

Repositório ISCTE-IUL

Deposited in *Repositório ISCTE-IUL*:

2022-11-03

Deposited version:

Accepted Version

Peer-review status of attached file:

Peer-reviewed

Citation for published item:

Loureiro, S. M. C. (2020). Virtual reality, augmented reality and tourism experience. In Saurabh Kumar Dixit (Ed.), *The Routledge handbook of tourism experience management and marketing*. (pp. 439-452).: Routledge.

Further information on publisher's website:

<https://www.routledge.com/The-Routledge-Handbook-of-Tourism-Experience-Management-and-Marketing/Dixit/p/book/9780367196783>

Publisher's copyright statement:

This is the peer reviewed version of the following article: Loureiro, S. M. C. (2020). Virtual reality, augmented reality and tourism experience. In Saurabh Kumar Dixit (Ed.), *The Routledge handbook of tourism experience management and marketing*. (pp. 439-452).: Routledge.. This article may be used for non-commercial purposes in accordance with the Publisher's Terms and Conditions for self-archiving.

Use policy

Creative Commons CC BY 4.0

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a link is made to the metadata record in the Repository
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

Chapter 38

VIRTUAL REALITY, AUGMENTED REALITY AND TOURISM EXPERIENCE

Sandra Maria Correia Loureiro

Iscte-Instituto Universitário de Lisboa and BRU-Business Research Unit

Introduction

Create tourists' experiences that lead them to consider outstanding or memorable experiences (e.g., Arnould and Price 1993; Tung and Ritchie 2011; Kim et al. 2012; Loureiro 2014) become a top priority at destinations, hotels, restaurants, tours, museums or any cultural or entertainment attraction. Schmitt (1999) and Pine II and Gilmore (1998) are the first scholars to point out the importance of experiences in a new economy that goes beyond products, services or brand.

Tourists are changing the way they live and intend to live their vacations and travel to other destinations. They are interacting with managers of destinations, hotels and other tourist and culture places in real time, using technologies such as social media platforms (e.g., Leeftang et al. 2014; Libai et al. 2010), augmented reality, virtual reality and other related technologies (e.g., Loureiro, Guerreiro, Eloy, Langaro, and Panchapakesan 2018; Loureiro and Guerreiro 2018).

Notwithstanding the importance of the tourism experience theme, to date an overview of the phenomenon is not found in the literature. Thus, this chapter intends to give an overview of tourist experience in real and virtual worlds (virtual and augmented reality) and how tourists are dealing with these two worlds. To achieve such goal, the chapter examines existent definitions and conceptualizations of experience (and related constructs), virtual reality (VR), augmented reality (AR) and delivers a historical perspective of real and virtual experiences within tourism. A comprehensive literature

review allows to methodologically capture the concepts on the topic and organize the structure of the chapter giving (i) different experience definitions, (ii) definition of VR and AR, (iii) the root of experience in tourism (e.g., service quality, satisfaction, relationship marketing, tourist focus, tourist engagement, co-creation), and (iv) tourist experience journey (stages of tourism experience and its relationship with VR and AR). The chapter is of the interest for both academics and practitioners, since it identifies concepts on tourism experience, aggregates the real and virtual worlds, and gives a view of the management of the tourist experience. Finally, the chapter points out critical areas for future research.

Experience conceptualization

When Pine II and Gilmore (1999) present and spread the idea of experience in an age where intangible activities become important, vis-à-vis with customization and going beyond the core product or service, they highlight the stage experience as the new economy. Thus, a customer pays “to spend time enjoying a series of memorable events that a company stages-as in a theatrical play-to engage him in a personal way” (Pine II and Gilmore (1999:2). Although other academics have mentioned the word experience previously, like Abbott (1955), Hirschman and Holbrook (1982) or Holbrook and Hirschman(1982), yet these authors associated experience to the hedonic product/services, and Pine II and Gilmore (1999) extend to all type of products/services and are more effective in communicating the concept.

Pine II and Gilmore (1998, 1999) claim for four realms of experience economy, educational, aesthetic, escapist, and entertainment -which vary according to the consumer or tourist’s active or passive participation and or immersion or absorption in the experience. Thus, depending on the level of tourist involvement in creating the experience, Pine II and Gilmore (1998, 1999) mention the active or passive participation.

Indeed, passive participation of the tourists characterizes the entertainment (e.g., watching television, attending a concert) and aesthetic (e.g., like a tourist who merely views an art gallery) dimensions, while active participation is connected to educational (e.g., attending a class, taking a ski lesson) and escapist (e.g., playing in an orchestra) experiences. Absorption, in turn, is “occupying customers’ attention by bringing the experience into the mind” and immersion is “becoming physically or virtually a part of the experience itself” (Pine II and Gilmore 1999: 31). Absorption is associated to entertainment and educational experiences, whereas immersion is related to aesthetic and escapist.

Experience has been highly associated to emotions (e.g., Hirschman and Holbrook 1982; Holbrook and Hirschman 1982), what is well mirrored in the conceptualization of brand experience expressed by Brakus, Schmitt, and Zarantonello (2009: 53) as subjective, internal consumer responses (sensations, feelings, and cognitions) and behavioral responses evoked by brand-related stimuli that are part of a brand’s design: sensory (the impression that the experience of the brand makes on consumers’ visual or other senses), affective (emotional brand that induces feelings and sentiments), intellectual (stimulates tourist’s curiosity and problem solving), and behavioral (the brand is action oriented and tourists could engage in physical actions and behaviors)

De Keyser et al. (2015: 23) regard customer experience as “comprised of the cognitive, emotional, physical, sensorial, spiritual, and social elements that mark the customer’s direct or indirect interaction with (an) other market actor(s)”. This conceptualization is very aligned with Kim, Ritchie, and McCormick (2012: 13), where the authors argue that a positive memorable tourism experience (MTE) has been operationally defined as “a tourism experience positively remembered and recalled after the event has occurred” and

propose seven dimensions, citing hedonism, novelty, local culture, refreshment, meaningfulness, involved and knowledge.

Experiences can also be seen from co-creation perspective (e.g., Prahalad and Ramaswamy 2003; Sfantla and Björk 2013; Chandler and Lusch 2015). Co-creation experiences regard the involvement of customers or tourists for defining and designing the experience with those who are in the side of offer (e.g., brand managers, firms, or destination, hotel and entertainment managers) (e.g., Prahalad and Ramaswamy 2003; Sfantla and Björk 2013). Co-creation experience puts the emphasis on network of relationships and interactive processes (Sfantla and Björk 2013).

In sum, the concept of experiences is multidimensional and involve the interaction between the firm and their stakeholders, particularly customers or tourists. These interactions occur before purchase the product/service, during the use of such product/service and after that, when consumers decide to re-purchase and recommend to other or not.

Roots of tourist experience

In an overview of the past research that give insights and contribute to emerge the whole conceptualization of experience: (i) buying behavior models, (ii) satisfaction and loyalty, (iii) service quality, (iv) relationship marketing and engagement process, and (v) virtual and augmented reality (see figure 1).

<INSERT FIGURE 1 ABOUT HERE>

Buying behavior models arise in 1960's and 1970's and deal with customers/tourists' process of decision making. Nicosia model (1966) is the first to emerge, followed by the Engel, Kollat, and Blackwell's (1968) model, but one of the most emblematic models is

proposed by Howard and Sheth (1969) and extended by other researchers (Pucinelli et al. 2009; Verhoef et al. 2009). Nicosia' (1966) model gives the seeds to the Howard and Sheth's (1969) model by suggesting four stages. Engel, Kollat, and Blackwell's (1968) model introduces for the first time the notion of feedback or 'search' loop, that is, when customers/tourists use not only the information communicated by the firm, but also their own knowledge about product/service and the communication by other consumers to the decision process.

Howard and Sheth's (1969) model presents four main components, beginning with the marketing communication process provided by the organizations and social stimuli, followed by the search for information and the evaluation process made by customers/tourists leading to an attitude and finally the decision and outcomes in terms of behavioral consumption. Finally, in the late 1990's McCarthy, Perreault, and Quester (1997) suggest a model of consumer decision-making -based on the previous models- where a cycle of is proposed: problem recognition, information search, evaluation and selection of alternatives, decision implementation and post-purchase evaluation.

Satisfaction and loyalty mean the evaluation of the products/services or experiences with standardized scales and tools which have an important development in the 1970's. Oliver (1980) conceptualize satisfaction as resulting from a comparison of the actual delivered performance with customer expectations (disconfirmation paradigm). Several multiple items have been used to measure customer satisfactions, as well as nonlinear effects of satisfaction and the customer delight (e.g., Oliver, Rust, and Varki 1997; Loureiro and Kastenholz 2011; Loureiro, Miranda, and Breazeale 2014). Loyalty also assumes several different ways to be measure, usually associated to behavioral intentions, which are highly associated to the work of Zeithaml, Berry and Parasuraman (1996). Three major

components are usually considered for loyalty, that is, the intention to buy again or re-visit, the willingness to recommend and the willingness to pay price premium (e.g., Loureiro and Roschk 2014; Loureiro and de Araújo 2014; Loureiro 2014).

Service quality has garnered importance as a way to measure the service delivery and map the customer journey. One of the most emblematic models comes from the work of Parasuraman, Zeithaml, and Berry (1988), who propose the SERVQUAL scale. Other researchers have improved and adapted the scale in several contexts, like SERVPERF (e.g., Cronin and Taylor 1992; 1994), or RURALQUAL (Loureiro and Miranda 2009; Loureiro and Kastenholz 2011). Together with the service quality researchers have been incorporate the atmospherics and the environment as influences on the customer experience (e.g., Bitner 1990; Roschk, Loureiro, and Breitsohl 2017).

Relationship marketing emerges as a field in the 1990's giving importance to stablish and develop strong relationships. Here, we may see constructs like commitment, trust (Morgan and Hunt 1994) and also relationship quality (Verhoef 2003; Palmatier, Gopalakrishna, and Houston 2006). In the beginning of 21th century more attention has been done to on emotional aspects of relationships (Verhoef and Lemon 2015), emerging concepts like love, passion, intimacy, attachment (e.g., Bügel, Verhoef, and Buunk 2011; Yim, Tse, and Chan 2008; Batra, Ahuvia, and Bagozzi 2012; Loureiro 2014). In the first decade of 21th century, all conceptualization of relationships with consumers/tourists has evolved to the idea of optimizing the relationships and create value to customers/tourists and shareholders (e.g., Venkatesan and Kumar2004; Shah, Kumar, and Kim 2014).).

A different construct but related to experience is the customer/ tourist engagement(e.g., Bowden 2009; van Doorn et al. 2010; Kumar 2013; Vivek et al. 2012; Loureiro and

Sarmento 2017; Bilro, Loureiro, and Guerreiro 2018). Although we cannot find a consensus regarding the conceptualization of engagement, it is possible to claim that engagement demands that customers/tourists should be active, involved and co-creational in their relationship with firms (e.g., Brodie et al. 2011; Hollebeek et al. 2019; Kumar et al. 2010). For instance, Brodie et al. (2011: 260) define consumer engagement as “*a psychological state that occurs by virtue of interactive, co-creative customer experiences with a focal agent/object (e.g., a brand) in focal service relationships*”. Hollebeek et al. (2014) claim for three dimensions of online engagement, cognitive processing (consumer’s level of relationship with a brand through processing and elaboration in a particular consumer/brand interaction), affection (degree of positive affective-relation with a brand) and activation (level of energy, effort and time spent on a brand). Kumar and his colleagues point out four dimensions for customer engagement value, such as customer purchasing behavior, customer referral behavior, customer influencer behavior, and customer knowledge behavior (e.g., Kumar et al. 2010; 2013; Kumar and Pansari 2016).

Consumer engagement can contribute to the co-creation process of new experiences or improve the existent. This process has been increasingly effective in online multiple interactions, using platforms such as crowdsourcing in real time, but also through the reviews in social media (Hollebeek et al. 2019; Bilro et al. 2018). In sum, technologies are changing the way consumers and tourists are living the experiences and virtual reality (VR), augmented reality (AR) are playing an important role.

Indeed, virtual reality and augmented reality are transforming and reshaping the way tourists see the world and perceive experiences (Williams and Hobson 1995; Guttentag 2010). A VR environment means a completely synthetic world that could be completely new,

unknown environment or a real-life mimicry. AR is an interactive experience of a real-world environment where tourists can see the objects of the real-world "augmented" by computer-generated perceptual information, sometimes across multiple sensory modalities, like visual, auditory, or olfactory (Milgram, Takemura, Utsumi, and Kishino 1994; Loureiro et al. 2018). Thus, in AR, tourists see the real world and also virtual objects overlaid on the real world, usually by wearing see-through displays (e.g., Milgram et al. 1994; Bimber and Raskar 2005).

Although the uses of AR date back to 1968, with the first head-mounted display (HMD) developed for research purposes by Ivan Sutherland (Carmigniani et al. 2011), its commercial development began in the 1990's (Javornik 2016). VR and AR have had huge impacts on the tourism marketing industry (Guttentag 2010; Lee, Jeong, and Jeon 2016; Hsu 2018). For instance, through the use of smartphone applications (e.g., Skyline 2018), tourists can learn more about iconic landmarks without a tourist guide, or a museum or an art gallery.

Virtual Reality (VR) technologies allow to experience immersive simulated reality. VR has been used successfully in several industry sectors (Wang, Yu, and Fesenmaier 2002), such as architectural (Arafa 2017), medicine (Rizzo et al. 2011), military (Manojlovich et al. 2003), or commerce (van Herpen et al. 2016), but has been more and more applied in tourism and hospitality context (e.g., Williams and Hobson 1995; Cheong 1995; Guttentag 2010). Indeed, museums, art galleries, hotels and restaurants are using this technology to promote their experiences leading to more and more research conducted (e.g., Hwang, Yoon, and Bendle 2012; Lee, Jeong, and Jeon 2016; Hsu 2018; Tussyadiah, Wang, Jung, and Dieck 2018).

Tourist experience journey

The experience journey of a tourist with a destination, hotel or other firm dealing with tourism is an iterative and dynamic process which start when tourists search for a destination or place where she/he intends to visit, goes through the time at the destination and to after the visit of the destination, when tourists return to the birth country or place of residence (see Figure 2) (e.g., O'Connor, Höpken, and Gretzel 2008; Buhalis, and Law 2008). In this vein, three major phases emerge: before the visit of the destination, during the visit and after the visit.

The first phase aggregates all the interaction with the destination managers and organizations that could give information about the place. Social media is a massively used to search, decide and also purchase the trip, accommodation and tours or visits to make at the destination. Tourists need to recognize a desire and/or a need to visit a destination, search and analyse alternatives and decide where to go. VR could perform an important role in promoting destinations, places, or lodgings and creating an imaginary to what tourist could expect at the destination (e.g., Stangl and Weismayer 2008; Buhalis and Amaranggana 2014; Buhalis and Amaranggana 2015).

The second stage encompasses the experience at the destination with all real environment, tours, hotels, restaurants, museums and other attractions (Loureiro 2014; Loureiro and Sarmiento 2018). The stimuli of the environment create an image in tourists' mind, which could be positive leading to favourable emotions and an approach to the destination. On the other hand, a negative image and appraisal gives rise to negative emotions and avoidance of the destination. In this stage VR and above all AR can extend the experience in using virtual objects to complement the real world, which can entertain the tourist or even contribute to learn more about the place, for instance what existed in the past in the same location (e.g., Buhalis and Amaranggana 2015).

The last phase -after the visit- regards tourist interactions with others and also with managers of the different places at the destination. These interactions could follow the more traditional tools of communications (e.g., letters, telephone, email), but above all the social media platforms (e.g., Twitter, TripAdvisor). Thus, tourists use their memories in mind and other objects that they could visualize (e.g., photos, souvenirs) and recommend/encourage others to visit the destination or not, which positive /negative reviews and posts (Boes, Buhalis, and Inversini 2016). The feedback should help managers to improve the experience and co-create potential experiences. Tourists may even intend to return to the same destination in the near future (e.g., Xiang, and Gretzel2010; Benckendorff, Sheldon, and Fesenmaier 2014; Huang, Goo, Nam, and Yoo 2017).

Past experience may influence the way tourists live the experience in the three stage (Bolton and Lemon 1999). Past experience creates expectations and influence the judgment made by tourists. This cognitive process that past knowledge being used to evaluate the current situation, can happen before, during and after the visit. Thus, tourists use the memories and the images in their minds of past experiences to analyse the information sought on potential new destinations and places to visit (Tung and Ritchie2011; Kim et al. 2012).

If they find a characteristic or stimuli in the information collected that remind them bad situations or experiences, they could decide not to have the option of such destination. Past negative memories may be even more effective in the decision process than the social influence provided by the family and friends or by the reviews in social media platforms (Verhoef et al. 2009; Prayag, Hosany, and Odeh 2013). Yet, we may also argue that the stimuli provided by the information about a new destination that cognitively is compared

with past situations in a positive way, could be a strong factor for tourists decide in favour of such destination. Indeed, according to the emotional appraisal theory (Moors, Ellsworth, Scherer, and Frijda 2013), we may claim that the cognitive comparative process between the past knowledge and memories with the potential new situation of the next destination to visit –or even the decision to return to a destination visited in the past– combined by the emotions that come to mind with the memories are a strong mechanism developed in tourist mind leading to the decision to buy or not the travel to the destination (Verhoef et al 2009).

During the visit to the destination, tourists continuously compare the present experience with past experience. This cognitive evaluation combined with emotions felt by tourists will determine whether their expectations are fulfilled (tourist satisfaction and positive emotions reinforce the experience), or not fulfilled (tourist dissatisfaction and even very negative emotions may be developed) or the situation where the current experience is perceived to be superior to the expectations (tourists become delighted and the experience could be classified as outstanding) (e.g., Arnould and Price 1993; Oliver et al. 1997; Berry, Carbone, and Haeckel 2002; Loureiro and Kastenholtz 2011).

Although past experience is a powerful influencing factor of tourist experience, we may find others that have been pointed out most often, that is, economic crisis, terrorism or natural disasters (e.g., Fornell, Rust, and Dekimpe 2010; Kumar et al. 2014). These events may affect how tourists make the decision to select a destination, live the experience at the destination and also after the visit (Gijsenberg, Van Heerde, and Verhoef 2015). A common tourist (unless he/she has a particular interest in extreme and radical situations) tends to prefer to travel to a destination where there is security in terms of violence, terrorism, serious illnesses or environmental disasters that could lead to devastating

situations. These aspects will be taken into consideration when searching for information and at the time of making the decision. The economic crisis may create a negative image in tourists' mind. Indeed, for some tourists, the economic crisis could be a negative indicator. Tourists or potential tourists may infer that a fate in economic crisis may reduce internal expenditures that may lead to problems of poorer health care or infrastructure support (e.g., roads, equipment, hospitals, cultural promotion) (e.g., Hunneman, Verhoef, and Sloot 2015).

VR allows tourists to have an experience without being at the destination. This avoids tourists to be exposed directly to diseases, terrorism or natural disasters. Tourists could have an immersive and vivid experience at the destination, but not having the negative consequences (Boes, Buhalis, and Inversini 2015). The immersive experience could also encourage donations and other support for the destination having troubles (e.g., Manojlovich, Manojlovich, Chen, and Lewis 2003), changing attitudes and be more proactive helping (Tussyadiah, Wang, Jung, and Dieck 2018).

However, natural disasters and unexpected situations can also happen, in particular during the tourist's visit to the destination. These events can completely alter the experience that tourists experience living before they travel to the destination, leading to return earlier than expected or even be in situations of serious danger. In the end, these negative events will influence the decision to revisit or not and how the recommendation is made to others as well as the comments on social networks. VR can also help citizens with disabilities and other health problems to visit emblematic destinations, museums, and other places in an immersive way (e.g., Rizzo et al. 2011), without needing to travel. These tourists of VR may even stay in their personal accommodations at home.

AR is regarded as a travel technology that uses dynamic packaging in the form of GPS (Global Positioning System) navigation and ubiquitous onsite contextual information to supplement (with more information) or replace the traditional tour guide. This background information on the area of interest for tourists could be commercial (promotional) information, historical information and touristic narrative (Hunter, 2014), but could also provide timely and credible information about diseases, terrorism potential areas or other calamities (Hunter, Chung, Gretzel, and Koo 2015).

In sum, VR, AR and related technologies allow tourists to achieve different information about tour destinations, receive electronic coupons and make diverse reservation confirmations at intelligent terminals (e.g., Hunter et al. 2015; Li, Hu, Huang, and Duan 2017). Tourists become less restricted by the pre-tour arrangements, because they can change those arrangements at any time and have up-dated information (for instance through AR) while travelling. During the travel process, tourists can communicate in real time with other tourists and friends (for instance using social networks) (e.g., Arafa 2017; Loureiro et al. 2018).

From the point of view of tour organizations and other national institutions (e.g., public service organizations and information service enterprises) in each destination, they can trace demand and other marketing information and coordinate the dual interactions between tourists and all other stakeholders in the chain of distribution through various media and dissemination channels. Indeed, tourism managers can provide interesting and important information to tourists based on their demands, that is, respond to tourists' requirements and locations (Li et al. 2017).

Conclusions and Implications

In literature is still scarce the authors concerned to explain how destination managers may operate and deal with the entire tourist journey. The technology (VR, AR an artificial intelligence) and tourist behavior are changing which demands to new and flexible business models.

Regarding technologies we may point out the Disney's park new approach (in Orlando, USA), which employs technologies throughout all stages of the tourist experience. This is the case of Magic Bands (bracelet individualized for each tourist) given to each tourist before entered the park that can be used throughout the park. The band sensors enable tourists to swipe the band for entrance onto rides and into their hotel room, to make purchases and allow the organization to find the (for a meet-and-greet with a Disney character, to take the photo while the tourist is on a ride, to deliver pre-ordered entrees to a tourist's table, or to e-mail a coupon if a tourist happens to wait too long in line).(Disneyworld 2019).

Another example of the use of artificial intelligence is the case of a chain hotel in Japan called Henn-na. In this chain the hotels are run by robots, turns out to need a surprising amount of human intervention, except where tourist would most like it. Behind reception is a motionless but lifelike girl robot wearing a cream jacket and a smirk. Indeed, Robots are taking off in Japan and several companies manufacture them for service. In April the Tokyo branch of Bank of Tokyo-Mitsubishi put a humanoid robot on reception; Nestlé is investing in robots to sell coffee makers in stores across the country; and robots guide visitors round the capital's National Museum of Emerging Science and Innovation.

AR and VR are improving and extending the experience introducing artificial objects and information about the place, the tours or the museum in apps that tourist can use through

they mobile. The immersive VR experience allow simulate real places, like museums or parks that tourist may visit without create problems with overcrowding and damaging the actual place. As mentioned previously, VR may also be the first experience during the tourist decision process and create expectations before the tourist actual travel to the destination. Citizens with some disabilities or who does not like to travel could have a VR experience of the destination at home.

Nevertheless, all these new technological approaches have also negative aspects, one that start to be very discussed is the dramatically changes that operate in the organization of work and the reduction of the number of employees required. Thus, new business models are needed, and people will assist to a re-configuration of the meaning of work.

In the future more studies are needed on (i) how VR and AR could develop a stronger role in after visit; (ii) how artificial intelligence change the whole flow of the tourist experience process; (iii) whether or not VR could be an truly alternative of a really destination visit and in each situations; (iv) how the whole process of select, purchase, experience and after experience could be done through VR; (v) how the five senses that are more effective in the VR environment; (vi) analyze how background music style in VR atmosphere influence the whole process of purchase decision; (vii) develop a tool to measure the VR and the AR experiences (and not use the adaptations from other contexts). Finally, a full theory on the VR and AR experiences is needed and not the mere extension of S-O-R (stimuli, organism and response) or TAM (theory of planned behavior).

In sum, the current chapter traces the conceptualization, foundation and roots of the tourist experience, as well as how new technologies are influencing and changing the way tourism is done and how tourists behave. The chapter presents and integrated view of

tourist experience across his/her journey which can help other researchers to know what has been then in this field and stimulate future research.

References

- Abbott, L. (1955). *Quality and Competition*. New York: Columbia University Press.
- Arafa, M. N. (2017). Achilles as a marketing tool for virtual heritage applications. *International Journal of Architectural Research: ArchNet-IJAR*, 11(3): 109-118. DOI:10.26687/archnet-ijar.v11i3.1385
- Arnould, E.J., and Price, L.L. (1993). River Magic: Extraordinary Experience and the Extended Service Encounter. *Journal of Consumer Research*, 20 (June): 24–45. DOI:10.1086/209331
- Batra, R., Ahuvia, A., and Bagozzi, R. P. (2012). Brand Love. *Journal of Marketing*, 76(2): 1-16. DOI:10.1509/jm.09.0339
- Benckendorff, P., Sheldon, P., and Fesenmaier, D. R. (2014). *Tourism Information Technology*. Oxford, UK: CAB International.
- Berry, L. L., Carbone, L.P., and Haeckel, S.H. (2002). Managing the Total Customer Experience, *MIT Sloan Management Review*, 43(3): 85–89.
- Bilro, R.G., Loureiro, S.M.C., and Guerreiro, J. (2018). Exploring online customer engagement with hospitality products and its relationship with involvement, emotional states, experience and brand advocacy. *Journal of Hospitality Marketing & Management*, 28(2): 147-171. DOI:10.1080/19368623.2018.1506375
- Bilro, R. G., Loureiro, S. M. C., and Ali, F. (2018). The role of website stimuli of experience on engagement and brand advocacy. *Journal of hospitality and Tourism Technology*, 9(2): 204-222. DOI:10.1108/JHTT-12-2017-0136
- Bimber, O., and Raskar, R. (2005). *Spatial Augmented Reality Merging Real and Virtual Worlds*, Cambridge, MA: A K Peters.
- Bitner, M. J. (1990). Evaluating Service Encounters: The Effects of Physical Surroundings and Employee Responses. *Journal of Marketing*, 54(April): 69–82. DOI:10.2307/1251871

- Boes K., Buhalis D., Inversini A. (2015). Conceptualising Smart Tourism Destination Dimensions. In: Tussyadiah I., Inversini A. (eds) *Information and Communication Technologies in Tourism* (pp. 391-403). Cham: Springer
- Boes, K., Buhalis, D., Alessandro Inversini, A. (2016). Smart tourism destinations: ecosystems for tourism destination competitiveness. *International Journal of Tourism Cities*, 2(2): 108-124, DOI: /10.1108/IJTC-12-2015-0032
- Bolton, R. N., and Lemon, K. N. (1999). A Dynamic Model of Customers' Usage of Services: Usage as an Antecedent and Consequence of Satisfaction. *Journal of Marketing Research*, 36(2): 171–86.
- Bowden, J. (2009). The process of customer engagement: A conceptual framework. *Journal of Marketing Theory and Practice*, 17(1): 63–74. DOI:10.2753/MTP1069-6679170105
- Brakus, J. J., Schmitt, B.H., and Zarantonello, L. (2009). Brand Experience: What Is It? How Is It Measured? Does It Affect Loyalty? *Journal of Marketing*, 73(3): 52–68. DOI:10.1509/jmkg.73.3.52
- Brodie, R.J., Hollebeck, L.D., Juric, B, and Ilic, A. (2011). Customer Engagement: Conceptual Domain, Fundamental Propositions, and Implications for Research, *Journal of Service Research*, 14(3): 252–71. DOI:10.1177/1094670511411703
- Buhalis D., Amaranggana A. (2014). Smart Tourism Destinations. In: Xiang Z., Tussyadiah I. (eds) *Information and Communication Technologies in Tourism*. (pp. 553-564). Cham: Springer
- Buhalis D., Amaranggana A. (2015). Smart Tourism Destinations Enhancing Tourism Experience Through Personalisation of Services. In: Tussyadiah I., Inversini A. (eds) *Information and Communication Technologies in Tourism* (pp. 377-389). Cham: Springer
- Buhalis, D., and Law, R. (2008). Progress in information technology and tourism management: 20 years on and 10 years after the Internet-the state of eTourism research. *Tourism Management*, 29(4): 609–623. DOI: 10.1016/j.tourman.2008.01.005
- Bügel, M. S., Verhoef, P. C., and Buunk, A. P. (2011). Customer Intimacy and Commitment to Relationships with Firms in Five Different Sectors: Preliminary Evidence. *Journal of Retailing and Consumer Services*, 18(4): 247–58. DOI: 10.1016/j.jretconser.2010.11.005

- Calatrava Moreno, M., Hörhager, G., Schuster, R., and Werthner, H. (2015). Strategic E-tourism alternatives for destinations. In I. Tussyadiah and A. Inversini (Eds.), *Information and communication technologies in tourism 2015* (pp. 405–417). Heidelberg, Germany: Springer.
- Carmigniani, J., Carmigniani, J., and Furht, B. (2011). *Handbook of Augmented Reality*, New York, NY: Springer.
- Chandler, J. D., and Lusch, R. F. (2015). Service Systems: A Broadened Framework and Research Agenda on Value Propositions, Engagement, and Service Experience. *Journal of Service Research*, 18(1): 6–22. DOI:10.1177/1094670514537709
- Cheong, R. (1995). The virtual threat to travel and tourism. *Tourism Management*, 16(6), 417-422. DOI: 10.1016/0261-5177(95)00049-T
- Cronin, J. J., Jr., and Taylor, S. A. (1992). Measuring Service Quality: A Reexamination and Extension. *Journal of Marketing*, 56(July): 55–68. DOI:10.2307/1252296
- Cronin, J. J., Jr., and Taylor, S. A. (1994). SERVPERF Versus SERVQUAL: Reconciling Performance-Based and Perceptions-Minus Expectations Measurement of Service Quality. *Journal of Marketing*, 58(January): 125–31. DOI:10.2307/1252256
- De Keyser, A., Lemon, K. N., Klaus, P., and Keiningham, T. (2015). A Framework for Understanding and Managing the Customer Experience. *MSI Working Paper No. 15-121*. Cambridge, MA: Marketing Science Institute.
- Disneyworld (2019). Retrieved from <https://disneyworld.disney.go.com/en-eu/> [Accessed April 15, 2019]
- Engel, J. F., Kollat, D. T., and Blackwell, R. D. (1968). *Consumer behavior*. New York: Holt Rinehart and Winston.
- Fornell, C., Rust, R. T., and Dekimpe, M. G. (2010). The Effect of Customer Satisfaction on Consumer Spending Growth. *Journal of Marketing Research*, 47(1): 28–35. DOI:10.1509/jmkr.47.1.28
- Gijzenberg, M. J., van Heerde, H. J., and Verhoef, P. C. (2015). Losses Loom Longer Than Gains: Modeling the Impact of Service Crisis on Perceived Service Quality over Time. *Journal of Marketing Research*, 52(5): 642–656. DOI:10.1509/jmr.14.0140
- Guttentag, D. A. (2010). Virtual reality: Applications and implications for tourism. *Tourism Management*, 31(5): 637-651. DOI:10.1016/j.tourman.2009.07.003
- Hirschman, E. C., and Holbrook, M. B. (1982). Hedonic Consumption: Emerging Concepts, Methods, and Propositions. *Journal of Marketing*, 46(3): 92–101. DOI:10.2307/1251707

- Holbrook, M. B., and Hirschman, E. C. (1982). The Experiential Aspects of Consumption: Consumer Fantasies, Feelings, and Fun. *Journal of Consumer Research*, 9(2): 132–40. DOI:10.1086/208906
- Hollebeek, L.D., Glynn, M.S., and Brodie, R. J. (2014). Consumer brand engagement in social media: Conceptualization, scale development and validation. *Journal of Interactive Marketing*, 28(2): 149–165. DOI:10.1016/j.intmar.2013.12.002
- Hollebeek, L.D., Srivastava, R.K., and Chen, T. (2019). S-D logic-informed customer engagement: integrative framework, revised fundamental propositions, and application to CRM. *Journal of the Academy of Marketing Science*, 47(1): 161-185. DOI:10.1007/s11747-016-0494-5
- Howard J. A., and Sheth J. N. (1969). *The Theory of Buyer Behaviour*. New York: J. Wiley and Sons.
- Hsu, C. H. C. (2018). Tourism education on and beyond the horizon. *Tourism Management Perspectives*, 25: 181-183. DOI: 10.1016/j.tmp.2017.11.022
- Huang, C. D., Goo, J., Nam, K., Yoo, Ch. W. (2017). Smart tourism technologies in travel planning: The role of exploration and exploitation, *Information and Management*, 54(6): 757-770, DOI: 10.1016/j.im.2016.11.010
- Hunter, W.C., Virtual Reality. In J. Jafari (Ed.), *The Encyclopedia of Tourism*, 2nd Edition. NY: Springer.
- Hunter, W. C., Chung, N., Gretzel, U., and Koo, Ch. (2015). *Constructivist research in smart tourism*. *Asia Pacific Journal of Information Systems*, 25 (1): 105-120. DOI: 10.14329/apjis.2015.25.1.105
- Hunneman, A., Verhoef, P. C., and Sloot, L. M. (2015). The Impact of Consumer Confidence on Store Satisfaction and Share of Wallet Formation. *Journal of Retailing*, 91(3): 516–532. DOI:10.1016/j.jretai.2015.02.004
- Hwang, J., Yoon, S.-Y., and 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. DOI:10.1108/09596111211206150
- Javornik, A. (2016). Augmented reality: Research agenda for studying the impact of its media characteristics on consumer behaviour. *Journal of Retailing and Consumer Services*, 30(May): 252–261. DOI:10.1016/j.jretconser.2016.02.004

- Kim, J., Ritchie, J., and McCormick, B. (2012). Development of a Scale to Measure Memorable Tourism Experiences. *Journal of Travel Research*, 51(1): 12-25. DOI:10.1177/0047287510385467
- Kumar, V. (2013). *Profitable Customer Engagement: Concept, Metrics and Strategies*. New Delhi: SAGE Publications India.
- Kumar, V., and Pansari, A. (2014). The Construct, Measurement, and Impact of Employee Engagement: a Marketing Perspective. *Customer Needs and Solutions*, 1(1): 52-67. DOI:10.1007/s40547-013-0006-4
- Kumar, V., and Pansari, A. (2016). Competitive Advantage through Engagement, *Journal of Marketing Research*, 53(4): 497-516. DOI:10.1509/jmr.15.0044
- Kumar, V., Bhaskaran, V., Mirchandani, R., and Shah, M. (2013). Creating a Measurable Social Media Marketing Strategy: Increasing the Value and ROI of Intangibles and Tangibles for Hokey Pokey. *Marketing Science*, 32(2): 194-212. DOI:10.1287/mksc.1120.0768
- Kumar, V., Aksoy, L., Donkers, B., Venkatesan, R., Wiesel, T., and Tillmanns, S. (2010). Undervalued or overvalued customers: Capturing total customer engagement value. *Journal of Service Research*, 13(3): 297-310. DOI:10.1177/1094670510375602
- Lee, S. A., Jeong, M., Jeon, M. M. (2016). Effects of experiential stimuli on customers' responses: An example of bed and breakfast websites. *Journal of Hospitality and Tourism Technology*, 7(4): 390-404. DOI:10.1108/JHTT-07-2016-0035
- Leeflang, P. S., Verhoef, P. C., Dahlström, P., and Freundt, T. (2014). Challenges and solutions for marketing in a digital era. *European Management Journal*, 32(1): 1-12. DOI:10.1016/j.emj.2013.12.001
- Libai, B., Bolton, R., Bügel, M.S., de Ruyter, K., Götz, O., Risselada, H., and Stephen, A.T. (2010). Customer to Customer Interactions: Broadening the Scope of Word of Mouth Research. *Journal of Service Research*, 13(3): 267-282. DOI:10.1177/1094670510375600
- Loureiro, S.M.C. (2014). The role of the rural tourism experience economy in place attachment and behavioral intentions. *International Journal of Hospitality Management*, 40(5): 1-9. DOI: 10.1016/j.ijhm.2014.02.010
- Loureiro, S.M.C., and de Araújo, C.M.B. (2014). Luxury Values and Experience as Drivers for Consumers to Recommend and Pay More. *Journal of Retailing and Consumer Services*, 21(3): 394-400. DOI: 10.1016/j.jretconser.2013.11.007

- Loureiro, S.M.C., and Guerreiro, J. (2018). Psychological behavior of generation Y: living between real and virtual reality. In M. Gerhardt and J. V.E. Peluchette (Eds.), *Millennials: Characteristics, Trends and Perspectives* (pp.67-90). New-York: NOVA science publishers, Inc.
- Loureiro, S.M.C., and Kastenholz, E. (2011). Corporate reputation, satisfaction, delight, and loyalty towards rural lodging units in Portugal. *International Journal of Hospitality Management*, 30(3):575–583. DOI:10.1016/j.ijhm.2010.10.007
- Loureiro, S. M. C., and Miranda G., F. J. (2009). Perceived Quality in Rural Lodgings of Spain and Portugal: RURALQUAL Scale. *European Journal of Management studies* 14(1): 33-52 (ISSN: 1647-2225).
- Loureiro, S.M.C. and Roschk, H. (2014). Differential Effects of Atmospheric Cues on Emotions and Loyalty Intention with Respect to Age under Online/Offline Environment. *Journal of Retailing and Consumer Services*, 21(2): 211–219. DOI:10.1016/j.jretconser.2013.09.001
- Loureiro, S.M.C., and Sarmiento, E.M. (2017). Tourist engagement: the role of place attachment and place authenticity. In A. Pizam and Y. Wang (Eds.) Conference book proceedings of the 4th world research summit for tourism and hospitality: Innovation, Partnerships and Sharing (accepted), 8-11 of December, Rosen College of Hospitality Management, University of Central Florida, Orlando, Florida, USA.
- Loureiro, S.M.C., and Sarmiento, E.M. (2018). Engaging visitors in cultural and recreational experience at museums. *ANATOLIA: An International Journal of Tourism and Hospitality Research*, 29(4): 581-592. DOI:10.1080/13032917.2018.1484378
- Loureiro, S.M.C., Miranda, F.J., and Breazeale, M. (2014). Who Needs Delight? The Greater Impact of Value, Trust and Satisfaction in Utilitarian, Frequent-Use Retail. *Journal of Service Management*, 25(1):101-124. DOI: 10.1108/JOSM-06-2012-0106
- Loureiro, S.M.C., Guerreiro, J., Eloy, S., Langaro, D., and Panchapakesan, P. (2018). Understanding the use of Virtual Reality in Marketing: A text mining-based review, *Journal of Business Research* (Available online 9 November 2018). DOI:10.1016/j.jbusres.2018.10.055
- Milgram, P., Takemura, H., Utsumi, A., and Kishino, F. (1994). Augmented Reality: A class of displays on the reality-virtuality continuum. *Systems Research*. In H. Das (Ed.), *Telemanipulator and Telepresence Technologies* (Vol. 2351. pp.282–292). Boston: Photonics for Industrial Applications. DOI: 10.1117/12.197321
- Manojlovich, J., Manojlovich, J.M., Chen, J., and Lewis, M. (2003). UTSAF: a multi-

- agent-based framework for supporting military-based distributed interactive simulations in 3D virtual environments. In S. Chick, P. J. Sánchez, D. Ferrin, and D. J. Morrice (Eds.), *Proceedings of the International Conference on Machine Learning and Cybernetic* (pp. 960–968). North Bangkok: King Mongkut's University of Technology. DOI: 10.1109/WSC.2003.1261517
- McCarthy, J. E., Perreault, W. D., and Quester, P. G. (1997). *Basic marketing: a managerial approach* (1st Australasian ed.). Sydney: Irwin.
- Moors, A., Ellsworth, P. C., Scherer, K. R., and Frijda, N. H. (2013). Appraisal theories of emotion: State of the art and future development. *Emotion Review*, 5(2): 119-124. DOI:10.1177/1754073912468165
- Morgan, R. M. and Hunt, S. D. (1994). The Commitment–Trust Theory of Relationship Marketing. *Journal of Marketing*, 58(3): 20–38. DOI:10.2307/1252308
- Nicosia, F. M. (1966). *Consumer decision processes: marketing and advertising implications*. Englewood Cliffs, N.J.: Prentice-Hall.
- O'Connor, P., Höpken, W., Gretzel, P. (2008). Information and Communication Technologies in Tourism 2008. *Proceedings of the International Conference in Innsbruck, Austria, 2008*. Innsbruck: Springer.
- Oliver, R. L. (1980). A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions. *Journal of Marketing Research*, 17(4): 460-469. DOI:10.2307/3150499
- Oliver, R. L., Rust, R. T., and Varki, S. (1997). A Customer Delight: Foundations, Findings, and Managerial Insight. *Journal of Retailing*, 73(3): 311-336. DOI:10.1016/S0022-4359(97)90021-X
- Palmatier, R.W., Gopalakrishna, S., and Houston, M.B. (2006). Returns on Business-to-Business Relationship Marketing Investments: Strategies for Leveraging Profits. *Marketing Science*, 25(5): 477–93. DOI: 10.1287/mksc.1060.0209
- Parasuraman, A., Zeithaml, V.A., and Leonard Berry, L. (1988). SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality. *Journal of Retailing*, 64(1), 12–40. file:///C:/Users/Sandra/Downloads/Escala%20Servqual%20-%20Journal%20of%20Retailing%20(1).pdf
- Pine, B. J., and Gilmore J. (1998). Welcome to the experience economy. *Harvard Business Review*, 76(4): 97–105.

- Pine, B. J., II, and Gilmore, J. H. (1999). *The Experience Economy: Work Is Theater and Every Business a Stage*. Cambridge, MA: Harvard Business School Press.
- Prahalad, C.K., and Ramaswamy, V. (2003). The New Frontier of Experience Innovation. *MIT Sloan Management Review*, 44(4): 12–18.
- Prayag, G., Hosany, S., and Odeh, K. (2013). The role of tourists' emotional experiences and satisfaction in understanding behavioral intentions. *Journal of Destination Marketing and Management*, 2(2): 118-127. DOI:10.1016/j.jdmm.2013.05.001
- Pucinelli, N. M., Goodstein, R. C., Grewal, D., Price, R., Raghurir, P. and Stewart, D. (2009). Customer Experience Management in Retailing: Understanding the Buying Process. *Journal of Retailing*, 85(1): 15–30. DOI:10.1016/j.jretai.2008.11.003
- Rizzo, A., Requejo, P., Winstein, C.J., Lange, B., Ragusa, G., Merians, A., Patton, J., Banerjee, P., and Aisen, M. (2011). Virtual reality applications for addressing the needs of those aging with disability. *Studies in Health Technology and Informatics*, 163 (Medicine Meets Virtual Reality, 18): 510–516. DOI:10.3233/978-1-60750-706-2-163
- Roschk, H., Loureiro, S.M.C., Breitsohl, J. (2017). Calibrating 30 years of experimental research: A meta-analysis of the atmospheric effects of music, scent, and color. *Journal of retailing*, 93(2): 228-240. DOI: 10.1016/j.jretai.2016.10.001
- Schmitt, B. H. (1999). *Experiential Marketing*. New York, NY: Free Press.
- Sfandla, C., and Björk, P. (2013). Tourism experience network: co-creation of experiences in interactive processes. *International Journal of Tourism Research* 15(5): 495–506. DOI:10.1002/jtr.1892
- Shah, D., Kumar, V., and Kim, K. H. (2014). Managing Customer Profits: The Power of Habits. *Journal of Marketing*, 51(6): 726–41. DOI:10.1509/jmr.13.0423
- Skyline (2018). Retrieved from: <https://crokepark.ie/ericsson-skyline-app> [Accessed February 12, 2019]
- Tung, V.W.S., and Ritchie, J.R.B. (2011). Exploring the essence of memorable tourism experiences. *Annals of Tourism Research*, 38(4): 1367-1386. DOI:10.1016/j.annals.2011.03.009
- Tussyadiah, I. P., Wang, D., Jung, T., Dieck, M. C. T. (2018). Virtual reality, presence, and attitude change: Empirical evidence from tourism. *Tourism Management*, 66(June):140-154. DOI:10.1016/j.tourman.2017.12.003
- van Doorn, J., Lemon, K.N., Mittal, V., Nass, S., Pick, D., Pirner, P., and Verhoef, P. C. (2010). Customer Engagement Behavior: Theoretical Foundations and Research Directions. *Journal of Service Research*, 13(3): 253–266.

DOI:10.1177/1094670510375599

- van Herpen, E., van den Broek, E., van Trijp, H.C.M., and Yu, T. (2016). Can a virtual supermarket bring realism into the lab? Comparing shopping behavior using virtual and pictorial store representations to behavior in a physical store. *Appetite*, 107: 196-207. DOI:10.1016/j.appet.2016.07.033
- Venkatesan, R., and Kumar, V. (2004). A Customer Lifetime Value Framework for Customer Selection and Resource Allocation Strategy. *Journal of Marketing*, 68(4): 106-25. DOI:10.1509/jmkg.68.4.106.42728
- Verhoef, P. C. (2003). Understanding the Effect of Customer Relationship Management Efforts on Customer Retention and Customer Share Development. *Journal of Marketing*, 67(4): 30-45. DOI:10.1509/jmkg.67.4.30.18685
- Verhoef, P. C., and Lemon, K. N. (2015). Advances in Customer Value Management. In R.M. Morgan, J.T. Parish, and G. Deitz (Eds.), *Handbook of Research in Relationship Marketing* (pp. 75-103). Northampton, UK: Edward Elgar.
- Verhoef, P. C., Lemon, K. A., Parasuraman, A., Roggeveen, A., Tsiros, M., and Schlesinger, L. A. (2009). Customer experience creation: Determinants, dynamics and management strategies. *Journal of Retailing*, 85(1): 31-41. DOI:10.1016/j.jretai.2008.11.001
- Vivek, S.D., Beatty, S.E., and Morgan, R.M. (2012). Customer Engagement: Exploring Customer Relationships Beyond Purchase. *Journal of Marketing Theory and Practice*, 20(2): 122-146. DOI:10.2753/MTP1069-6679200201
- Wang, Y., Yu, Q., and Fesenmaier, D. R. (2002). Defining the virtual tourist community: implications for tourism marketing. *Tourism Management*, 23(4): 407-417. DOI: 10.1016/S0261-5177(01)00093-0
- Williams, P., and Perry Hobson, J. S. (1995). Virtual reality and tourism: fact or fantasy?. *Tourism Management*, 16(6): 423-427. DOI:10.1016/0261-5177(95)00050-X
- Xiang, Z., and Gretzel, U. (2010). Role of social media in online travel information search. *Tourism Management*, 31(2): 179-188. DOI: 10.1016/j.tourman.2009.02.016
- Yim, C. K., Tse, D. K., and Chan, K. W. (2008). Strengthening Customer Loyalty Through Intimacy and Passion: Roles of Customer-Firm Affection and Customer Staff Relationships in Services. *Journal of Marketing Research*, 45(6): 741-756. DOI:10.1509/jmkr.45.6.741

Zeithaml, V. A., Berry, L. L., and Parasuraman, A. (1996). The Behavioral Consequences of Service Quality. *Journal of Marketing*, 60(2): 31-46. DOI:10.2307/1251929