

Reviews in tourism management

## How emotions sound. A literature review of music as an emotional tool in tourism marketing

Ana Moreno-Lobato<sup>a,\*</sup>, Elide Di-Clemente<sup>b</sup>, José-Manuel Hernández-Mogollón<sup>b</sup>,  
Ana-María Campón-Cerro<sup>b</sup>

<sup>a</sup> Universidad de Extremadura, Avda. De las Ciencias, s/n, Cáceres (España) 1001, Spain

<sup>b</sup> Universidad de Extremadura, Spain

### ARTICLE INFO

#### Keywords:

Music  
Emotion  
Tourism marketing  
Systematic literature review  
Bibliometric analysis  
SciMat

### ABSTRACT

Tourism marketing scholars have recently focused on the experiential development of services. As a sensory tool, music has not been exhaustively approached from a multidimensional perspective. The goal of this paper is to understand the role of music and audio in the development of emotional reaction studies in tourism marketing by integrating and summarizing academic contributions during the last 50 years (1970–2021). Qualitative Systematic Literature Review and Bibliometric Analysis are used to show historical overview and academic tendencies, relevance, relations, and methodological developments. There is an increasing interest in the scope that relates music and emotions, with exponential growth in the last 10 years. Retailing, branding and environmental studies are the most common research areas of application, and SOR and causal models are the theoretical and methodological trends. This approach offers significant insights as it combines theoretical bases proceeding from complementary areas to tourism marketing, such as psychology or psychophysiology.

### 1. Introduction

As a service sector, tourism has evolved in recent years into the experience economy (Bastiaansen et al., 2019). The tourism market increasingly demands affective experiences that help create lasting and memorable experiences (Coudounaris & Sthapit, 2017). Within the development of tourism experiences, practitioners face the challenge of including added value to services with emotional elements that enhances memorable outcomes and drives positive tourists' behaviour and intentions (Lajante & Lux, 2020; Tuerlan, Li, & Scott, 2021). Different marketing tools have been applied in the search for this emotionality. However, sensory marketing is one emotion inducer that provides direct and effective results through creating environments and consumer immersion in experiences (Podoshen, 2005).

The development and management of the senses as emotional elements have been widely studied in the literature (Agapito, Mendes, & Valle, 2013). In the retail sector, very positive results have been obtained in consumer behaviours and intentions through the application of sensorial stimulation (Podoshen, 2005). However, not all the five senses have received the same attention and application in scientific research.

Due to its natural characteristics, the auditory sense is ideal for its use in the service sector and tourism in particular. Music and sounds represent a direct and involuntary stimulus, like visual and olfactory stimuli, which do not require active participation on the receiver's part (Juslin, 2013).

Moreover, it has the added characteristic of being a non-denotative language, i.e. it is not associated with semantic referents or languages and is therefore interpretable by the receiver without the need for prior knowledge (Juslin, 2013; Juslin & Västfjäll, 2008). On the other hand, it is an accessible resource for everyone because of the ease of access and because of the aesthetics and variety of the music itself, adapting to personal tastes and preferences (Siles, Segura-Castillo, Sancho, & Solís-Quesada, 2019). Finally, the music itself is an element that induces activation (neuronal and psychophysiological), being emotions an intrinsic element of music (Konečni, 2008). Because of these characteristics, it is an element that is challenging to be developed in research because it is susceptible to individual interpretations according to preferences, experiences or likes (Apolaza-Ibantildeez, Zander, & Hartmann, 2010). However, at the same time, it is of great interest due to its capacity to induce emotions (Juslin, 2013). Authors such as Juslin

\* Corresponding author.

E-mail addresses: [anamorenol@unex.es](mailto:anamorenol@unex.es) (A. Moreno-Lobato), [ediclemente@unex.es](mailto:ediclemente@unex.es) (E. Di-Clemente), [jmherdez@unex.es](mailto:jmherdez@unex.es) (J.-M. Hernández-Mogollón), [amcampon@unex.es](mailto:amcampon@unex.es) (A.-M. Campón-Cerro).

<https://doi.org/10.1016/j.tmp.2023.101154>

Received 18 November 2022; Received in revised form 27 June 2023; Accepted 6 July 2023

Available online 14 July 2023

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and Västfjäll (2008) point out six ways of inducing emotions through music. The first is a physical phenomenon in which noises and sounds lead to unconscious bodily reactions. Secondly, emotion is a condition of music itself, associating elements of music such as tempo or mode with specific emotions. Thirdly, through feelings linked to melodies via the implicit association of melodies with previously experienced feelings. Fourthly, music is associated with visual images, e.g., landmarks or destinations. Fifthly, emotions are induced through episodic memory that connects memories of places or moments with specific music. Finally, emotions are created through the receiver's expectations at the moment of listening.

Music has been studied in different fields and perspectives, considering all the options for emotional interaction between the receiver and the auditory elements. As a language and communication tool, it has been developed in various scientific fields (Vieira, 2013). The various lines of study focus on the relevance of music and its induction capacity from different approaches.

Due to the great variety of research that has been developed in the science of music and emotions, it is necessary to make an approximation of the lines, procedures, methodologies and results obtained in recent years in the fields adjacent to tourism. These will allow for identifying trends and study techniques for their application in tourism. This research line has acquired relevance and interest in recent years, and its development has led to new theoretical contributions, ways of approaching studies, and measurement techniques. Although some studies have been identified in tourism, there is little development in areas such as consumer behaviour or tourism marketing, despite being a highly relevant topic (Min et al., 2019) with significant practical implications.

This study focuses on music and emotions in tourism and how these issues have been addressed in the different research areas complementary to tourism. This study offers a compendium of methodological, theoretical and areas of application ideas that could be useful for developing environmental music studies in tourism. To this end, an analysis of the scientific production in recent years, its progress and new trends is carried out by a systematic literature review (SLR) and bibliometric analysis. The following research questions are proposed:

RQ1: What are the publication outputs and trends for studying music and emotion?

RQ2: How have emotions and music been conceptualized and measured in the literature?

RQ3: What are the relations and variables linking music and emotions?

Firstly, the theoretical background of this research on the topic of emotions, music, tourism and the underlying themes of the combination of these concepts are identified. Through a systematic analysis, 664 contributions have been identified from different scientific fields. Their theoretical bases, methodologies, development variables and application trends have been the object of a thorough study. Afterwards, a bibliometric study is also carried out to understand this field's key themes and relate them to the lines of research applicable to the tourism sector. The conclusions provide ideas and study approaches of relevance in the field of tourism marketing in order to establish research insights that help to understand tourist behaviour and reactions through the use of emotional musical elements in promotion and marketing.

## 2. Theoretical background

### 2.1. Emotions research in tourism marketing

Tourism marketing is evolving and focusing on creating tourism experiences and emotions that are essential elements for the development and enjoyment of these tourism experiences (Bastiaansen et al., 2019). These are caused by tourists looking for emotional experiences that provide engagement and unique memories (Volo, 2021). Thus, to

turn tourist proposals into experiences, it is necessary to take advantage of and manage emotions throughout the consumption process. The emotional component of the experiences may result in better marketing results, such as higher tourist satisfaction and positive future intentions (Lajante & Lux, 2020).

Emotions could be responses to stimuli and situations, sometimes associated with the psychophysiological body or mental changes that lead to certain behaviours or decisions (Volo, 2021). They are evaluated as antecedents (Bastiaansen et al., 2019) but also as consequences of environmental elements capable of arising them (Morrison, Gan, Dubelaar, & Oppewal, 2011). Different theories support the importance of emotions in the decision-making consumer process and the creation of intentions. Tourist Gaze Theory by Urry (2002) highlights the emotional interaction that exists between the destination environment and the tourists' reactions and it was applied in emotional tourism experiences studies (Agapito et al., 2013; Kim & Fesenmaier, 2014; Wood & Kinnunen, 2020). SOR Model by Mehrabian and Russell (1974) from environmental psychology explained the physical and cognitive process of experiencing and reacting to certain stimuli and how emotions affect evaluations. This psychological theory has a huge development in the tourism emotional research (Tuerlan et al., 2021). Hadinejad, Moyle, Kralj, and Scott (2019) support the relevance of analysing the emotional process across different psychological spheres of the tourist to better understand the decision-making and behavioural process.

Some literature reviews on emotional issues are already performed and published. Li, Scott, and Walters (2015) developed a review based on emotional methodological tools in marketing, and Bastiaansen et al. (2019) also did this methodological revision focused on the tourism area. Tuerlan et al. (2021) carry out a theoretical literature review on emotions in tourism, identifying the most prominent theories, lines of research, scales, and trends in studying emotions in tourism. Thus, theoretical studies through literature reviews in tourism marketing in the field of emotion are a scientific tool useful for framing trends and concepts.

### 2.2. Music in tourism marketing research

In tourism marketing, experiencing different senses is part of the enjoyment, development and remembrance of the tourism experiences (Volo, 2021). The way to enhance the emotional results could be by adding and designing more effective stimuli, including environmental attributes that could better induce the elicitation of emotions (Tuerlan et al., 2021). Juslin and Västfjäll (2008) define music as the most relevant emotional inductor and behavioural driver in the enjoyment and development of sensory experiences. Some studies developed Service-scape Theory (Bitner, 1992) where music is a relevant condition for the creation of a quality environment (Hul, Dube, & Chebat, 1997). Also, a trip is a sensory interaction of the place with the tourist and some theories, as Tourist Gaze of Urry (2002) have evolved by giving greater value to non-visual interactions (Wood & Kinnunen, 2020). The application of music in tourism has been studied from the effectiveness of background music (Loureiro, Roschk, & Lima, 2019), to music as a destination communication tool (Min et al., 2019), or even music events as a tourism product itself (Hudson, Roth, Madden, & Hudson, 2015).

The emotional nature of music makes it an interesting element in promoting and creating tourism experiences. Authors such as Trompeta, Karantinou, Koritos, and Bijmolt (2022) show discrepancies in the results of a meta-analysis of music in tourism studies and raise the need to learn new ways of approaching the gap in the application of music in tourism. Waitt and Duffy (2010) use a more sociological and psychological approach that underlines the need to deepen our knowledge of music's affective and emotional processes in tourism.

### 2.3. Music as an emotional trigger

Music arouses emotions in about 55–65% of situations (Juslin,

2013). Following theoretical environmental psychology basis on SOR Model (Mehrabian & Russell, 1974), in the pre-consumption and consumption stage, music works as sensorial stimuli that engage emotionally and have effects on different behavioural and physiological responses or reactions (Errajaa, Legohérel, & Daucé, 2018; Klepzig et al., 2020). These reactions result in personal evaluations as value (Wood & Kinnunen, 2020; Yüksel, 2007) or perceptions (Kantono et al., 2019). Authors such as Morrison et al. (2011) analyse reactions in the post-consumption stage, concluding that music causes behavioural consumer changes that affect marketing outcomes as satisfaction, but also buying and behavioural intentions (Jang & Namkung, 2009; Sayed, Farrag, & Belk, 2004) that could benefit tourism marketing managers.

Explained by Imagery Processing Theory, some researches highlight that music helps to evoke imaginative and emotional reactions through a mental process that impacts individual evaluations (Berthold-Losleben et al., 2018; Juslin, 2013). This Imagery Processing Theory by MacInnis and Price (1987), explains the emotional, physical and cognitive reactions through sensory information that would result in memories. In some ways, these emotional music tools can also transform the consumer's personal sphere (Kirillova, Lehto, & Cai, 2017) through memory (Apaolaza-Ibantildez et al., 2010; Wood & Kinnunen, 2020) and by affecting psychological variables such as mood (Alpert & Alpert, 1990; Lehrner, Marwinski, Lehr, Jöhren, & Deecke, 2005; Siles et al., 2019; Taylor & Friedman, 2015) and attitudes (Stewart & Koh, 2017). Both terms are related to long-term psychological changes: mood is referred to an emotional state of mind (Siles et al., 2019) and attitudes to change of mind (Stewart & Koh, 2017).

This relationship between music and emotions has been conceptualized (Juslin, 2013) and reviewed in marketing from the behavioural (Konečni, 2008), branding (Argo, Popa, & Smith, 2010) or retailing (Vieira, 2013) fields. Music application in tourism areas has also been studied (Trompeta et al., 2022) but the relationship between music and emotions requires further attention (Min et al., 2019; Trompeta et al., 2022; Waitt & Duffy, 2010).

### 3. Methodology

A qualitative SLR was conducted at the beginning of 2022 to synthesize the research production based on music and emotions in tourism and marketing. This procedure aims to show the outputs and trends of the research line (RQ1). The SLR is a reproducible and rigorous analysis method for identifying the existing academic body of a research line (Fink, 2014).

Following the steps proposed by Fink (2014), a SLR was developed to explore and evaluate the existing studies on emotions elicited by music elements in tourism marketing. A systematic literature review focuses on reproducibility, detailing the search, exclusion, summary procedure and minimising bias (Chang, Moyle, Dupre, Filep, & Vada, 2022). In tourism research, some authors have recently developed SLR methods for understanding multidimensional tendencies in the study of emotions (Tuerlan et al., 2021). The research protocols proposed by Fink (2014), Mulet-Forteza, Lunn, Merigó, and Horrach (2020) and Tuerlan et al. (2021) are followed in this research in order to perform a proper SLR (Fig. 1).

The databases Web of Science (WOS) and Scopus were queried. As Fig. 1 shows, the process has four steps following the PRISMA method (Andronie et al., 2023) and begins in the identification phase, where keyword quest in the title, keywords and abstract was made with the use of research equations. It is necessary to restrict the query to English article document type to limit these issues with the aim of a properly bibliometric keyword analysis (Chang et al., 2022). This research produced a total of 807 articles. The second step, screening, was to narrow the duplicate articles inserted in both databases. This document's screening resulted in 702 articles. In the "eligibility step", the characteristics of the articles are reviewed and checked that text is available. The last phase labelled the "included step" was the selection of the relevant journals for the analysis as judged by the researchers. To focus on study propose, some authors have selected the scope of the journal, intending to target the objective state of the art. The target categories selected were the areas related to communication, social science, management, tourism, geography, behavioural science and business. In this

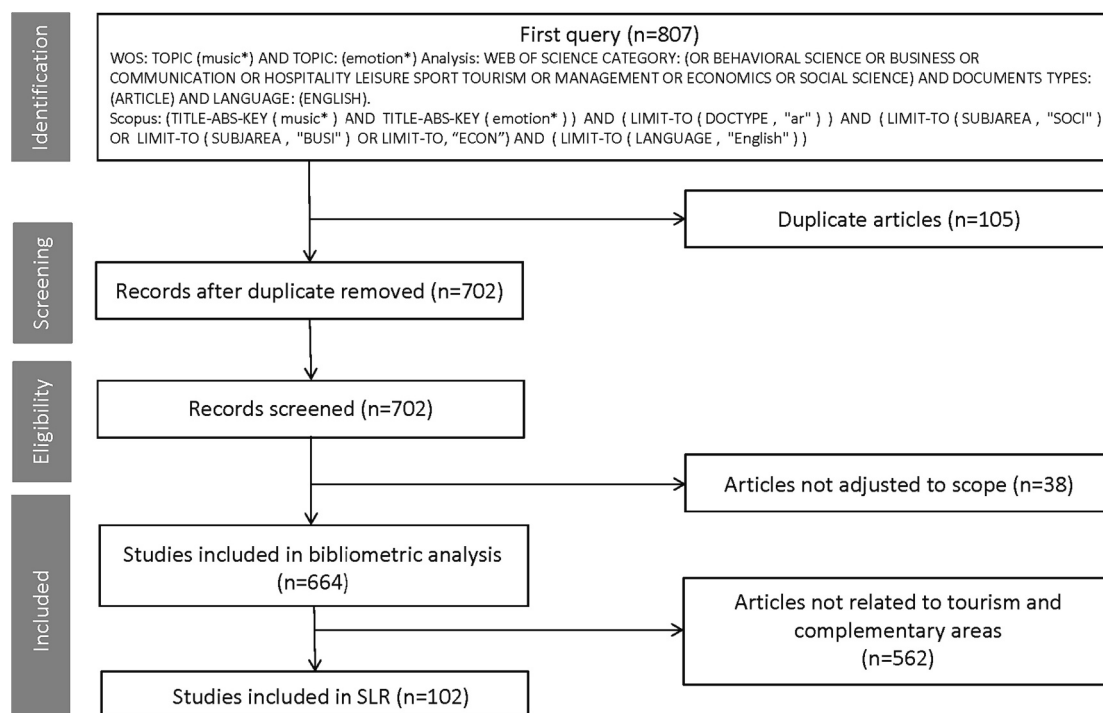


Fig. 1. Technical details of the query procedure adapted from PRISMA Method. Source: Own Elaboration based on Chang et al., 2022

paper, educational, sports and language journals were removed.

The final *corpus* for bibliometric analysis led to target literature made of 664 articles resulting from the adequacy procedure, published from 1970 to 2021, in 270 journals, by 1490 authors. The bibliometric analysis has been developed using SciMat, software commonly used in tourism, to offer an exhaustive analysis of state of the art and tendencies in some specific research fields such as restaurants research evolution, post-covid-19 insights in tourism research or ITC in tourism (Casado-Aranda, Sánchez-Fernández, & Bastidas-Manzano, 2021; Molina-Collado et al., 2022; Rodríguez-López, Alcántara-Pilar, Del Barrio-García, & Muñoz-Leiva, 2020). SciMat can develop an analysis of the bibliographic relations among the units of analysis selected, named nodes that refer to variables (RQ3). The bibliometric analysis is limited to the following condition proposed by Cobo, López-Herrera, Herrera-Viedma, and Herrera (2012), Rodríguez-López et al. (2020), Casado-Aranda et al. (2021), and Molina-Collado et al. (2022): author's words, source's words and added words as a unit of analysis and data reduction method limited to two units; the co-occurrence matrix where the nodes are the words selected and the Equivalence Index and the Clustering algorithm used was Simple Centre Algorithm. All the analysis was measured by document count, h-index and sum citations as quality indicators.

For the SLR *corpus*, only articles related to tourism and complementary areas such as marketing and customer behavioural science are selected ( $n = 102$ ). These articles are analysed, reviewed and cited, emphasizing the research lines and application fields with the aim of highlighting the primary research, analysis and results applied in tourism marketing. The analysis of these articles provides insights into the methodologies, measurement and conceptualisation of the research line (RQ2).

## 4. Results

### 4.1. Outputs evolution and trends

#### 4.1.1. Publications per year

The number of articles found per year shows the increasing relevance of the studied issue. It can be noticed that, since 2010, the scientific production about the application of emotions in tourism has experienced a significant increase (Fig. 2). During the last ten years, it can be observed a clear trend upwards, as 79% of the total of papers published between 2011 and 2021 show. 2021 has been the most productive year, with 117 articles, followed by 2020 with 72 articles and 2019 with 59

articles. This trend shows the growing interest in music in tourism marketing research.

#### 4.1.2. Development of the theoretical concepts

In order to perform a proper analysis, contributions have been divided into three periods: the first from 1970 to 1999, labelled as the initial period, the development period from 2000 to 2010 and the growth period from 2011 until 2021.

The initial period (1970–1999) shows a conceptualization of terms like music, song, store music or soundscape. Dunbar (1990) defines music as “a complete language which can communicate very powerfully with the senses and the emotions” (p. 197) and songs as the tools that materialize this language. Already from the beginning, the musical term is conceptualized with its emotional affectations (Juslin, 2013). Store music is defined as a specific tool developed in a place (Yalch & Spangenberg, 1993). Smith (1994) established the concept of soundscape in reference to the relation between landscape and sensory elements. So, the relevance of music in the ambience and as environmental tool is highlighted (Tuerlan et al., 2021), as well as the development of specific terms related to servicescapes (Bitner, 1992). The studies developed in this stage try to find results on intentions (Alpert & Alpert, 1990), emotion or memory (Baumgartner, 1992), focusing the research aims at zoning (Yalch & Spangenberg, 1993), waiting (Hul et al., 1997) and time spent in spaces, or the uses of music in advertising (Dunbar, 1990). The behavioural responses of SOR Model (Mehrabian & Russell, 1974) are included in terms, above all, of flow.

The development period (2000–2010) hosts 17% of the contributions and brings forward new research environments, focused on environmental psychology and behaviour proposed by Mehrabian and Russell (1974). New terms appear, such as background music (Chebat, Chebat, & Vaillant, 2001), physical surroundings (Sayed et al., 2004) or environmental elements and atmosphere (Chebat et al., 2001; Urich & Koenigstorfer, 2009). There is a significant research trend studying the context and in-store atmosphere related to music and sounds. In the tourism area, specifically, some tourism experiences, such as music festivals, started to be analysed (Matheson, 2008).

Moreover, some relevant contributions are made in the field of methods and theoretical frameworks. First, it developed the dual analysis of emotion in cognition vs affective (Sweeney & Wyber, 2002) or valence vs arousal (Carpentier & Potter, 2007; Gorn, Pham, & Sin, 2001; Mattila & Wirtz, 2006). These researches are in line with what has been proposed by different evaluation theories that establish this dual

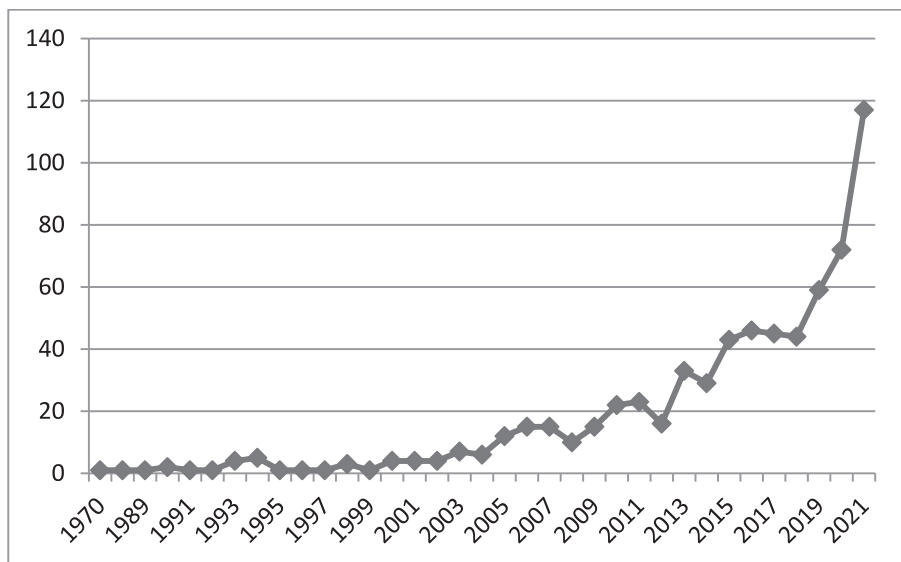


Fig. 2. Evolution of the number of articles per year. (Source: Own Elaboration)



processing pathway (MacInnis & Price, 1987; Mehrabian & Russell, 1974). In addition, authors start using the fusion of sensory elements, combining olfactory (Chebat & Michon, 2003; Lehrner et al., 2005) and visual (Chebat & Morrin, 2007) items with sounds.

The growth period (2011–2021) is the most productive, with 527 articles out of 664. Fields of application evolve based on Information and Communication Technologies (ICT) development. Most scientific production revolves around new technologies: online sources (Anwar, Waqas, Muhammad Zain, & Mui Hung Kee, 2020; Krämer, 2018; Wu, Tao, & Lin, 2017), virtual reality (Hwang, Yoon, & Bendle, 2012; Molet, Billiet, & Bardo, 2013; Skulmowski, Bunge, Kaspar, & Pipa, 2014) or social media (Hudson et al., 2015; Kemp, Francisco, Siew, Turri, & Smith, 2013), particularly Facebook (Hoksbergen & Insch, 2016; Mogaji, 2016) and Twitch (Ruberg & Lark, 2021) as a social tools or Spotify (Eriksson, 2020; Siles et al., 2019) as a musical tool.

Some researchers had introduced the use of musical elements for detailed studies in the previous period (Carpentier & Potter, 2007), but these lines were not developed enough. In this last period, those elements become relevant. Beat (Baird, Walker, Biggs, & Robinson, 2014), genre (Apaolaza-Ibantildez et al., 2010; Fiegel, Meullenet, Harrington, Humble, & Seo, 2014; Istók, Brattico, Jacobsen, Ritter, & Tervaniemi, 2013; Siles et al., 2019; Strobin, Hunt, Spencer, & Hunt, 2015), tempo (Ding & Lin, 2012; Stewart & Koh, 2017) or tone (Centanni, Halpern, Seisler, & Wenger, 2020) are some of the music element isolated studied. Being of great significance in the development of congruency studies (Ausín, Bigne, Marín, Guixeres, & Alcañiz, 2021; Garaus, 2017; Helme-falk & Hultén, 2017; Lee, Andrade, & Palmer, 2013) caused of the use of multisensory tool management.

The methodological innovations implemented during this period include the use of psychophysiological measures through face-reader (Invitto et al., 2017), piloerection (Benedek & Kaernbach, 2011), eye tracking (Skulmowski et al., 2014), cardiovascular measures (Fairclough, van der Zwaag, Spiridon, & Westerink, 2014), electrophysiological responses (Kantono et al., 2019) or electroencephalogram (EEG) (Revuelta, Ortiz, Lucía, Ruiz, & Sánchez-Pena, 2020); and brain responses through functional magnetic resonance imaging (fMRI) (Bert-hold-Losleben et al., 2018), neuron activity (Hill et al., 2013) or amygdala and cortex responses (Liégeois-Chauvel et al., 2014). In line with the physiological study of emotional reactions to music, the

development of Autonomous Sensory Meridian Response (ASMR) auditory tool as a new field of study stands out (Ruberg & Lark, 2021; Sakurai et al., 2021) as a response to theories that state the need to study the elements in isolation to see how they affect the tourist or consumer (Mehrabian & Russell, 1974).

Trends over the last year (2021) also provide new research focusing on the Covid-19-induced social and health care crisis and the behavioural changes that have emerged (Fink et al., 2021; Wulf, Breuer, & Schmitt, 2021).

#### 4.2. Music and emotions methodology and publishing scope

##### 4.2.1. Scientific journal outputs and quality characteristics

Regarding the publishing format, only journal articles were selected to know the publication areas for the target issue (Tuerlan et al., 2021). Out of the total sample, 97 academic journals have at least two published articles. Table 1 shows the top 20 journals sorted by the number of published articles; they cover 34% of the total. Almost all have a quality impact factor index associated with WOS or Scopus. It is worth noting that these top journals belong to diverse categories. Some tourism marketing authors highlight the relevance of psychology in the research on emotion, a key area for a better understanding of the affective changes that tourists may experience during tourism consumption and its subsequent behaviours (Coudounaris & Sthapit, 2017).

##### 4.2.2. Most cited articles and most used theoretical and methodological framework

Some theoretical models and theories are developed in different studies. TAM Model (Ding & Lin, 2012) for online researches, SOR Model in environmental studies (Eroglu, Machleit, & Davis, 2001; Jang & Namkung, 2009), Actor-Partner Interdependence Models in hormonal-emotional analysis (Abad-Tortosa et al., 2019) or PAD Model in emotional tracking articles (Kim & Fesenmaier, 2014) are some of the models used. Also, theoretical basis as the Critical Social Theory applied to environmental studies (Waitt & Duffy, 2010), the Consumption Value Theory (Wu et al., 2017) or the Aesthetic Trinity Theory (Konečni, 2008) coming from behavioural and social science are applied. Some other authors, as Chebat and Michon (2003), take as reference the combination of two theoretical bases, PAD Model and the Cognitive Theory of

**Table 1**  
Quality indexes of the most productive and relevant journals.

Journal	N. doc.	JCR category	Ranking*	SJR Category	Ranking*
Neuropsychologia	34	Behavioral Science	Q3	Behaviotal Neuroscience	Q1
Journal of Business Research	21	Business	Q1	Marketing	Q1
Cortex	20	Behavioral Science	Q1	Neurology	Q1
Biological Psychology	12	Behavioral Science	Q2	Neuropsychology	Q1
Journal of Retailing and Consumer Services	11	Business	Q1	Marketing	Q1
Frontiers in Behavioral Neuroscience	9	Behavioral Science	Q2	Behavioral Neuroscience	Q1
Cognitive Affective and Behavioral Neuroscience	8	Behavioral Science	Q2	Behavioral Neuroscience	Q1
Media Psychology	8	Communication	Q1	Communication	Q1
Journal of Psychology	7	Psychology	Q2	Business	Q1
Psychology and Marketing	7	Business	Q2	Marketing	Q1
Emotion Space and Society	7	Social Science	Q3	Social Psychology	Q2
Journal of Consumer Behaviour	6	Business	Q3	Social Psychology	Q2
Behavioural Brain Research	6	Behavioral Science	Q2	Behavioral Neuroscience	Q2
European Journal of Marketing	6	Business	Q2	Marketing	Q1
Advances in Consumer Research	6	Business	Q4 (2005)	Marketing	Q4 (2019)
Physiology and Behavior	5	Behavioral Science	Q1	Behavioral Neuroscience	Q2
International Journal of Contemporary Hospitality Management	5	Hospitality, Leisure, Sport and Tourism	Q1	Tourism, Leisure and Hospitality Management	Q1
Leisure Studies	5	Hospitality, Leisure, Sport and Tourism	Q4	Tourism, Leisure and Hospitality Management	Q2
International Journal of Hospitality Management	5	Hospitality, Leisure, Sport and Tourism	Q1	Tourism, Leisure and Hospitality Management	Q1
Tourism Management	5	Hospitality, Leisure, Sport and Tourism	Q1	Tourism, Leisure and Hospitality Management	Q1

\* Quartiles of journals according to the ranking based on the impact index calculated in the year 2021 Source: Own Elaboration.

Emotions, with the aim of explaining the combined nature of emotions. The study of emotions and the difficulty of approaching complete emotional analysis, including affective and cognitive elements, make essential the use of combined theories.

To understand the most relevant research lines, it is also essential to analyse the updated most cited publications (Molina-Collado et al., 2022). There are differences between the numbers of citations recorded in the two databases considered due to the different counting protocols employed (Table 2).

Most of the articles try to evaluate the environmental conditions while trying to understand customer responses. The SOR Model is one of the most relevant and developed theoretical frameworks used in emotional studies (Tuerlan et al., 2021) and also the most frequently used in the top 20 most cited articles in this study (Table 2). This theory, stated by Mehrabian and Russell (1974) and based on environmental psychology, suggests that the stimulus in the space strongly conditions emotions. These relations between the environment, the customers' reactions and behavioural intentions have been strongly developed by some authors in research areas such as retailing (Vieira, 2013) or tourism (Tuerlan et al., 2021). Table 2 shows that the most used method is the survey through structured questionnaires analysed with a structural equation model. Nevertheless, also, it has been developed in case studies and experiments. Some other papers studied hormonal and emotional responses by testosterone tests (Abad-Tortosa et al., 2019), neural and cerebral responses (Centanni et al., 2020; Halko, Mäkelä, Nummenmaa, Hlushchuk, & Schürmann, 2015; Istók et al., 2013) and physiological and psychological responses (Egermann, Pearce, Wiggins, & McAdams, 2013; Li, 2019). Such methodologies improve data collection, allowing consumer reactions and behaviours to be fully understood (Hadinejad et al., 2019; Volo, 2021).

#### 4.3. Bibliometric and content analysis

Among the 664 articles identified and used in the bibliometric analysis, SciMat established 38 clusters, known as nodes, classified by Callon's centrality and Callon's density in 4 different themes shown in a strategic diagram (Fig. 3). Centrality is defined as "the degree of interaction of a network with other networks", and density as "the internal strength of the network" (Cobo et al., 2012, p. 9).

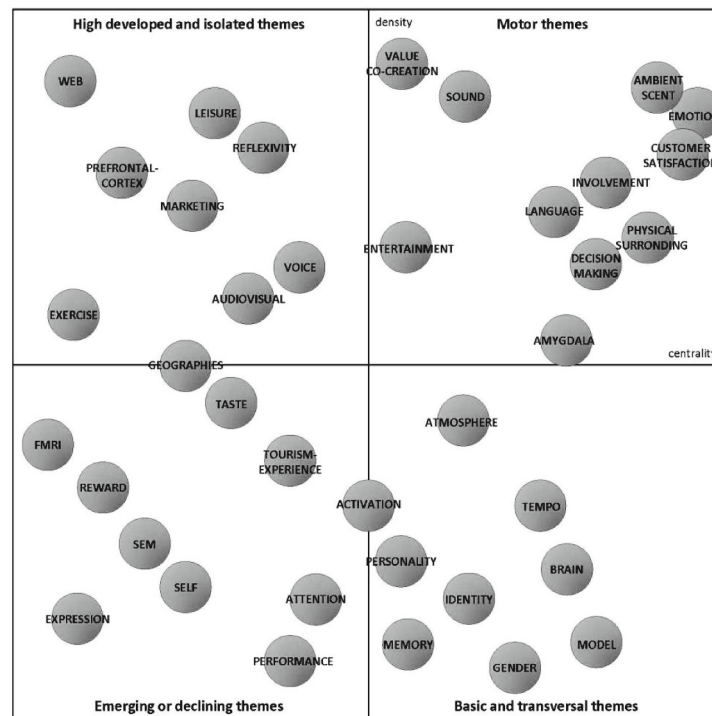
Some motor themes are reviewed in detail because of their relevance (high density and centrality) (Cobo et al., 2012). That means that these nodes have relevance in the research field but also have internal developed links. These themes include conceptualization nodes as sound or physical surroundings that show the auditory elements used in studies and related to environmental tools. These terms have been studied in different areas related to branding (Argo et al., 2010; Klepzig et al., 2020), quality of experience (Klimmt et al., 2019), retailing (Biswas, Lund, & Szocs, 2019; Hynes & Manson, 2016; Sayed et al., 2004), geography (Duffy, Waitt, & Harada, 2016) and tourism management (Gale, Ednie, Beeftink, & Adiego, 2021). Also, there is a motor node related to ambient scent that shows the multisensory uses of the stimuli. This variable has been used in the tourism field (Anguera-Torrell, León, Cappai, & Antolín, 2021), but, above all, there are also substantial academic contributions in the retailing field that include sensory ambient as a flow tool that provides more sensory immersive atmospheres (Biswas et al., 2019; Chebat & Michon, 2003; Jha & Singh, 2013; Lehrner et al., 2005).

Some marketing result variables, such as customer satisfaction, are also motor themes and have been studied in the service context of developing emotions and music in places and environments (Garaus, 2017; Jani & Han, 2014; Ladhari, Souiden, & Dufour, 2017; Moon, Yoon, & Han, 2016; Morrison et al., 2011; Wirtz & Bateson, 1999; Wirtz, Mattila, & Tan, 2000). Specifically, it is developed in the so-called servicescape, defined as the ambient design with sensory and affective

**Table 2**  
Most cited articles and most employed methodologies.

Title	Year	Authors	Journal	WOS	Scopus	Model and methodology
Perceived quality, emotions, and behavioral intentions: Application of an extended Mehrabian-Russell model to restaurant	2009	Jang, SC Namkung, Y	Journal of Business Research	529	587	Using Stimulus-Oganism-Result (SOR) Model for evaluating through Structural Equation Model (SEM)
Atmospheric qualities of online retailing - A conceptual model and implications	2001	Eroglu, SA Machleit, KA Davis, LM	Journal of Business Research	523	682	A proposal model is developed based on SOR Model
Impact of ambient odors on mall shoppers' emotions, cognition, and spending - A test of competitive causal theories	2003	Chebat, JC Michon, R	Journal of Business Research	363	428	Comparing SOR Model and Emotion-Cognition Model through SEM
When should a retailer create an exciting store environment?	2006	Kaltcheva, VD Weitz, BA	Journal of Marketing	350	-	Analysis of the motivational orientation in the SOR Model by two experiments
The impact of music on consumers' reactions to waiting for services	1997	Hul, MK Dube, L Chebat, JC	Journal of Retailing	240	291	By five experimental conditions, emotional response and perceived wait were studied
Service clues and customer assessment of the service experience: Lessons from marketing	2006	Berry, LL Wall, EA Carbone, LP	Academy of Management Perspectives	231	279	A case study based on three experience clues that influence customers' perceptions
Ambient odors of orange and lavender reduce anxiety and improve mood in a dental office	2005	Lehrner, J Marwinski, G Lehr, S Johren, P Deecke, L	Physiology and Behavior	225	281	Statistical analysis of people answer to four ambience conditions by questionnaires
The effects of social media on emotions, brand relationship quality, and word of mouth: An empirical study of music festival attendees	2015	Hudson, S Roth, MS Madder, TJ Hudson, R	Tourism Management	221	263	Evaluating behavioural and emotional results in a music tourism context by SEM
The effects of music in a retail setting on real and perceived shopping times	2000	Yalch, RF Spangenberg, RE	Journal of Business Research	213	255	Analysis of customer results in a simulated experiment for evaluating environmental factors
Consumer satisfaction with services: Integrating the environment perspective in services marketing into the traditional disconfirmation paradigm	1999	Wirtz, J Bateson, JEG	Journal of Business Research	209	276	By a simulation experiment, satisfaction is evaluated as a consumption result variable in SOR Model

Source: Own Elaboration.



Themes	Characteristics	Study clusters*
High developed and isolated themes	High density Low centrality	Geography (9), Leisure (6), Reflexivity (5), Prefrontal-Cortex (5), Marketing (5), Voice (4), Audiovisual (4), Exercise (3), Web (3)
Emerging or declining themes	Low density Low centrality	Performance (10), Tourism Experience (8), Activation (7), Attention (6), Reward (5), Self (5), Taste (4), FMRI (4), Expression (4), SEM (3)
Basic and transversal themes	Low density High centrality	Brain (14), Personality (11), Model (11), Tempo (7), Memory (10), Atmosphere (9), Gender (9), Identity (8)
Motor themes	High density High centrality	Emotions (187), Customer-Satisfaction (30), Ambient-Scents (20), Decision-Making (14), Sound (13), Language (12), Physical-Surrounding (12), Involvement (10), Amygdala (9), Entertainment (6), Value Co-creation (5)

Fig. 3. Cluster classified by themes and by document count. Source: Own Elaboration, adapted from strategic diagram by SciMat. \*The numbers in brackets show the relevance of the cluster according to its document count.

elements (Lin & Worthley, 2012). This relation interacts with involvement (Harmon & Kyle, 2016) and place-attachment (Fu, Yi, Okumus, & Jin, 2019; Rajaobelina, Dusseault, & Ricard, 2019). They have been studied in conjunction with the opposite variable detachment (Sinclair, 2015), in leisure activities research, where is analysed the emotional results of a music scene (Harmon & Kyle, 2016) and in the branding field (Argo et al., 2010; Hepola, Karjaluoto, & Hintikka, 2017). Also, satisfaction and emotions have been used in experiential research to develop ambience relations between arousal, pleasure, and satisfaction in restaurants (Wirtz et al., 2000).

### 5. Conclusions and future research lines

This study tries to identify, summarize, clarify and analyse the research inputs that link music and emotions during the last 50 years (1970–2022). The main implication is the theoretical contribution in tourism marketing studies focused on music and emotion. The interdisciplinary study of the application of sensory marketing and consumer emotional behaviour is carried out through an extensive literature review including business, behavioural and psychological fields. This analysis highlights the evolution and trends that could be applied in forward tourism marketing research.

The trend of scientific production related to the topic shows the increasing interest of marketing scholars in the study of music and sounds related to emotions. It can be understood in line with the growing interest in the knowledge of emotions in tourism (Tuerlan et al., 2021). The state-of-the-art shows the relevance of the variable emotion in conjunction with music elements and tools and an evident growth of interest during the last ten years. It could be explained by the long-standing use of sensory marketing in service delivery and retailing and the application of this knowledge in tourism. But also, it could be explained by the new methodologies applied that helps to focus and solve the research question from another approach.

The most used theoretical basis and conceptualizations are explained by most cited articles. This emotion and music research line has been developed based on different and multidimensional research areas. Above all, studies related to this scope are focused on behavioural studies, as most productive journals display. As the review settles, emotions are conceptualized as reactions to stimuli by behavioural, psychological, psychophysiological, or neuronal science of general human behaviour. Although the survey methodology is applied, the scope of the most productive journals provides an important scientific theoretical basis for the application of innovative emotional measures methodologies in marketing. These methodologies come from neurology

science, such as psychophysiological and biometric measures or neuroimaging (Bastiaansen et al., 2019) and could help to understand the complete decision-making process through the different reaction studies (Mehrabian & Russell, 1974). But applying this scientific knowledge is also implemented in other fields such as business, communication, hospitality and tourism. The numbers and quality of journals that host scientific articles in this scope reflect the interest, applicability and reliability of emotional music studies. Environmental reactions are the most common developed studies in these articles, mainly by the psychological SOR Model. This tendency shows the scholars' interest in the eliciting process of emotions through music as sensory communication and environmental tool in the development of experiential environments or servicescapes (Bitner, 1992).

Music's emotional responses and reactions evolve around experience development. Bibliometric analysis displays relevant themes related to the tourist decision-making process in the different consumption stages. Stimuli are developed by different auditory elements, including controllable ones such as sounds or language and even uncontrollable ones such as physical surroundings that could be combined with other sensory elements. These stimuli, through a mental imagery process of association and interaction with information (MacInnis & Price, 1987), lead to emotional responses that the brain and psychophysiological activity could measure. All these processes could have resulted in tourists' responses by satisfaction, involvement, decision making or positive evaluation through quality, perceived waiting or ambient settings explained by Tourist Gaze Theory (Urry, 2002).

As limitations of the work, articles that are not from complementary areas and not included in the analysis may also be interesting. There may have been a loss of information. Other areas, such as sport or education, work with variables such as memory or wellbeing, which are of increasing interest in the field of tourism. These articles, although not specific to the area of study, may serve to contribute theoretical or methodological ideas. In the case of articles referring to sports, it could be interesting to analyse how the relationship between movement and music is studied and how psychophysiology methodologies are applied in this field.

This paper tries to approach a theoretical frame that could be useful for developing emotional studies in tourism and marketing. The contribution of this paper to the literature is to build a theoretical scheme of the most developed research lines that could be useful for explaining and understanding the scope of music and emotions. Theoretically, a methodological, conceptual and theoretical approach helps to highlight the tendencies in music on emotional tourist studies. The concepts are clarified and the relevance of the different typologies of studies and the essential variables in emotional analysis are presented. Some practical implications for involved stakeholders are based on the approach to understanding possible consumer reactions and the elements for tourist music experience design. The variables highlighted in this study allow managers to understand the responses and possible outcomes of the application of musical tools in their experiences. In addition, it provides a series of auditory (genre, rhythm or timbre of the music) and personal (consumer tastes, expectations) elements that can influence the tourist evaluation and response. The multidimensional nature of tourism marketing and emotional scope could be a limitation in the approach of theoretical and methodological studies tendency by SLR. It could be interesting if more specific studies could be developed with the focus on multisensorial tools (touch, taste, or smell) as emotional enhancer applied in the tourism field that helps to improve tourists' experiences in terms of evaluation and marketing results. For future research, it could be interesting to approach the auditory and musical studies from an experimental and multi methodological perspective. It would help to understand how music tools affect consumer behaviour in isolation. Also, applied studies should be adapted to new technological tendencies, trying to apply VR or metaverse studies or big data automatization for the analysis of environment perception (Andronie et al., 2023).

## Declaration of Competing Interest

None.

## Acknowledgements

The authors acknowledge the funding by Diputación de Cáceres (Spain) with the project "Tajo-Salor: La Torta, sus tierras y sus aguas" (Ref. AV-2).

## References

- Abad-Tortosa, D., Costa, R., Alacreu-Crespo, A., Hidalgo, V., Salvador, A., & Serrano, M.A. (2019). Hormonal and emotional responses to competition using a dyadic approach: Basal testosterone predicts emotional state after a defeat. *Physiology & Behavior*, 206, 106–117. <https://doi.org/10.1016/j.physbeh.2019.03.025>
- Agapito, D., Mendes, J., & Valle, P. (2013). Exploring the conceptualization of the sensory dimension of tourist experiences. *Journal of Destination Marketing and Management*, 2, 62–73. <https://doi.org/10.1016/j.jdmm.2013.03.001>
- Alpert, J. I., & Alpert, M. I. (1990). Music influences on mood and purchase intentions. *Psychology and Marketing*, 7(2), 109–133. <https://doi.org/10.1002/MAR.4220070204>
- Andronie, M., Lăzăroi, G., Karabolevski, O. L., Ștefănescu, R., Hurlou, I., Dijmărescu, A., & Dijmărescu, I. (2023). Remote big data management tools, sensing and computing technologies, and visual perception and environment mapping algorithms in the internet of robotic things. *Electronics*, 12(1), 22. <https://doi.org/10.3390/electronics12010022>
- Anguera-Torrell, O., León, I.Á., Cappai, A., & Antolín, G. S. (2021). Do ambient scents in hotel guest rooms affect customers' emotions? *European Journal of Tourism Research*, 27, 2701. <https://doi.org/10.54055/ejtr.v27i.2120>
- Anwar, A., Waqas, A., Muhammad Zain, H., & Mui Hung Kee, D. (2020). Impact of music and colour on Customers' emotional states: An experimental study of online store. *Asian Journal of Business Research*, 10(1), 104–125. <https://doi.org/10.14707/ajbr.190077>
- Apaolaza-Ibantildez, V., Zander, M. F., & Hartmann, P. (2010). Memory, emotions and rock n roll: The influence of music in advertising, on brand and endorser perception. *African Journal of Business Management*, 4(17), 3805–3816.
- Argo, J. J., Popa, M., & Smith, M. C. (2010). The sound of brands. *Journal of Marketing*, 74, 97–109. <https://doi.org/10.1509/JMKG.74.4.097>
- Ausín, J. M., Bigne, E., Marín, J., Guixeres, J., & Alcañiz, M. (2021). The background music-content congruence of TV advertisements: A neurophysiological study. *European Research on Management and Business Economics*, 27(2). <https://doi.org/10.1016/j.iedeen.2021.100154>
- Baird, A. D., Walker, D. G., Biggs, V., & Robinson, G. A. (2014). Selective preservation of the beat in aperceptive music agnosia: A case study. *Cortex*, 53(1), 27–33. <https://doi.org/10.1016/j.cortex.2014.01.005>
- Bastiaansen, M., Lub, X. D., Mitas, O., Jung, T. H., Ascensão, M. P., Han, D.-I., ... Srijbosch, W. (2019). Emotions as core building blocks of an experience. *International Journal of Contemporary Hospitality Management*, 31(2), 651–668. <https://doi.org/10.1108/IJCHM-11-2017-0761>
- Baumgartner, H. (1992). Remembrance of things past: Music, autobiographical memory, and emotion. *ACR North American Advances*, 19, 613–620.
- Benedek, M., & Kaernbach, C. (2011). Physiological correlates and emotional specificity of human piloerection. *Biological Psychology*, 86(3), 320–329. <https://doi.org/10.1016/j.biopsycho.2010.12.012>
- Berry, L. L., Wall, E. A., & Carbone, L. P. (2006). Service clues and customer assessment of the service experience: Lessons from marketing. *Academy of Management Perspectives*, 20(2), 43–57. <https://www.jstor.org/stable/4166231>
- Berthold-Losleben, M., Habel, U., Brehl, A.-K., Freiherr, J., Losleben, K., Schneider, F., ... Kohn, N. (2018). Implicit affective rivalry: A behavioral and fMRI study combining olfactory and auditory stimulation. *Frontiers in Behavioral Neuroscience*, 12(313), 1–14. <https://doi.org/10.3389/FNBEH.2018.00313>
- Biswas, D., Lund, K., & Szocs, C. (2019). Sounds like a healthy retail atmospheric strategy: Effects of ambient music and background noise on food sales. *Journal of the Academy of Marketing Science*, 47, 37–55. <https://doi.org/10.1007/s11747-018-0583-8>
- Bitner, M. J. (1992). Servicescapes: The impact of physical surroundings on customers and employees. *Journal of Marketing*, 56(2), 57–71. <https://doi.org/10.1177/002224299205600205>
- Carpentier, F. R. D., & Potter, R. F. (2007). Effects of music on physiological arousal: Explorations into tempo and genre. *Media Psychology*, 10(3), 339–363. <https://doi.org/10.1080/15213260701533045>
- Casado-Aranda, L. A., Sánchez-Fernández, J., & Bastidas-Manzano, A.-B. (2021). Tourism research after the COVID-19 outbreak: Insights for more sustainable, local and smart cities. *Sustainable Cities and Society*, 73(103126), 1–14. <https://doi.org/10.1016/j.scs.2021.103126>
- Centanni, T. M., Halpern, A. R., Seisler, A. R., & Wenger, M. J. (2020). Context-dependent neural responses to minor notes in frontal and temporal regions distinguish musicians from nonmusicians. *Cognitive, Affective, & Behavioral Neuroscience*, 20, 551–564. <https://doi.org/10.3758/s13415-020-00785-6>



- Chang, L., Moyle, B. D., Dupre, K., Filep, S., & Vada, S. (2022). Progress in research on seniors' well-being in tourism: A systematic review. *Tourism Management Perspectives*, 44. <https://doi.org/10.1016/j.tmp.2022.101040>
- Chebat, J. C., Chebat, C. G., & Vaillant, D. (2001). Environmental background music and in-store selling. *Journal of Business Research*, 54(2), 115–123. [https://doi.org/10.1016/S0148-2963\(99\)00089-2](https://doi.org/10.1016/S0148-2963(99)00089-2)
- Chebat, J. C., & Michon, R. (2003). Impact of ambient odors on mall shoppers' emotions, cognition, and spending: A test of competitive causal theories. *Journal of Business Research*, 56(7), 529–539. [https://doi.org/10.1016/S0148-2963\(01\)00247-8](https://doi.org/10.1016/S0148-2963(01)00247-8)
- Chebat, J. C., & Morrin, M. (2007). Colors and cultures: Exploring the effects of mall décor on consumer perceptions. *Journal of Business Research*, 60(3), 189–196. <https://doi.org/10.1016/J.JBUSRES.2006.11.003>
- Cobo, M. J., López-Herrera, A. G., Herrera-Viedma, E., & Herrera, F. (2012). SciMAT: A new science mapping analysis software tool. *Journal of the American Society for Information Science and Technology*, 63(8), 1609–1630. <https://doi.org/10.1002/asi.22688>
- Coudounaris, D. N., & Sthapit, E. (2017). Antecedents of memorable tourism experience related to behavioral intentions. *Psychology and Marketing*, 34(12), 1084–1093. <https://doi.org/10.1002/mar.21048>
- Ding, C. G., & Lin, C. H. (2012). How does background music tempo work for online shopping? *Electronic Commerce Research and Applications*, 11(3), 299–307. <https://doi.org/10.1016/J.ELERAP.2011.10.002>
- Duffy, M., Waitt, G., & Harada, T. (2016). Making sense of sound: Visceral sonic mapping as a research tool. *Emotion, Space and Society*, 20, 49–57. <https://doi.org/10.1016/J.EMOSPA.2016.06.006>
- Dunbar, D. S. (1990). Music, and advertising. *International Journal of Advertising*, 9(3), 197–203. <https://doi.org/10.1080/02650487.1990.11107148>
- Egermann, H., Pearce, M. T., Wiggins, G. A., & McAdams, S. (2013). Probabilistic models of expectation violation predict psychophysiological emotional responses to live concert music. *Cognitive, Affective, & Behavioral Neuroscience*, 13(3), 533–553. <https://doi.org/10.3758/S13415-013-0161-Y>
- Eriksson, M. (2020). The editorial playlist as container technology: On Spotify and the logistical role of digital music packages. *Journal of Cultural Economy*, 13(4), 415–427. <https://doi.org/10.1080/17530350.2019.1708780>
- Eroglu, S. A., Machleit, K. A., & Davis, L. M. (2001). Atmospheric qualities of online retailing: A conceptual model and implications. *Journal of Business Research*, 54(2), 177–184. [https://doi.org/10.1016/S0148-2963\(99\)00087-9](https://doi.org/10.1016/S0148-2963(99)00087-9)
- Errajaa, K., Legohérel, P., & Daucé, B. (2018). Immersion and emotional reactions to the ambiance of a multiservice space: The role of perceived congruence between odor and brand image. *Journal of Retailing and Consumer Services*, 40, 100–108. <https://doi.org/10.1016/j.jretconser.2017.08.016>
- Fairclough, S. H., van der Zwaag, M., Spiridon, E., & Westerink, J. (2014). Effects of mood induction via music on cardiovascular measures of negative emotion during simulated driving. *Physiology & Behavior*, 129, 173–180. <https://doi.org/10.1016/J.PHYSBEH.2014.02.049>
- Fiegel, A., Meulenet, J. F., Harrington, R. J., Humble, R., & Seo, H. S. (2014). Background music genre can modulate flavor pleasantness and overall impression of food stimuli. *Appetite*, 76, 144–152. <https://doi.org/10.1016/J.APPET.2014.01.079>
- Fink, A. (2014). *Conducting research literature reviews: From the internet to paper*. SAGE Publications Inc.
- Fink, L. K., Warrenburg, L. A., Howlin, C., Randall, W. M., Hansen, N. C., & Wald-Fuhrmann, M. (2021). Viral tunes: Changes in musical behaviours and interest in coronamusic predict socio-emotional coping during COVID-19 lockdown. *Humanities and Social Sciences Communications*, 8(180). <https://doi.org/10.1057/s41599-021-00858-y>
- Fu, X., Yi, X., Okumus, F., & Jin, W. (2019). Linking the internal mechanism of exhibition attachment to exhibition satisfaction: A comparison of first-time and repeat attendees. *Tourism Management*, 72, 92–104. <https://doi.org/10.1016/J.TOURMAN.2018.11.002>
- Gale, T., Ednie, A., Beefink, K., & Adiego, A. (2021). Beyond noise management: Exploring visitors' perceptions of positive emotional soundscape dimensions. *Journal of Leisure Research*, 52(2), 129–153. <https://doi.org/10.1080/00222216.2020.1749912>
- Garaus, M. (2017). Atmospheric harmony in the retail environment: Its influence on store satisfaction and re-patronage intention. *Journal of Consumer Behaviour*, 16, 265–278. <https://doi.org/10.1002/cb.1626>
- Gorn, G., Pham, M. T., & Sin, L. Y. (2001). When arousal influences ad evaluation and valence does not (and vice versa). *Journal of Consumer Psychology*, 11(1), 43–55. [https://doi.org/10.1207/S15327663JCP1101\\_4](https://doi.org/10.1207/S15327663JCP1101_4)
- Hadinejad, A., Moyle, B. D., Kralj, A., & Scott, N. (2019). Physiological and self-report methods to the measurement of emotion in tourism. *Tourism Recreation Research*, 44(4), 466–478. <https://doi.org/10.1080/02508281.2019.1604937>
- Halko, M. L., Mäkelä, T., Nummenmaa, L., Hlushchuk, Y., & Schürmann, M. (2015). Hedonic context modulates risky choices and reward responses in amygdala and dorsal striatum. *Journal of Neuroscience, Psychology, and Economics*, 8(2), 100–115. <https://doi.org/10.1037/NPE0000036>
- Harmon, J., & Kyle, G. T. (2016). Positive emotions and passionate leisure involvement. *Annals of Leisure Research*, 19(1), 62–79. <https://doi.org/10.1080/11745398.2015.1065753>
- Helmefalk, M., & Hultén, B. (2017). Multi-sensory congruent cues in designing retail store atmosphere: Effects on shoppers' emotions and purchase behavior. *Journal of Retailing and Consumer Services*, 38, 1–11. <https://doi.org/10.1016/j.jretconser.2017.04.007>
- Hepola, J., Karjaluoto, H., & Hintikka, A. (2017). The effect of sensory brand experience and involvement on brand equity directly and indirectly through consumer brand engagement. *Journal of Product and Brand Management*, 26(3), 282–293. <https://doi.org/10.1108/JPBM-10-2016-1348>
- Hill, A. T., Fitzgibbon, B. M., Arnold, S. L., Rinehart, N. J., Fitzgerald, P. B., & Enticott, P. G. (2013). Modulation of putative mirror neuron activity by both positively and negatively valenced affective stimuli: A TMS study. *Behavioural Brain Research*, 249, 116–123. <https://doi.org/10.1016/J.BBR.2013.04.027>
- Hoksbergen, E., & Insch, A. (2016). Facebook as a platform for co-creating music festival experiences: The case of New Zealand's Rhythm and Vines New Year's Eve festival. *International Journal of Event and Festival Management*, 7(2), 84–99. <https://doi.org/10.1108/IJEFM-02-2016-0012>
- Hudson, S., Roth, M. S., Madden, T. J., & Hudson, R. (2015). The effects of social media on emotions, brand relationship quality, and word of mouth: An empirical study of music festival attendees. *Tourism Management*, 47, 68–76. <https://doi.org/10.1016/j.tourman.2014.09.001>
- Hul, M. K., Dube, L., & Chebat, J. C. (1997). The impact of music on consumers' reactions to waiting for services. *Journal of Retailing*, 73(1), 87–104. [https://doi.org/10.1016/S0022-4359\(97\)90016-6](https://doi.org/10.1016/S0022-4359(97)90016-6)
- Hwang, J., Yoon, S. Y., & Bendle, L. J. (2012). Desired privacy and the impact of crowding on customer emotions and approach-avoidance responses: Waiting in a virtual reality restaurant. *International Journal of Contemporary Hospitality Management*, 24(2), 224–250. <https://doi.org/10.1108/09596111211206150>
- Hynes, N., & Manson, S. (2016). The sound of silence: Why music in supermarkets is just a distraction. *Journal of Retailing and Consumer Services*, 28, 171–178. <https://doi.org/10.1016/j.jretconser.2015.10.001>
- Invitto, S., Calcagni, A., Mignozzi, A., Scardino, R., Piraino, G., Turchi, D., ... de Tommaso, M. (2017). Face recognition, musical appraisal, and emotional Crossmodal Bias. *Frontiers in Behavioral Neuroscience*, 11(144), 1–14. <https://doi.org/10.3389/FNBEH.2017.00144>
- Istók, E., Brattico, E., Jacobsen, T., Ritter, A., & Tervaniemi, M. (2013). 'I love Rock "n" Roll'—Music genre preference modulates brain responses to music. *Biological Psychology*, 92(2), 142–151. <https://doi.org/10.1016/J.BIOPSYCHO.2012.11.005>
- Jang, S. C., & Namkung, Y. (2009). Perceived quality, emotions, and behavioral intentions: Application of an extended Mehrabian-Russell model to restaurants. *Journal of Business Research*, 62(4), 451–460. <https://doi.org/10.1016/j.jbusres.2008.01.038>
- Jani, D., & Han, H. (2014). Testing the moderation effect of hotel ambience on the relationships among social comparison, affect, satisfaction, and behavioral intentions. *Journal of Travel & Tourism Marketing*, 31(6), 731–746. <https://doi.org/10.1080/10548408.2014.888967>
- Jha, S., & Singh, B. (2013). Impact of ambient music and affability of salespersons on consumer behavior in a real retail setting with emphasis on gender difference. *Indian Journal of Marketing*, 43(4), 5–11. <https://doi.org/10.17010/IJOM/2013/V43/I4/36373>
- Juslin, P. N. (2013). From everyday emotions to aesthetic emotions: Towards a unified theory of musical emotions. *Physics of Life Reviews*, 10(3), 235–266. <https://doi.org/10.1016/j.plprev.2013.05.008>
- Juslin, P. N., & Västfjäll, D. (2008). Emotional responses to music: The need to consider underlying mechanisms. *Behavioral and Brain Sciences*, 31(5), 559–621. <https://doi.org/10.1017/S0140525X08005293>
- Kaltcheva, V. D., & Weitz, B. A. (2006). When should a retailer create an exciting store environment? *Journal of Marketing*, 70(1), 107–118. <https://doi.org/10.1509/jmkg.2006.70.1.107>
- Kantono, K., Hamid, N., Shepherd, D., Lin, Y. H. T., Skiredj, S., & Carr, B. T. (2019). Emotional and electrophysiological measures correlate to flavour perception in the presence of music. *Physiology & Behavior*, 199, 154–164. <https://doi.org/10.1016/J.PHYSBEH.2018.11.012>
- Kemp, E., Francisco, C., Siew, S. W., Turri, A. M., & Smith, K. H. (2013). Developing affective brand commitment through social media. *Journal of Electronic Commerce Research*, 14(3), 201–214.
- Kim, J., & Fesenmaier, D. R. (2014). Measuring emotions in real time: Implications for tourism experience design. *Journal of Travel Research*, 54(4), 419–429. <https://doi.org/10.1177/0047287514550100>
- Kirilova, K., Lehto, X., & Cai, L. (2017). What triggers transformative tourism experiences? *Tourism Recreation Research*, 42(4), 498–511. <https://doi.org/10.1080/02508281.2017.1342349>
- Klepzig, K., Horn, U., König, J., Holtz, K., Wendt, J., Hamm, A. O., & Lotze, M. (2020). Brain imaging of chill reactions to pleasant and unpleasant sounds. *Behavioural Brain Research*, 380, Article 112417. <https://doi.org/10.1016/J.BBR.2019.112417>
- Klimmt, C., Possler, D., May, N., Auge, H., Wanjek, L., & Wolf, A. L. (2019). Effects of soundtrack music on the video game experience. *Media Psychology*, 22(5), 689–713. <https://doi.org/10.1080/15213269.2018.1507827>
- Konečni, V. J. (2008). Does music induce emotion? A theoretical and methodological analysis. *Psychology of Aesthetics, Creativity, and the Arts*, 2(2), 115–129. <https://doi.org/10.1037/1931-3896.2.2.115>
- Krämer, B. (2018). Online music recommendation platforms as representations of ontologies of musical taste. *Communications*, 43(2), 259–281. <https://doi.org/10.1515/COMMUN-2017-0056>
- Ladhari, R., Souden, N., & Dufour, B. (2017). The role of emotions in utilitarian service settings: The effects of emotional satisfaction on product perception and behavioral intentions. *Journal of Retailing and Consumer Services*, 34, 10–18. <https://doi.org/10.1016/j.jretconser.2016.09.005>
- Lajante, M., & Lux, G. (2020). Perspective: Why organizational researchers should consider psychophysiology when investigating emotion? *Frontiers in Psychology*, 11, 1–7. <https://doi.org/10.3389/fpsyg.2020.01705>

- Lee, C. J., Andrade, E. B., & Palmer, S. E. (2013). Interpersonal relationships and preferences for mood-congruity in aesthetic experiences. *Journal of Consumer Research*, 40(2), 382–391. <https://doi.org/10.1086/670609>
- Lehrner, J., Marwinski, G., Lehr, S., Johren, P., & Deecke, L. (2005). Ambient odors of orange and lavender reduce anxiety and improve mood in a dental office. *Physiology & Behavior*, 86(1–2), 92–95. <https://doi.org/10.1016/J.PHYSBEH.2005.06.031>
- Li, S. (2019). Emotional appeals in tourism TV commercials: A psycho-physiological study. *Journal of Hospitality and Tourism Research*, 43(6), 783–806. <https://doi.org/10.1177/1096348019828440>
- Li, S., Scott, N., & Walters, G. (2015). Current and potential methods for measuring emotion in tourism experiences: A review. *Current Issues in Tourism*, 18(9), 805–827. <https://doi.org/10.1080/13683500.2014.975679>
- Liègeois-Chauvel, C., Bénar, C., Krieg, J., Delbé, C., Chauvel, P., Giusiano, B., & Bigand, E. (2014). How functional coupling between the auditory cortex and the amygdala induces musical emotion: A single case study. *Cortex*, 60, 82–93. <https://doi.org/10.1016/J.CORTEX.2014.06.002>
- Lin, I. Y., & Worthley, R. (2012). Servicescape moderation on personality traits, emotions, satisfaction, and behaviors. *International Journal of Hospitality Management*, 31(1), 31–42. <https://doi.org/10.1016/J.IJHM.2011.05.009>
- Loureiro, S. M. C., Roschk, H., & Lima, F. (2019). The role of background music in visitors' experience of art exhibitions: Music, memory and art appraisal. *International Journal of Arts Management*, 22(1), 4–24.
- MacInnis, D. J., & Price, L. L. (1987). The role of imagery in information processing: Review and extensions. *Journal of Consumer Research*, 13(4), 473–491. <https://www.jstor.org/stable/2489369>
- Matheson, C. M. (2008). Music, emotion and authenticity: A study of Celtic music festival consumers. *Journal of Tourism and Cultural Change*, 6(1), 57–74. <https://doi.org/10.1080/14766820802140448>
- Mattila, A. S., & Wirtz, J. (2006). Arousal expectations and service evaluations. *International Journal of Service Industry Management*, 17(3), 229–244. <https://doi.org/10.1108/09564230610667087>
- Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*. M.I.T. Press.
- Min, Z., Jie, Z., Xiao, X., Mengyuan, Q., Youhai, L., Hui, Z., ... Meng, H. (2019). How destination music affects tourists' behaviors: Travel with music in Lijiang, China. *Asia Pacific Journal of Tourism Research*, 25(2), 131–144. <https://doi.org/10.1080/10941665.2019.1683046>
- Mogaji, E. (2016). This advert makes me cry: Disclosure of emotional response to advertisement on Facebook. *Cogent Business and Management*, 3(1). <https://doi.org/10.1080/23311975.2016.1177906>
- Molet, M., Billiet, G., & Bardo, M. T. (2013). Conditioned place preference and aversion for music in a virtual reality environment. *Behavioural Processes*, 92, 31–35. <https://doi.org/10.1016/J.BEPROC.2012.10.001>
- Molina-Collado, A., Gómez-Rico, M., Sigala, M., Molina, M. V., Aranda, E., & Salinero, Y. (2022). Mapping tourism and hospitality research on information and scientific approach. *Information Technology & Tourism*, 24, 299–340. <https://doi.org/10.1007/s40558-022-00227-8>
- Moon, H., Yoon, H. J., & Han, H. (2016). Role of airport physical environments in the satisfaction generation process: Mediating the impact of traveller emotion. *Asia Pacific Journal of Tourism Research*, 21(2), 193–211. <https://doi.org/10.1080/10941665.2015.1048260>
- Morrison, M., Gan, S., Dubelaar, C., & Oppewal, H. (2011). In-store music and aroma influences on shopper behavior and satisfaction. *Journal of Business Research*, 64(6), 558–564. <https://doi.org/10.1016/j.jbusres.2010.06.006>
- Mulet-Forteza, C., Lunn, E., Merigó, J. M., & Horrach, P. (2020). Research progress in tourism, leisure and hospitality in Europe (1969–2018). *International Journal of Contemporary Hospitality Management*, 33(1), 48–74. <https://doi.org/10.1108/IJCHM-06-2020-0521>
- Podoshen, J. (2005). Brand sense: How to build powerful brands through touch, taste, smell, sight and sound. *The Journal of Product and Brand Management*, 14(4), 278–279. <https://doi.org/10.1108/10610420510609311>
- Rajaobelina, L., Dusseault, P., & Ricard, L. (2019). The mediating role of place attachment in experience and word of mouth: The case of music and film festivals. *International Journal of Arts Management*, 21(2), 43–54.
- Revuelta, P., Ortiz, T., Lucía, M. J., Ruiz, B., & Sánchez-Pena, J. M. (2020). Limitations of standard accessible captioning of sounds and music for deaf and hard of hearing people: An EEG study. *Frontiers in Integrative Neuroscience*, 14(1), 1–9. <https://doi.org/10.3389/FNINT.2020.00001>
- Rodríguez-López, M. E., Alcántara-Pilar, J. M., Del Barrio-García, S., & Muñoz-Leiva, F. (2020). A review of restaurant research in the last two decades: A bibliometric analysis. *International Journal of Hospitality Management*, 87. <https://doi.org/10.1016/j.ijhm.2019.102387>
- Ruberg, B., & Lark, D. (2021). Livestreaming from the bedroom: Performing intimacy through domestic space on Twitch. *Convergence*, 27(3), 679–695. <https://doi.org/10.1177/1354856520978324>
- Sakurai, N., Ohno, K., Kasai, S., Nagasaka, K., Onishi, H., & Kodama, N. (2021). Induction of relaxation by autonomous sensory Meridian response. *Frontiers in Behavioral Neuroscience*, 15, Article 761621. <https://doi.org/10.3389/fnbeh.2021.761621>
- Sayed, I. M. E. I., Farrag, D. A., & Belk, R. W. (2004). The effects of physical surroundings on Egyptian Consumers' emotional states and buying intentions. *Journal of International Consumer Marketing*, 16(1), 5–27. [https://doi.org/10.1300/J046V16N01\\_02](https://doi.org/10.1300/J046V16N01_02)
- Siles, I., Segura-Castillo, A., Sancho, M., & Solís-Quesada, R. (2019). Genres as social affect: Cultivating moods and emotions through playlists on Spotify. *Social Media & Society*, 5(2), 1–11. <https://doi.org/10.1177/2056305119847514>
- Sinclair, G. (2015). Involvement and detachment: The application of Figurational sociology methodologies in consumer research and macromarketing. *Journal of Macromarketing*, 36(1), 27–40. <https://doi.org/10.1177/0276146715599575>
- Skulmowski, A., Bunge, A., Kaspar, K., & Pipa, G. (2014). Forced-choice decision-making in modified trolley dilemma situations: A virtual reality and eye tracking study. *Frontiers in Behavioral Neuroscience*, 8(426). <https://doi.org/10.3389/FNBEH.2014.00426>
- Smith, S. J. (1994). *Soundscape*. *Area*, 26(3), 232–240.
- Stewart, K., & Koh, H. E. (2017). Hooked on a feeling: The effect of music tempo on attitudes and the mediating role of consumers' affective responses. *Journal of Consumer Behaviour*, 16(6), 550–564. <https://doi.org/10.1002/cb.1665>
- Strobin, A. A., Hunt, J. B., Spencer, F. J., & Hunt, T. G. (2015). The role of music in motion picture advertising and theatrical trailers: Altering music to modify emotional response and genre expectations. *International Academy of Marketing Studies Journal*, 19(3), 244–260.
- Sweeney, J. C., & Wyber, F. (2002). The role of cognitions and emotions in the music-approach-avoidance behavior relationship. *Journal of Services Marketing*, 16(1), 51–69. <https://doi.org/10.1108/08876040210419415>
- Taylor, C. L., & Friedman, R. S. (2015). Sad mood and music choice: Does the self-relevance of the mood-eliciting stimulus moderate song preference? *Media Psychology*, 18(1), 24–50. <https://doi.org/10.1080/15213269.2013.826589>
- Trompeta, M. A., Karantinou, K., Koritos, C., & Bijmolt, T. H. A. (2022). A meta-analysis of the effects of music in tourism and hospitality settings. *Journal of Business Research*, 138, 130–145. <https://doi.org/10.1016/j.jbusres.2021.08.067>
- Tuerlan, T., Li, S., & Scott, N. (2021). Customer emotion research in hospitality and tourism: Conceptualization, measurements, antecedents and consequences. *International Journal of Contemporary Hospitality Management*, 33(8), 2741–2772. <https://doi.org/10.1108/IJCHM-11-2020-1257>
- Uhrich, S., & Koenigstorfer, J. (2009). Effects of atmosphere at major sports events: A perspective from environmental psychology. *International Journal of Sports Marketing and Sponsorship*, 10(4), 325–344. <https://doi.org/10.1108/IJSM-10-04-2009-8005>
- Urry, J. (2002). *The tourist gaze* (2nd ed.). SAGE Publications.
- Vieira, V. A. (2013). Stimuli-organism-response framework: A meta-analytic review in the store environment. *Journal of Business Research*, 66(9), 1420–1426. <https://doi.org/10.1016/j.jbusres.2012.05.009>
- Volo, S. (2021). The experience of emotion: Directions for tourism design. *Annals of Tourism Research*, 86, Article 103097. <https://doi.org/10.1016/j.annals.2020.103097>
- Waitt, G., & Duffy, M. (2010). Listening and tourism studies. *Annals of Tourism Research*, 37(2), 457–477. <https://doi.org/10.1016/j.annals.2009.10.017>
- Wirtz, J., & Bateson, J. E. G. (1999). Consumer satisfaction with services: Integrating the environment perspective in services marketing into the traditional disconfirmation paradigm. *Journal of Business Research*, 44(1), 55–66. [https://doi.org/10.1016/S0148-2963\(97\)00178-1](https://doi.org/10.1016/S0148-2963(97)00178-1)
- Wirtz, J., Mattila, A. S., & Tan, R. L. P. (2000). The moderating role of target-arousal on the impact of affect on satisfaction—An examination in the context of service experiences. *Journal of Retailing*, 76(3), 347–365. [https://doi.org/10.1016/S0022-4359\(00\)00031-2](https://doi.org/10.1016/S0022-4359(00)00031-2)
- Wood, E. H., & Kinnunen, M. (2020). Emotion, memory and re-collective value: Shared festival experiences. *International Journal of Contemporary Hospitality Management*, 32(3), 1275–1298. <https://doi.org/10.1108/IJCHM-05-2019-0488>
- Wu, C. H., Tao, Y. H., & Lin, Y. M. (2017). Repurchase decision for music products in Taiwan: Physical versus online media. *Digital Policy, Regulation and Governance*, 19(4), 302–316. <https://doi.org/10.1108/DPRG-09-2016-0044>
- Wulf, T., Breuer, J. S., & Schmitt, J. B. (2021). Escaping the pandemic present: The relationship between nostalgic media use, escapism, and well-being during the COVID-19 pandemic. *Psychology of Popular Media*, 11(3), 258–265. <https://doi.org/10.1037/ppm0000357>
- Yalch, R. F., & Spangenberg, E. (1993). Using store music for retail zoning: A field experiment. *ACR North American Advances*, 20, 623–636.
- Yalch, R. F., & Spangenberg, E. R. (2000). The effects of music in a retail setting on real and perceived shopping times. *Journal of Business Research*, 49(2), 139–147. [https://doi.org/10.1016/S0148-2963\(99\)00003-X](https://doi.org/10.1016/S0148-2963(99)00003-X)
- Yüksel, A. (2007). Tourist shopping habitat: Effects on emotions, shopping value and behaviours. *Tourism Management*, 28(1), 58–69. <https://doi.org/10.1016/j.tourman.2005.07.017>



**Ana Moreno-Lobato** is a PhD candidate in the Inter-university Program on Tourism at the Universidad de Extremadura, Spain. She is author of various publications in international scientific journals and book chapters. Her current research interests are based on marketing and tourism management, particularly in experiential marketing, emotions, neuro-marketing, sensory marketing and memorability.

**Elide Di-Clemente** is professor and researcher at the Universidad de Extremadura, Spain. She holds a Ph.D. from the same institution. She is author of various publications in

international scientific journals, with high impact factor, and book chapters. Her current research interests are in the fields of marketing and tourism management, in particular in experiential marketing, neuro-marketing, slow tourism, culinary tourism and quality of life.

**José-Manuel Hernández-Mogollón** is professor at the Department of Business Management and Sociology, Faculty of Business, Finance and Tourism, Universidad de Extremadura, Spain. He holds a PhD in Economics and Business Management, and he is the author of various papers in international journals and chapters in edited volumes. His research

interests are Relational marketing, culinary tourism, experiential tourism and quality of life.

**Ana-María Campón-Cerro** is professor at the Department of Business Management and Sociology, Faculty of Business, Finances and Tourism, at the Universidad de Extremadura, Spain. She received her PhD from the Universidad de Extremadura, and she authored several publications in international scientific journals and book chapters in edited volumes. Her research interests include rural tourism, relational marketing, agrotourism, culinary tourism, experiential tourism and quality of life.