When immersive technologies drive service brand outcomes: the role of episodic future thinking

Lisa Baiwir[1], Laurence Dessart[1], Cécile Delcourt[1]

[1]HEC-Liège, Management School of the University of Liège, Liège, Belgium

Correspondence

Lisa Baiwir, HEC-Liège, Management School of the University of Liège, 14, rue Louvrex, 4000 Liège, Belgium.

Email: lisa.baiwir@uliege.be

Conflicts of interest

There are no conflicts of interest to report.

Abstract

Purpose: Using the Stimulus-Organism-Response (S-O-R) theory, this paper investigates the impact of an immersive experience with a service brand (Stimulus) on consumer attitudes and intentions (Response) by understanding the mediating role of episodic future thinking (Organism).

Design/methodology/approach: We used structural equation modelling to analyze the responses of participants who were exposed to an online questionnaire showcasing a 360° video of a destination brand.

Findings: Episodic future thinking mediates the relationship between immersive technology characteristics (i.e., vividness and presence) and consumer attitudes and intentions toward a service brand. Specifically, vividness induces the simulation of vivid images in consumers' minds, while a sense of presence enhances anticipated satisfaction with the imagined service brand experience.

Research implications: These findings contribute to a better understanding of the psychological mechanisms explaining the formation of service brand attitudes and intentions elicited by immersive technologies.

Practical implications: We offer recommendations for businesses to enhance the vividness and presence achieved with accessible immersive technologies such as 360° videos.

Societal implications: The ability of immersive technologies such as 360° videos to foster episodic future thinking offers valuable applications in transformative contexts such as healthcare, education, or psychological wellbeing.

Originality: This research strengthens the emerging idea that mental time travel experiences are inherent to the service experience, especially because consumers re-enact service brand stimuli when projecting themselves in imagined interactions with the service experience.

Keywords
Immersive technologies; 360° videos; episodic future thinking; imagined service experience; service brand outcomes, structural equation modelling

Introduction

Immersive technologies increasingly play a pivotal role in services, mainly because of their ability to provide consumers with multisensory (de Regt *et al.*, 2021), hybrid (Flavián *et al.*, 2019), and remote service brand experiences (Gibbons, 2020; Vardomatski, 2021). They provide new contexts of service consumption by providing realistic service experiences in virtual environments (Batat and Hammedi, 2022). Their potential to trigger various emotional, cognitive, and behavioral responses across the consumer journey (Kim and Choo, 2023; Kostyk and Sheng, 2023) has attracted global service brands, such as Marriot International, Qantas Airlines, Disney, or Mayo Clinic. Furthermore, immersive technologies possess significant transformative potential, given their ability to contribute to key societal goals, such as high-quality education and training (Im *et al.*, 2023), medical practice (Tang *et al.*, 2022), sustainability (Breves and Heber, 2020), and psychological well-being (Frost *et al.*, 2022). Accordingly, the immersive technologies market is expected to reach more than 1490 billion US dollars by 2030 (PMI, 2022).

360° videos are immersive technologies providing a spherical representation of real environments (Flavián *et al.*, 2019) thanks to special sets of cameras that capture every direction simultaneously (Feng, 2018; Snelson and Hsu, 2020). Because of these specific filming conditions, 360° videos can foster immersion (Milgram *et al.*, 1995; Slater and Wilbur, 1997), and create a strong sense of presence for consumers when experiencing the medium (Shen *et al.*, 2020). Thus, 360° videos enable consumers to experience services in an immersive environment, simulating real experiences (Cowan and Ketron, 2019).

Furthermore, 360° videos can be watched without any special equipment other than a computer, smartphone, or tablet, which makes them easily accessible for brands to engage consumers (Chen and Yao, 2022; Rauschnabel *et al.*, 2022). This ease of access has seen service brands

increasingly adopt 360° videos as a means of immersive advertising (Burton and Schlieman, 2021). Recent examples include Thomas Cook, McDonald's, the London Natural History Museum, and the University of Technology of Sidney (Mileva, 2024; Obeid, 2021), to name just a handful. To date, 360° videos represent the most common, simplest, and easiest way of accessing immersive technologies (Kim and Choo, 2023).

Research shows that 360° videos are particularly suited to simulate mental imagery (Barreda-Ángeles *et al.*, 2021; Bender and Sung, 2020), leading viewers to mentally interact with the promotional message, enhancing consumers' evaluations and purchase intentions (Schlosser, 2003; Elder and Krishna, 2011; Krishna *et al.*, 2016). By providing immersive experiences, 360° videos can thus influence consumers' responses through mental imagery and sense of presence (Cowan and Ketron, 2019). In other words, consumers engage their imagination when experiencing 360° videos, as if they were interacting with the product, service or brand (Cian *et al.*, 2014; Elder and Krishna, 2010).

Because of their immersive nature, 360° videos can foster episodic future thinking, a specific form of mental imagery relating to the imagination of specific future events (Schacter *et al.*, 2017). As such, immersive technologies could influence the mental construction and satisfaction of imagined service brand experiences (Cowan and Ketron, 2019). This projection in an imagined future is essential for service brands to emulate, as consumers often subconsciously imagine future service experience to predict future feelings and inform their decision-making (Karl *et al.*, 2023). However, despite this potential positive influence of immersive technologies on imagined service brand experiences, knowledge of the role of episodic future thinking in fostering service brand outcomes remains scant (Cowan *et al.*, 2021).

Accordingly, this research investigates the role of episodic future thinking in fostering consumers' attitudes and intentions toward service brands in an immersive experience (i.e., a 360° video). Particularly, we aim to answer the following research questions:

(1) How can immersive technologies impact consumers' service brand attitudes and intentions?
(2) To what extent does episodic future thinking mediate the relationship between immersive technologies and consumers' service brand attitudes and intentions?

By looking into the advantages of immersive technologies (i.e., 360° videos) in inducing episodic future thinking and its subsequent positive influence on service brand attitudes and intentions, we address calls for research on the cognitive, affective, and behavioral effects of specific immersive formats (Kim, 2021) and provide insights into how these technologies can be more effectively designed for services brands (Alenka *et al.*, 2023). Notably, this research contributes to a better understanding of the psychological mechanisms that explain the formation of service brand outcomes elicited by immersive technologies (Loureiro *et al.*, 2019). While several studies have demonstrated a positive impact of the use of immersive technologies on service brand attitudes and intentions (e.g., Chen and Yao, 2022; de Regt *et al.*, 2021; Pleyers and Poncin, 2020), few studies investigate the potential factors explaining those results (Pimentel *et al.*, 2021), such as the role of episodic future thinking.

To best understand the impact of immersive technologies on service brand attitudes and intentions, we use the S-O-R theory. This theory has been used in previous studies as an overarching framework to examine the links among inputs (Stimulus), processes (Organism), and outputs (Response) considering its relevance in explaining how consumers react to novel environmental stimuli such as VR (Erensoy *et al.*, 2024; Kim *et al.*, 2020), immersive technologies (Ambika *et al.*, 2023), interactive media (Blasco-Arcas *et al.*, 2016), or service

robots (Hlee *et al.*, 2023). In our study, we show that 360° videos (i.e., Stimulus) affects service brand attitudes and intentions (i.e., Response) through episodic future thinking (i.e., Organism).

This research brings several contributions. First, this paper contributes to the service literature on multisensory experiences (e.g., Stead *et al.*, 2022) by showing how immersive technologies provide sensory stimuli that enable cognitive processes like episodic future thinking. Episodic future thinking, in turn, explains how immersive technologies shape anticipation and expectations, enhancing service experiences (Zarantonello and Schmitt, 2023), improving satisfaction, alongside brand attitudes and behavioral intentions such as purchase and loyalty (Karl *et al.*, 2023; Polegato and Bjerke, 2019). By integrating transdisciplinary insights from cognitive psychology, this study advances understanding of how technological touchpoints drive service outcomes (Furrer *et al.*, 2020) and responds to calls to examine how innovations transform service processes (Ostrom *et al.*, 2021).

Second, by empirically testing the mediating role of episodic future thinking, we advance understanding of the psychological mechanisms activated by immersive technologies that drive service brand outcomes. Although recent reviews have highlighted the mediating role of cognitive processes such as flow, experience, elaboration, and imagination (Ambika *et al.*, 2023; Erensoy *et al.*, 2024), there is limited knowledge on the role of mental time travel in driving service outcomes.

Third, this paper provides compelling evidence of the potential of immersive technologies such as 360° videos as a digital touchpoint to enhance service and brand awareness (Grewal *et al.*, 2022). Indeed, 360° videos are transformative and accessible technologies to strengthen expected satisfaction toward a service experience, which can be important in various stages of the consumer journey (Kostyk and Sheng, 2023) and across sectors (e.g., education and training; Im *et al.*, 2023).

Finally, this research contributes to the nascent literature on imagined brand experiences (e.g., Barhorst *et al.*, 2023) and their influence on service brand outcomes. This work shows that 360° videos foster episodic future thinking in service brand interactions. In other words, consumers imagine future service brand interactions in their minds thanks to the stimuli provided by the immersive video.

Literature review

360° videos as immersive technologies

Immersive technologies refer to technologies that, through interactive and immersive multi-sensory content, enable consumers to have a sense of presence within the virtual environment (de Regt *et al.*, 2021; Suh and Prophet, 2018). Therefore, two main factors describe immersive technologies; from the physical and psychological perspectives: immersion and presence.

First, immersion is the degree to which computer systems reproduce high fidelity and verisimilitude between the physical and virtual world (Slater and Wilbur, 1997), especially by closely reproducing rich layers of sensory stimuli so that people experience the immersive technology as if they were in the physical world (Joo *et al.*, 2022). In other words, it refers to the characteristics of the technology (Sanchez-Vives and Slater, 2005) or the system (Han *et al.*, 2024). The literature particularly highlights two dimensions of immersion: vividness (i.e., the ability to produce rich sensory cues) and interactivity (i.e., the extent to which the technology adapts to consumers' actions) (Steuer, 1992). Based on this logic, technologies offering visual, auditory, and haptic feedback, such as 360° videos, are more immersive than technologies that only permit a single sensory cue (e.g., radio).

While immersion is objective and quantifiable, presence depicts consumers' subjective experience (Slater and Wilbur, 1997; Steuer, 1992). Indeed, presence refers to a mental state in which consumers feel physically present within the environment presented by the immersive

technology (Sanchez-Vives and Slater, 2005). More specifically, feelings of presence when being exposed to an ad encourage consumers to feel as if they were part of the action and experience the ad as if it were real (Joo *et al.*, 2022). In other words, if immersion is the objective capacity of a specific technology or medium, presence is the subjective experience of users exposed to its high-fidelity features (Joo *et al.*, 2022). Presence is thus an individual and context-dependent stage of consciousness (de Regt *et al.*, 2021).

Immersion and presence are highly interrelated: when consumers become enveloped by layers of sensory cues, this interaction will likely induce the subjective experience of "being there" in the mediated environment. Steuer (1992) discusses how vividness and interactivity contribute to presence. Indeed, extant research demonstrates that both vividness (e.g., Cheng *et al.*, 2014; Shen *et al.*, 2020) and interactivity (e.g., Bogicevic *et al.*, 2019; Spielmann and Mantonakis, 2018) influence consumers' sense of presence within an immersive environment.

Studies show that 360° videos can present high levels of immersion and induce high levels of presence (e.g., Breves and Heber, 2020; Shen *et al.*, 2020; Song *et al.*, 2021), thus emphasizing their crucial role as immersive technologies. Particularly, vividness is a strong predictor of immersion for this type of technology (Cheng *et al.*, 2014).

Episodic future thinking with immersive technologies

Immersive technologies can provide immersive and multi-sensory content (de Regt *et al.*, 2021). Accordingly, they tend to foster consumers' imagination (Elder and Krishna, 2010), as sensory cues help consumers imagine service brand interactions (Cian *et al.*, 2014). Through imagination, consumers create potential future experiences with service brands by integrating their existing knowledge with new sensory information (Cowan and Dai, 2014), such as ads (Krishna *et al.*, 2016).

Episodic future thinking is a form of imagination that focuses on specific events that might occur in one's personal future (Atance and O'Neill, 2001), such as a service experience. Unlike broader forms of mental imagery, episodic future thinking is distinct because it inherently considers constraints related to specific future scenarios, such as financial resources or time availability. For example, envisaging an upcoming training seminar might involve factors like how much preparation time one will need beforehand, the workload that needs to be managed during the seminar, or the availability of resources to complete assignments afterward. Moreover, episodic future thinking involves placing oneself in a future situation, encompassing not only the cognitive imagery of how the service might unfold but also the emotions that might be experienced during the event (Agren, 2023; Boyer, 2008). In other words, episodic future thinking is conceptualized in cognitive psychology as the construction of a specific mental representation of a future event (Schacter *et al.*, 2017) and known to be a pervasive and critical mental activity (D'Argembeau *et al.*, 2011). Consumers perform this projection of imagined future service brand consumption subconsciously to predict future feelings and inform their overall decision-making (Karl *et al.*, 2023). For instance, consumers might engage in episodic future thinking by envisioning the first module of an upcoming training seminar or picturing what a visit to a wildlife reserve would be like. Episodic future thinking is known to entail a high level of vividness as well as sensorial, contextual, and emotional details about the imagined event (D'Argembeau and Van der Linden, 2004).

While episodic future thinking is an established construct in cognitive neuroscience and psychology (Schacter *et al.*, 2017), its application in service marketing is still scant (for an exception, see Karl *et al.*, 2021; 2023). Accordingly, this paper approaches the episodic future thinking of an experience of service brand consumption according to two dimensions: its intensity and its valence. The intensity of episodic future thinking is the extent to which consumers can vividly imagine a potential episode of future interaction with the service brand

(i.e., the imagination vividness of the future experience; Miller *et al.*, 2000). Intensity is thus linked to the vividness and specific nature of the mental simulation of the imagined service brand experience (Schacter *et al.*, 2017).

When forming vivid mental representations of future events, individuals also anticipate their emotional responses to these events, underscoring the valence dimension of episodic future thinking. Research indicates that over two-thirds of future-oriented thoughts are emotionally charged (D'Argembeau *et al*., 2011), emphasizing not only the critical role of valence in episodic future thinking but also its well-established importance within existing psychology literature (Agren, 2023; Boyer, 2008; D'Argembeau *et al.*, 2004). In theorizing episodic future thinking, we thus adopt the view from cognitive psychology, encompassing both cognitive (vividness) and affective (valence) components. While some studies, such as Karl *et al.* (2021), distinguish episodic future thinking as the cognitive aspect and treat affective forecasting separately, we follow the cognitive psychology perspective that episodic future thinking encompasses both dimensions, ensuring a more holistic conceptualization.

In a consumption context, the valence of episodic future thinking often aligns with consumers' anticipation of the service, shaping their expectations of whether the experience will be satisfactory (or not). It thus refers to consumers' forecasted future satisfaction or whether they feel the imagined service brand experience would be satisfactory (or not). Particularly, Schacter *et al.* (2017) refer to this as the "prediction" aspect of episodic future thinking, whereby one estimates the likelihood of a future outcome. This has been approached in marketing as the imagined future brand experience valence (Söderlund *et al.*, 2001).

This dual approach of considering both the level of sensory details and the projected future satisfaction has been applied in articles investigating episodic future thinking in a consumption context (Karl *et al.*, 2023), highlighting its relevance for the service marketing field. In

particular, consumer anticipation—a mental process by which individuals consider the outcomes expected to arise from future consumption (Vichiengior *et al.*, 2019)—provides an insightful lens for understanding this duality in service contexts. Anticipation often occurs in situations of delayed consumption, where consumers visualize their future service experiences by preparing and imagining them. Through episodic future thinking, consumers form both cognitive expectations (what the experience might look like—cf. vividness) and affective expectations (the (dis)satisfaction they anticipate feeling—cf. valence) (Vichiengior *et al.*, 2019). The affective dimension of anticipation is critical for driving positive or negative service outcomes, not just fostering vivid representation of future events (Krishen *et al.*, 2020). As such, this paper operationalizes episodic future thinking in a service brand experience context by addressing the imagination vividness of future service brand experience as well as the imagined future service brand experience valence, both of which considered central to consumer anticipation and its application in service marketing

Visual depiction of services lead consumers to mentally interact with what is presented (Krishna *et al.*, 2016), potentially by imagining future experiences of service consumption (i.e., episodic future thinking). In the context of immersive technologies, 360° videos enable consumers to experience highly immersive advertising content. Various studies point to the fact that immersion, particularly the vividness of an immersive technology, leads to heightened imagination from consumers (e.g., Choi and Taylor, 2014). As vivid ads more closely resemble reality, consumers collect increased sensory information, which helps them form detailed mental representations of imagined service brand experiences (Cowan and Dai, 2014; Dimofte and Yalch, 2010) and create lasting memories surrounding service brand offerings (Kostyk *et al.*, 2024). However, the role of the degree of immersion of the technology, specifically its ability to produce vivid, immersive content, as perceived by consumers, remains understudied. Accordingly, this paper proposes the following hypothesis:

H1: Vividness influences episodic future thinking through (H1a) imagination vividness of future service brand experience and (H1b) imagined future service brand experience valence.

As 360° videos are immersive technologies that produce sensorial stimuli, they can trigger consumers' sense of presence within the advertised environment (e.g., Breves and Heber, 2020; Shen *et al.*, 2020). Because consumers feel present within the ad, their recollection of sensorial stimuli is heightened (Elder and Krishna, 2010), which enables them to capitalize on further resources to imagine the service experience (Krishna *et al.*, 2016). Indeed, consumers are more likely to engage in the episodic projection of potential future events when they feel engrossed within an immersive environment (Barhorst *et al.*, 2023). Recent investigations have uncovered the potential of immersive technologies to create lasting memories around brands (Kostyk *et al.*, 2024), as well as foster cognitive outcomes such as involvement (e.g., Cowan and Ketron, 2019), imagination (e.g., Orús *et al.*, 2021) and cognitive elaboration (e.g., Erensoy *et al.*, 2024). Additionally, immersive technologies are posited to generate anticipated satisfaction toward a service experience (Zarantonello and Schmitt, 2023), fostering positive and highly-valenced emotions surrounding a future consumption (Mauri *et al.*, 2024). However, knowledge on the role of perceived presence in encouraging episodes of vividly imagined service brand consumption simulation remains scarce, which leads to the following hypothesis:

H2: Presence influences episodic future thinking through (H2a) imagination vividness of future service brand experience and (H2b) imagined future service brand experience valence.

To make decisions, consumers intuitively tend to visualize themselves experiencing a service (Karl *et al.*, 2021). To create such images of imagined service experience, consumers rely on immersive sensorial cues around the service brand and its offering (Cian *et al.*, 2014), such as

360° videos. Because of their immersive characteristics, 360° videos enable highly vivid and concrete images of imagined experience episodes in consumers' minds (Cowan and Dai, 2014). Indeed, immersive technologies are particularly suited to represent reality in detail and, thus, help form accurate expectations regarding the service presented (Erensoy *et al.*, 2024; Kostyk and Sheng, 2023). In other words, thanks to vivid episodic images of imagined service brand experience, 360° videos allow for a better apprehension of consumers' real-life experience, giving rise to a better understanding of their forecasted satisfaction (Dimofte and Yalch, 2010) through heightened knowledge and experience (Shen *et al.*, 2022). Because satisfaction occurs when expectations align with actual service experience (expectation-confirmation theory; Oliver, 1980), we expect that imagining vivid episodes of service brand experience will lead consumers to perceive images that more closely resemble reality, thus leading to perceived future satisfaction. The recollection of vivid memories and the availability of highly vivid sensorial resources to imagine future service are expected to foster satisfactory future service brand experiences. Accordingly, we posit:

> H3: The imagination vividness of future service brand experience influences the imagined future service brand experience valence.

Service brand outcomes

A growing number of advertising scholars have investigated the impact of 360° videos on service brand outcomes, such as attitudes toward the ad (e.g., Feng *et al.*, 2019; Song *et al.*, 2021), toward the brand (e.g., Feng, 2018; Pleyers and Poncin; 2020) and purchase intentions (e.g., Lo and Cheng, 2020; Orús *et al.*, 2021). Nevertheless, few studies have attempted to uncover the underlying cognitive mechanisms behind those positive outcomes fostered by 360° videos. Additionally, the ones that do have currently focused on the mediating role of mental imagery in the form of imagination (e.g., Bogicevic *et al.*, 2019; Cowan *et al.*, 2021), which

considerable role in attitudes and intentions has been established in the literature (Krishna *et al.*, 2016; Schlosser, 2003).

Although episodic future thinking as a specific form of mental imagery serves a wide range of consumer functions, such as decision-making, emotional regulation, and intention formation (Schacter *et al.*, 2017), scant research has investigated its explanatory power in fostering service brand outcomes. However, mentally interacting with a product or service is known to enhance consumer attitudes and promote purchase intentions (Elder and Krishna, 2011; Krishna *et al.*, 2016). Furthermore, vivid and satisfying mental simulations of imagined service experiences are expected to prime consumers in envisioning themselves in specific situations with the service brand, increasing their knowledge about the service offering (Shen *et al.*, 2022). These episodic simulations may also strengthen perceptions of accurate brand associations and benefits, thereby supporting the development of the service brand (Chatzipanagiotou *et al.*, 2019). This deeper understanding and emotional connection with the service brand and its offerings can lead to both cognitive and affective anticipated satisfaction (Kunz *et al.*, 2011).

Expectations are central to service evaluations (e.g., Tan *et al.*, 2017), shaping consumer satisfaction when actual performance aligns with expectations (Voss *et al.*, 1998). The intangibility of services heightens the importance of managing consumer expectations (Bebko, 2000) to, ultimately, foster consumer satisfaction and loyalty intentions (Zeithaml *et al.*, 2023), and episodic future thinking supports this by enabling consumers to vividly and emotionally anticipate future service experiences. By fostering clearer and more positive expectations, episodic future thinking enhances consumers' ability to evaluate services effectively, leading to improved satisfaction and stronger attitudes toward the service brand (Zeithaml *et al.*, 1993; Polegato and Bjerke, 2019). Anticipated satisfaction regarding imagined service experience is likely to foster positive attitudes toward the service brand and intentions to purchase in the future (Karl *et al.*, 2021; Karl *et al*., 2023; Sousa *et al.*, 2024). Anticipated satisfaction regarding

imagined service experience is likely to foster positive attitudes toward the service brand and intentions to purchase in the future (Karl *et al.*, 2021; Karl *et al.*, 2023; Sousa *et al.*, 2024). Accordingly, this paper investigates the following hypotheses:

H4: Imagination vividness of future service brand experience influences (a) service brand attitudes and (b) service brand intentions.

H5: Imagined future service brand experience valence influences (a) service brand attitudes and (b) service brand intentions.

Finally, based on the widely accepted theory of planned behavior (Ajzen, 1991), studies in similar contexts (e.g., Cowan *et al*., 2021; Feng, 2018; Pleyers and Poncin, 2020) have linked consumer attitudes with their future purchase intentions. Accordingly, we expect the following:

H6: Service brand attitudes positively influence service brand intentions.

Figure 1 summarizes the hypotheses of the study, which are anchored in the S-O-R theory (Mehrabian and Russell, 1974).

[INSERT FIGURE 1 ABOUT HERE]

Research design

Instrument

To address the hypotheses developed above, this study adopted a survey design whereby the respondents were exposed to a 360° video of a destination brand as part of an online questionnaire distributed with Qualtrics. The tourism context was thus explicitly chosen for this study for two main reasons. First, destination brands particularly use immersive technologies

in tourism (Kim *et al.*, 2020; Loureiro *et al.*, 2020) to effectively promote the service experiences they offer (Gursoy *et al*., 2022). Second, brand destinations are considered a service with high intangibility and the difficulty of creating accurate expectations upfront. Accordingly, consumers intuitively engage in anticipation (i.e., episodic future thinking) to make decisions and assess destinations' attractiveness (Karl *et al.*, 2021; 2023).

A 360° video, featuring the city of Barcelona as a destination brand, was shown to participants. The video, developed by Sygic Travel, was accessed on YouTube and embedded into the online questionnaire. The link to access the videos is available in Appendix 1. We chose this video for its visual quality, adequate length (4'4'') to allow the viewer to enter the narrative and develop a sense of presence, and its popularity (thirty-one thousand views at the time of the study). The focus on Barcelona was considered adequate, given the relatively high awareness and popularity of this European city worldwide (Resonance Consultancy, 2023). The questionnaire was distributed in English and Spanish.

Sampling

The study adopts convenience sampling, whereby the questionnaire was distributed through social media and accessible on a voluntary, non-incentivized basis. Specifically, individuals from Belgium and Mexico were targeted. The inclusion of Mexican and Belgian samples in this study is relevant for several reasons. First, established research underscores the significant role of culture in shaping consumer decision-making and service evaluation (e.g., Mattila, 1999; Steenkamp and Geyskens, 2006). Second, while cultural differences are crucial, global brands increasingly rely on homogeneous communication strategies across cultures (Steenkamp, 2019), particularly in tourism advertising, which is inherently multi-cultural. Third, Latin America, despite its potential for theory testing in marketing and services (Aguinis *et al.*, 2020), remains underrepresented in published research (Fastoso and Whitelock, 2011). Fourth, the two countries reflect differing cultural characteristics according to Hofstede's dimensions (Hofstede

et al., 2005). For instance, Belgium is characterized by high levels of individualism, pragmatism, and low indulgence, whereas Mexico contrasts with its collectivistic orientation, normative tendencies, and higher indulgence. Taken together, this sampling decision allows for an exploration of whether the findings are generalizable across cultures (Chatzipanagiotou *et al.*, 2019; Kim and Yin, 2022), particularly when considering the differing stages of development and cultural differences between Mexico and Belgium (Steenkamp, 2019).

The questionnaire was distributed in English to the Belgian population, assessing the sample's English proficiency, and in Spanish to Mexican respondents. The questionnaire was translated back into Spanish thanks to native Spanish speakers (Craig and Douglas, 2006).

Measurement

The questionnaire has been designed to capture the key constructs of interest by using established, validated scales that have been widely adopted and proven reliable in previous research. Multiple-choice items, as well as 5-point Likert scale and 7-point semantic differential questions were used—see Appendix 2. Presence was appraised using a scale from Coyle and Thorson (2001) adapted to the context of promoting a destination brand. Vividness was measured using a scale proposed by Van Kerrebroeck *et al.* (2017) and adapted from the work of Keller and Block (1997). Episodic future thinking was evaluated within the questionnaire thanks to two dimensions: the imagined future service brand experience valence scale developed by Söderlund *et al.* (2001) adapted to a destination brand context and the imagination vividness of future service brand experience construct proposed by Miller *et al.* (2000). Service brand attitudes was adapted from Choi and Taylor (2014), while service brand intentions were appraised based on the work of Horng *et al.* (2012). Destination brand familiarity was also assessed to control for possible variance in knowledge of Barcelona, adapting a scale of brand familiarity developed by Steenkamp *et al.* (2003) to accommodate the context of tourism and destination familiarity. Additionally, the respondents were asked if they had ever visited the

destination brand and their travel frequency and technology familiarity. Their level of English was also assessed to ensure a good understanding of the questionnaire and video narrative. The scales used to assess the independent, dependent, and mediating variables are summarized in Appendix 2, which describes the items and statements used for each construct.

Sample characteristics

The final sample consists of 138 respondents. This sample size aligns with similar studies (e.g., Anasori *et al.*, 2022; Laato *et al.*, 2020), and falls within the range considered adequate for structural equation modeling (Hair *et al.*, 2017; Kline, 2015). The respondents' ages ranged between 19 and 76 years old with a median of 29 and consists of 54% females. Respondents come from Belgium (44%) and Mexico (56%). They have a good level of education, with 45% having a bachelor's degree and 44% having a master's degree. Respondent's familiarity with Barcelona is 3 out of 5, which is above average, as well as their travel frequency (avg=3.3) and familiarity with technology (avg=4.1). Their proficiency in English is also good (avg=3.9). Complete details of the respondents' characteristics are found in Table I.

[INSERT TABLE I ABOUT HERE]

Results

Consistent with previous studies examining mediating effects through the S-O-R theory (e.g., Schill and Godefroit-Winkel, 2022; Sharma *et al.*, 2023), a two-phase structural equation modeling (SEM) process is used for the analysis of the results. We focus first on the measurement model to assess the factor structure before addressing the structural model to test the hypothesized links between the variables and verify the fit of the entire structural model with the data (Anderson and Gerbing, 1988). All analyses are computed using the computer software AMOS (Byrne, 2016).

Reliability and validity

The constructs are internally consistent with all Cronbach's alpha values above 0.7 (Bagozzi and Yi, 1988). The convergent validity indicators are also satisfactory, with average variance extracted (AVE) values all above 0.55, supporting the measurement model's convergent validity. AVE for imagined future brand experience valence was low (0.47) due to a lower inter-item correlation. Despite exhibiting a good Cronbach's alpha (0.7) with three items, we removed the third item of this variable, which had the lowest reliability loading, which subsequently brought the AVE to 0.56. The inter-item correlation of the second item of vividness (V2) being deficient with all other items and negatively impacting the reliability, we decided to remove this item for further analysis as well. The coefficient of reliability (CR) indicators are equal to or above 0.70 for all constructs, which further indicates reliability, as Hair *et al.* (2006) suggest. Correlations among latent variables are all significant (CR ≥ 1.96). All AVEs are superior to the square of their related pairwise correlations, indicating that the measurement model achieves discriminant validity, as shown in Table II.

[INSERT TABLE II ABOUT HERE]

Model fit and group invariance

Given the heterogeneity of the sample in terms of countries, a multigroup analysis is used to test the invariance of model fit between the Belgian and the Mexican samples, whereby the CFI delta between the two models acts as the indicator, needing to assume a value below or equal to 0.01 to verify invariance.

The first step consists of assessing the goodness-of-fit of the multigroup sample. The measurement model exhibited a chi-square of 358,537 ($p = 0.00$) with 236 degrees of freedom, CFI = 0.94, TLI = 0.93, which are above the cut-off value of 0.90, and an RMSEA = 0.06, which is also deemed a good representation of fit. Measurement model fit is achieved for the

multigroup sample, and having established the configural invariance, the metric, or measurement invariance aims to check the similarity of the loadings across samples. To test for metrics invariance, the factor loadings are thus constrained to be the same across countries, using the automated models function of AMOS (Byrne, 2016) and using the CFI difference value to test the significance of the invariance, with a cut-off criterion of ΔCFI =< 0.01. The model exhibits a ΔCFI=0.01 between the configural and constrained models, which indicates measurement invariance between the Belgian and Mexican samples. A further check of the modification indices does not suggest the need to modify the factorial structure, further validating the measurement invariance.

The same method is applied to check the structural model invariance and denotes as well a ΔCFI=0.01, which indicates structural invariance. The multigroup structural model exhibited a chi-square of 328,868 (p = 0.00) with 234 degrees of freedom, CFI = 0.96, TLI = 0.95, well above the cut-off value of 0.90, and an RMSEA = 0.05. Having established the measurement and structural fit of the models and multigroup invariance, the detailed analysis of the hypotheses considers the whole sample as homogenous.

Hypothesis testing

Hypothesis testing uses SEM with maximum likelihood estimation. In the causal path model, the statistics support that the data fit the model as discussed above. The significance of the model's path coefficient shows that H1a is supported in contrast to H1b, which is rejected. This means that vividness (V) only impacts significantly imagination vividness of future service brand experience (IVFSBE) (β = 0.84, sig = 0.00) and not imagined future service brand experience valence (IFSBEV) (β = -0.25, sig = 0.20). Regarding the impact of presence (P) (H2), similar results are found, however, this time supporting the impact on imagined future service brand experience valence (β = 0.67, sig = 0.00) and not on imagination vividness of future service brand experience (β = -0.16, sig = 0.07). This shows support for H2b and rejects

H2a however. The results show that vividness is an essential predictor of imagination vividness of future service brand experience in contrast to presence, with an overall R2 of 0.59. On the other hand, imagined future service brand experience valence is impacted by presence rather than vividness, with an overall R2 of 0.46. In support of H3, imagination vividness of future service brand experience does impact imagined future service brand experience valence (β = 0.32, sig < 0.05).

Regarding the dependent variables of the model, the results show that imagination vividness of future service brand experience does not have any of the expected direct impact on attitudes (ATT) (β = 0.04, sig = 0.92) and intentions (INT) (β = -0.03, sig =0.62). However, imagined future service brand experience valence does significantly impact attitudes to a large extent (β = 0.75, sig =0.00), and attitudes, in turn significantly impacts intentions (β = 0.51, sig = 0.00), in support of both H5a and H6. Last, H5b is not supported as imagined future service brand experience valence does not directly impact intentions (β = 0.30, sig = 0.06). Episodic future thinking variables thus impact intentions through the mediation of attitudes. Hypothesis support is summarized in Table III.

[INSERT TABLE III ABOUT HERE]

Discussion

Relying on the S-O-R theory, this paper investigates the role of episodic future thinking (O) in fostering consumers' attitudes and intentions (R) following an immersive experience with a service brand (S). More specifically, we bring forward episodic future thinking as one of the underlying mechanisms explaining 360° videos' ability to enhance brand outcomes. By incorporating episodic future thinking within the organism response, this study extends the S-O-R framework by highlighting the role of imagined and future-oriented cognitive processing in shaping consumer responses to immersive brand experiences.

Episodic future thinking is a specific form of imagination that focuses on specific events that might occur in one's personal future (Atance and O'Neill, 2001), such as the consumption of a product, service, or brand. While episodic future thinking is a well-established concept in other fields, such as cognitive neuroscience and psychology (Schacter *et al.*, 2017), and is particularly relevant to understanding how consumers rely on mental time travel to make future decisions (Karl *et al.*, 2023), it has scarcely been applied in the service literature. We bridge this gap by showing that episodic future thinking mediates the relationship between the characteristics of immersive technologies such as 360° videos (i.e., vividness and presence) and service brand attitudes and intentions. By facilitating vivid and emotionally charged mental simulations, episodic future thinking enhances consumer anticipation and expectations, which, as established in service literature, are crucial drivers of service outcomes (Voss *et al.*, 1998), including attitudes and intentions toward the brand (e.g., Polegato and Bjerke, 2019). This theoretical perspective reinforces the role of episodic future thinking as a key mechanism for managing service brand outcomes. We thus show that 360° videos help consumers imagine future service experiences (Barreda-Ángeles *et al.*, 2021; Bender and Sung, 2020; Cowan and Ketron, 2019)—through episodic future thinking.

In this study, we conceptualize episodic future thinking in a service consumption context through two dimensions: its intensity (i.e., the vividness of the imagined service brand experience) and valence (i.e., the anticipated satisfaction consumers expect from the imagined service brand experience), in line with recent work (Karl *et al.*, 2023). Those two dimensions were found to be key predictors of service brand attitudes and intentions (Karl *et al.*, 2023), highlighting the relevance of considering episodic future thinking both in its intensity and valence.

Specifically, the results of the study reveal that the imagination vividness of future service brand experiences alone is not sufficient to directly influence service brand outcomes. This suggests

that simply forming vivid mental images of future service interactions does not inherently drive outcomes like attitudes or intentions. Instead, these imagined scenarios must be positively valenced and evoke a sense of anticipated satisfaction with the service experience to have a meaningful impact (Dimofte and Yalch, 2010). This finding aligns with recent research emphasizing the role of positive emotions and arousal in driving service outcomes in the context of immersive technologies (Mauri *et al.*, 2024). It may be that vividness acts as a foundational cognitive process within episodic future thinking, but it requires the presence of emotional and evaluative dimensions—such as anticipated satisfaction—for these simulations to effectively influence service brand outcomes.

Furthermore, our study shows that vividness is a crucial characteristic of immersive technologies in priming consumers to produce images of imagined service experiences that more closely resemble reality. Thus, we concur with previous findings highlighting the vividness of immersive technologies as a critical enabler of collecting sensory information (Cowan and Dai, 2014; Dimofte and Yalch, 2010), which will foster mental representations of imagined future service experience. In other words, immersive sensory cues help consumers imagine intense and vivid future service brand interactions (Cian *et al.*, 2014).

We also add knowledge to the understanding that feelings of presence when being exposed to an ad encourage consumers to experience the communication as if it were real (Joo *et al.*, 2022). Our results also highlight that feelings of presence positively influence the expected satisfaction that consumers will feel toward imagined service experience. In other words, our findings concur with Shen *et al.* (2020), as 360° videos were found to foster a sense of presence, enabling enhanced imagination. Nevertheless, we develop those findings in more depth by showing that the sense of presence enhances mental representations of imagined service experience through consumers' anticipated satisfaction. Put simply, the more consumers feel part of the immersive

service experience, the more satisfied they expect to feel regarding potential future service brand consumption.

This study particularly highlights that specific characteristics of immersive technologies (i.e., vividness and sense of presence) contribute to episodic future thinking in distinct ways. Indeed, vividness of the 360° video was shown to enhance the imagination vividness of future service brand experience, creating detailed mental images of the potential future service interaction. However, vividness of the 360° video alone was not sufficient to directly influence service brand outcomes, as it did not predict the valence of these imagined experiences. Instead, the ability of immersive technology to provide a sense of presence emerged as a key predictor of the imagined future service brand experience valence, fostering expected satisfaction with the potential future service interaction.

These findings underscore the multifaceted nature of episodic future thinking and the differentiated roles of immersive technology characteristics. They align with seminal conceptualizations of immersive technologies, such as Steuer's (1992) work, which emphasizes the need to distinguish between technological characteristics (e.g., vividness) and their psychological effects on individuals (e.g., presence). Additionally, it is worth noting that technical elements such as image quality, experience duration, sound environment, visual details, and level of interactivity—though excluded from the current study—may act as potential moderators, influencing the relationships between immersive technology characteristics and episodic future thinking. Our findings thus underscore the significance of distinguishing between technological characteristics and psychological effects when evaluating how immersive experiences shape cognitive and affective processes linked to service brand outcomes.

In conclusion, presence and vividness contribute to some extent to the episodic future thinking formed in consumers' minds, which will be key in influencing service brand attitudes and intentions. These findings particularly concur with Kostyk and Sheng's (2023) strategic guidelines of immersive technology implementation, as our study emphasizes the potential of 360° videos to foster imagined service brand consumption experiences. Additionally, due to their high accessibility for both consumers and companies (Chen and Yao, 2022; Rauschnabel *et al.*, 2022), 360° videos are especially relevant during the pre-purchase phase, when consumers familiarize themselves with the service brand and begin planning or organizing potential future experiences. By enabling consumers to vividly simulate future service experiences, 360° videos effectively convey key brand associations and benefits, facilitating service brand building and enhancing brand equity (Chatzipanagiotou *et al.*, 2019).

Theoretical implications

This research investigates the advantages of immersive technologies (i.e., 360° videos) to induce imagination in the form of episodic future thinking, positively influencing service brand attitudes and intentions. This enables us to articulate several important contributions.

First, by demonstrating how immersive technologies, such as 360° videos, deliver sensory-rich stimuli that activate cognitive processes like episodic future thinking, we add knowledge to the existing service literature on multisensory experiences (e.g., Stead *et al.*, 2022). Particularly, episodic future thinking plays an important role in service contexts as it explains how immersive stimuli shape consumer anticipation and expectations, ultimately enhancing the perceived quality of service experiences (Zarantonello and Schmitt, 2023). We show that 360° videos enable consumers to construct vivid and emotionally positive mental representations of future service interactions, which are essential in driving key outcomes such as satisfaction, attitudes toward the service brand, and behavioral intentions such as purchase and loyalty (e.g., Karl *et al.*, 2023; Polegato and Bjerke, 2019).

By integrating insights from cognitive psychology (e.g., Schacter *et al.*, 2017), this paper bridges disciplines to deepen understanding of the mechanisms linking technological touchpoints to critical service outcomes (Furrer *et al.*, 2020). Moreover, it addresses calls within the service literature to explore how innovative technologies are reshaping traditional service processes and customer interactions (Ostrom *et al.*, 2021).

Second, we answer calls for research on the advantages of specific immersive formats in terms of cognitive, affective, and behavioral effects (Kim, 2021). Notably, this research contributes to a better understanding of the psychological mechanisms that explain the formation of service brand attitudes and intentions elicited by immersive technologies (Loureiro *et al.*, 2019). While several studies have demonstrated a positive impact of the use of immersive technologies attitudes and intentions in several contexts (e.g., Chen and Yao, 2022; de Regt *et al.*, 2021; Pleyers and Poncin, 2020), few studies investigate the potential factors explaining those results (Pimentel *et al.*, 2021). When they do, they tend to focus on cognitive processes such as imagination (e.g., Cowan *et al.*, 2021) or flow (e.g., Ambika *et al.*, 2023). By empirically testing the mediating role of episodic future thinking, we advance current knowledge of the psychological mechanisms underlying immersive technologies' attitudinal and behavioral outcomes on service brands. The S-O-R theory is particularly relevant to anchor our hypotheses (Ambika *et al.*, 2023; Erensoy *et al.*, 2024), considering that immersive technologies act as a stimulus (S) that can generate attitudinal and behavioral responses among consumers (R) through episodic future thinking (O). Furthermore, by incorporating episodic future thinking as an organism response, we showcase the importance of imagined and future-oriented cognitive processing to drive positive service brand outcomes. Doing so, we also complement recent work showing that organisms related to inspiration, imagination (Sengoz *et al.*, 2024), as well flow and affective responses (Kim *et al.*, 2020) play an important role in bridging the organism-response gap in immersive settings.

Third, this paper provides compelling evidence of the potential of specific immersive technologies, such as 360° videos, as a digital touchpoint to enhance service outcomes throughout the consumer journey (Batat and Hammedi, 2022; Grewal *et al.*, 2022). Indeed, 360° videos are powerful and accessible technologies to strengthen feelings of presence within and expected satisfaction toward a service experience, which can be important in various stages of the consumer journey (Kostyk and Sheng, 2023). By focusing on the practical application of a specific type of immersive technology (i.e., 360° videos) that is highly accessible to both consumers and companies (Kim and Choo, 2023), we advance understanding of the specific implications that concrete immersive technologies have for service brands (Kunz *et al.*, 2019).

Finally, this research contributes to the nascent literature on imagined brand experiences (e.g., Barhorst *et al.*, 2023). Indeed, 360° videos foster episodic future thinking for future service brand interactions. In other words, consumers imagine service brand interactions in their minds thanks to the stimuli provided by the immersive video. We thus strengthen the emerging idea that mental time travel experiences are inherent to the overall service experience, especially because consumers re-enact stimuli when projecting themselves in imagined future experiences (Barhorst *et al.*, 2023). These insights also highlight the potential of immersive technologies to reduce uncertainty in service delivery and enhance anticipated satisfaction, benefiting service brand outcomes (Gursoy *et al.*, 2022).

Practical and societal implications

This research is beneficial for service managers in understanding the benefits that immersive technologies such as 360° videos can bring to promotion efforts. Indeed, 360° videos are considered a simple, easy, and accessible immersive technology (Kim and Choo, 2023). Accordingly, they are particularly suited to raise awareness (Kostyk and Sheng, 2023; Zarantonello and Schmitt, 2023) and present clear stimulus to potential consumers (Sharma *et al.*, 2023) in a way that will favor positive service brand attitudes and intentions.

Our paper also demonstrates that episodic future thinking positively influences service brand outcomes within the context of immersive technologies. In doing so, we address recent calls for research on how immersive service brand promotion can be optimized for greater effectiveness (Ambika *et al.*, 2023). Based on these findings, practical recommendations emerge, particularly for companies looking to create immersive content that helps consumers form vivid mental representations of specific future service brand experiences. This can be further primed not only by choice of immersive technology, such as 360° videos, but also through specific content creation and communication design, such as emphasizing consumer's involvement regarding the service brand in the ad itself.

Additionally, our findings point to the fact that the different characteristics of immersive technology (i.e., its vividness and ability to deliver a sense of presence) can be combined in several ways to foster specific dimensions of episodic future thinking. Namely, vivid communications will help consumers form vivid images in their minds, while communications targeting their sense of presence will help consumers expect future satisfaction in case of potential future service experience. In this sense, we stress the need for qualitative media production with advanced cameras and high-resolution outputs. Immersion and presence are also strengthened with a compelling narrative and design supporting narrative transportation (Han *et al*., 2024; Van Laer *et al.*, 2014), as well as with cues fostering the simulation of various senses, such as olfaction and taste (Batat and Hammedi, 2022; Cowan *et al.*, 2023), haptics (Mulcahy and Riedel, 2022), and human connection (Batat and Hammedi, 2022; Hou *et al*., 2023).

These practical implications not only highlight recommendations for businesses, but also offer valuable applications in transformative contexts such as healthcare, education, or psychological wellbeing. In healthcare, 360° videos can be used to educate patients about upcoming treatments or surgeries. The immersive nature of these technologies promotes episodic future thinking,

helping patients better prepare for their medical experiences by reducing anxiety, uncertainty, and stress. This is achieved through enhanced knowledge and a greater sense of responsibility (Ungaro *et al.*, 2024), ultimately enhancing their experience with the service provider. Based on the study's results, healthcare providers are encouraged to incorporate 360° video tours of hospital facilities or treatments into their patient onboarding process to help reduce patient concerns and enhance treatment understanding. Further, immersive technologies have also proven valuable in education and training, enhancing learner satisfaction and self-efficacy (Im *et al.*, 2023). For instance, 360° videos are particularly relevant when it comes to practical skills training, as they enable students to engage in vivid and realistic simulations of real-world scenarios before actual hands-on practice. The University of Stavanger in Norway has successfully implemented an interactive 360° video learning experience to train nursing students, helping them respond effectively to emergencies by simulating high-pressure situations in a controlled, immersive environment. Finally, immersive technologies have also demonstrated significant value in enhancing psychological therapy, particularly in addressing psychiatric disorders such as phobias (e.g., Lundin *et al.*, 2022), anxiety (e.g., Park *et al.*, 2019), or addictions (e.g., Bouchard *et al.*, 2017). For instance, 360° videos can simulate controlled environments that allow patients to confront their fears or triggers in a safe and guided manner, gradually reducing their symptoms through exposure therapy. Overall, the findings of this study suggest that transformative industries can benefit from integrating accessible technologies like 360° videos and should consider collaborating with expert content creators to enhance the service experience and foster transformative outcomes.

Limitations and future research direction

While this paper provides compelling evidence of the relevance of capitalizing on 360° videos as immersive technologies to foster service brand outcomes through imagined service experiences, these critical insights face some limitations, providing fruitful avenues for future

research. First, this study concentrates on one type of immersive technology: 360° video. While this setting allowed for the isolation of its specific advantages (Kim, 2021), it prevented comparison with other relevant immersive technologies, such as virtual reality using head-mounted displays or augmented reality. Particularly future research could use experimental data to evaluate the relative impact of technologies with varying levels of immersion (Cowan and Ketron, 2019; Flavián *et al.*, 2019) on fostering service brand outcomes through episodic future thinking. This approach would offer deeper insights into the mediating role of episodic future thinking, shaped by differing levels of interactivity and sensory stimuli. In the same vein, this paper considers vividness as the critical dimension of immersion, mainly because 360° videos are known to entail less interactivity (Rauschnabel *et al.*, 2022). Further research could assess the perceived interactivity of immersive technology and its influence in fostering episodic future thinking, both through simulation and prediction (Schacter *et al.*, 2017).

Second, this study includes data collection in two contrasting countries, namely Belgium and Mexico. While this diversified sampling intends to increase the generalizability of the research, the data shows that both groups can be considered homogenous regarding respondents' perceptions of the immersive technology and its outcomes. Yet, future research might consider an international sampling from other cultures to assess if consumers' responses to immersive technologies differ across countries. Such cross-cultural insights are especially relevant, given the inherent global nature of tourism advertising (e.g., Chatzipanagiotou *et al.*, 2019).

Third, further research could investigate the moderating role of previous exposure to the service brand offering in promoting episodic future thinking thanks to immersive technologies. Because episodic future thinking is a form of cognitive imagery formed by resources available to consumers (e.g., ads; Krishna *et al.*, 2016), past experiences with a service brand can also help consumers in the formation of future imagined service experiences (Spears and Yazdanparast, 2014; Vichiengior *et al.*, 2019). Similarly, past exposure to immersive content

from the service brand creates lasting memories in consumers' minds (Kostyk *et al.*, 2024), which can influence their ability to imagine future service experiences through episodic future thinking. In this case, consumers might rely on their existing knowledge and past experiences to form judgment about imagined future satisfaction regarding the service provided (Shen *et al.*, 2022) as well as maintain positive attitudes toward service brands (Su *et al.*, 2021). Accordingly, future studies might investigate the interplay between consumers' previous knowledge of the service brand and immersive technologies' characteristics in influencing episodic future thinking and related service brand outcomes.

Fourth, other consumer characteristics may moderate the relationship between the capabilities of immersive technologies and service brand outcomes through episodic future thinking. Specifically, consumer optimism could influence the imagined valence of future service brand experiences. Optimistic individuals generally possess a more positive outlook on future events, which may lead them to envision future service interactions with more favorable outcomes (Tanner and Carlson, 2009), often associating these experiences with positive emotions. Furthermore, individuals differ in their ability to generate vivid mental imagery, meaning that some consumers may have a stronger capacity to create detailed and vivid images of future brand interactions (Suica *et al.*, 2022). These individual differences may therefore moderate the strength of the imagined vividness of future service brand experience, as facilitated by immersive technologies.

Fifth, our results show that 360° videos significantly influence service brand attitudes and intentions through episodic future thinking in the context of destination brands. These insights hold promise for transformative applications of tourism services. Indeed, they might extend beyond destination branding by offering virtual access to areas that may benefit from reduced tourist traffic, such as natural reserves. In doing so, immersive technologies can promote virtual tourism in remote or vulnerable locations (Malodia *et al.*, 2024), contributing to sustainability

efforts and the preservation of natural landscapes and cultural heritage. This is particularly relevant as global warming and increased tourism are currently threatening existing destination brands, paradoxically making them more appealing to consumers—a phenomenon known as 'last chance tourism' (Gaffney, 2024). By providing vivid and satisfying projected previews of what it would be like to visit these destinations, 360° videos can help reduce the physical impact on vulnerable sites while raising awareness about sustainable travel practices.

Finally, exploring the role of episodic future thinking in other service contexts, such as healthcare (Ungaro *et al.*, 2024), education (Im *et al*., 2023), sustainability (Breves and Heber, 2020) and well-being (Frost *et al*., 2022), offers promising directions for future research, particularly in linking imagined and transformative service experiences.

Conclusion

This study highlights the significant role of immersive technologies, particularly 360° videos, in enhancing service brand outcomes through episodic future thinking. By leveraging the vividness and sense of presence provided by these technologies, consumers can form detailed and satisfying mental representations of future service experiences, which positively influence their attitudes and intentions toward the service brand. Theoretically, we contribute to service research on multisensory and imagined service experiences by demonstrating how innovative and immersive formats effectively drive episodic future thinking, which in turn influences key service brand outcomes throughout the consumer journey. Practically, these findings underscore the potential of 360° videos as accessible and effective tools for service brands to engage consumers and foster positive brand perceptions, especially through the adoption of qualitative media production and a strong narrative, alongside the simulation of human senses and connection. Furthermore, this study holds broader applications in transformative contexts, as the results can be capitalized on to empower patients in healthcare settings, support training and education, as well as enhance psychological well-being, amongst others.

References

Aguinis, H., Villamor, I., Lazzarini, S. G., Vassolo, R. S., Amorós, J. E., and Allen, D. G. (2020), "Conducting management research in Latin America: why and what's in it for you?", *Journal of Management,* Vol. *46* No.5, pp. 615-636. https://doi.org/10.1177/0149206320901581

Agren, T. (2023), "Physiological and subjective arousal to prospective mental imagery: A mechanism for behavioral change?", *Plos one*, Vol. 18 No. 12, e0294629. https://doi.org/10.1371/journal.pone.0294629

Ajzen, I. (1991), "The theory of planned behavior", *Organizational Behavior and Human Decision Processes*, Vol. 50 No. 2, pp.179-211. https://doi.org/10.1016/0749-5978(91)90020-T

Ambika, A., Shin, H., and Jain, V. (2023), "Immersive technologies and consumer behavior: A systematic review of two decades of research", *Australian Journal of Management*, Vol. 50 No. 1, pp.55-79. https://doi.org/10.1177/03128962231181429

Anasori, E., Kucukergin, K. G., Soliman, M., Tulucu, F. and Altinay, L. (2022), "How can the subjective well-being of nurses be predicted? Understanding the mediating effect of psychological distress, psychological resilience and emotional exhaustion", *Journal of Service Theory and Practice*, Vol. 32 No. 6, pp.762-780. https://doi.org/10.1108/JSTP-01-2022-0008

Anderson, J. C. and Gerbing, D. W. (1988), "Structural equation modeling in practice: a review and recommended two-step approach", *Psychological Bulletin*, Vol. 103 No. 3, pp.411-423. https://doi.org/10.1037/0033-2909.103.3.411

Atance, C. M. and O'Neill, D. K. (2001), "Episodic future thinking", *Trends in Cognitive Sciences*, Vol. 5 No. 12, pp.533-539. https://doi.org/10.1016/S1364-6613(00)01804-0

Bagozzi, R. P. and Yi, Y. (1988), "On the evaluation of structural equation models", *Journal of the Academy of Marketing Science,* Vol. 16, pp.74-94. https://doi.org/10.1007/BF02723327

Barhorst, J. B., Krey, N. and McLean, G. (2023), "Exploring mental time travel experiences and their influence on behavioral intentions and learning", *Psychology & Marketing*, Vol. 40 No. 8, pp.1615-1633. https://doi.org/10.1002/mar.21828

Barreda-Ángeles, M., Aleix-Guillaume, S. and Pereda-Baños, A. (2021), "Virtual reality storytelling as a double-edged sword: immersive presentation of nonfiction 360-video is associated with impaired cognitive information processing", *Communication Monographs,* Vol. 88 No. 2, pp.154-173. https://doi.org/10.1080/03637751.2020.1803496

Batat, W. and Hammedi, W. (2022), "The extended reality technology (ERT) framework for designing customer and service experiences in phygital settings: a service research agenda", *Journal of Service Management*, Vol. 34 No. 1, pp.10-33. https://doi.org/10.1108/JOSM-08-2022-0289

Bebko, C. P. (2000), "Service intangibility and its impact on consumer expectations of service quality", *Journal of Services Marketing*, Vol. 14 No. 1, pp.9-26. https://doi.org/10.1108/08876040010309185

Bender, S. M. and Sung, B. (2021), "Fright, attention, and joy while killing zombies in virtual reality: a psychophysiological analysis of VR user experience", *Psychology & Marketing,* Vol. 38 No. 6, pp.937-947. https://doi.org/10.1002/mar.21444

Blasco-Arcas, L., Hernandez-Ortega, B. I. and Jimenez-Martinez, J. (2016), "Engagement platforms: The role of emotions in fostering customer engagement and brand image in interactive media", *Journal of Service Theory and Practice,* Vol. 26 No. 5, pp.559-589. https://doi.org/10.1108/JSTP-12-2014-0286

Bogicevic, V., Seo, S., Kandampully, J. A., Liu, S. Q. and Rudd, N. A. (2019), "Virtual reality presence as a preamble of tourism experience: the role of mental imagery", *Tourism Management,* Vol. 74, pp.55-64. https://doi.org/10.1016/j.tourman.2019.02.009

Bouchard, S., Robillard, G., Giroux, I., Jacques, C., Loranger, C., St-Pierre, M., ... and Goulet, A. (2017), "Using virtual reality in the treatment of gambling disorder: the development of a new tool for cognitive behavior therapy", *Frontiers in Psychiatry*, Vol. 8, 27. https://doi.org/10.3389/fpsyt.2017.00027

Boyer, P. (2008), "Evolutionary economics of mental time travel?", *Trends in cognitive sciences*, Vol. 12 No. 6, pp.219-224. 10.1016/j.tics.2008.03.003

Breves, P. and Heber, V. (2020), "Into the wild: the effects of 360 immersive nature videos on feelings of commitment to the environment", *Environmental Communication*, Vol. 14 No. 3, pp.332-346. https://doi.org/10.1080/17524032.2019.1665566

Burton, N. and Schlieman, T. (2021), "User response to extended reality sponsorship activations on social media: exploring impressions of GoPro's use of 360 video in marketing", *Journal of Interactive Advertising,* Vol. 21 No. 2, pp.93-107. https://doi.org/10.1080/15252019.2021.1944405

Byrne, B. M. (2016), *Structural equation modeling with AMOS: Basic concepts, applications, and programming,* Routledge, NY. https://doi.org/10.4324/9780203807644

Chatzipanagiotou, K., Christodoulides, G. and Veloutsou, C. (2019), "Managing the consumer-based brand equity process: a cross-cultural perspective", *International Business Review,* Vol. 28 No. 2, pp.328-343. https://doi.org/10.1016/j.ibusrev.2018.10.005

Chen, C. and Yao, M. Z. (2022), "Strategic use of immersive media and narrative message in virtual marketing: understanding the roles of telepresence and transportation", *Psychology & Marketing,* Vol. 39 No. 3, pp.524-542. https://doi.org/10.1002/mar.21630

Cheng, L. K., Chieng, M. H. and Chieng, W. H. (2014), "Measuring virtual experience in a three-dimensional virtual reality interactive simulator environment: a structural equation modeling approach", *Virtual Reality,* Vol. 18, pp.173-188. https://doi.org/10.1007/s10055-014-0244-2

Choi, Y. K. and Taylor, C. R. (2014), "How do 3-dimensional images promote products on the Internet?, *Journal of Business Research,* Vol. 67 No. 10, pp.2164-2170. https://doi.org/10.1016/j.jbusres.2014.04.026

Cian, L., Krishna, A. and Elder, R. S. (2014), "This logo moves me: dynamic imagery from static images", *Journal of Marketing Research,* Vol. 51 No. 2, pp.184-197. https://doi.org/10.1509/jmr.13.0023

Coyle, J. R. and Thorson, E. (2001), "The effects of progressive levels of interactivity and vividness in web marketing sites", *Journal of Advertising*, Vol. 30 No. 3, pp.65-77. https://doi.org/10.1080/00913367.2001.10673646

Cowan, K. and Dai, B. (2014), "Who is the "self" that buys?: an exploratory examination of imaginative consumption and explanation of opinion leadership", *Psychology & Marketing,* Vol. 31 No. 11, pp.1008-1023. https://doi.org/10.1002/mar.20749

Cowan, K. and Ketron, S. (2019), "A dual model of product involvement for effective virtual reality: the roles of imagination, co-creation, telepresence, and interactivity", *Journal of Business Research,* Vol. 100, pp.483-492. https://doi.org/10.1016/j.jbusres.2018.10.063

Cowan, K. and Ketron, S. (2019), "Prioritizing marketing research in virtual reality: development of an immersion/fantasy typology", *European Journal of Marketing*, Vol. 53 No. 8, pp.1585-1611. https://doi.org/10.1108/EJM-10-2017-0733

Cowan, K., Spielmann, N., Horn, E. and Griffart, C. (2021), "Perception is reality… How digital retail environments influence brand perceptions through presence", *Journal of Business Research,* Vol. 123, pp.86-96. https://doi.org/10.1016/j.jbusres.2020.09.058

Cowan, K., Ketron, S., Kostyk, A. and Kristofferson, K. (2023), "Can you smell the (virtual) roses? The influence of olfactory cues in virtual reality on immersion and positive brand responses", *Journal of Retailing*, Vol. 99 No. 3, pp.385-399. https://doi.org/10.1016/j.jretai.2023.07.004

Craig, C. S. and Douglas, S. P. (2006), "Beyond national culture: implications of cultural dynamics for consumer research", *International Marketing Review*, Vol. 23 No. 3, pp.322–342. https://doi.org/10.1108/02651330610670479

de Regt, A., Plangger, K. and Barnes, S. J. (2021), "Virtual reality marketing and customer advocacy: transforming experiences from story-telling to story-doing", *Journal of Business Research*, Vol. 136, pp.513-522. https://doi.org/10.1016/j.jbusres.2021.08.004

Dimofte, C. V. and Yalch, R. F. (2010), "The role of frequency of experience with a product category and temporal orientation in self-referent advertising", *Journal of Consumer Psychology,* Vol. 20 No. 3, pp.343-354. https://doi.org/10.1016/j.jcps.2010.04.002

D'Argembeau, A. and Van der Linden, M. (2004), "Phenomenal characteristics associated with projecting oneself back into the past and forward into the future: influence of valence and temporal distance", *Consciousness and Cognition,* Vol. 13 No. 4, pp.844-858. https://doi.org/10.1016/j.concog.2004.07.007

D'Argembeau, A., Renaud, O. and Van der Linden, M. (2011), "Frequency, characteristics and functions of future-oriented thoughts in daily life", *Applied Cognitive Psychology*, Vol. 25 No. 1, pp.96-103. https://doi.org/10.1002/acp.1647

Elder, R. S. and Krishna, A. (2010), "The effects of advertising copy on sensory thoughts and perceived taste", *Journal of Consumer Research,* Vol. 36 No. 5, pp.748-756. https://doi.org/10.1086/605327

Elder, R. S. and Krishna, A. (2011), "The "visual depiction effect" in advertising: facilitating embodied mental simulation through product orientation"*, Journal of Consumer Research,* Vol. 38 No. 6, pp.988-1003. https://doi.org/10.1086/661531

Erensoy, A., Mathrani, A., Schnack, A., Elms, J., and Baghaei, N. (2024), "Consumer behavior in immersive virtual reality retail environments: A systematic literature review using the stimuli-organisms-responses (S-O-R) model", *Journal of Consumer Behaviour*, Vol. 23 No. 6, pp.2781-2811. https://doi.org/10.1002/cb.2374

Fastoso, F., and Whitelock, J. (2011), "Why is so little marketing research on Latin America published in high quality journals and what can we do about it? Lessons from a Delphi study of authors who have succeeded", *International Marketing Review,* Vol. 28 No. 4, pp.435-449. https://doi.org/10.1108/02651331111149967

Feng, Y. (2018), "Facilitator or inhibitor? The use of 360-degree videos for immersive brand storytelling", *Journal of Interactive Advertising*, Vol. 18 No. 1, pp.28-42. https://doi.org/10.1080/15252019.2018.1446199

Feng, Y., Xie, Q. and Lou, C. (2019), "The key to 360-degree video advertising: an examination of the degree of narrative structure", *Journal of Advertising,* Vol. 48 No. 2, pp.137-152. https://doi.org/10.1080/00913367.2019.1585305

Flavián, C., Ibáñez-Sánchez, S. and Orús, C. (2019), "The impact of virtual, augmented and mixed reality technologies on the customer experience", *Journal of Business Research,* Vol. 100, pp.547-560. https://doi.org/10.1016/j.jbusres.2018.10.050

Frost, S., Kannis-Dymand, L., Schaffer, V., Millear, P., Allen, A., Stallman, H., ... and Atkinson-Nolte, J. (2022), "Virtual immersion in nature and psychological well-being: A systematic literature review", *Journal of Environmental Psychology,* Vol. 80, 101765. https://doi.org/10.1016/j.jenvp.2022.101765

Furrer, O., Yu Kerguignas, J., Delcourt, C., and Gremler, D. D. (2020), "Twenty-seven years of service research: a literature review and research agenda", *Journal of Services Marketing*, Vol. 34 No. 3, pp.299-316. https://doi.org/10.1108/JSM-02-2019-0078

Gaffney, A. (2024), "Climate Change Is Making 'Last Chance Tourism' More Popular, and Riskier", available at: https://www.seattletimes.com/nation-world/climate-change-is-making-last-chance-tourism-more-popular-and-riskier/ (accessed 10 October 2024)

Gibbons, S. (2020), "How businesses are using VR to survive the COVID-19 era", available at: https://www.forbes.com/sites/serenitygibbons/2020/05/02/how-businesses-are-using-vr-to-survive-the-covid-19-era/ (accessed 10 October 2024)

Grewal, D., Herhausen, D., Ludwig, S. and Ordenes, F. V. (2022), "The future of digital communication research: considering dynamics and multimodality", *Journal of Retailing,* Vol. 98 No. 2, pp.224-240. https://doi.org/10.1016/j.jretai.2021.01.007

Gursoy, D., Malodia, S. and Dhir, A. (2022), "The metaverse in the hospitality and tourism industry: An overview of current trends and future research directions", *Journal of Hospitality Marketing & Management,* Vol. 31 No. 5, pp.527-534. https://doi.org/10.1080/19368623.2022.2072504

Hair, J., Bush, R. and Ortinau, D. (2006), *Marketing Research within a changing environment*, McGraw-Hill, New York, NY.

Hair, J., Hult, G.T.M., Ringle, C.M. and Sarstedt, M. (2017) *A primer on partial least squares structural equation modeling (PLS-SEM*). 2nd edition, Sage Publications Inc., Thousand Oaks, CA.

Han, D. I. D., Melissen, F. and Haggis-Burridge, M. (2024), "Immersive experience framework: a Delphi approach", *Behaviour & Information Technology*, Vol. 43 No. 4, pp.623-639. https://doi.org/10.1080/0144929X.2023.2183054

Hlee, S., Park, J., Park, H., Koo, C. and Chang, Y. (2023), "Understanding customer's meaningful engagement with AI-powered service robots", *Information Technology & People,* Vol. 36 No. 3, pp.1020-1047. https://doi.org/10.1108/ITP-10-2020-0740

Hofstede, G., Hofstede, G. J., and Minkov, M. (2005), *Cultures and organizations: Software of the mind*. 2nd edition, McGraw-Hill Education, New York, NY.

Horng, J. S., Liu, C. H., Chou, H. Y. and Tsai, C. Y. (2012), "Understanding the impact of culinary brand equity and destination familiarity on travel intentions", *Tourism Management*, Vol. 33 No. 4, pp.815-824. https://doi.org/10.1016/j.tourman.2011.09.004

Hou, J., Han, B., Chen, L. and Zhang, K. (2023), "Feeling present matters: effects of social presence on live-streaming workout courses' purchase intention", *Journal of Product & Brand Management*, Vol. 32 No. 7, pp.1082-1092. https://doi.org/10.1108/JPBM-03-2022-3926

Im, J. E., Gu, J. Y., Bae, J. H. and Lee, J. G. (2023), "Comparative study of 360° virtual reality and traditional two-dimensional video in nonface-to-face dental radiology classes: focusing on learning satisfaction and self-efficacy", *BMC Medical Education,* Vol. 23 No. 1, 855. https://doi.org/10.1186/s12909-023-04851-8

Karl, M., Kock, F., Ritchie, B. W. and Gauss, J. (2021), "Affective forecasting and travel decision-making: an investigation in times of a pandemic", *Annals of Tourism Research,* Vol. 87, 103139. https://doi.org/10.1016/j.annals.2021.103139

Karl, M., Kock, F., Bauer, A., Ritchie, B. W. and Assaf, A. G. (2023), "When the future is now: an experimental study on the role of future thinking and affective forecasting in accommodation decision-making", *Journal of Travel Research,* Vol. 62 No. 5, pp.969-988. https://doi.org/10.1177/00472875221109825

Keller, P. A. and Block, L. G. (1997), "Vividness effects: a resource-matching perspective", *Journal of Consumer Research,* Vol. 24 No. 3, pp.295-304. https://doi.org/10.1086/209511

Kim, J. (2021), "Advertising in the metaverse: research agenda", *Journal of Interactive Advertising,* Vol. 21 No. 3, pp.141-144. https://doi.org/10.1080/15252019.2021.2001273

Kim, M. J., Lee, C. K. and Jung, T. (2020), "Exploring consumer behavior in virtual reality tourism using an extended stimulus-organism-response model", *Journal of Travel Research,* Vol. 59 No. 1, pp.69-89. https://doi.org/10.1177/0047287518818915

Kim, S. and Yim, M. Y. C. (2022), "Exploring consumers' attitude formation toward their own brands when in crisis: cross-national comparisons between USA and China", *Journal of Product & Brand Management,* Vol. 31 No. 1, pp.56-72. https://doi.org/10.1108/JPBM-01-2020-2731

Kim, W. B. and Choo, H. J. (2023), "How virtual reality shopping experience enhances consumer creativity: the mediating role of perceptual curiosity", *Journal of Business Research, Vol. 154*, 113378. https://doi.org/10.1016/j.jbusres.2022.113378

Kline, R. B. (2015). *Principles and practice of structural equation modeling*. 4th edition, Guilford Press, New York, NY.

Kostyk, A., Cowan, K., Dessart, L. and Schyns, M. (2024), "Memories of tourism brands in virtual reality", *Annals of Tourism Research,* Vol. 109, 103824. https://doi.org/10.1016/j.annals.2024.103824

Kostyk, A. and Sheng, J. (2023), "VR in customer-centered marketing: purpose-driven design", *Business Horizons,* Vol. 66 No. 2, pp.225-236. https://doi.org/10.1016/j.bushor.2022.06.005

Kunz, W. H., Heinonen, K. and Lemmink, J. G. (2019), "Future service technologies: is service research on track with business reality?", *Journal of Services Marketing,* Vol. 33 No. 4, pp.479-487. https://doi.org/10.1108/JSM-01-2019-0039

Kunz, W., Schmitt, B. and Meyer, A. (2011), "How does perceived firm innovativeness affect the consumer?", *Journal of Business Research*, Vol. 64 No. 8, pp.816-822. https://doi.org/10.1016/j.jbusres.2010.10.005

Krishen, A. S., Berezan, O., Agarwal, S., and Robison, B. (2020), "Harnessing the waiting experience: anticipation, expectations and WOM", *Journal of Services Marketing*, Vol. 34 No. 7, pp.1013-1024. https://doi.org/10.1108/JSM-10-2019-0382

Krishna, A., Cian, L. and Sokolova, T. (2016), "The power of sensory marketing in advertising", *Current Opinion in Psychology*, Vol. 10, pp.142-147. https://doi.org/10.1016/j.copsyc.2016.01.007

Laato, S., Islam, A. N., Farooq, A. and Dhir, A. (2020), "Unusual purchasing behavior during the early stages of the COVID-19 pandemic: The stimulus-organism-response approach",

Journal of Retailing and Consumer Services, Vol. 57, 102224. https://doi.org/10.1016/j.jretconser.2020.102224

Lo, W. H. and Cheng, K. L. B. (2020), "Does virtual reality attract visitors? The mediating effect of presence on consumer response in virtual reality tourism advertising", *Information Technology & Tourism,* Vol. 22 No. 4, pp.537-562. https://doi.org/10.1007/s40558-020-00190-2

Loureiro, S. M. C., Guerreiro, J., Eloy, S., Langaro, D. and Panchapakesan, P. (2019), "Understanding the use of virtual reality in marketing: a text mining-based review", *Journal of Business Research,* Vol. 100, pp.514-530. https://doi.org/10.1016/j.jbusres.2018.10.055

Lundin, J., Lundström, A., Gulliksen, J., Blendulf, J., Ejeby, K., Nyman, H., ... and Hedman-Lagerlöf, E. (2022), "Using 360-degree videos for virtual reality exposure in CBT for panic disorder with agoraphobia: a feasibility study", *Behavioural and Cognitive Psychotherapy*, Vol. 50 No. 2, pp.158-170. https://doi.org/10.1017/S1352465821000473

Malodia, S., Otterbring, T., Taheri, B. and Dhir, A. (2024), "How negative framing affects VR tourism adoption: exploring the role of travel anxiety during crisis events", *Journal of Travel Research*, (ahead-of-print). https://doi.org/10.1177/00472875241234387

Mattila, A. S. (1999), "The role of culture in the service evaluation process", *Journal of Service Research,* Vol. 1 No. 3, pp. 250-261. https://doi.org/10.1177/109467059913006

Mauri, M., Rancati, G., Riva, G., and Gaggioli, A. (2024), "Comparing the effects of immersive and non-immersive real estate experience on behavioral intentions", *Computers in Human Behavior*, Vol. 150, 107996. https://doi.org/10.1016/j.chb.2023.107996

Mehrabian, A. and Russell, J.A. (1974), *An Approach to Environmental Psychology*, MIT Press, Cambridge, MA.

Mileva, G. (2024), "Top 15 VR Marketing Examples for 2024" available at: https://influencermarketinghub.com/vr-marketing-examples (accessed 10 October 2024)

Miller, D. W., Hadjimarcou, J. and Miciak, A. (2000), "A scale for measuring advertisement-evoked mental imagery", *Journal of Marketing Communications,* Vol. 6 No. 1, pp.1-20. https://doi.org/10.1080/135272600345525

Milgram, P., Takemura, H., Utsumi, A. and Kishino, F. (1995), "Augmented reality: a class of displays on the reality-virtuality continuum", *Telemanipulator and telepresence technologies*, Vol. 2351, pp.282-292. https://doi.org/10.1117/12.197321

Mulcahy, R. F. and Riedel, A. (2022), "Going on a sensory adventure, a touchy subject?: investigating haptic technology and consumer adventure orientation", *Journal of Service Theory and Practice,* Vol. 32 No. 1, pp.5-29. https://doi.org/10.1108/JSTP-11-2020-0244

Obeid, M. (2021), "UTS launches 360 video tour via Paper Moose" available at: https://www.adnews.com.au/news/uts-launches-360-video-tour-via-paper-moose (accessed 10 October 2024)

Oliver, R. L. (1980), “A cognitive model of the antecedents and consequences of satisfaction decisions”, *Journal of Marketing Research,* Vol. 17 No. 4, pp.460-469. https://doi.org/10.1177/002224378001700405

Orús, C., Ibánez-Sánchez, S. and Flavián, C. (2021), “Enhancing the customer experience with virtual and augmented reality: the impact of content and device type”, *International Journal of Hospitality Management*, Vol. 98, 103019. https://doi.org/10.1016/j.ijhm.2021.103019

Ostrom, A. L., Field, J. M., Fotheringham, D., Subramony, M., Gustafsson, A., Lemon, K. N., ... and McColl-Kennedy, J. R. (2021), “Service research priorities: managing and delivering service in turbulent times”, *Journal of Service Research*, Vol. 24 No. 3, pp.329-353. https://doi.org/10.1177/10946705211021915

Park, M. J., Kim, D. J., Lee, U., Na, E. J., and Jeon, H. J. (2019), “A literature overview of virtual reality (VR) in treatment of psychiatric disorders: recent advances and limitations”, *Frontiers in Psychiatry*, Vol. 10, 505. https://doi.org/10.3389/fpsyt.2019.00505

Pimentel, D., Kalyanaraman, S., Lee, Y. H. and Halan, S. (2021), “Voices of the unsung: the role of social presence and interactivity in building empathy in 360 video”, *New Media & Society,* Vol. 23 No. 8, pp.2230-2254. https://doi.org/10.1177/1461444821993124

Pleyers, G. and Poncin, I. (2020), “Non-immersive virtual reality technologies in real estate: how customer experience drives attitudes toward properties and the service provider”, *Journal of Retailing and Consumer Services,* Vol. 57, 102175. https://doi.org/10.1016/j.jretconser.2020.102175

PMI. (2022), “Immersive Technologies Market is estimated to be US$ 1491.07 bllion by 2020 with a CAGR of 38.4% during the forecast period 2030” available at https://www.globenewswire.com/news-release/2022/09/12/2514096/0/en/Immersive-Technologies-Market-is-estimated-to-be-US-1491-07-bllion-by-2020-with-a-CAGR-of-38-4-during-the-forecast-period-2030-By-PMI.html (accessed 10 October 2024)

Polegato, R., and Bjerke, R. (2019), “Looking forward: anticipation enhances service experiences”, *Journal of Services Marketing*, Vol. 33 No. 2, pp.148-159. https://doi.org/10.1108/JSM-02-2018-0064

Rauschnabel, P. A., Felix, R., Hinsch, C., Shahab, H. and Alt, F. (2022), “What is XR? Towards a framework for augmented and virtual reality”, *Computers in Human Behavior,* Vol. 133, 107289. https://doi.org/10.1016/j.chb.2022.107289

Resonance Consultancy. (2023), “World’s Best Cities: A Ranking of Global Place Equity”, available at https://www.worldsbestcities.com/reports/2024-worlds-best-cities/ (accessed 5 December 2023)

Sanchez-Vives, M. V. and Slater, M. (2005), “From presence to consciousness through virtual reality”, *Nature Reviews Neuroscience*, Vol. 6 No. 4, pp.332-339. https://doi.org/10.1038/nrn1651

Schacter, D. L., Benoit, R. G. and Szpunar, K. K. (2017), "Episodic future thinking: mechanisms and functions", *Current Opinion in Behavioral Sciences,* Vol. 17, pp.41-50. https://doi.org/10.1016/j.cobeha.2017.06.002

Schill, M., and Godefroit-Winkel, D. (2022). "Consumer responses to environmental corporate social responsibility and luxury", *Journal of Services Marketing*, Vol. 36 No. 6, pp.769-780. https://doi.org/10.1108/JSM-11-2020-0472

Schlosser, A. E. (2003), "Experiencing products in the virtual world: the role of goal and imagery in influencing attitudes versus purchase intentions", *Journal of Consumer Research,* Vol. 30 No. 2, pp.184-198. https://doi.org/10.1086/376807

Sengoz, A., Cavusoglu, M., Kement, U., and Bayar, S. B. (2024), "Unveiling the symphony of experience: Exploring flow, inspiration, and revisit intentions among music festival attendees within the SOR model", *Journal of Retailing and Consumer Services, 81*, 104043. https://doi.org/10.1016/j.jretconser.2024.104043

Sharma, A., Singh, J. and Prakash, G. (2023), "Consumer confusion and its consequences in the e-hospitality marketplace: the mediating role of negative emotions", *Journal of Service Theory and Practice*, Vol. 33 No. 4, pp. 488-510. https://doi.org/10.1108/JSTP-11-2022-0264

Shen, Y. C., Lin, H. Y., Chou, C. Y., Wu, P. H. and Yang, W. H. (2022), "Yes, I know you: the role of source familiarity in the relationship between service adaptive behavior and customer satisfaction", *Journal of Service Theory and Practice*, Vol. 32 No. 5, pp.620-639. https://doi.org/10.1108/JSTP-01-2022-0017

Shen, J., Wang, Y., Chen, C., Nelson, M. R. and Yao, M. Z. (2020), "Using virtual reality to promote the university brand: when do telepresence and system immersion matter?", *Journal of Marketing Communications*, Vol. 26 No. 4, pp.362-393. https://doi.org/10.1080/13527266.2019.1671480

Slater, M. and Wilbur, S. (1997), "A framework for immersive virtual environments (FIVE): speculations on the role of presence in virtual environments", *Presence: Teleoperators & Virtual Environments,* Vol. 6 No. 6, pp.603-616. https://doi.org/10.1162/pres.1997.6.6.603

Snelson, C. and Hsu, Y. C. (2020), "Educational 360-degree videos in virtual reality: a scoping review of the emerging research", *TechTrends,* Vol. 64 No. 3, pp.404-412. https://doi.org/10.1007/s11528-019-00474-3

Söderlund, M., Vilgon, M. and Gunnarsson, J. (2001), "Predicting purchasing behavior on business-to-business markets", *European Journal of Marketing,* Vol. 35 Nos. 1-2, pp.168-181. https://doi.org/10.1108/03090560110363409

Song, H., Kim, J., Nguyen, T. P., Lee, K. M. and Park, N. (2021), "Virtual reality advertising with brand experiences: the effects of media devices, virtual representation of the self, and self-presence", *International Journal of Advertising,* Vol. 40 No. 7, pp.1096-1114. https://doi.org/10.1080/02650487.2020.1834210

Sousa, N., Alén, E., Losada, N., and Melo, M. (2024), "Virtual reality in wine tourism: Immersive experiences for promoting travel destinations", *Journal of Vacation Marketing*. https://doi.org/10.1177/13567667241267306

Spears, N. and Yazdanparast, A. (2014), "Revealing obstacles to the consumer imagination", *Journal of Consumer Psychology,* Vol. 24 No. 3, pp.363-372. https://doi.org/10.1016/j.jcps.2014.01.003

Spielmann, N. and Mantonakis, A. (2018), "In virtuo: how user-driven interactivity in virtual tours leads to attitude change", *Journal of Business Research*, Vol. 88, pp.255-264. https://doi.org/10.1016/j.jbusres.2018.03.037

Stead, S., Wetzels, R., Wetzels, M., Odekerken-Schröder, G., and Mahr, D. (2022), "Toward multisensory customer experiences: a cross-disciplinary bibliometric review and future research directions", *Journal of Service Research*, Vol. 25 No. 3, pp.440-459. https://doi.org/10.1177/10946705221079941

Steenkamp, J. B. E., Batra, R. and Alden, D. L. (2003), "How perceived brand globalness creates brand value", *Journal of International Business Studies*, Vol. 34, pp.53-65. https://doi.org/10.1057/palgrave.jibs.8400002

Steenkamp, J. B. E. (2019), "Global versus local consumer culture: Theory, measurement, and future research directions", *Journal of International Marketing,* Vol. 27 No. 1, pp.1-19. https://doi.org/10.1177/1069031X18811289

Steenkamp, J. B. E., and Geyskens, I. (2006), "How country characteristics affect the perceived value of web sites", *Journal of Marketing,* Vol. 70. No. 3, pp.136-150. https://doi.org/10.1509/jmkg.70.3.136

Steuer, J. (1992), "Defining virtual reality: dimensions determining telepresence", *Journal of Communication,* Vol. 42 No. 4, pp.73-93. https://doi.org/10.1111/j.1460-2466.1992.tb00812.x

Su, L., Hsu, M. K. and Huels, B. (2021), "First-time versus repeat tourists: Resistance to negative information", *Journal of Service Theory and Practice,* Vol. 32 No. 2, pp.258-282. https://doi.org/10.1108/JSTP-04-2020-0076

Suh, A. and Prophet, J. (2018), "The state of immersive technology research: a literature analysis", *Computers in Human behavior*, Vol. 86, pp.77-90. https://doi.org/10.1016/j.chb.2018.04.019

Suica, Z., Behrendt, F., Gäumann, S., Gerth, U., Schmidt-Trucksäss, A., Ettlin, T., and Schuster-Amft, C. (2022), "Imagery ability assessments: a cross-disciplinary systematic review and quality evaluation of psychometric properties", *BMC medicine*, Vol. 20 No. 1, 166. https://doi.org/10.1186/s12916-022-02295-3

Tan, L., Roberts, J. H., and Morrison, P. D. (2017), "The role of expectations on consumer interpretation of new information", *Journal of Service Theory and Practice*, Vol. 27 No. 3, pp.569-615. https://doi.org/10.1108/JSTP-04-2016-0062

Tanner, R. J., and Carlson, K. A. (2009), "Unrealistically optimistic consumers: A selective hypothesis testing account for optimism in predictions of future behavior", *Journal of Consumer Research*, Vol. 35 No. 5, pp.810-822. https://doi.org/10.1086/593690

Tang, Y. M., Chau, K. Y., Kwok, A. P. K., Zhu, T. and Ma, X. (2022), "A systematic review of immersive technology applications for medical practice and education-trends, application areas, recipients, teaching contents, evaluation methods, and performance", *Educational Research Review,* Vol. 35, 100429. https://doi.org/10.1016/j.edurev.2021.100429

Ungaro, V., Di Pietro, L., Guglielmetti Mugion, R. and Renzi, M. F. (2024), "A systematic literature review on transformative practices and well-being outcomes in healthcare service", *Journal of Service Theory and Practice,* Vol. 34 No. 3, pp.432-463. https://doi.org/10.1108/JSTP-03-2023-0071

Van Kerrebroeck, H., Brengman, M. and Willems, K. (2017), "When brands come to life: experimental research on the vividness effect of Virtual Reality in transformational marketing communications", *Virtual Reality*, Vol. 21, pp.177-191. https://doi.org/10.1007/s10055-017-0306-3

Van Laer, T., De Ruyter, K., Visconti, L. M. and Wetzels, M. (2014), "The extended transportation-imagery model: a meta-analysis of the antecedents and consequences of consumers' narrative transportation", *Journal of Consumer Research*, Vol. 40 No. 5, pp.797-817. https://doi.org/10.1086/673383

Vardomatski, S. (2021), "Augmented and virtual reality after covid-19", available at: https://www.forbes.com/sites/forbestechcouncil/2021/09/14/augmented-and-virtual-reality-after-covid-19/ (accessed 10 October 2024)

Vichiengior, T., Ackermann, C. L., and Palmer, A. (2019), "Consumer anticipation: antecedents, processes and outcomes". *Journal of Marketing Management*, Vol. 35 No. 1-2, pp.130-159. https://doi.org/10.1080/0267257X.2019.1574435

Voss, G. B., Parasuraman, A., and Grewal, D. (1998), "The roles of price, performance, and expectations in determining satisfaction in service exchanges", *Journal of Marketing*, Vol. 62 No. 4, pp.46-61. https://doi.org/10.1177/002224299806200404

Zarantonello, L., and Schmitt, B. H. (2023), "Experiential AR/VR: a consumer and service framework and research agenda", *Journal of Service Management*, Vol. 34 No. 1, pp.34-55. https://doi.org/10.1108/JOSM-12-2021-0479

Zeithaml, V. A., Berry, L. L., and Parasuraman, A. (1993), "The nature and determinants of customer expectations of service", *Journal of the Academy of Marketing Science*, Vol. 21, pp.1-12. https://doi.org/10.1177/0092070393211001

Zeithaml, V.A., Bitner, M.J., Gremler, D.D. and Mende, M. (2023), *Services Marketing: Integrating Customer Focus Across the Firm.* 8th edition, McGraw-Hill Education, New York, NY.

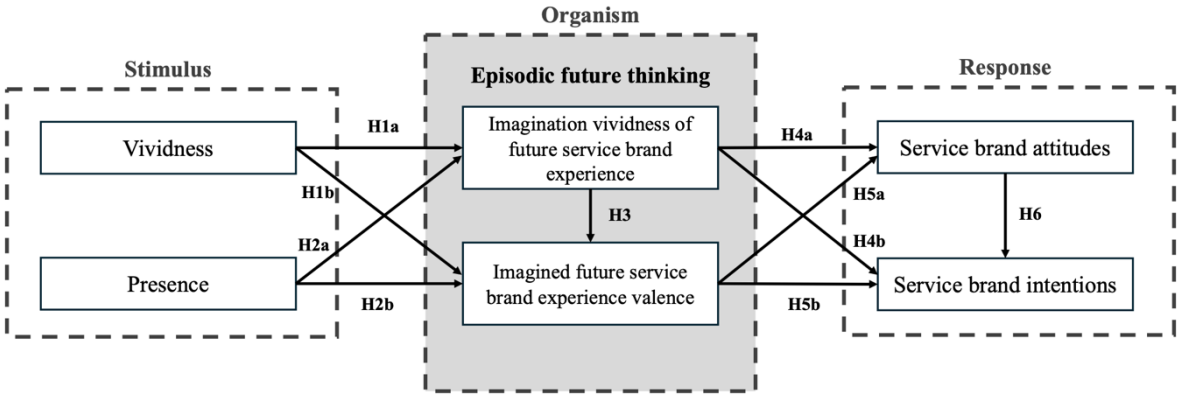

Figure 1: Research model
Source: Figure created by authors

Characteristics	Scale	Frequency	%
Technology familiarity Avg = 4.1	Not familiar at all	0	0.0
	Not familiar	2	1.4
	Neutral	23	16.7
	Familiar	69	50.0
	Extremely familiar	44	31.9
Travel frequency Avg =3.3	Never	2	1.4
	Not often	18	13.0
	Neutral	67	48.6
	Frequently	43	31.2
	Extremely frequently	8	5.8
Familiarity destination Avg = 3	Not familiar at all	28	20.3
	Not familiar	26	18.8
	Neutral	31	22.5
	Familiar	30	21.7
	Extremely familiar	23	16.7
English proficiency Avg= 3.9	Not good at all	4	2.9
	Not good	2	1.4
	Average	26	18.8
	Good	62	44.9
	Very good	40	29.0
Gender	Female	75	54.3
	Male	62	44.9
	Other	1	.7
Nationality	Belgian	60	43.5
	Mexican	78	56.5
Level of education	Less than high school	1	.7
	High school graduate	6	4.3
	Bachelor's degree	62	44.9
	Master's degree	61	44.2
	Doctorate degree	8	5.8
	Total	**138**	**100.0**

Table I: Sample characteristics
Source: Table created by authors

Constructs	**1**	**2**	**3**	**4**	**5**	**6**
1. Presence	**0.55**	0.30	0.19	0.09	0.26	0.15
2. Vividness	0.55	**0.62**	0.05	0.53	0.12	0.05
3. Imagined future service brand experience valence	0.44	0.19	**0.56**	0.06	0.35	0.26
4. Imagination vividness of future service brand experience	0.30	0.73	0.25	**0.64**	0.09	0.07
5. Service brand attitudes	0.51	0.35	0.59	0.31	**0.76**	0.60
6. Service brand intentions	0.39	0.23	0.51	0.26	0.78	**0.75**
CR	0.83	0.87	0.72	0.93	0.92	0.90
Alpha	0.81	0.86	0.70	0.92	0.92	0.89

Note: The diagonal represents the AVEs of each construct; below the diagonal are the pairwise correlations between constructs and above are the squared pairwise correlations.

Table II: Reliability and validity
Source: Table created by authors

Hypothesis	Path	β	CR	Hypothesis Support
H1a	V → IVFSBE	0.84**	7.46	Supported
H1b	V → IFSBEV	-0.25	0.20	Not supported
H2a	P → IVFSBE	-0.16	0.07	Not supported
H2b	P → IFSBEV	0.67**	3.53	Supported
H3	IVFSBE → IFSBEV	0.32*	2.02	Supported
H4a	IVFSBE →ATT	0.04	0.09	Not supported
H4b	IVFSBE → INT	-0.03	-0.48	Not supported
H5a	IFSBEV →ATT	0.75**	3.81	Supported
H5b	IFSBEV → INT	0.30	1.87	Not supported
H6	ATT → INT	0.51**	3.39	Supported
**significant at the 0.05 level **significant at the 0.01 level* *Vividness (V), Presence (P), Imagination Vividness of Future Service Brand Experience (IVFSBE), Imagined Future Service Brand Experience Valence (IFSBEV), Attitudes (ATT), Intentions (INT)*				

Table III: Summary of results
Source: Table created by authors