses, Emotions, Memories, Modelling MTE, SEM Model.

JEL Classification: Z30, Z32, Z33

1. INTRODUCTION

Memorable tourism experiences (MTE) are the ultimate goal of tourists and what the tourism industry intends to provide (Tung & Ritchie, 2011). A MTE is a multifaceted process, however, and the senses, emotions and memories (SEMs) play a crucial role in its development (Kim & Fesenmaier, 2015; Agapito, Pinto, & Mendes, 2017; Dias, Correia, & Cascais, 2017; Moyle, Moyle, Bec, & Scott, 2019). "In a context of globalization and increasing competition between organizations and tourism destinations, […] fostering competitiveness […] entails adopting an unequivocal quality approach to meet the balance between tourists' expectations, needs and wants and the understanding of what they think and how they live experiences" (Mendes, Guerreiro, & Matos, 2016, p. 295).

Tourism experiences are always unique due to their highly personal and subjective nature, in which the human senses are the mediators between the tourist and surrounding world (Adhikari & Bhattacharya, 2016; Chang, 2018). It is through the senses that tourists experience and perceive environmental information, that is, the experiential stimulus (Dann & Jacobsen, 2003; Hendry, Farley, & McLafferty, 2012; Krishna, 2012; Agapito, Mendes, & Valle, 2013; Barnes, Mattsson, & Sørensen, 2014; Jensen, Scarles, & Cohen, 2015; Martins

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et al., 2017). This experiential stimulus transforms the sensations from the surrounding world into information that promotes the activation of emotional states, contributes to explaining the meaning of that stimulus information, and later to the creation of memories (Gretzel, Fesenmaier, Formica, & O'Leary, 2006; Damásio, 2011; Brunner-Sperdin, Peters, & Strobl, 2012; Esteves, Slongo, Esteves, & Barcelos, 2013; Bimonte & Faralla, 2014; Ekman, 2016; Park & Santos, 2017). The memory is the tourism experience result: the memory encodes and stores only what the tourist perceives as emotionally meaningful for the long-term (Oh, Fiore, & Jeoung, 2007).

There is also a relationship between the senses (Krishna, 2012; Meacci & Liberatore, 2015; Tiago, Amaral, & Tiago, 2015; Kim & Fesenmaier, 2017), the emotions (Gretzel et al., 2006; Brunner-Sperdin et al., 2012; Esteves et al., 2013; Bimonte & Faralla, 2014; Park & Santos, 2017) and the memories during the establishment and fruition of a tourism experience (Duarte, 2012; Kahneman, 2012; Ayazlar & Arslan, 2017; Zatori, Smith, & Puczko, 2018). Sensorial attributes allow a tourist to feel and perceive the experience, to evoke emotions and inscribe memories (Agapito et al., 2017; Dias et al., 2017). Although this is a crucial relationship, however, very few studies to our knowledge seem to have a addressed it (Pedro, Mendes, Matos, & Ascenção, 2019). Mapping the MTE through the SEMs will thus increase knowledge of experience creation and will promote understanding of psychologic processing.

The focus of this study is to understand and clarify the role of the SEMs on the MTE. The research therefore first identifies and assesses the senses, the emotional states and the memorable elements within the establishment of a MTE. Secondly, the research maps and models the relationship between the SEMs in the creation of a MTE. This study helps to understand the tourism experience formation process and enriches knowledge of the design and implementation of a MTE.

2. MEMORABLE TOURISM EXPERIENCE PARADIGM

Creating memories is a crucial process in tourism, and specifically, in the tourism experience (Larsen, 2007; Cutler & Carmichael, 2010). Creating and promoting positive MTE is a strategic paradigm that destination management organisations, stakeholders and others private companies must accomplish (Kim et al., 2012; Kim & Jang, 2016; Zare, 2019). A MTE is defined as a "tourism experience positively remembered and recalled after the event has occurred" (Kim, 2014, p. 36; Kim & Ritchie, 2014, p. 323). Larsen (2007, p. 15) notes that a MTE is a tourism-related event "strong enough to have entered long term memory". From this perspective, a MTE is a personal rewarding process, one in which emotions are awake and positive memorable landmarks are made (Csikszentmihalyi, 2014; Kim & Fesenmaier, 2017; Sthapit & Coudounaris, 2018).

Several studies have described the role of the senses in the tourism experience (Krishna, 2012; Meacci & Liberatore, 2015; Tiago, Amaral, & Tiago, 2015; Dias et al., 2017; Kim & Fesenmaier, 2017), the influence of emotions (Gretzel et al., 2006; Brunner-Sperdin et al., 2012; Esteves et al., 2013; Bimonte & Faralla, 2014; Park & Santos, 2017; Correia, Oliveira, & Pereira, 2017) and the effects that memories (Duarte, 2012; Kahneman, 2012; Ayazlar & Arslan, 2017; Zatori et al., 2018) have on the establishment and enjoyment of a MTE.

However, the relational process that allows tourists to perceive the experience (sensorial attributes), to feel and evoke meaning (emotional states), and to create and inscribe it in their memories (memory elements) seems a subject ill-defined by tourism scholars (Pedro, Mendes, Matos, & Ascenção, 2019). The memorable experience is the logical connection of the tourism industry. In order to experience a memorable event, however, there are other

aspects that precede the memory process and can also have a significant effect, such as the senses and sensorial perception (Agapito et al., 2017; Lv, Li, & McCabe, 2020), and emotional states with high arousal and positive valence (Guzel, 2014; Kastenholz, Carneiro, Marques, & Loureiro, 2017; Hui Zhang & Xu, 2019). A broad definition of foodservice quality, for example, must address both food-related (including food characteristics, culinary arts, and hygiene/safety) and consumer preference-related concerns (including environment/ambiance, marketing/promotion, and service).

2.1 The Role of Senses on Tourism Experience

According to Lv et al. (2020, p. 2) "… the senses are the basic means through which humans explore and understand the world". All the stimulus perceived by tourists is received through the five senses. The perception of the tourism experience, and specifically the MTE, is a result of sensorial or multi-sensorial stimulation (Pan & Ryan, 2009; Meacci & Liberatore, 2018). Dias et al. (2017), note that multi-sensorial stimulation has a significant effect on the tourism experience, particularly on the emotion and memories. Agapito et al. (2017) reported a positive influence of sensory impressions on the long-term memory of tourist experiences. For tourists, however, in order to experience a memorable event the sensory stimulus should also evoke positive emotional states, and thereby, increase the memory process activation (Dias et al., 2017). Pine and Gilmore (1998, p. 104) state that "the more senses an experience engages, the more effective and memorable it can be".

Multi-sensorial stimulation during a tourism experience seems to increase MTE engagement, although, despite multi-sensorial information, there appears to be a hierarchy of the senses during the perception of MTE (Tiago et al., 2015; Meacci & Liberatore, 2018). Other studies have indicated that the most relevant sense in the tourist experience perception is sight, followed by hearing, smell, taste and touch (Xiong, Hashim, & Murphy, 2015; Goggin et al., 2017). Agapito et al. (2014) found that the most important sense in the tourist experience perception in a rural context is vision/sight, followed by hearing, taste, smell and touch. Other results have suggested a different hierarchy, namely, sight, taste, touch, hearing and smell (Dias et al., 2017). However, data about the senses hierarchy during the tourism experience perception reveals a lack of consistency, and, moreover, the relationship between the senses, and between the senses and the emotions, are issues to be explored in this research. Accordingly, the following hypotheses were formulated:

Hypothesis H1A: Visual perception is positively related to the emotional states of joy.
Hypothesis H1B: Visual perception is positively related to the emotional states of love.
Hypothesis H1C: Visual perception is positively related to the emotional states of positive surprise.
Hypothesis H2A: Acoustic perception is positively related to the emotional states of joy.
Hypothesis H2B: Acoustic perception is positively related to the emotional states of love.
Hypothesis H2C: Acoustic perception is positively related to the emotional states of positive surprise.
Hypothesis H3A: Gustatory perception is positively related to the emotional states of joy.
Hypothesis H3B: Gustatory perception is positively related to the emotional states of love.
Hypothesis H3C: Gustatory perception is positively related to the emotional states of positive surprise.
Hypothesis H4A: Olfactory perception is positively related to the emotional states of joy.
Hypothesis H4B: Olfactory perception is positively related to the emotional states of love.

Hypothesis H4C: Olfactory perception is positively related to the emotional states of positive surprise.
Hypothesis H5A: Haptic perception is positively related to the emotional states of joy.
Hypothesis H5B: Haptic perception is positively related to the emotional states of love.
Hypothesis H5C: Haptic perception is positively related to the emotional states of positive surprise.

According to Demangeot and Broderick (2010), the haptic and visual senses cooperate during sensorial perception, and vision is highly associated with touch. Accordingly, the following hypothesis was formulated:

Hypothesis H11: Visual perception is positively related to haptic perception.

Consumer experience studies have indicated that smell affects taste and sound affects vision (Krishna, 2012; Lee, Lee, Seo, & Green, 2012; Lee, Heere, & Chung, 2013). Consequently, the following hypotheses were formulated:

Hypothesis H12: Olfactory perception is positively related to gustatory perception.
Hypothesis H13: Acoustic perception is positively related to visual perception.

2.2 The Influence of Emotions on Tourism Experience

Emotions are a complex subject to study, given their cultural, economic, social and personal behaviour differences (Faullant, Matzler, & Mooradian, 2011; Pomfret, 2012; Lin, Kerstetter, Nawijn, & Mitas, 2014; Correia et al., 2017; Shoval, Schvimer, & Tamir, 2018b, 2018a). Scherer (2005) stated that emotions are comprised of five related components: the cognitive (e.g. attention by Campos, Mendes, Valle, & Scott, 2016), neurophysiological (e.g. neurotransmitters by Koc & Boz (2014) and Lövheim (2012)), motivational (e.g. personal development, curiosity setting attractiveness and learning, Mendes et al., 2016; Sie, Phelan, & Pegg, 2018), expressive (e.g. facial expressions and pupil diameter, Bradley & Lang, 2015; Ekman, 2016), and subjective (e.g. personality traits, Faullant et al., 2011; Kim & Jang, 2016).

Emotional arousal is a state of heightened physiological activity (Bakker, van der Voordt, Vink, & de Boon, 2014; Damásio, 2010, 2018). This includes a strong emotional activation and mental excitement for human affective function and protection, namely, experiencing emotional states such as being excited, happy, satisfied, relaxed, alarmed and afraid (Russell, 2003; Damásio, 2010; Ekman, 2017). The emotional excitement during a tourist experience results in an increase in cognitive activation, attention, motivation, satisfaction, optimism and motor predisposition (i.e., motion) (Lempert & Phelps, 2016; Lochner, 2016; Servidio & Ruffolo, 2016; Goggin et al., 2017). Other authors have noted that emotional excitement has a positive effect on decision making processes, consumption, satisfaction, a positive destination image, experiencing high levels of joy/happiness, feelings of well-being, intention to revisit and to recommend, and creating an emotional bond between tourists versus experience (Esteves et al., 2013; Hosany & Prayag, 2013; Guzel, 2014; Prayag, Hosany, Muskat, & Del Chiappa, 2017). The following hypotheses were therefore formulated:

Hypothesis H6A: The emotional states of joy are positively related to recollection elements.
Hypothesis H6B: The emotional states of joy are positively related to vividness elements.

Hypothesis H7A: The emotional states of love are positively related to memory recollection elements.
Hypothesis H7B: The emotional states of love are positively related to memory vividness elements.
Hypothesis H8A: The emotional states of positive surprise are positively related to recollection elements.
Hypothesis H8B: The emotional states of positive surprise are positively related to vividness elements.

2.3 The Effects of Memories on Tourism Experience

The stage of memorable experiences is a central issue in experience economy (Pine & Gilmore, 1998; Schmitt, 1999; Oh et al., 2007). In a tourism context, it has been established that MTE create positive and long-term memories that allow tourists to increase their revisit intentions, experience mental reconstruction (recollection, re-experience and revisit) and share with family and friends (Kim et al., 2012; Campos et al., 2016; Seyfi et al., 2019). The establishment of memory increases tourist loyalty and levels of satisfaction for future encounters between tourists versus experiences, or tourists versus destination (Quadri-Felitti & Fiore, 2013; Ali, Hussain, & Ragavan, 2014; Barnes, Mattsson, & Sørensen, 2016).

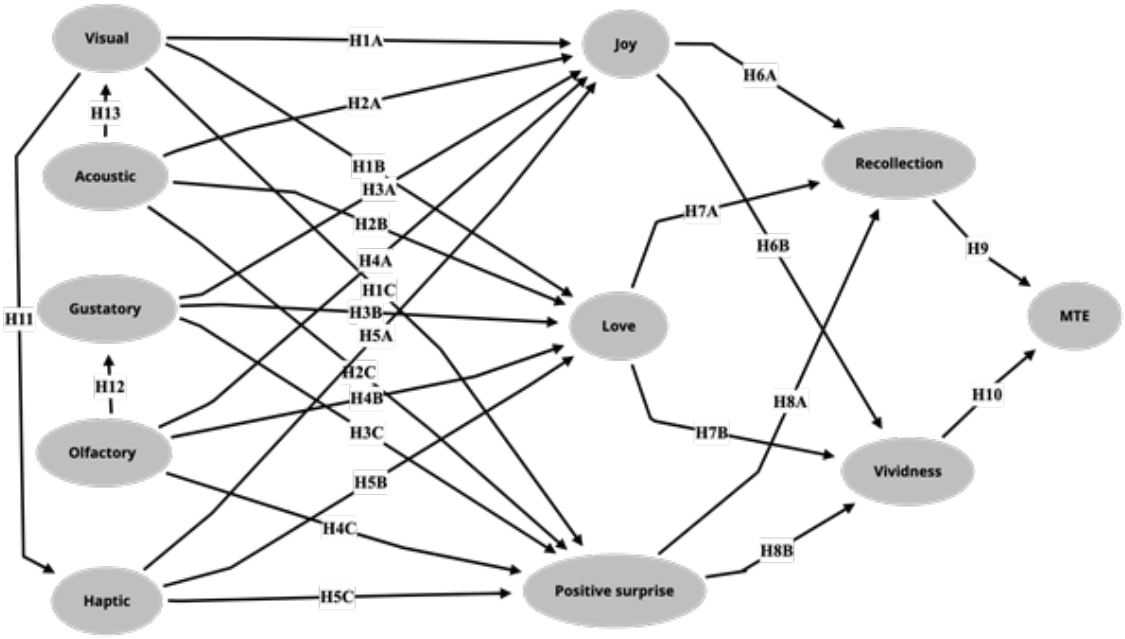
A memorable moment is closely related to experience as something different from the day-to-day, an extraordinary encounter, spontaneous, something new and unexpected (Kim et al., 2012; Andrades & Dimanche, 2014; Campos, 2016). Campos, Mendes, Valle, and Scott (2015) noted that physical participation, cognitive function, attention and human relations increase the chance to promote a memorable event. An event also appears to be more memorable when it is actively experienced by tourists instead of just being seen in a passive way – in a volunteer learning process (van Strien, Cappaert, & Witter, 2009; Amaral, 2011). Hedonism activities or moments, which form the uniqueness of an encounter and an experience provided by the local culture, are key issues in increasing memorability (Hung, Lee, & Huang, 2016). Accordingly, the following hypotheses were formulated:

Hypothesis H9: Memory recollection elements are positively related to a MTE.
Hypothesis H10: Memory vividness elements are positively related to a MTE.

3. CONCEPTUAL MODEL AND HYPOTHESES DIAGRAM

The present conceptual model and the hypotheses diagram formulation was undertaken with the purpose of studying and mapping the relationships between the SEMs in MTE creation. In this conceptual model (Figure 1), the authors grounded MTE creation and fruition though the relationships between the senses (Krishna, 2012; Meacci & Liberatore, 2015; Tiago, Amaral, & Tiago, 2015; Kim & Fesenmaier, 2017), the emotions (Gretzel et al., 2006; Brunner-Sperdin et al., 2012; Esteves et al., 2013; Bimonte & Faralla, 2014; Park & Santos, 2017) and the memories (Duarte, 2012; Kahneman, 2012; Ayazlar & Arslan, 2017; Zatori et al., 2018). On this basis, the sensorial attributes allow a tourist to feel and perceive an experience, to activate and evoke emotions and inscribe memories (Agapito et al., 2017; Correia et al., 2017; Dias et al., 2017).

Figure 1. The Conceptual Model and Hypotheses Diagram



Source: Own Elaboration with Software XMind

4. METHODOLOGY

4.1 Research Context

The Algarve is an international tourist destination located in the south of Portugal. The region is the main tourism destination in Portugal, and the core tourism product is centred on the sun, sand and sea (Portugal Tourism Bureau, 2020). There were 8,728,876 passengers in traffic/transit in Faro International Airport in 2017, and of these 4,346,157 passengers embarked, 4,335,963 passengers disembarked and 46,746 passengers were in direct traffic/transit (Pordata, 2018). Recent figures show that the majority of foreign tourists disembarking at Faro International Airport were tourists from United Kingdom (40%), Republic of Ireland (28%), Netherlands (8%), Germany (8%), France (3%) and domestic tourists (3%) (Statistics Portugal, 2018).

4.2 Instrument

The questionnaire developed (see Appendice I) to test the hypotheses consisted of five different sections (see Appendice II). The first section examined the senses and the sensorial attributes using the scale by Haase and Wiedmann (2018). According to the same authors, "… the sensory item set represents a holistic measurement tool … enables the capture of the magnitude of each sensory dimension (visual, acoustic, haptic, olfactory, and gustatory) … and the respective senses can be examined in a consistent manner" (Haase & Wiedmann, 2018, p. 727). To assess the intensity of a respondent's emotional states the authors used the three dimensions emotional scale based on the emotional states of joy, love and positive surprise representing a tourist's emotional experience (Hosany & Gilbert, 2010; Hosany, Prayag, Deesilatham, Cauševic, & Odeh, 2015).

In the third section of the questionnaire, the researchers operationalised the memory of the experiential encounter using two autobiographical memory constructs, recollection and vividness (Sheen, Kemp, & Rubin, 2001). The autobiographical memory scale was validated and used in previous studies, and was modified to fit the study setting, specifically tourism

(Kim, 2010; Kim & Youn, 2017) and particularly the MTE (Pedro, 2019). The MTE were also measured using the five items scale adopted from Kim et al. (2012). This condensed scale covers five dimensions of the MTE: hedonism, refreshment, meaningfulness, local culture and novelty. The MTE scale was validated in previous studies and modified to fit this research (Kim, 2018).

The last section of the questionnaire was used to collect sociodemographic data, such as gender, age, marital status, previous visits to the Algarve region, educational level, professional status and country of origin (Mendes et al., 2016; Agapito et al., 2017; Campos, Pinto, & Scott, 2019). The sensorial attributes, emotional states intensity, memory elements and MTE dimensions were assessed using a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree) and 0 (N/A – not applicable).

4.3 Data Collection

A non-probability convenience sampling technique was used, because the researchers were unaware of which tourists had a MTE in the Algarve destination. The population selected for this study comprised the national and international adult tourists (plus 18-year-old) who visited Algarve destination in November and December 2018, and declared having a MTE encounter (Kim et al., 2012). A total of 515 questionnaires were distributed at Faro International Airport and after deletion of incomplete responses (i.e., with more than 15% of missing cases/responses), 409 questionnaires were deemed complete to use further showing a response rate of 79%.

4.4 Data Analysis

The data was analysed in two stages, measurement model and structural model (Table 1). The authors first used PLS-SEM with SmartPLS 3.0 software to assess the measurement model and, secondly, assess the structural model (Henseler & Chin, 2010; Wong, 2013; Hair et al., 2014; Ringle, Silva, & Bido, 2014; Hair, Hult, Ringle, & Sarstedt, 2017; Hair, Risher, Sarstedt, & Ringle, 2019). Therefore, as presented in next table (Table 1), using PLS-SEM, the estimated model was evaluated for reflective measurement model fit and structural model fit (Hair et al., 1017, 2019).

Table 1. Guideline Values for PLS-SEM Measurement Model and Structural Model

Assessing reflective measurement model		**Guideline values**
1st Reliability (indicator loadings)		≥ 0.5 Minimum (i.e., satisfactory for exploratory research) ≥ 0.708 Recommended
2nd Internal consistency reliability	Cronbach's alpha (Cronbach's α)	Minimum 0.70 (or 0.60 in exploratory research) Recommended 0.70 to 0.90 Maximum 0.95
	Composite reliability (CR)	CR ≥ 0.70
3rd Convergent validity (average variance extracted – AVE)		AVE ≥ 0.50
4th Discriminant validity	Fornell-Larcker criterion	√AVE larger than the biggest correlation with any construct
	Heterotrait-monotrait ratio of the correlation (HTMT)	HTMT < 0.90 (but they are better when lower than 0.85), and must be significantly different from 1
Assessing structural model		**Guideline values**
1st Collinearity (variance inflation factor values – VIF)		VIF ≥ 5 (probable/critical collinearity issues) VIF ≥ 3 to 5 (possible collinearity issues) VIF < 3 (ideal value)

2nd Explanatory power of the model (coefficient of determination – R^2)	R^2 = 0.75 (substantial explanatory power of the model) R^2 = 0.50 (moderate explanatory power of the model) R^2 = 0.25 (weak explanatory power of the model)
3rd Predictive accuracy of the PLS path model (Stone-Geisser test – Q^2) – Blindfolding procedure	Q^2 > 0 (small accuracy of the model) Q^2 > 0.25 (medium accuracy of the model) Q^2 > 0.50 (large accuracy of the model)

Source: Adapted from Hair et al. (2017, 1029)

The PLS-SEM methodology is a comprehensive and mature technique widely used by many researchers (Wang et al., 2020), user-friendly software (Hair et al., 2019) and is a technique capable of modelling potential constructs in a non-normal sample and with small to medium sample sizes (Hair et al., 2017). It was therefore appropriate to use PLS-SEM and SmartPLS software to examine the relationships between the eleven preliminary constructs (11) and the forty-seven indicators (47) in this research.

5. RESULTS

5.1 Sample Profile

A total of 409 fully questionnaires were completed, validated and used in the study. Of the sample achieved, 49.9% of the respondents were male and 51.1% female, 26.4% within the mean age group more than 61 years old, and 22.5% in the mean age group of 51 to 60 years old. Other information includes: 63.1% married or living together/cohabiting, 49.9% employed, 42.7% had visited the Algarve more than three times, 64.1% had a higher education level and they were predominantly from the United Kingdom (52.8%) and Ireland (15.2%).

5.2 Structural Equation Model Analysis

5.2.1 Measurement Model Fit

First, the researchers tested the reliability, internal consistency and validity of the constructs to evaluate the measurement model. Reliability was evaluated using factor loadings, internal consistency was measured though the Cronbach's alpha and composite reliability (CR) and convergence validity was assessed using the average variance extracted (AVE).

Before confirming the reliability of the measurement model, the factor loading scores of all indicators were analysed (Hair et al., 2019). After deleting one indicator with low loading value (item MTE_5 Novelty = 0.674; less than the threshold values 0.708; see the indicator with * in Table 2), all other indicator factor loading scores were above the recommended threshold (≥ 0.708), indicating the satisfactory reliability of the constructs. As shown in Table 2, the Cronbach's alpha scores for all values were above the threshold values (> 0.70), and ranged from 0.800 to 0.967; the CR ranged from 0.855 to 0.976 (> 0.7 threshold values); and AVE ranged from 0.598 to 0.911 (> 0.50 threshold values). Reliability, internal consistency and convergent validity were thus established (Henseler & Chin, 2010; Wong, 2013; Ringle et al., 2014; Hair et al., 2019).

Table 2. Assessment of Measurement Model on Loading, Cronbach's α, CR and AVE

Measurements and Items	Loadings	Cronbach's α	CR	AVE
Visual		0.874	0.914	0.726
VIS_1 Aesthetic	0.828			
VIS_2 Attractive	0.811			
VIS_3 Beautiful	0.913			
VIS_4 Pretty	0.854			
Acoustic		0.934	0.953	0.836
ACT_1 Euphonic	0.905			
ACT_2 Good-sounding	0.875			
ACT_3 Melodic	0.929			
ACT_4 Sonorous	0.947			
Gustatory		0.967	0.976	0.911
GST_1 Appetizing	0.950			
GST_2 Flavourful	0.966			
GST_3 Palatable	0.941			
GST_4 Tasty	0.961			
Olfactory		0.939	0.956	0.844
OLF_1 Fragrant	0.908			
OLF_2 Nice-smelling	0.907			
OLF_3 Perfumed	0.934			
OLF_4 Scented	0.926			
Haptic		0.952	0.965	0.874
HPT_1 Comfortable	0.921			
HPT_2 Handy	0.952			
HPT_3 Soothing	0.963			
HPT_4 Well-shaped	0.903			
Joy		0.879	0.912	0.675
JOY_1 Cheerful	0.750			
JOY_2 Delight	0.857			
JOY_3 Enthusiasm	0.838			
JOY_4 Joy	0.845			
JOY_5 Pleasure	0.813			
Love		0.914	0.936	0.746
LOV_1 Affection	0.897			
LOV_2 Caring	0.889			
LOV_3 Love	0.808			
LOV_4 Tenderness	0.901			
LOV_5 Warm-hearted	0.819			
Positive surprise		0.907	0.931	0.729
SRP_1 Astonishment	0.858			

SRP_2 Amazement	0.900			
SRP_3 Fascinated	0.842			
SRP_4 Inspiration	0.822			
SRP_5 Surprise	0.845			
Recollection		0.800	0.882	0.713
RCL_1 Reliving	0.869			
RCL_2 Participate in	0.810			
RCL_3 Remember	0.853			
Vividness		0.845	0.896	0.682
VVD_1 Hear in mind	0.805			
VVD_2 See in mind	0.833			
VVD_3 Feel emotions	0.826			
VVD_4 Revisit setting	0.839			
Memorable Tourism Experience		0.874	0.855	0.598
MTE_1 Hedonism	0.710			
MTE_2 Refreshment	0.878			
MTE_3 Meaningfulness	0.767			
MTE_4 Local culture	0.727			
MTE_5 Novelty *	-------			

Source: Own Elaboration

The Fornell-Larcker criterion for assessment of the discriminant validity (Fornell & Larcker, 1981) was next performed (Table 3). The Fornell-Larcker criterion approach compares the square root of the AVE values with the latent variable correlations. The criterion states that if the square root of the AVE is larger than the biggest correlation with any construct, then discriminant validity is recognised. In this study (Table 3), all constructs met this criterion.

Table 3. Assessment of Discriminant Validity according to Fornell-Larcker Criterion

Fornell-Larcker criterion											
Constructs	ACT	GST	HPT	JOY	LOV	MTE	OLF	SRP	RCL	VIS	VVD
Acoustic	0.914										
Gustatory	0.221	0.954									
Haptic	0.518	0.415	0.935								
Joy	0.310	0.256	0.272	0.822							
Love	0.427	0.329	0.481	0.552	0.864						
MTE	0.267	0.242	0.343	0.416	0.380	0.773					
Olfactory	0.493	0.481	0.661	0.274	0.373	0.334	0.919				
Surprise	0.391	0.214	0.350	0.555	0.576	0.391	0.365	0.854			
Recollect	0.306	0.238	0.342	0.480	0.442	0.489	0.359	0.520	0.844		
Visual	0.372	0.174	0.304	0.480	0.274	0.314	0.316	0.452	0.406	0.852	
Vividness	0.325	0.245	0.373	0.490	0.391	0.558	0.363	0.472	0.651	0.397	0.826

Source: Own Elaboration

The HTMT ratio of correlation was also applied to assess the discriminant validity (Hair et al., 2019). Table 4 shows that none of the HTMT ratio of correlation values were above the recommended threshold (0.85), indicating the satisfactory discriminant validity of the constructs (Carrión, Nitzl, & Roldán, 2017).

Table 4. Assessment of Discriminant Validity on the Heterotrait-Monotrait Ratio of Correlation ($HTMT_{0.85}$)

Heterotrait-Monotrait Ratio of Correlation ($HTMT_{0.85}$)											
Constructs	ACT	GST	HPT	JOY	LOV	MTE	OLF	SRP	RCL	VIS	VVD
Acoustic											
Gustatory	0.230										
Haptic	0.548	0.432									
Joy	0.340	0.277	0.297								
Love	0.461	0.348	0.514	0.614							
MTE	0.309	0.277	0.392	0.497	0.441						
Olfactory	0.526	0.504	0.700	0.299	0.400	0.384					
Surprise	0.421	0.224	0.376	0.608	0.632	0.453	0.393				
Recollect	0.347	0.261	0.380	0.570	0.505	0.604	0.406	0.597			
Visual	0.408	0.187	0.334	0.543	0.298	0.376	0.346	0.489	0.479		
Vividness	0.355	0.266	0.407	0.564	0.434	0.680	0.397	0.523	0.785	0.460	

Source: Own Elaboration

5.2.2 Structural Model and Hypotheses Testing

The researchers used the SmartPLS 3.0 software to examine the structural model, and tested the hypotheses using bootstrapping (5000 re-samples) and path analysis (Ringle, Wende, & Becker, 2015). Collinearity was evaluated with variance inflation factor values, the explanatory power of the model was measured though the coefficient of determination (R2 values) and the model predictive accuracy was assessed using the Stone-Geisser test (Q2 values) (Henseler & Chin, 2010; Ali, Rasoolimanesh, Sarstedt, Ringle, & Ryu, 2018; Hair et al., 2019).

The collinearity of the results through the variance inflation factor show that (see Table 5) values varied in the sensorial attributes sonorous (ACT-4), appetising (GST-1), flavourful (GST-2), tasty (GST-4), handy (HPT-2), soothing (HTP-3), perfumed (OLF-3), and scented (OLF-4) from 5.860 to 8.758, which is above the common cut-off threshold of 5 (Henseler & Chin, 2010; Hair et al., 2014), thereby suggesting that the factors are not highly correlated to one another. However, as shown in Table 4, the other variance inflation factor values (VIF) related to sensorial attributes, emotional states, memorable elements, and MTE, revealed an ideal collinearity (VIF < 3).

Table 5. Variance Inflation Factor Values (VIF)

Measurement indicators	VIF	Measurement indicators	VIF	Measurement indicators	VIF	Measurement indicators	VIF
ACT_1	3.280	JOY_1	1.865	RCL_1	1.708	MTE_1	1.632
ACT_2	2.714	JOY_2	2.472	RCL_2	1.665	MTE_2	2.220
ACT_3	4.968	JOY_3	2.282	RCL_3	1.783	MTE_3	1.543
ACT_4	6.019	JOY_4	2.464	VVD_1	1.707	MTE_4	1.384
GST_1	6.375	JOY_5	1.999	VVD_2	2.393		
GST_2	8.758	LOV_1	3.684	VVD_3	1.818		
GST_3	4.839	LOV_2	3.514	VVD_4	2.499		
GST_4	8.006	LOV_3	2.247				
HPT_1	4.750	LOV_4	3.464				
HPT_2	6.243	LOV_5	2.111				
HPT_3	7.391	SRP_1	3.442				
HPT_4	3.509	SRP_2	4.609				
OLF_1	3.531	SRP_3	2.368				
OLF_2	3.658	SRP_4	2.072				
OLF_3	6.278	SRP_5	2.609				
OLF_4	5.860						
VIS_1	2.059						
VIS_2	1.970						
VIS_3	3.030						
VIS_4	2.147						

Source: Own Elaboration

The coefficient of determination (R2 values) was used to assess the explanatory power of the model, as suggested by Ali et al. (2018) and Hair et al. (2019). Table 6 indicates that the haptic (R2 = 0.092), visual (R2 = 0.138) and gustatory (R2 = 0.231) constructs had an unsatisfactory explanatory power in the structural model as shown by values under the cut-off threshold (R2 < 0.25). All other coefficient of determination values showed satisfactory explanatory ability for the model tested. The model also showed that the relationships between the SEMs explain approximately 40% of MTE establishment (R2 = 39.9%).

Table 6. Coefficient of Determination (R^2)

Constructs	R^2 Coefficient
Acoustic	------
Gustatory	0.231
Haptic	0.092
Joy	0.274
Love	0.301
MTE	0.399
Olfactory	------
Surprise	0.287

Recollection	0.334
Visual	0.138
Vividness	0.301

Source: Own Elaboration

The Stone–Geisser (Q^2) value was obtained by applying the blindfolding procedure. This procedure was applied to all endogenous constructs that had reflective measurement models (Hair et al., 2017, 2019). As shown in Table 7, the Stone–Geisser values for constructs were greater than 0, and values ranged from 0.080 to 0.224, indicating they had a small to medium predictive relevance and validity in the model (Hair et al., 2017, 2019).

Table 7. Model Predictive Accuracy (Stone-Geisser test Q^2)

Constructs	Stone-Geisser Q^2 (=1-SSE/SSO)
Acoustic	------
Gustatory	0.205
Haptic	0.080
Joy	0.176
Love	0.218
MTE	0.193
Olfactory	------
Surprise	0.197
Recollection	0.224
Visual	0.097
Vividness	0.196

Source: Own Elaboration

Next, the researchers examined the hypothesised relationships in the structural model (Table 8), and found that 18 of the 26 hypotheses were supported and 8 hypotheses were not supported. The path coefficient values between the senses and emotions hypotheses showed that: vision had a positive and significant influence on joy (β = 0.403, t = 6.484, p = 0.000*) and on positive surprise (β = 0.325, t = 6.420, p = 0.000*); hearing had a positive and significant influence on joy (β = 0.111, t = 1.984, p = 0.048***), love (β = 0.226, t = 3.516, p = 0.000*) and positive surprise (β = 0.167, t = 3.046, p = 0.002**); taste had a positive and significant influence on joy (β = 0,149, t = 2.775, p = 0.006**) and love (β = 0.160, t = 2.658, p = 0.008**); and touch had a positive and significant influence on love (β = 0.298, t = 3.937, p = 0.000*); supporting Hypotheses H1a, H1c, H2a, H2b, H2c, H3a, H3b, and H5b.

The results between the emotions hypotheses and the memories hypotheses, shown in Table 8, demonstrated that: joy had a positive and significant influence on recollection (β = 0.232, t = 3.284, p = 0.001*) and on vividness (β = 0.305, t = 5.260, p = 0.000*), love had a positive and significant influence on recollection (β = 0.133, t = 2.271, p = 0.024***), positive surprise had a positive and significant influence on recollection (β = 0.314, t = 5.089, p = 0.000*) and on vividness (β = 0.262, t = 4.085, p = 0.000*); validating Hypotheses H6a, H6b, H7a, H8a, and H8b.

Table 8. Path Coefficient Analysis of the Structural Model and Hypotheses Testing

Hypotheses	Path Coefficient (β)	S. D.	*t*-values	*p*-values	Decision
H1a: Visual -> Joy	0.403	0.062	6.484	0.000*	Supported
H1b: Visual -> Love	0.084	0.059	1.420	0.156	Not supported
H1c: Visual -> Surprise	0.325	0.051	6.420	0.000*	Supported
H2a: Acoustic -> Joy	0.111	0.056	1.984	0.048***	Supported
H2b: Acoustic -> Love	0.226	0.064	3.516	0.000*	Supported
H2c: Acoustic -> Surprise	0.167	0.055	3.046	0.002**	Supported
H3a: Gustatory -> Joy	0.149	0.054	2.775	0.006**	Supported
H3b: Gustatory -> Love	0.160	0.060	2.658	0.008**	Supported
H3c: Gustatory -> Surprise	0.035	0.060	0.596	0.552	Not supported
H4a: Olfactory -> Joy	0.000	0.068	0.004	0.997	Not supported
H4b: Olfactory -> Love	-0.039	0.076	0.519	0.604	Not supported
H4c: Olfactory -> Surprise	0.112	0.079	1.424	0.155	Not supported
H5a: Haptic -> Joy	0.030	0.060	0.503	0.615	Not supported
H5b: Haptic -> Love	0.298	0.076	3.937	0.000*	Supported
H5c: Haptic -> Surprise	0.076	0.067	1.136	0.256	Not supported
H6a: Joy -> Recollection	0.232	0.071	3.284	0.001*	Supported
H6b: Joy -> Vividness	0.305	0.058	5.260	0.000*	Supported
H7a: Love -> Recollection	0.133	0.058	2.271	0.024***	Supported
H7b: Love -> Vividness	0.071	0.067	1.060	0.290	Not supported
H8a: Surprise -> Recollection	0.314	0.062	5.089	0.000*	Supported
H8b: Surprise -> Vividness	0.262	0.064	4.085	0.000*	Supported
H9: Recollection -> MTE	0.219	0.070	3.129	0.002**	Supported
H10: Vividness -> MTE	0.415	0.075	5.514	0.000*	Supported
H11: Visual -> Haptic	0.304	0.049	6.190	0.000*	Supported
H12: Olfactory -> Gustatory	0.481	0.052	9.189	0.000*	Supported
H13: Acoustic -> Visual	0.372	0.051	7.263	0.000*	Supported

Notes: *P ≤ 0.001, ** P ≤ 0.01, *** P ≤ 0.05

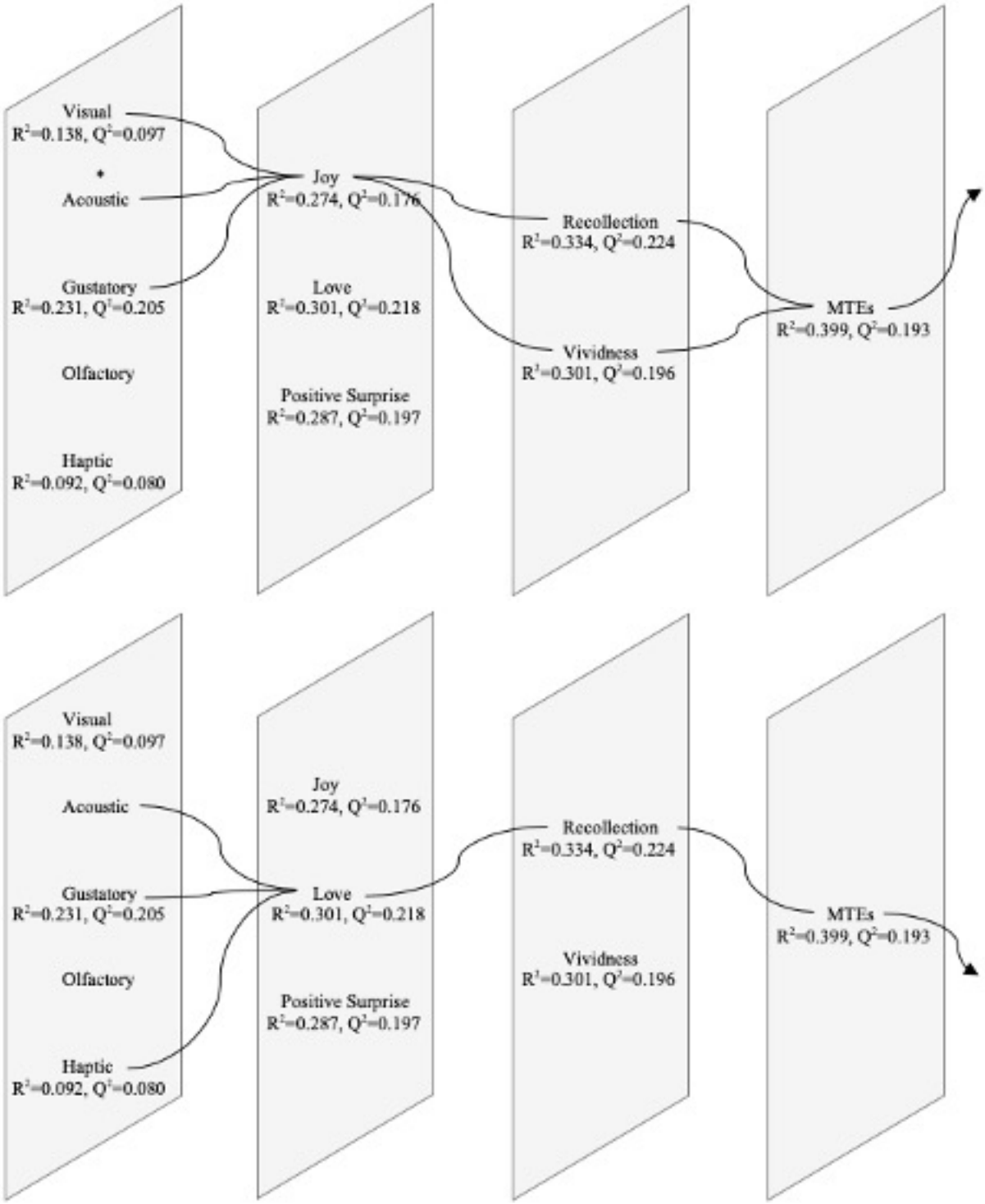
Source: Own Elaboration

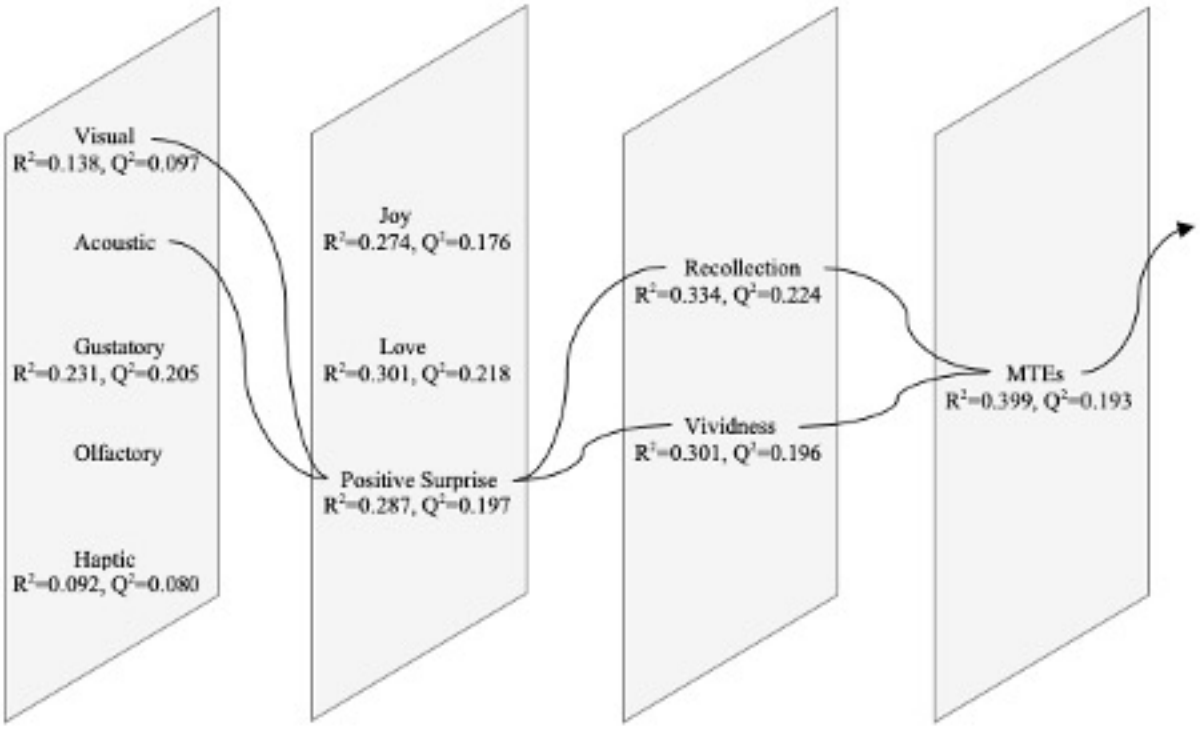
The memorable elements, recollection and vividness, revealed a positive and significant influence on the establishment of MTE, namely, recollection (β = 0.219, t = 3.129, p = 0.002**) and vividness (β = 0.415, t = 5.514, p = 0.000*), supporting Hypotheses H9 and H10. To verify whether vision had a positive influence on touch, smell on taste and hearing on vision, the researchers formulated H11 (β = 0.304, t = 6.190, p = 0.000*), H12 (β = 0.481, t = 9.189, p = 0.000*), and H13 (β = 0.372, t = 7.263, p = 0.000*), and verified that all the hypotheses were supported.

The proposed model explaining the positive relationship between senses (visual, acoustic, gustatory and haptic), emotions (joy, love and positive surprise) and memories (recollection and vividness) to establish a MTE from a tourist's perspective is supported. The results of the model analysis, however, demonstrated three patterns in MTE construction according

to the emotional states experience, namely, joy, love, and positive surprise. The three final structural models are presented in Figure 2.

Figure 2. Three Final Models of the MTE based on Emotional States of Joy, Love, and Positive Surprise





Source: Own Elaboration

6. CONCLUSION

The purpose of this research was threefold: to identify and assess the contribution of the senses, the emotional states and the memorable elements within the tourism experience establishment, to map and model the relationship between the SEMs in experience creation, and to enrich knowledge of the design and implementation of a MTE. This was the first attempt to integrate SEMs and MTE in the same model and test it empirically, and the results showed:

1. An additional understanding of the MTE;
2. The relationship between the SEMs and, perhaps, the MTE constriction;
3. The variance of the SEMs model explains approximately 40% of the establishment of a MTE (R^2 = 39.9%);
4. The olfactory sense had no effect in any emotional states;
5. Three patterns or models of MTE construction according to the emotional states that tourists experience, namely, joy, love, and positive surprise;
6. The results of previous studies related to some senses dominance in the consumer experience context (Demangeot & Broderick, 2010; Krishna, 2012; Lee et al., 2013, 2012), and also confirmed a significant positive influence in a tourism context, namely, visual on haptic, olfactory on gustatory and acoustic on visual;
7. The first use of the sensory item set scale developed by Haase and Wiedmann (2018) in a tourism context to measure the sensory perception of tourists, however, although the results attested the validity of the scale, and allow a clear understanding of the tourism sensory dimension, it should be applied in more studies to ensure its robustness.

The ultimate aim of tourists is to obtain MTE, and the tourism industry needs to be competitive to provide this (Tung & Ritchie, 2011). The globalisation of the tourism industry, along with higher demands on service quality, better experiences, touristic products,

increased competitiveness in the private domain and tourist demands for MTE have revealed a gap in the tourism research in the, "… understanding of what they [tourists] think and how they live experiences" (Mendes et al., 2016, p. 295). Previous empirical evidence was found in the study of SEMs in tourism (e.g., Dias et al., 2017), and this study highlights the role of SEMs, and reinforces their significant positive effect on a MTE. The innovative arrangement of the constructs in the model has revealed that SEMs are related and that they are positively involved in the establishment of the tourism experience in the Algarve, despite only explaining part of the relationship (39.9%).

The relationship between constructs (i.e.: SEMs Model) has proved insufficient to explain the entire MTE construction, however, others studies have analysed the role of the senses in tourism experience (Pan & Ryan, 2009; Agapito et al., 2014; Lo, Wu, & Tsai, 2015; Jelincic & Senkic, 2017; Meacci & Liberatore, 2018), the influence of emotions (Gretzel et al., 2006; Brunner-Sperdin et al., 2012; Esteves et al., 2013; Bimonte & Faralla, 2014; Servidio & Ruffolo, 2016; Park & Santos, 2017), and the effects of memories (Ballantyne, Packer, & Sutherland, 2011; Duarte, 2012; Kahneman, 2012; Ayazlar & Arslan, 2017; Zatori et al., 2018). This research explored the gap between the relationship between the SEMs in the establishment of a MTE, and in particular, the SEMs relational map of the experience process from a tourist's perspective, one that in "… tourism is all about places and people" (Correia et al., 2017, p. 163).

6.1 Limitations and Suggestions for Future Research

Although this study makes several contributions to the study of the MTE, and particularly, the role of the senses, the influence of emotions and the effect of memories, there were several limitations, and important additional elements for future research. One limitation of this study is that it focuses on a particular point of time to develop the data collection, November and December (i.e., low season at the Algarve destination). For future research the data collection should be developed in both high season (i.e., June, July and August) and low season, in order to increase generalisability to the tourism experience. Another limitation of this study was the questionnaire length (3 pages), which was a factor in the withdrawal of participants. Future research should use smaller questionnaires, and/or they should be developed on a digital device with a touchscreen (Tablets, iPad, etc.), because these devices are more appealing and have user-friendly interfaces. The questionnaires were in the Portuguese and English languages, which made participation impossible for tourists who did not know these languages. Future studies should translate the questionnaire to other languages (e.g., German, French and Spanish) to include more tourist nationalities. This research analyses and maps the overall MTE. In the future it seems important to adopt a more detailed posture, that is, a specific experience according to the stage and/or product (e.g., gastronomy experience, wine experience, golf experience, sports and physical activity experience, wellness and well-being experience, etc.) to create a matrix for each particular tourism experience.

ACKNOWLEDGEMENTS

This paper is financed by National Funds provided by FCT- Foundation for Science and Technology through project UIDB/04020/2020.

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APPENDICES

Appendice I.

Questionnaire

UAlg FE UNIVERSIDADE DO ALGARVE

SURVEY
SENSES, EMOTIONS AND MEMORIES IN TOURISM EXPERIENCE

Dear Sir/Madam,
This questionnaire is part of the research carried out under the PhD in Tourism at the Faculty of Economics of the University of Algarve and aims to understand the relationship between senses, emotions and memories in the memorable tourism experience in Algarve.
Your participation is very important to this research and your response is absolutely confidential and only used for the academic purposes of the investigation.

Thank you.

1. During your current holidays do you remember any memorable or unforgettable experience in Algarve?

☐ YES **(please, continue to the following questions)**
☐ NO **(thank you very much for your participation)**

2. Can you describe in detail your memorable or unforgettable experience in Algarve.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____ . (End)

3. To what extent do you associate your experience with the following sensorial attributes?
Circle your answer in each line (1-Strongly disagree, 2-Disagree, 3-Somewhat disagree, 4-Neither agree or disagree, 5-Somewhat agree, 6-Agree, 7-Strongly agree, N/A- Not applicable).

Visual perception (sight):								
	Aesthetic.	1	2	3	4	5	6	7	N/A
	Attractive.	1	2	3	4	5	6	7	N/A
	Beautiful.	1	2	3	4	5	6	7	N/A
	Pretty.	1	2	3	4	5	6	7	N/A
Acoustic perception (hearing):								
	Euphonic.	1	2	3	4	5	6	7	N/A
	Good-sounding.	1	2	3	4	5	6	7	N/A
	Melodic.	1	2	3	4	5	6	7	N/A
	Sonorous.	1	2	3	4	5	6	7	N/A

Gustatory perception (taste):								
	Appetizing.	1	2	3	4	5	6	7	N/A
	Flavourful.	1	2	3	4	5	6	7	N/A
	Palatable.	1	2	3	4	5	6	7	N/A
	Tasty.	1	2	3	4	5	6	7	N/A
Olfactory perception (smell):								
	Fragrant.	1	2	3	4	5	6	7	N/A
	Nice-smelling.	1	2	3	4	5	6	7	N/A
	Perfumed.	1	2	3	4	5	6	7	N/A
	Scented.	1	2	3	4	5	6	7	N/A
Haptic perception (touch):								
	Comfortable.	1	2	3	4	5	6	7	N/A
	Handy.	1	2	3	4	5	6	7	N/A
	Soothing.	1	2	3	4	5	6	7	N/A
	Well-shaped.	1	2	3	4	5	6	7	N/A

4. To what extent do you agree with the following statements regarding your emotions during the experience? Circle your answer in each line (1-Strongly disagree, 2-Disagree, 3-Somewhat disagree, 4-Neither agree or disagree, 5-Somewhat agree, 6-Agree, 7-Strongly agree, N/A- Not applicable).								
I feel cheerful.	1	2	3	4	5	6	7	N/A
I feel delighted.	1	2	3	4	5	6	7	N/A
I feel enthusiasm.	1	2	3	4	5	6	7	N/A
I feel joy.	1	2	3	4	5	6	7	N/A
I feel pleasure.	1	2	3	4	5	6	7	N/A
I feel affection.	1	2	3	4	5	6	7	N/A
I feel care.	1	2	3	4	5	6	7	N/A
I feel love.	1	2	3	4	5	6	7	N/A
I feel tenderness.	1	2	3	4	5	6	7	N/A
I feel warm-hearted.	1	2	3	4	5	6	7	N/A
I feel astonishment.	1	2	3	4	5	6	7	N/A
I feel amazed.	1	2	3	4	5	6	7	N/A
I feel fascinated.	1	2	3	4	5	6	7	N/A
I feel inspiration.	1	2	3	4	5	6	7	N/A
I feel surprise.	1	2	3	4	5	6	7	N/A

5. To what extent do you agree with the following statements regarding the recollection and the vividness of your memories during the experience? Circle your answer in each line (1-Strongly disagree, 2-Disagree, 3-Somewhat disagree, 4-Neither agree or disagree, 5-Somewhat agree, 6-Agree, 7-Strongly agree, N/A- Not applicable).								
As I remember the experience, I feel as though I am reliving it.	1	2	3	4	5	6	7	N/A
As I think about the experience, I can actually remember it rather than just knowing that it happened.	1	2	3	4	5	6	7	N/A
As I remember the experience, I feel that I travel back to the time when it happened, that I am a participant in it again, rather than an outside observer tied to the present.	1	2	3	4	5	6	7	N/A

As I remember the experience, I can hear it in my mind.	1	2	3	4	5	6	7	N/A
As I remember the experience, I can see it in my mind.	1	2	3	4	5	6	7	N/A
As I remember the experience, I can feel now the emotion I felt then.	1	2	3	4	5	6	7	N/A
As I remember the experience, I can recall the setting where the experience happened.	1	2	3	4	5	6	7	N/A

6. How do you evaluate the following statements regarding the result of your experience? Circle your answer in each line (1-Not at all important, 2-Low importance, 3-Slightly important, 4-Neutral, 5-Moderatly important, 6-Very important, 7-Extremely important, N/A- Not applicable).								
I really enjoyed this tourism experience.	1	2	3	4	5	6	7	N/A
I revitalized through this tourism experience.	1	2	3	4	5	6	7	N/A
I learned something about myself from this tourism experience.	1	2	3	4	5	6	7	N/A
I had a chance to closely experience the local culture of a destination area.	1	2	3	4	5	6	7	N/A
I experienced something new (e.g., food, activity, etc.) during this tourism experience.	1	2	3	4	5	6	7	N/A

7. Socio-demographic information:

Gender
- ☐ Male
- ☐ Female

Age
- ☐ Less than 21 years
- ☐ 21 to 30 years
- ☐ 31 to 40 years
- ☐ 41 to 50 years
- ☐ 51 to 60 years
- ☐ More than 61 years

Marital status
- ☐ Single
- ☐ Married
- ☐ Divorced
- ☐ Widow(er)
- ☐ Other: _____

Occupation
- ☐ Employed
- ☐ Self-employed
- ☐ Student
- ☐ Retired
- ☐ Domestic
- ☐ Unemployed
- ☐ Other: _____

Previous visit at Algarve
- ☐ 1st Visit
- ☐ 2nd Visit
- ☐ 3rd Visit
- ☐ more than 3 visits

Education level
- ☐ Primary Education
- ☐ Secondary Education
- ☐ Higher Education

Country of origin
- ☐ Portugal
- ☐ Spain
- ☐ France
- ☐ U.K.
- ☐ Ireland
- ☐ Netherlands
- ☐ Germany
- ☐ Other: _____

Thank you for your participation!

Appendice II.

Measurement Items for all Constructs

Constructs	Measurement Items	Literature Background
Senses	Visual	
	VIS_1: Aesthetic.	
	VIS_2: Attractive.	
	VIS_3: Beautiful.	
	VIS_4: Pretty.	
	Acoustic	
	ACT_1: Euphonic.	
	ACT_2: Good-sounding.	
	ACT_3: Melodic.	
	ACT_4: Sonorous.	
	Gustatory	
	GST_1: Appetizing.	
	GST_2: Flavourful.	Adapted from (Haase & Wiedmann, 2018).
	GST_3: Palatable.	
	GST_4: Tasty.	
	Olfactory	
	OLF_1: Fragrant.	
	OLF_2: Nice-smelling.	
	OLF_3: Perfumed.	
	OLF_4: Scented.	
	Haptic	
	HPT_1: Comfortable.	
	HPT_2: Handy.	
	HPT_3: Soothing.	
	HPT_4: Well-shaped.	
Emotions	Joy	
	JOY_1: I feel cheerful.	
	JOY_2: I feel a sense of delight.	
	JOY_3: I feel a sense of enthusiasm.	
	JOY_4: I feel a sense of joy.	
	JOY_5: I feel a sense of pleasure.	
	Love	
	LOV_1: I feel a sense of affection.	
	LOV_2: I feel a sense of caring.	Adapted from (Hosany & Gilbert, 2010; Hosany et al., 2015)
	LOV_3: I feel a sense of love.	
	LOV_4: I feel a sense of tenderness.	
	LOV_5: I feel warm-hearted.	
	Positive surprise	
	SRP_1: I feel a sense of astonishment.	
	SRP_2: I feel a sense of amazement.	
	SRP_3: I feel fascinated.	
	SRP_4: I feel a sense of inspiration.	
	SRP_5: I feel a sense of surprise.	

Memories	Recollection	
	RCL_1: As I remember the experience, I feel as though I am reliving it.	
	RCL_2: As I think about the experience, I can actually remember it rather than just knowing that it happened.	
	RCL_3: As I remember the experience, I feel that I travel back to the time when it happened, that I am a participant in it again, rather than an outside observer tied to the present.	Adapted from (Kim, 2010; Kim & Youn, 2017; Sheen et al., 2001).
	Vividness	
	VVD_1: As I remember the experience, I can hear it in my mind.	
	VVD_2: As I remember the experience, I can see it in my mind.	
	VVD_3: As I remember the experience, I can feel now the emotions that I felt then.	
	VVD_4: As I remember the experience, I can recall the setting where the experience happened.	
MTEs	MTE_1: I really enjoyed this tourism experience.	
	MTE_2: I revitalized through this tourism experience.	
	MTE_3: I learned something about myself from this tourism experience.	Adapted from (Kim, 2018; Kim et al., 2012).
	MTE_4: I had a chance to closely experience the local culture of a destination area.	
	MTE_5: I Experience something new (e.g., food activity, etc.) during this tourism experience.	

DESTINATION FOODSCAPE – A HOLISTIC CONCEPTUAL FRAMEWORK

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Dora Agapito[2]
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ABSTRACT

While destination foodscape experience is a subject of growing interest, most studies have been dominated by a management and marketing approach. This theoretical research builds upon current literature on destination foodscape and identifies diverse elements that can influence the destination foodscape experience. The research contributes to different social science fields by drawing a multidisciplinary holistic conceptual framework that can help to better understand the importance of food systems. This reflection indicates that place and space as well as performance in connection with consumption are essential for foodscape destination analysis. Findings suggest that by complementing different social sciences, considering different academic points of view and taking different stakeholders into account, the proposed holistic conceptual framework allows for a deeper and wider understanding of destination foodscape.

Keywords: Destination Foodscape, Conceptual Framework, Food System, Consumption, Performance, Experience.

JEL Classification: L83

1. INTRODUCTION

Food tourism experience research is well known, mainly from an 'experiencescape' perspective (Quan & Wang, 2004) on food-related inputs resulting from participation in activities or from social interaction (Mossberg, 2007). In the context of services marketing, research on 'scapes' is usually attributed to Bitner's (1992) framework around the servicescape. This construct entails an understanding of how physical characteristics of a service environment can influence the behaviour of service providers and consumers. Bitner argues that it would be possible to steer or influence consumer experiences and service quality through a better understanding of how cognitive, affective and behavioural inclinations are influenced by the environment (symbols, space and artefacts; see Pine & Gilmore, 1998).

This principle was expanded within tourism studies because it opened a floodgate to related 'scapes' in which destination tourism experiences were explored (O'Dell, 2005), not just as external environments but also internal ones, that is, emotional, psychological and sensorial environments. Mossberg (2007) suggested the concept of experiencescape, arguing that the tourist experience is influenced by the environment, products and souvenirs. Thus, it is important to communicate the core values of the destination via storytelling or

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theme design (staging) in order to ensure a 'more meaningful experience' (p. 71). Mossberg recognised that the tourist experience is beyond the full control of the service provider. Consumer experience within the context of tourism depends on interactions with others as much as with products. Consumers are active in their experiences and co-create value (Prahalad & Ramaswamy, 2004), which requires an approach that invites consumer theories developed in various disciplines (Mossberg, 2007).

Foodscape is a context-specific experiencescape within tourism studies which is focussed on food-related experiences, such as those which occur in destinations that highlight food experiences as part of their brand. Foodscapes are dynamic in nature and allow travellers to bring their experiences back home in the form of memories, souvenirs and new behaviours (Dolphijn, 2004). They can occur in organised environments common to tourism services – such as hotels and restaurants – and also in non-organised environments that are part of everyday life (Long, 2010) – like beaches and bakeries. Some are even in co-organised environments (Vargo & Lusch, 2004) which are usually present in co-created experiences.

Björk and Kauppinen-Räisänen (2019) defined destination foodscapes as every type of food-related environment in which a tourist has a given experience that is 'constantly being produced and reproduced in staged and non-staged foodscapes by a varying set of actors' (p. 468). In terms of destination foodscape research centred on food consumption, D. Su et al. (2020) concluded that foodies' motivation intentions towards food travels is influenced by sensory experience (taste of food), intangible experiences (cultural experiences) and psychological experience (learning and connecting), which in turn is related to the destination foodscape (in both its core as well as its complementary scopes). Destination foodscape can contribute to memorable experiences mostly from experience quality, environment typology, interaction and immersion.

While food tourism has been mostly focused on motivations, and (destination) foodscape has centred on experience evaluation following a managerial approach (Björk & Kauppinen-Räisänen, 2019; D. Su et al., 2020), it is argued that other dimensions have been toned-down, namely performance, place and space, and food system (Yasmeen, 2005). Additionally, although we can define the concept, there is no broad holistic guideline which encompasses all the dimensions and perspectives that must be considered when researching destination foodscapes. By a holistic approach, we refer to the recognition that a destination foodscape is more than the sum of its parts; thus, relevant theoretical contributions from different social sciences and academic fields in which foodscapes have been researched should be considered. To showcase this, we shall first categorise the components and dimensions of the theoretical frameworks presented by Björk and Kauppinen-Räisänen (2019) as well as other studies within tourist experience research.

This research also covers broad theoretical and empirical contributions to produce an adequate and operational research framework that features the characteristics of a food system followed by the performance dimension, both primarily influenced by a socio-anthropological approach. Finally, it highlights the place and space dimension, which is generally influenced by human geography. We attempt to demonstrate other key variables that need to be considered and propose a holistic conceptual destination foodscape framework based on the theoretical and empirical contributions from other social sciences. Before presenting and discussing our proposal, we first dwell on the contributions of marketing and management on this subject, followed by the contributions from the social sciences.

2. MARKETING AND MANAGEMENT DESTINATION FOODSCAPE FRAMEWORK

Marketing and management approaches attempt to anticipate and manage tourist satisfaction and attitudes towards food products or experiences in a destination (Hashimoto & Telfer, 2006) by providing memorable and enjoyable experiences for tourists (Björk & Kauppinen-Räisänen, 2016). This link between local food consumption and satisfaction can result in higher tourist revisit probability (Ignatov & Smith, 2006; Björk & Kauppinen-Räisänen, 2016, 2019) by establishing an emotional connection with the destination (Tsai, 2016). This connection is based on a memorable moment with a specific gastronomic identity (Chandralal & Valenzuela, 2013) that can be influenced by destination attachment and trust (Han et al., 2021).

In fact, from a demand-side overview, several studies have related motivation and behaviour to gastronomy (Fields, 2002; Ignatov & Smith, 2006; Björk & Kauppinen-Räisänen, 2016), perceived food image (Chi et al., 2013; S. Kim, Choe & Lee, 2018) and imagery and consumption (Karim & Chi, 2010). As for typologies proposed so far, Fields (2002) identified four food-related motivation typologies (cultural, interpersonal, physical and status) and Santa Cruz et al. (2019) segmented travellers according to their gastronomic experiences (survivors, enjoyers and experiencers). Özdemir and Seyitoğlu (2017) divided gastronomical quests into three typologies and Björk and Kauppinen-Räisänen (2016) into three gastronomy-related behaviour groups. Finally, Boyne et al. (2003) categorised tourists according to their information searches.

Some researchers have identified dimensions that influence food tourism consumption in relation to sociodemographic profiles (Sengel et al., 2015; Gupta et al., 2019), tourist's evaluation of dining experiences (Chang et al., 2011), satisfaction and physical environments in restaurants (Han & Ryu, 2009), tourist's memorable food and culinary experiences (Stone et al., 2018) and even other attributes related to tourist's satisfaction with street food experiences (Jeaheng & Han, 2020). Some researchers have studied consumption's connection to the quality of products and the competence of providers (Mahfud et al., 2019), innovation (Hjalager & Wahlberg, 2014; Marwanti et al., 2020), the origin of food – local ethnic food consumption (Addina et al., 2020) – and intangible heritage consumption (Y. Kim & Eves, 2012).

However, the relationship between tourist–object cannot be understood as separate from society's role in setting the stage or mediating the interaction between hosts and guests. It is critical to understand the gastronomic discourse in order to properly convey it (see Beer, 2008). In fact, Rosenbaum and Massiah (2011) proposed the *social dimension* and socially symbolic meanings as key environmental dimensions for servicescape perception. As Hillel et al. (2013) put it, "By deciphering (…) the gastronomic discourse, tourists can either accept or refute the existence of an organic link between food, place and community" (p. 202), and by doing so, food, community, and place can be linked.

The close link between behaviour studies and marketing is clear since knowledge of behaviour and motivation allow for a better food marketing strategy for tourists (Hillel et al., 2013; Broadway, 2017). The importance of branding food culture in a destination (Pearson & Pearson, 2017), food tourism policy (Slocum & Everett, 2010), destination image (Henderson, 2009), food web marketing (Mohamed et al., 2012) or city marketing (Amore & Roy, 2020) are some of the issues that have been tackled by researchers within management and marketing.

Some authors have focused on specific foodscapes, such as markets, in tourism destinations, (Björk & Kauppinen-Räisänen, 2016), including location and accessibility (Dimitrovski & Crespi-Vallbona, 2017), satisfaction and intention to revisit (Crespi-Vallbona & Dimitrovski,

2016), visitor segmentation (Castillo-Canalejo et al., 2020), merchant response to food markets, adaptation to tourism and gentrification (Maskov & Shoval, 2020). Even the dimensions and attributes that lead to food souvenirs have been studied – namely sensorial, utilitarian and symbolic dimensions (Lin & Mao, 2015).

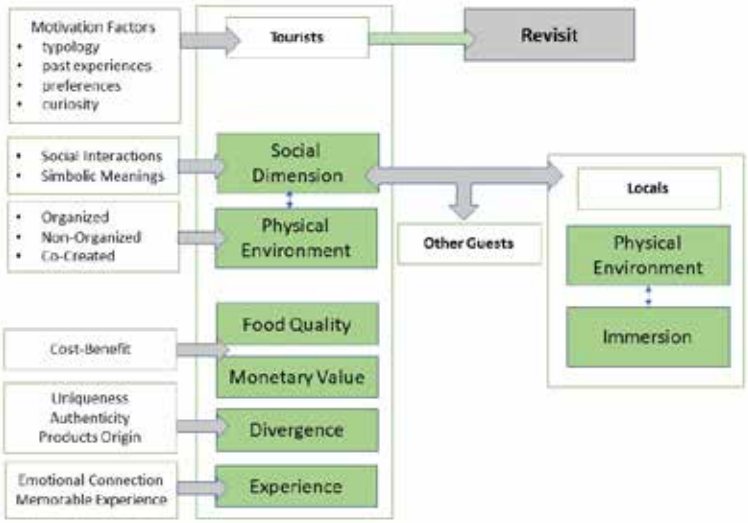
Others added destination foodscape-related environment studies– like food or culinary routes from the supply side (Mei et al., 2016), food harvest routes and experiences (Merkel et al., 2021), traditional food production facilities (Morales et al., 2015), urban foodscapes (Nelson, 2016), street food (Gupta et al., 2019) and museums (Hjalager & Wahlberg, 2014).

Foodscape research in management and marketing has expanded with regard to destination, food and market development (Henderson, 2009) and is mainly focussed on the management of external environment stimuli. One of the most important studies within this approach is by Björk & Kauppinen-Räisänen's (2019), whose concept of destination foodscape recognises that tourists experience a destination foodscape with a set of distinctive motivating factors drawn from the tourist's typology, past experiences, personal preferences and level of curiosity. Additionally, tourists evaluate the experience at a destination foodscape through six main dimensions (see Figure 1, adapted from Björk and Kauppinen-Räisänen [2019] p. 472), namely:

1. Social dimension (from perceived symbolic meanings to interactions with locals and other guests);
2. Physical environment (where the experience takes place, be it organised, unorganised or co-created settings);
3. Food quality (of the consumed products);
4. Monetary value (in comparison with other destination food experiences);
5. Divergence (uniqueness in relation to authentic local experiences and product origin);
6. Experience (specifically, emotional connection and memorability). This dimension relates to D. Su et al.'s (2020) study on foodies as a core foodscape consumer type, allowing us to consider this as part of authenticity.

These dimensions, in turn, manifest positive or negative responses that may lead to tourist's revisit and intentions to recommend destinations. A destination foodscape framework should simultaneously consider the importance of immersion for local costumers and guests.

Figure 1. Destination Foodscape Framework in Management and Marketing



Source. Own Elaboration

Research on destination foodscape has proposed and tested this management and marketing approach by analysing specific elements (or variables) in tourists' discourses. However, a few challenges come to mind; the most evident is the realisation that this framework focuses on tourists' evaluations of their experiences and mostly ignores the destination foodscape itself. Foodscape studies mainly focus on the social interactions and symbolic meanings among the immediate network of participants that interact with the tourist (other tourists, local costumers and service providers).

Destination foodscape is assumed to be an internal experience, detached from production, from its food system, from indirect relations and from the impacts it creates. Looking only at tourists' perceptions, this framework overlooks the food system and connected values, norms, culture and identity that are in play within the physical environment, disregarding the social and environmental system to which they belong. This framework is also focused on social interactions and services directed towards the tourist. It is important to reinforce that local costumers have agency, goals and interactions, and consider tourists' performances, which is a central dimension that helps reveal motivation and social behaviour. These are some of the issues tackled in this research with the goal of providing inputs that may fill some of the existing framework gaps. Let's begin by looking into the food system and its relation to motivations.

3. CONSUMING OTHER FOOD SYSTEMS: TASTING ELSEWHERE

Food consumption, regardless of its environment, is a form in which to communicate culture and its symbolic meanings via interactions during consumption rituals, both ordinary and extraordinary. Sociology stresses that *Food Systems* are mirrors of a greater social system that is in play (Douglas, 1975) in which values (De Soucey, 2010), rules and meanings are (re) produced (Mintz, 1985). We argue that every destination foodscape is part of a specific food system with its own social and environmental system, cultural identity, set of values, rules and meanings.

In anthropology, the food social system is understood as a process that reproduces cultural identity via *performance*, which means there is always a goal-driven cultural performance of consumption that moulds eating practices and individual and collective identity. Destination foodscapes are a small and specific part of the *food social system* in which production/producers and consumption/consumers are interactive dynamic forces within tourist consumption. The individual agency produces a continuous social change as an outcome of the experience that in turn influences cultural identity in the food social system in an ever-dynamic loop.

New sociology discussions on postmodernity consumption (Richards, 2014) are pulling researchers to take a look into newfound tourist interest in local/traditional food products, primarily as a gateway to reveal today's culture consumers (Kiralova & Hamarneh, 2017), its relationship to the need for a contrast with daily life and how it can determine tourist experiences (Quan & Wang, 2004). Cohen (1979) would argue that tourist motivations to consume a destination foodscape come from the opportunity to experience something beyond their ordinary life ('centre out here'). Experiences that vary according to specific desired modalities (recreational, diversionary, experiential, experimental and existential) can vary even within a single trip. Every destination foodscape is an experience specific to a *Food System* in which curiosity and opportunism also play key roles (McIntosh et al., 1995).

The desire to taste food elsewhere can also be influenced by past experiences and related emotions (Leri & Theodoridis, 2019; Sthapit et al., 2019) and by personal preferences, such as price (Wall & Mathieson, 2006), media exposure or other external factors (S. Kim et al., 2019); in other words, a range of different motivations that can lead to consumption.

In this research, we have divided destination foodscape consumption analysis into three distinct dimensions: the tourist's *experience evaluation* (based on Figure 1), the tourist's *performance*, and *place and space*. At this point, we shall address the place and space dimension, followed by the performance dimension.

4. CONSUMING A PLACE AND SPACE: TASTING CULTURAL LANDSCAPES

Foodscape was used by Yasmeen (2005) as a means to analyse the spatial relationship with food and was an expansion on Appadurai's (1990) concept of scapes that understood tourists' cultural consumption as attempts to temporarily experience the everyday life of others. Foodscape is understood as a symbolic binary relationship between food and *place* (Adema, 2006). Yasmeen (2005) proposed foodscape as an individual subjective imaginary construct that is the result of tensions between the global and the local in modern society (Bell & Valentine, 1997) in which multiple people, places, and meanings struggle in a power relation (Panelli & Tipa, 2009). Foodscapes are then opportunities to observe and study social change within a food-related context, specifically the role of foodscapes in industrialised and post-industrialised contexts on a global scale (Mintz & Dubois, 2002), and the multiple ways tourism fluxes can influence foodways (Teixeira & Ribeiro, 2013).

Foodscape studies in human geography are seen as a chance to deepen *place* knowledge through social relations and their interrelationships. Food tourism research has come to be about the production and consumption of *places* (Everett, 2012) and *spaces* (see Bell & Valentine, 1997) where food is recognised as material culture. The food we consume is seen as cultural artefacts that can only be understood in relation to spatial as well as social contexts in which globalisation, cultural materialisation of the economy and a commodity fetish allow for an understanding of the 'geographies of displacement' (Cook & Crang, 1996). Place is not assumed geographically but as a shared social construct between hosts and guests.

Foodscapes in different geographies of food tell stories about how production and consumption reveal deep economic tensions, inequalities and issues of power (Goodman, 2015). Studies have shown how inequalities in socioeconomic conditions (Yasmeen, 2005), nutrition (Smoyer-Tomic et al., 2006), food access and health (Miewald & McCann, 2014; Lebel et al., 2017; Pinho et al., 2020), wellbeing (Panelli & Tipa, 2009), food (in) security (Hainstock & Masuda, 2019) and food governance (Sonnino, 2014) can flourish in different foodscapes. But foodscapes also rely on alternative food networks, on the need to reconnect producers and consumers and to reduce inequalities through behavioural changes in consumption. Foodscape research allows us to 'identify and analyse the socio-spatial manifestation of human-food activities, foodstuff and subsequent social or health implications' (Panelli & Tipa, 2009, p. 456). Sociology has also recognised how food studies are advantageous in order to analyse symbolic meanings and materiality in society. Ranging from gender to race studies, power relations to inequalities, from micro to macro, many studies have been on food-related issues (see Murcott, 2019) of contemporary consumption (Paddock, 2011).

Destination foodscape entails *relational materiality* that states how food consumption can tell tales of inequality, thereby closing the gap to sociological studies in which food geographies can be (re)defined (Goodman, 2015). There is an interdependent relation between the human dimension of foodscapes and the environmental or terrain dimensions. For human geography, destination foodscape must be understood as a multidimensional experience that crosses *places* and their shared social construct (social relations among consumers and producers) with *spaces*, namely the environment (or spatial setting). This

intersection of places and spaces establishes relational materiality that crosses culture – local cultural tradition and people – with the environment – natural and social. This nexus exposes impacts, contentions, disparities, inequalities and other issues in the existing relations and interactions at a destination.

This focus on the intersection of places and spaces relates to Pizam and Tasci's (2019) argument that we should focus on the perspectives of different stakeholders or on moderating factors and not just consumers and providers in experiencescape research. This also leads us to the next and final dimension to consider in destination foodscape research: performance.

5. FOODSCAPE PERFORMANCE

Foodscapes are built upon values which are attached to specific food items or ways of preparing and consuming food, reinscribing social identities for both individuals and groups (Chan & Farrer, 2021). It is a dynamic place where food actors relate and act differently within their food environment and existing social structures depending on their perceived goals and where authenticity is understood as a performance and not as a specific product or plate. An anthropo-sociological approach to tourist performance reveals that there are three main goals that tourists seek to achieve: *identity formation, sensory and cultural consumption* and *social distinction*.

For anthropologists, the role of food tourism in *identity formation* in postmodern societies became a point of interest (S. Kim & Iwashita, 2016) after the link between place and identity as part of the same symbolic landscape was made, thus welding the sociocultural and environmental dimensions (Adelson, 2000). Food is a form of cultural consumption and it builds identity and moulds a person (Mak et al., 2012) through a ritualised performance (eating practices) in which food sharing and eating together are understood as social ideals.

Anthropology studies on this subject have ranged from slow foodscapes (Grimaldi et al., 2019), gender and food production (Tucker, 2020), pop-up restaurants as temporary *communitas* building (Bardone & Kannike, 2018), and others all the way to digital foodscapes (Schneider & Eli, 2021) and connecting food to culture and identity building, especially local food (Berris, 2019) in relation to heritage (Mercado & Andalecio, 2020).

Food is an opportunity to interact and to exchange and share with others, hence communication and food consumption are connected (Karrebaek et al., 2018). They are an integrated part of both the physical–physiological and social–symbolic aspects (Cohen & Avieli, 2004) which connect different environments or systems (Bessière, 1998), relating food tourism consumption to globalisation processes (Mak et al., 2012), identity (De Jong & Varley, 2001) and rules and meanings (Atkinson, 1983); a *cultural* as much as *sensory consumption* and an opportunity to study the cognitive and bodily engagement of place (see Everett, 2019), thereby expanding our understanding of food consumption beyond the visual and into the multisensorial linking of embodiment with performativity (X. Su & Zhang, 2020). A focus on symbolic meanings rather than on action is intended to highlight the non-material and its role in tourism performance.

Another important element in foodscape performance is the goal of *social distinction*. In terms of foodscape research, sociology does not see the food environment as an external dimension. The symbolic meanings and their relation to materiality precede it, setting the stage and conducting the orchestra of interactions, relations and motivations; an unconscious, active force that drives actions, perceptions and behaviours. Anchoring on Pierre Bourdieu's contribution, some researchers use foodscape studies to better understand class culture and relations and other everyday practices of consumption (Bourdieu, 1984). Warde and Martens (2000) showed how eating in restaurants entails a display of distinctive

class identities, and Mennel et al. (1992) discussed how taste is morally valued and thus can be used to discriminate against others. Studies like these take us back to Bourdieu's proposition that culture consumption has a social function of marking and legitimating social differences between social subjects (Paddock, 2011). A distinction between 'us' and 'them' that is based on socio-economic, cultural and moral attributes (Southerton, 2002).

As Bennet et al. (2009) and Mellor et al. (2010) found, food consumption in different foodscapes contributes to establishing, and reinforcing relational networks through *performance*. The same purpose of distinction can occur in the way people prepare and consume food (Ashley et al., 2004; DeSolier, 2005), or where they consume it. Among the most common motivations for destination foodscapes are broad perceptions of authenticity and exoticism. These require cultural capital to appreciate or value, hence playing into the class distinction argument (Johnston & Baumann, 2007) to justify different consumption behaviours and attitudes (Johnston et al., 2012). Recently, some researchers have also studied food literacy (Mikkelsen, 2020) in order to better understand the values shared by people, re-educating them on food consumption practices (Oncini, 2019).

Sociologists are also concerned with ethnic foodscapes, meaning how ethnicity and food can reveal social inequality and hidden hierarchies (Ray, 2016), primarily through ethnic food consumption in restaurants (Miranda-Nieto & Boccagni, 2020) or consumption attitudes in certain cultural environments (Yalvaç & Hazir, 2021). Others look at ethics in food consumption in both consumers and rural producers (Carolan, 2020) and in workers (Woodhall-Melnik & Matheson, 2017) in relation to globalisation and modernity (Zhang, 2018) and as a theoretical debate on normality and deviance (Koskenniemi, 2019).

In a nutshell, these studies anchor on Bourdieu's proposition that individuals' *habitus* form a lifestyle construct that guides them to value or not value given propositions or choices. This social orientation builds a world view that orients the actors' predispositions that are manifest in choices according to their different accessible resources (capital). This sense of place allows the actors to morally judge others that are outside their worldview and to reinforce their own (Paddock, 2011; Hiamey et al., 2020). Sociology teaches us that modernity is a complex force that sets the stage for tourism performances in which senses, culture and identity have a role in defining the individual's worldview as set by class culture, a key feature of the social distinction function. Destination foodscape is, then, one specific and privileged stage from which to observe and study this performance.

Only by considering performance as a separate dimension of analysis can we properly look at it based on a set of classifications and rules and look at food environments as foodscape displays (Winson, 2004). Destination foodscapes must also be approached as staged performances connecting senses, cultural predispositions and social identity. This means that more attention must be given to consumer and provider motivations to consume and promote within a given destination foodscape as it can help us understand what kind of distinctive experience the actors look for, and for the provider, the values and ideas about the destination's culture that they are trying to reinforce and promote.

6. CONCLUSION

By going back to the contributions of several social sciences on foodscape research, we have uncovered different contributions that have helped to draw a comprehensive conceptual framework that improves upon Björk and Kauppinen-Räisänen's (2019) proposition; one that attempts to cross dimensions, perspectives and approaches to foodscape studies by applying them in one holistic destination foodscape framework. We propose a model that reflects the dynamics and fluidity that the destination foodscape encapsulates.

The Food System (Figure 2) is a specific social environment with a predefined identity, perceptions, values, rules and meanings which exist before tourists arrive at the destination foodscape. Consumption is driven by motivating factors influenced by the said food system; hence, to understand the motivations, it is key to know the tourist's typology, past experiences, personal preferences and level of curiosity. This reveals the tourist's perceived expectations and how they may play into their experience evaluation, the performance.

Consumption requires an understanding of the Place and Space specific to the destination foodscape. This means that the connections between products, providers, producers and the local community as well as the shared social construct and environment most be considered. Only then can we establish the relational materiality that the destination foodscape may be creating, the foreseeable outcomes for the community and the influence on the tourist's experience.

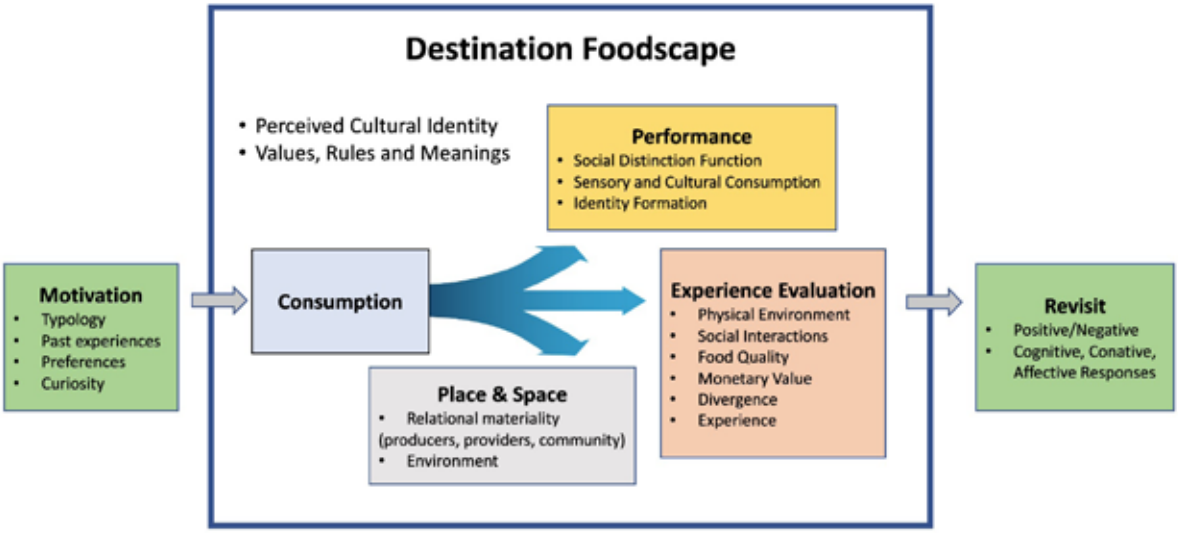
Consumption also entails performance. Understanding a tourist's performance helps to know their goals, namely how the experience facilitates social distinction and identity formation through a specific sensory and cultural consumption (socio-anthropological contribution). This not only relates to motivation and evaluation but implies a social and behavioural change that can be studied to understand the destination foodscape that is being communicated and how the experience can influence the food system's future social and environmental changes.

Drawing mostly from business and marketing, the experience evaluation depends on: (a) the physical elements surrounding the experience (design, comfort, environment, typology, etc.); (b) the level of competence of the providers (servants, chefs, entertainers, tour guides, etc.); (c) the perceived quality and monetary value of the consumed product and its uniqueness (divergence); and (d) the perceived experience, namely the level of emotional connection and memorability.

This evaluation, in turn, results in a set of cognitive, conative and affective responses that can be positive or negative, influencing the overall evaluation and the chance of a future revisit. The relation between emotional response and positive loyalty (revisit intention) has been broadly demonstrated (see Godovykh & Tasci, 2020) and underlines the significance of looking at a destination foodscape as a material and immaterial performative experience.

As the proposed framework in Figure 2 shows, destination foodscape research implies diving into an intricate system of values, relations, performances, experiences and outcomes that are dynamic and, therefore, require a holistic approach that reflects its complexity. This framework expands upon previous contributions and reveals that understanding the tourist experience requires a much broader theoretical approach. It stands to reason that research on this subject demands a multidisciplinary approach capable of tackling a multifaceted scenario with different actors, environments, relationships, connections and outcomes.

Figure 2. Destination Foodscape Framework



Source: Own Elaboration

This study considers that destination foodscape is a complex setting that is still lacking a conceptualisation framework which encompasses holistically different social scientific approaches and perspectives. Recent authors have successfully tried to broaden the approach to destination foodscapes (Björk & Kauppinen-Räisänen, 2019) and others have successfully deepened it (D. Su et al., 2020). However, we believe that this subject can benefit from an even more intrinsic approach woven by even more scientific disciplines.

With that goal in mind, and after a brief take on food tourism contributions, we have reviewed key studies and theoretical contributions from sociology, anthropology, human geography and management and marketing studies to build a holistic framework that helps to better operationalise the concept. The proposed holistic destination foodscape framework not only fills the gaps needed for a broader model but also opens the door to variables to test and potentially correlate in future research. It goes beyond the tourist's immediate experience evaluation and into the relational materiality created by place and space as well as the importance of the tourist's performance in the destination foodscape context. It also emphasises the role and perception of different stakeholders, from providers and producers to the very communities at a destination (Pizam & Tasci, 2019). By bringing multiple approaches to the destination foodscape framework, this paper goes beyond the marketing studies approach, thereby gaining conceptual robustness and theoretical validation.

Given the importance of the tourist experience for tourism success, this research contributes to better understand destination foodscape experiences and, therefore, improve the overall tourist experience. This approach also allows for a better understanding of the role of communities and society at large in these experiences. By highlighting how people are central in the success of tourism, it is possible to better understand how their values, norms and attitudes become key elements in the tourist's experience and satisfaction. Public policy and planning in a given destination must not only consider provider and consumer but also environments and social systems that are in play in a destination foodscape.

The main limitation of this research is that even though it recognises the complexity of the destination foodscape framework, the framework requires empiric testing. Future research should test the proposed framework to determine its empirical viability, ensure its operationalisation and multidisciplinary value, and even finetune the framework by discussing it with food tourism research experts using, for example, a Delphi method or

focus group discussion approach. We also consider it pertinent that future destination foodscape research tackles co-organised experiences since it may help us better understand the relations between the aforementioned dimensions.

ACKONWLEDGEMENTS

This article is financed by National Funds through FCT – Foundation for Science and Technology under the UIDB/04020/2020 project.

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INTENTION TO VISIT ECO-FRIENDLY DESTINATIONS FOR TOURISM EXPERIENCES: AN EXTENDED THEORY OF PLANNED BEHAVIOR

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ABSTRACT

The purpose of this study is to investigate consumers' intentions to visit eco-friendly destinations for tourism experiences by developing an integrated structural model that incorporates the TPB model with an additional construct, i.e. environmental friendly activities (EFA). Data was collected via a web-based survey and then analyzed. The related hypotheses have been tested using Structural Equation Modeling (SEM). The sample consists of 471 responses from Indian consumers. The findings reveal that attitude, subjective norm, perceived behavioral control and environmental friendly activities are significant predictors of intention. These constructs explained approximately 50 percent of the variance in the intention. The results of this study contribute to the body of the knowledge of intention, eco-friendly destinations, and tourism experiences and also provide useful information for developing effective marketing strategies to encourage consumers to visit eco-friendly destinations for tourism experiences. To the best of the researchers' knowledge, this was the first attempt to predict the intention to visit eco-friendly destinations for tourism experiences by employing TPB along with the EFA construct.

Keywords: Theory of Planned Behavior (TPB), Intention, Eco-friendly Destinations, Environmental Friendly Activities (EFA), Tourism Experiences.

JEL Classification: L83, Q01, Q56, Z32

1. INTRODUCTION

Experiences are generated by expressed or implied behavior, perception, cognition, and emotions (Oh et al., 2007; Jurowski, 2009). Experiencing something new is something one does for his/herself. Backgrounds, values, attitudes and beliefs are the factors that contribute to the individual's unique experience (Knutson et al., 2007). The process of visiting, learning and participating in activities in a setting that is different from one's environment creates tourism experiences (Stamboulis & Skayannis, 2003; Jurowski, 2009). An individual's tourism experience is a multifunctional leisure activity that can be either educational or entertaining or both (Ryan 1997; Li, 2000). Every tourism activity creates an experience whether positive or negative. Hence, visit to all eco-friendly destinations must be set up to provide consumers with an unforgettable and unexpected tourism experience (Dalonso et al., 2014). The subjective personal responses and feelings associated with tourism activities are

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referred to as consumer tourism experiences (Chen & Chen, 2010). The ability of tourism companies to attract and retain consumers is dependent on their ability to create memorable tourism experiences (Kandampully et al., 2011; Leung et al., 2013; Sugathan & Ranjan, 2019).

Eco-tourism, sustainable tourism, environmental friendly destinations and environmental friendly activities are the terms used to describe tourism that is good for the environment. All of these terms are interrelated. Eco-tourism is a kind of tourism taking full responsibility for the economic, social and environmental effects of its present and future and addressing the requirements of its tourists, industry, environment and host communities (Ahmad et al., 2020). Tourism is an activity that is economical and requires economic, social, cultural, and environmental inputs across traditional industries. It is, therefore, referred to as multi-faceted (Lickorish & Jenkins, 2011). Eco-tourism is growing at a rate that is nearly three times the rate of tourism in general (Hultman et al., 2015; Ahmad et al., 2020). Similarly, sustainable tourism is a journey that not only concentrates on reducing the damage caused to the natural environment by tourists but also requires sustainable growth of the contribution of tourism to the economy, culture and society and the sustainable use of resources and environment. This research will help to create awareness of eco-tourism's purpose (Liu, 2003; Pham & Khanh, 2020). Plenty of tourists are becoming more aware of the environment and prefer green destinations and services, showing their desire to visit environmental friendly locations (Vandermerwe & Oliff, 1990; Mendleson & Polonsky, 1995; Manaktola & Jauhari, 2007; Han et al., 2010). It's not surprising that sustainable tourism is becoming a booming industry that we, as a community, are becoming more mindful of and trying to minimize our global impact (Ashraf et al., 2019). Since environmental sustainability amongst customers is becoming increasingly significant; environmental concerns, business ethics, moral values and social competence have become more crucial for competing in tourist areas (Manaktola & Jauhari, 2007; Baker et al., 2013; Yarimoglu & Gunay, 2019). Walsh and Dodds (2017) explain that there has been a favorable relationship between competitiveness, economic performance in organizations and low-cost methods to sustainable development that focus on operational efficiency.

Providing guests with the opportunity to experience more about nature in ways that lead to better understanding, appreciation and pleasure is an important component of visiting an eco-friendly destination. An eco-friendly destination should increase visitors' understanding and awareness of the natural environment, as well as encourage them to participate in environmental friendly activities (Lee & Moscardo, 2005). As a service-oriented sector, the tourism industry is heavily impacted by the quality of the tourism experiences in its services and facilities (Abdul Gani et al., 2019; Abbasi et al., 2021). This study investigates the tourists' visit intentions to visit eco-friendly destinations by utilizing the TPB. The study incorporated an additional construct i.e. environmental friendly activities that assesses the experience and implications of intentions. Environmentally friendly and environmentally responsible are the terms that represent the activities that are beneficial for the environment (Roberts, 1996; Manaktola & Jauhari, 2007; Jang et al., 2015). Environmental friendly activities gradually increase people's understanding of the environment, including their behavior in a given situation (Rannikko, 1996; Ahmad et al., 2020). It is expected that increased consumer awareness and interest in eco-friendly destinations for tourism experiences will influence consumer visit intention. The intention to travel to environmentally friendly destinations for tourism experiences can be considered pro-environmental, inspired by compassion for others, coming stages, or the environment as a whole (Ashraf et al., 2019). This research assessed the intentions of customers' to explore eco-friendly destinations for tourism experiences by developing an integrated structural model that incorporates an additional construct, EFA, into the TPB model.

In the following sections, the concepts of the TPB and environmental friendly activities (EFA) are discussed. Next, the research methodology, covering research instrument, data collection & sample traits and data analysis, have been explained. The results are then analyzed ahead of the discussion and theoretical & practical implications. At last, limitations and directions for further researches have been given.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1 Theory of Planned Behavior (TPB)

The TPB was propounded by Ajzen (1985, 1991), who integrated perceived behavioral control (PBC) into the theory of reasoned action (Fishbein & Ajzen, 1975). The TPB is empirically supported and among the most frequent theoretical frameworks used to anticipate and analyze human behavior (Ajzen, 1991; Kautish et al., 2019). Three theoretically independent variables of behavioral intention that TPB accepts are attitude towards a behavior, subjective norm and PBC (Ajzen, 1991; Ajzen & Fishbein, 2005; Han et al., 2010). Behavior intentions can be anticipated with highly precise behavioral attitudes, subjective norms and PBC (Ajzen, 1991). As per the TPB, PBC and BI can be straightly employed to determine the effectiveness of behavior (Ajzen, 1991). The TPB has been effectively utilized in several prior studies to foresee an individual's eco-friendly behavioral intentions. For instance, Ahmad et al. (2020) established a theoretical model that incorporates Schwartz's (1992) personal values with TPB and seeks to study the intentions of visitors concerning visiting eco-friendly destinations. Yarimoglu and Gunay (2019) evaluated the intents of consumers to visit green hotels by utilizing TPB with two integrated structures, EFA and overall image. Ashraf et al. (2019) explore the consumers' intentions to visit eco-friendly destinations with the TPB and the confederation of Schwartz's (1992) personal values. Setyawan et al. (2018) demonstrated the young customers' intention to purchase green items with collaborating variables, environmental concern, environmental knowledge and willingness to pay more with TPB. Based on these studies, the first three hypotheses of this study were developed to evaluate the links between TPB's three primary variables and intention to visit eco-friendly destinations for tourism experiences.

2.2 Attitude (ATT)

The foremost and key element of behavioral intention is attitude (Ajzen, 1991; Han et al., 2010) which is termed as "the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question" (Ajzen, 1991). Attitude can be described as a human's extensive review of a particular behavior (Ajzen, 1991). A person's attitude is shaped by two factors: beliefs about the impacts of engaging in particular behavior and convictions concerning those effects (Ajzen & Fishbein, 1980; Ajzen, 1991). When the results are examined appropriately, the consumer has a more favorable attitude and is often more inclined to participate in that particular behavior (Lee, 2005; Cheng et al., 2006; Han et al., 2010). In other way, a person's favorable attitude towards a particular behavior enhances the intention of participating in the behavior (Ajzen, 1991; Han et al., 2010). Behavioral beliefs shape attitudes toward behaviors, which reflects positive and negative behavioral assessments. The link connecting intentions and attitudes toward a behavior is direct and positive (Yarimoglu & Gunay, 2019). A consumer's intention will be positively affected if he or she has a favorable attitude towards specific behavior, as per TPB (Ajzen, 1991). In the framework of this research, attitude relates to how intelligent, pleasant, helpful and appealing consumers are towards visiting eco-friendly destinations for tourism

experiences (Ashraf et al., 2020). Numerous studies found an important and beneficial attitude and intention relationship (Chen & Tung, 2014; Han, 2015; Manosuthi et al., 2020). The following hypothesis has been proposed based on the above conceptual and empirical foundation:

H1. Attitude has a significant and positive effect on the intention to visit eco-friendly destinations for tourism experiences.

2.3 Subjective Norm (SN)

Subjective norm is the second element of behavioral intention, as per the TPB framework. Ajzen (1991) states subjective norm as "the perceived social pressure to perform or not perform the behavior". Social influences to participate or not in a target behavior are described by subjective norms (Ajzen, 1991). An individual's convictions about how others want him/her to behave and his/her determination to comply with the significant referents' views regarding behavior, are considered to be two components of subjective norms. (Ajzen & Fishbein, 1980; Ajzen, 1991). In other words, the perceived perspectives of important others who are close to the consumer and who influence consumers' decisions are referred to as the subjective norm (Park, 2000; Han et al., 2010). Subjective norms are described as the measure to which key customers value while selecting to visit environment-friendly tourism destinations. (Ashraf et al., 2020). Subjective norm includes normative beliefs and demonstrate how others perceive and react to actual behavior. It exerts social pressure on people to engage in or refrain from engaging in a particular behavior (Ajzen, 1985). Subjective norms are regarded perspectives of people who are reasonably close and who significantly impact the decisions. People's intentions to perform a behavior are stronger when they have more positive subjective norms (Chen & Tung, 2014). In the context of this study, when important others believe that visiting eco-friendly destinations for tourism experiences is responsible behavior, an individual's perceived societal obligation to visit eco-friendly destinations for tourism experiences increases. As a result of the higher degree of social pressure, consumers will be more likely to visit eco-friendly destinations for tourism experiences. It has been shown in prior studies that subjective norms positively affect intention (Tonglet et al., 2004; Chien et al., 2012; Chen & Tung, 2014; Han, 2015; Manosuthi et al., 2020). Based upon the previous findings, the following hypothesis is formed:

H2. Subjective norm has a significant and positive effect on the intention to visit eco-friendly destinations for tourism experiences.

2.4 Perceived Behavioral Control (PBC)

The third element of behavioral intention is PBC. "The perceived ease or difficulty of performing a behavior is referred to as perceived behavioral control" (Ajzen, 1991). PBC denotes an individual's opinion of whether a behavior is simple or complex to perform. (Ajzen, 1991; Kim & Han, 2010). This structure has two components: control beliefs, which are the personal evaluation of the presence or absence of behavioral facilitators and inhibitors, and perceived power that represent the personal evaluation of its impact on enabling or preventing the particular behavior of these factors. (Ajzen, 1991; Lam & Hsu, 2006; Kim & Han, 2010). Perceived behavioral control, in particular, assesses how effectively one can control elements that might assist or restrict activities necessary to deal with a certain circumstance (Han et al., 2010). Because of the availability of required resources, a consumer's behavioral intention will be higher if the consumer controls the conduct of specific behavior. Perceived behavioral control depicts the view of people that the activity of interest is easy or difficult to accomplish (Ajzen, 1991). As per the TPB, the insight of behavioral control is contrary to the level of real behavior control that promptly influences

both the intention to implement that behavior and also the actual implementation of that behavior (Jalilvand & Samiei, 2012). When an individual perceives the presence or absence of opportunities or resources to achieve a specific behavior, and the perceived importance of such opportunities or resources for achieving that behavior, he or she is said to have PBC (Ajzen & Madden, 1986). In the context of the current study, PBC can be understood as how easy or difficult it is to visit eco-friendly destinations for tourism experiences. Several prior researches have indicated that PBC has a positive and significant relationship with the intention (Chen & Tung, 2014; Han, 2015; Wu & Chen, 2018; Manosuthi et al., 2020; Sujood et al., 2021). Hence, the following hypothesis is formed:

H3. Perceived behavioral control has a significant and positive effect on the intention to visit eco-friendly destinations for tourism experiences.

2.5 Environmental Friendly Activity (EFA)

Environmental friendly activities and eco-friendly destinations are related to eco-tourism, which is defined by Björk (2000) as "an activity where the authorities, the tourism industry, tourists and local people make it possible for tourists to travel to genuine areas to admire, study and enjoy nature and culture in a way that does not exploit the resource but contributes to sustainable development". Former researches demonstrated the positive facet of eco-friendly consumption in comparison with other factors in individual psychographics (Jeong et al., 2014; Ahmad et al., 2020). Environmental Friendly Activities (EFA) relates to an individual's assumption of the necessity of environmental conservation (Pham & Khanh, 2020). Researchers propose that a consumer who is ecologically informed may show pro-environmental behavior more often than other consumers (Lee & Moscardo, 2005; Baker et al., 2013). There are several environmental friendly activities at eco-friendly destinations for tourism experiences like sustainable cooking, availability of sustainable products, usage of green/blue bags for recycling, usage of pollution-free transportation etc. A positive attitude towards the importance of visiting eco-friendly activities for tourism experiences is required to be environmentally conscious (Laroche et al., 2001; Leonidou et al., 2010; Baker et al., 2013). When it comes to visiting eco-friendly destinations for tourism experiences, environmentally conscious consumers are more likely to do so than those who do not (Han et al., 2009; Han et al., 2011; Baker et al., 2013). There are several previous studies in which a positive and significant relationship between environmental friendly activities and intention has been shown (Kim & Han, 2010; Han & Yoon, 2015; Trivedi et al., 2018; Yarimoglu & Gunay, 2020). Based on previous studies, we have postulated the following hypothesis:

H4. Environmental Friendly Activity has a significant and positive effect on the intention to visit eco-friendly destinations for tourism experiences.

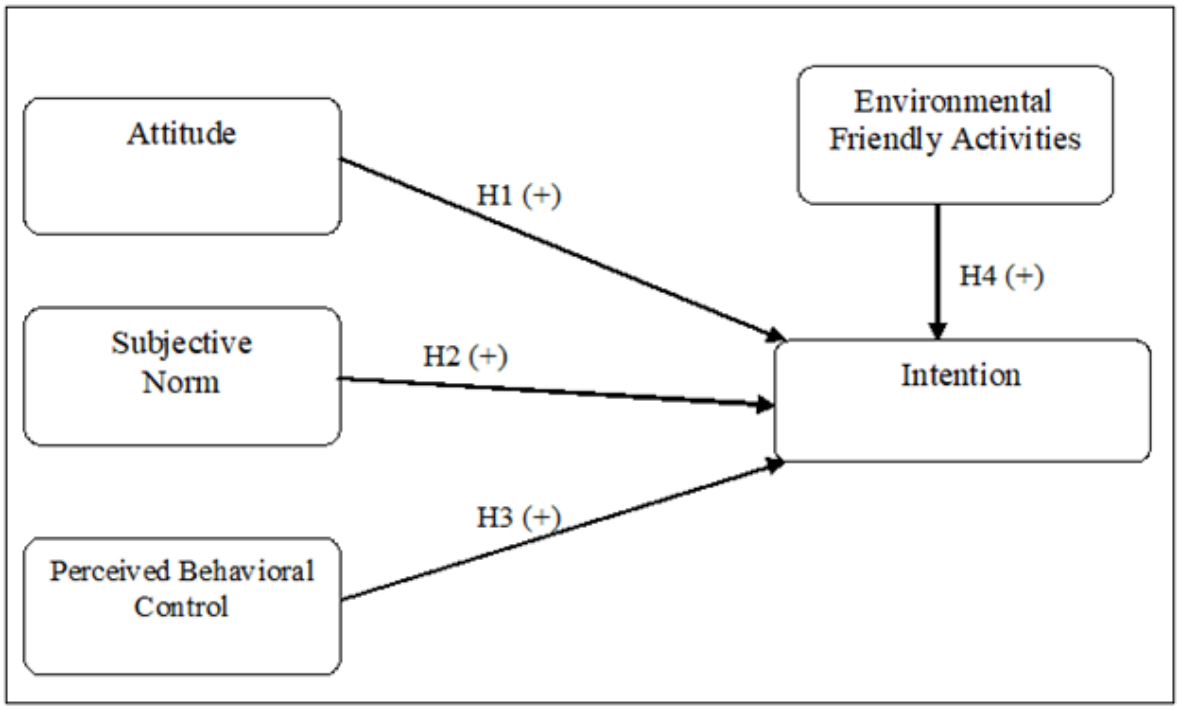
Table 1. Researches related to TPB, Eco-friendly activities and Intention

Author/s (Year)	Objective	Nation	Data Collection	Sample Size	Data Analysis	Constructs	Theory/ Concept	Findings
Hasan et al. (2020)	To compose a conceptual model by adjoining the service quality and perceived value with the TPB to inspect the tourists' intention to revisit the beach destinations.	Bangladesh	Survey	N=419	PLS-SEM	Attitude, Subjective Norms, PBC, Service quality and Perceived value.	TPB	The results show that perceived value influenced attitudes of visitors and revisit intentions both, while only the attitudes of tourists were affected by the quality of the service.
Ahmad et al. (2020)	To propose a theoretical framework integrating Schwartz's (1992) and TPB personal values to evaluate the visitors' intentions for visiting environmentally friendly destinations.	China	Survey	N=503	SEM	Attitude, Resultant Conservation, Environmental Consciousness, Social Norms, PBC, Visiting Intention, Resultant Self-transcendence.	Schwartz Personal Values and TPB	The results show that all of the three TPB variables have a favorable effect on visitors' self-transcendence.
Ashraf et al. (2019)	To examine the visitor's intention to explore eco-friendly destinations with the confederation of Schwartz's (1992) personal values and TPB.	China	Survey	N=467	SEM	Resultant Self-transcendence, Resultant Conservation, Environmental Consciousness, Attitude, Subjective Norms, PBC, Perceived Green Image, Visiting Intention	Schwartz (1992) personal values and TPB	TPB elements and perceived green images have a positive influence on the intentions of visitors of visiting environmental friendly destinations.
Olya et al. (2019)	The objective of this paper is to present a unique perspective on the formulation of hotel visitors' behavioral responses.	Cyprus	Survey	N=260	SEM	Attitude, Subjective Norms, PBC, Continued intention to use and Intention to recommend.	TPB	All the variables show a positive influence on the consumers' behavior to visit Green hotels except the Intention to recommend.
Yarimoglu and Gunay (2019)	To examine the intentions of the travelers to explore green hotels by employing the two variables in the TPB framework.	Turkey	Survey	N=400	SEM	Willingness to Pay More, Attitude, Subjective Norms, PBC, Environmental Friendly Activities (EFA), Visit Intention, Overall Image, Satisfaction and Loyalty.	TPB	The findings of the study validated the extended planned behavior theory to explore green hotels.
Setyawan et al. (2018)	Demonstrated the young customers' intention of purchasing green items with collaborating variables, environmental concern, environmental knowledge and Willingness to pay more with TPB.	Indonesia	Survey	N=326	SEM	Environmental concern, Environmental knowledge, and Willingness to pay	TPB	The purchasing of green items among young customers did not have any effect on environmental concerns and attitudes.
Paul et al. (2016)	To certify TPB and TRA to predict the green product purchase intentions of Indian consumers.	India	Survey	N=521	SEM	Attitude, Subjective Norms, Perceived Behavior Control, Environmental Concern and Purchase Intention.	TPB and TRA	The findings demonstrate that Attitude and PBC significantly predict Purchase Intention whereas Subjective Norm does not.
Chen and Tung (2014)	To assess the intention of consumers to go to green hotels.	Taiwan	Survey	N=559	SEM	Attitude, Subjective Norms, PBC, Perceived Moral Obligation, Environmental Concern, and Intentions.	TPB	The results indicate that consumers' environmental concern, perceived moral obligation, and all the foregoing TPB framework have a favorable impact on green hotel visits.

Han et al. (2010)	To test the TPB framework for illustrating how visitors want to visit a green hotel.	U.S	Online Survey	N=3000	SEM	Attitude, Subjective Norm, PBC, Visit Intention.	TPB	The results demonstrate that the tourists' intention to spend time at a green hotel has a significant effect on the attitude, subjective norms and the PBC.
Han and Kim (2010)	To justify the decision of the consumers to pay similar costs for a green hotel at normal rates.	Korea	Survey	N=389	SEM	Environmental Concerns, Perceived Customer Effectiveness and Environmentally Conscious Behaviors	TPB	The purpose is to pay normal hotel costs for a green hotel was supported by all the antecedent elements of intention.
Kalafatis et al. (1999)	To study the variables that affect the desire of people to buy environmental friendly items.	UK & Greece	Survey	N=345	SEM	Attitude, Subjective Norms, PBC, Intention and Behavior.	TPB	The results provided significant support for the TPB's resilience in the purpose of both the countries.

Source: Own Elaboration

Figure 1. Conceptual Model and Hypotheses



Source: Own Elaboration

3. RESEARCH METHODOLOGY

3.1 Instrument

The online questionnaire was developed using Google forms. The attitude was determined by four items adapted from Lam and Hsu (2004). Subjective Norm was determined by four items from Ajzen (1991) and Hsu and Huang (2012). PBC was determined by four items adapted from Ajzen (1991). Environmental Friendly Activities were determined by four items adapted from Han et al. (2010). Lastly, Intention was determined by four items adapted from Han et al. (2010) and Song et al. (2012). The items' wordings have been

slightly changed to make them more appropriate for this study. A detailed description of eco-friendly destinations was provided in the survey's opening instructions. The Likert scale of 7-point was utilized to determine all the items (where "1= strongly disagree; 2= disagree; 3= somewhat disagree; 4= neither agree nor disagree; 5= somewhat agree; 6= agree and 7= strongly agree"). Appendix A displays the items.

3.2 Data Collection and Sample Size

Data was collected via a web-based survey which is a convenience sampling method. This is a quick and easy method of sampling. Online surveys make it easier to reach out to larger populations of interest (Han & Hyun, 2017) that are hard to reach because there is a challenge in finding and recognizing them (Fricker, 2008; Das & Tiwari, 2021). Before posting the questionnaire, a pilot study of 40 respondents was conducted to ensure that the questions were clear and easily understandable. The results of the pilot test confirmed the reliability. From May 1 to June 30, 2021, the survey link was shared on social networking sites. The appropriate sample size has been estimated for this study based on the recommendation of Hair et al. (1998) that the required level of 15-20 observations per studied variable should be determined. This research consists of 05 variables and 20 items, which means a sample size of 20 x 20 = 400 is adequate. There were 509 responses in total, 38 cases omitted due to incomplete values. The final sample of 471 valid responses was considered, which is greater than the required value of no less than 400 for SEM (Boomsma, 1987; Paul et al., 2016).

3.3 Data Analysis

SPSS 25 and AMOS 22 softwares have been used to evaluate data. With the help of frequency tables, the demographic properties of the sample have been analyzed. After that, the two-stage process proposed by Anderson and Gerbing (1988) was subsequently followed to analyse data by SEM and verify if the data is suitable for the proposed model. First, CFA was utilized for the evaluation of the measurement model's quality and adequacy to establish the reliability, convergent validity, and discriminant validity of the investigated constructs (Anderson & Gerbing, 1988). Second, to investigate the causal relationship of latent variables, SEM has been utilized to validate hypotheses.

4. RESULTS

4.1 Sample Profile

471 responses of Indian consumers were found to be valid. The characteristics of the respondents are given in table 2.

Table 2. Sample Profile

Items	Classification	Sample Amount	Percentage
Gender			
	Male	269	58.12 %
	Female	202	42.88 %
Age			
	Below 25	53	11.26 %
	25-35	110	23.35 %
	36-45	129	27.39 %
	46-55	106	22.51 %
	Above 55	73	15.49 %
Education			
	Intermediate	45	09.55 %
	Bachelor's Degree	210	44.58 %
	Master's Degree	178	37.79 %
	Ph.D.	38	08.06 %
Marital Status			
	Unmarried	193	40.97 %
	Married	267	56.68 %
	Others	11	02.33 %
Occupation			
	Employee	179	38.00 %
	Student	78	16.56 %
	Businessman	129	27.38 %
	Retired	32	06.79 %
	Others	53	11.25 %
Monthly Income (INR)			
	Up to 20,000	85	18.04 %
	20,001-35,000	124	26.32 %
	35,001-50,000	135	28.66 %
	50,001-65,000	109	23.14 %
	Above 65,000	18	03.82 %
Total		471	100%

(US$1= Approx. INR 75.00 as of 2021)

Source: Own Elaboration

4.2 Descriptive Statistics

The constructs' mean values are displayed in Table 3, which range from MIN 4.770 to MAX 5.691 on a seven-point Likert scale. Among all variables, Attitude (ATT) has the highest mean value (5.691), while Intention (INT) has the lowest (4.770). The highest standard deviation (1.039) was recorded by Subjective Norm (SN), while the lowest was recorded by INT (0.893).

Table 3. Descriptive Statistics

Construct	Mean	Std. Deviation
ATT	5.691	0.985
SN	5.127	1.039
PBC	5.507	0.953
EFA	5.259	0.978
INT	4.770	0.893

Source: Own Elaboration

Factor analysis was implemented with Principal Component Analysis and the Varimax Rotation Technique. Table 4 displays the cumulative percentage (79.55 %) of the variance of the factors with Kaiser–Meyer–Olkin (KMO) sampling efficiency measurement of 0.946, which was higher than the recommended index of 0.60 (Garson, 2001). Bartlett's test of Sphericity was 7943.120 (df = 190, $p<0.001$).

Table 4. Factor Analysis of the Measuring Instrument

Variables	Items	Factor Loadings	Eigenvalue	% of variance	Cumulative %
SN			10.868	16.921	16.921
	SN1	0.788			
	SN2	0.844			
	SN3	0.804			
	SN4	0.768			
PBC			1.604	16.043	32.964
	PBC1	0.772			
	PBC2	0.804			
	PBC3	0.801			
	PBC4	0.723			
INT			1.313	15.684	48.648
	INT1	0.730			
	INT2	0.812			
	INT3	0.728			
	INT4	0.755			
ATT			1.124	15.536	64.183
	ATT1	0.780			
	ATT2	0.809			
	ATT3	0.750			
	ATT4	0.689			
EFA			1.001	15.368	79.551
	EFA1	0.811			
	EFA2	0.733			
	EFA3	0.767			
	EFA4	0.742			

Source: Own Elaboration

4.3 Measurement Model

To confirm the measurement model's adequacy, the constructs' reliability, convergent and discriminant validity were tested. The variables' reliability of internal consistency has been evaluated by alpha and CR. Alpha coefficients should be 0.70 or higher (Hair et al., 2006), and CR values should be greater than .6 (Bagozzi & Yi, 1988) for reliability. All variables have been recognized as reliable in the study because they met the threshold criterion of reliability (Table 5). The authors used the Fornell and Larcker (1981) recommendations to confirm convergent validity: (1) all factor weights must be greater than 0.70 and (2) the average variance extracted (AVE) value must be higher than 0.50. All of the items had loading values greater than 0.70. The AVE ranged from 0.636 to 0.772, exceeding the 0.50 cut-off and meeting the convergent validity criteria (Table 5).

Table 5. Reliability and Convergent Validity

Variables	Items	Standardized Factor Loading	CR	AVE	Cronbach's Alpha
SN			0.916	0.732	0.916
	SN1	0.84			
	SN2	0.87			
	SN3	0.88			
	SN4	0.83			
ATT			0.931	0.772	0.930
	ATT1	0.89			
	ATT2	0.90			
	ATT3	0.89			
	ATT4	0.83			
PBC			0.917	0.734	0.916
	PBC1	0.87			
	PBC2	0.81			
	PBC3	0.89			
	PBC4	0.86			
EFA			0.875	0.636	0.874
	EFA1	0.75			
	EFA2	0.83			
	EFA3	0.81			
	EFA4	0.79			
INT			0.916	0.733	0.915
	INT1	0.80			
	INT2	0.86			
	INT3	0.87			
	INT4	0.89			

Source: Own Elaboration

By measuring each variable's AVE values' square root against their correlations with other variables, the discriminating validity of the variables was evaluated. Because each variable's square root value of AVE was greater than inter-construction correlations, therefore discriminant validity was supported (Fornell & Larcker, 1981), as presented in Table 6.

Table 6. Discriminant Validity

	ATT	SN	PBC	EFA	INT
ATT	**0.879**				
SN	0.663***	**0.856**			
PBC	0.721***	0.638***	**0.857**		
EFA	0.659***	0.546***	0.635***	**0.797**	
INT	0.725***	0.663***	0.667***	0.709***	**0.856**

"*** p< 0.001; square root of AVE diagonally in bold

Source: Own Elaboration

4.4 Structural Model

Structural equation modeling was utilized in this study by using AMOS 22.0 to derive the path coefficients of the association between the variables. The structural model's overall fit indices are as follows: ($\chi 2/df$ = 2.629, NFI = 0.948, CFI = 0.967, RFI = 0.938, IFI = 0.967, TLI = 0.961, RMSEA = .059), which show an adequate fit with the hypothesized structural model (Bagozzi et al., 1991; Hair et al., 1998; Bagozzi & Yi, 2012).

Table 7 presents the results of the hypothesis testing. All three constructs of TPB, Attitude (H1) (β = 0.363, t-value= 11.137, p <0.001), Subjective Norm (H2) (β = 0.315, t-value= 9.658, p <0.001) and PBC (H3) (β = 0.120, t-value= 3.698, p <0.001) have a significant and positive effect on Intention. Lastly, Environmental friendly activities (H4) (β = 0.506, t-value= 15.524, p <0.001) has a significant and positive effect on Intention. Therefore, all the hypotheses are supported.

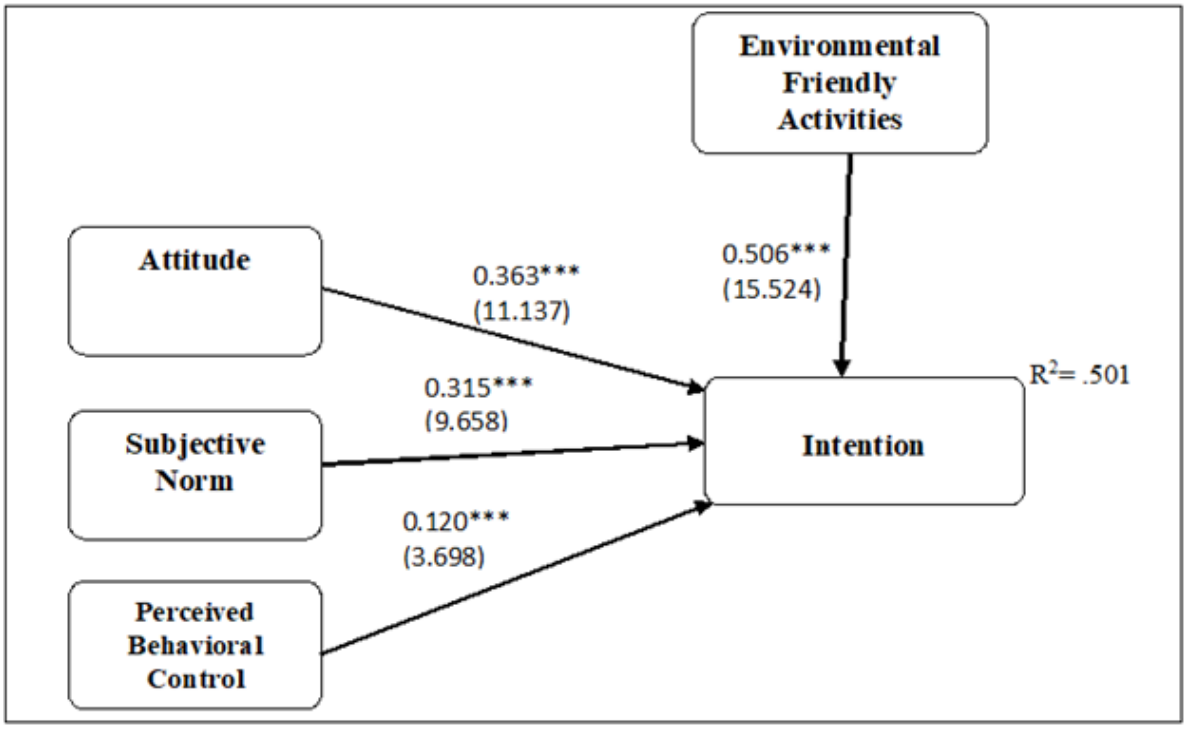
Table 7. Hypotheses Testing

Relationship	β	t-value	p-value	Result
H1: ATT ⟶ INT	0.363	11.137	< 0.001	Supported
H2: SN ⟶ INT	0.315	09.658	< 0.001	Supported
H3: PBC ⟶ INT	0.120	03.698	< 0.001	Supported
H4: EFA ⟶ INT	0.506	15.524	< 0.001	Supported

Source: Own Elaboration

The above findings show that all the variables of TPB and environmental friendly activities are significant and positive determinants of Intention. These constructs explained about 50 percent (R^2 = 0.501) of the variance in the intention to visit eco-friendly destinations for tourism experiences. Figure 2 shows the structural model and path coefficients and the numbers in the brackets are t-values.

Figure 2. Structural Model and Path Coefficients



Source: Own Elaboration

5. DISCUSSION AND CONCLUSION

This research is focused on the TPB that investigated consumers' intention to visit eco-friendly destinations for tourism experiences by broadening the original TPB model with the inclusion of Environmental Friendly Activities (EFA). The results of the study validated the TPB usage in predicting intention to visit eco-friendly destinations for tourism experiences, as EFA and original TPB components have a significant positive impact on Intention. As per Ajzen (1991), attitude denotes "the degree to which a person has a favorable or unfavorable evaluation of the behavior in question". In the context of this study, the attitude can be understood as a favorable evaluation of intention to visit eco-friendly destinations for tourism experiences. The result proved that attitude positively (β = 0.363) affects intention. This result matches with prior studies (Han & Kim, 2010; Han et al., 2011; Teng et al., 2013; Chen & Tung, 2014; Han & Yoon, 2015; Paul et al., 2016; Yarimoglu & Gunay, 2020; Sujood et al., 2021). There are several studies in which there is no influence of attitude on intention (Lam & Hsu, 2006; Sparks, 2007; Abbasi et al., 2021). Consumers may perceive visiting eco-friendly destinations as an environmental friendly tourism experience. Also, if they have a positive attitude towards eco-friendly destinations, they will prefer visiting eco-friendly destinations for tourism experiences over conventional destinations. This finding states that consumers think that visiting eco-friendly destinations for tourism experiences would be favorable, enjoyable, fun and pleasant. Subjective Norm is described as "the perceived social pressure to perform or not to perform the behavior" (Ajzen, 1991). The result displays that subjective norm is significantly and positively (β = 0.315) influencing intention to visit eco-friendly destinations for tourism experiences. The results are consistent with previous research (Lam & Hsu, 2006; Chen & Tung, 2014; Quintal et al., 2015, Verma & Chandra, 2018; Hasan et al., 2020). In contrary to this finding, there are few studies in which no significant relationship was found between Subjective Norm and Intention

(Lam & Hsu, 2004; Ryu & Jang, 2006; Casaló et al., 2010). This outcome is because social pressures have a strong impact on the intended behaviors of consumers. Their intention to visit eco-friendly destinations will be strengthened if they understand that their close ones (peers, family, and relatives) expect them to do so for tourism experiences (Ahmad et al., 2020). Their colleagues/relatives/peer group provide positive reinforcement as to why they should visit eco-friendly tourism destinations. As a result, consumers believe that visiting environmentally friendly destinations for tourism experiences is socially acceptable (Paul et al., 2016). The third important factor of TPB is PBC. It is characterized as "the perceived ease or difficulty of performing the behavior" (Ajzen, 1991). The finding of this study reveals that PBC significantly and positively ($\beta = 0.120$) influences intention to visit eco-friendly destinations for tourism experiences. This result is in line with previous researches (Ajzen, 2002; Lam & Hsu, 2004; Lee et al., 2014; Abbasi et al., 2021). The most probable reason for this finding is that consumers are confident, they have time and resources, and they do not perceive difficulty in visiting eco-friendly destinations for tourism experiences. Out of all the variables, Environmental Friendly Activities have the strongest influence ($\beta = 0.506$) on intention to visit eco-friendly destinations for tourism experiences. This finding is consistent with previous studies (Kim & Han, 2010; Han & Yoon, 2015; Sreen et al., 2018; Trivedi et al., 2018; Yarimoglu & Gunay, 2020). This is an interesting finding which means that buying eco-friendly products, checking whether the products are packaged in recyclable material and using green/blue bags for recycling are positively linked to visiting eco-friendly destinations for tourism experiences.

6. THEORETICAL & PRACTICAL IMPLICATIONS

The results help to achieve the understanding of Intention, eco-friendly destinations and tourism experiences. This study is an effort of examining the intention as there was scarce information available about consumers' intentions to visit eco-friendly destinations for tourism experiences. To the best of the authors' knowledge, this was the first attempt to employ TPB along with the construct EFA for the prediction of intention to visit eco-friendly destinations for tourism experiences. As per Armitage and Conner (2001), "From a database of 185 independent studies published up to the end of 1997, the TPB accounted for 27% and 39% of the variance in behavior and intention, respectively", and the present study has a variance of approximately 50 percent in intention to visit eco-friendly destinations for tourism experiences. Hence, this research verifies the effectiveness of the extended TPB model. All the constructs of TPB and EFA are significant in predicting intention, and out of all the constructs, EFA has the strongest influence. Therefore, in the context of eco-friendly destinations, EFA can be one of the key determinants of intention. The addition of EFA to the TPB broadens the current tourism literature, as no other study has considered EFA for predicting the intention of visiting environmentally friendly destinations for tourism experiences in the Indian context.

When the intentions of customers to visit environmentally friendly destinations for tourism experiences are examined, the proposed model's results have proven to be effective. The findings can also be regarded as a useful tool for examining consumers' intentions in other types of eco-tourism activities in India due to the model's satisfactory explanation power. As previously stated, the findings revealed that all the variables have a significant and positive influence on intention, implying that they can make a significant contribution to consumers' intentions to visit eco-friendly destinations for tourism experiences. These findings have important implications for eco-friendly destination marketers in developing marketing strategies that highlight which areas of services as well as tourist characteristics

should be prioritized to encourage consumers to explore eco-friendly destinations. Marketers who deal in eco-friendly destinations should look for ways to boost EFA, as this will increase the intention to visit eco-friendly destinations for tourism experiences. It may be beneficial for marketers to focus more on ways to increase positive attitudes to increase consumers' intention to visit eco-friendly destinations for tourism experiences. Subjective Norm has a strong influence on intention; managers should focus on the ways by which favorable subjective norms towards visiting eco-friendly destinations for tourism experiences can be developed among consumers. As per the results, PBC is also one of the key determinants of intention, so managers should focus on improving the tourism infrastructure at eco-friendly destinations, reducing the overall cost of visiting eco-friendly destinations so that consumers can perceive that they have time, money, resources and control over traveling to eco-friendly destinations for tourism experiences.

7. LIMITATIONS AND FUTURE DIRECTIONS

Although the current study met its objectives, it has few limitations which provide future research opportunities. First, this study only measured Intention rather than actual behavior; as suggested by Belk (1985), consumers' actual behavior does not always match their intention. Therefore, future research should concentrate on the actual behavior of consumers visiting eco-friendly destinations for tourism experiences, which will bridge the gap between intention and actual behavior. Second, only an additional construct was added to the TPB model, i.e. Environmental Friendly Activities. In future studies, it is suggested to add more constructs like environmental concern, knowledge value, experience, etc. to the TPB model for the better predictive ability of the model. Third, the data have been collected for this research study using a Web-based survey method. This method is easy and practical for reaching out to a larger population. However, respondents of this study were limited to those having computers and access to the internet connection. To address this issue, future studies should examine intention in an actual setting of eco-friendly destinations for tourism experiences. Fourth, data was obtained from Indian consumers. As a result, generalizing the findings to consumers in other countries or continents should be done with caution. To improve the generalizability of the results, a larger sampling range of different geographic locations should be included in future studies. Fifth, this study did not take the relationship between demographic characteristics and variables into consideration, so it should be investigated in future studies to gain a better understanding of consumer profiles.

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APPENDIX: A

Please answer the following questions. (Please tick √ the appropriate box)

1. **Gender:** Male ☐ Female ☐ Others ☐
2. **Age:** Below 25 ☐ 25-35 ☐ 36-45 ☐ 46-55 ☐ above 55 ☐
3. **Education:** Intermediate ☐ Bachelor's Degree ☐ Master's Degree ☐ Ph.D. ☐
4. **Marital Status:** Unmarried ☐ Married ☐ Others ☐
5. **Occupation:** Student ☐ Employee ☐ Retired ☐ Businessman ☐ Others ☐
6. **Monthly Income:** Upto 20,000 ☐ 20,001-35,000 ☐ 35,001-50,000 ☐ 50,001-65,000 ☐ Above 65,000 ☐
7. **Nationality:** Indian ☐ Others ☐

Attitude	**Source**
ATT1: I think visiting eco-friendly destinations for tourism experiences would be enjoyable.	Lam and Hsu (2004)
ATT2: I think visiting eco-friendly destinations for tourism experiences would be fun.	
ATT3: I think visiting eco-friendly destinations for tourism experiences would be pleasant.	
ATT4: I think visiting eco-friendly destinations for tourism experiences would be favorable.	
Subjective Norms	
SN1: Most people who are important to me think I should visit eco-friendly destinations for tourism experiences.	Ajzen (1991) Hsu and Huang (2012)
SN2: Most people who are important to me would want me to visit eco-friendly destinations for tourism experiences.	
SN3: People whose opinions I value would prefer me to visit eco-friendly destinations for tourism experiences.	
SN4: Most of my friends encourage me to visit eco-friendly destinations for tourism experiences.	
Perceived Behavioral Control	
PBC1: Whether or not, visiting eco-friendly destinations for tourism experiences is completely up to me.	Ajzen (1991)
PBC2: I am confident that if I want, I can visit eco-friendly destinations for tourism experiences.	
PBC3: I have the resources to visit eco-friendly destinations for tourism experiences.	
PBC4: I have the time to visit eco-friendly destinations for tourism experiences.	
Environmental Friendly Activities	
EFA1: When buying something wrapped, I often check whether it is wrapped in recyclable material.	Han et al. (2010)
EFA2: I frequently buy Eco-friendly products.	
EFA3: I frequently use the green bag for recycling.	
EFA4: I frequently use the blue bag for recycling.	
Behavioral Intention	
INT1: I am willing to visit eco-friendly destinations for tourism experiences.	Han et al. (2010) Song et al. (2012)
INT2: I plan to visit eco-friendly destinations for tourism experiences.	
INT3: I will make an effort to visit eco-friendly destinations for tourism experiences.	
INT4: I have an intention to visit eco-friendly destinations for tourism experiences.	

ISSN: 2183-1912

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