

## Supplementary Material

### Appendix B. Literature review (Source: Created by authors)

The essence of the tourist experience is his/her encounter with the environment of the destination; thus, it is essential that VR users feel immersed in the virtual environment (Tussyadiah *et al.*, 2018). Previous research has shown that VR environments evoke sense of presence because they feature direct and realistic responses to actions performed by the user (Pizzi *et al.*, 2020). Sense of presence is generated from three dimensions (Makransky *et al.*, 2017): social presence, self-presence and physical presence. That is, the user must perceive that (s)he is physically, socially and mentally in the virtual environment. Sense of presence is regarded as a key concept in the design of immersive VR applications, as it has been shown to influence the user's processing performance, and cognitive and emotional responses, in various digital contexts (Tussyadiah *et al.*, 2018). Therefore, in the context of VR environments sense of presence is a key factor in determining users' attitudes, beliefs and behavioural intentions (Bogicevic *et al.*, 2019; Hollebeek *et al.*, 2020).

VR is designed to enhance and enrich the user experience, through stimulating his/her senses (McLean and Barhorst, 2022). Zarantonello and Schmitt (2023) emphasised the importance of understanding the configuration of the consumer's experience in VR (antecedents, moderating variables and its dimensions), and of going beyond examining the efficiency and functionality of the experience. Similarly, Calisto and Sarkar (2024) underlined the need to understand the VR tourist experience from the user's point of view, including the factors that evoke positive and/or negative experiences. Customer experience refers to the perceptions, feelings and thoughts, originating from contacts with brands, companies and destinations, which generate reactions. Schmitt (1999) defined customer experience as a set of subjective customer responses evoked by specific experiential attributes; it is a combination of sensing, feeling, thinking, acting and relating. This holistic conceptualisation has been extended to digital environments. Lemon and Verhoef (2016) concluded that customer experience is a multidimensional construct related to his/her cognitive, emotional, sensorial, social and behavioural responses. In the online context, Bleier *et al.* (2019) and Molinillo *et al.* (2022) underlined the importance of the first four of these factors. Very few works have directly examined customer experience in the VR tourism context. Some have conceptualised it as a first-order construct (e.g. Mou *et al.*, 2024), or focused on one of its dimensions (e.g. Morrison *et al.*, 2024). In contrast, others have taken a more holistic approach. Thus, Bogicevic *et al.* (2019) argued that customer experience is composed of cognitive (intellectual), affective, sensory and behavioural dimensions, while Yuan and Hong (2023) employed four dimensions: entertainment, education, aesthetics and escapism. Taking into account these studies, and the dimensions proposed in various digital contexts, the present study conceptualises customer experience as a second-order, holistic, 5-dimensional construct: cognitive, affective, sensory, behavioural and social.

Tussyadiah *et al.* (2018) showed that VR experiences can induce tourists to develop positive attitudes, and visit intentions, towards tourist destinations. Chang and Chiang (2022) and Santoso *et al.* (2022) highlighted the important role VR plays in shaping tourist destination image throughout the stages of the customer journey. These authors emphasised the need both to understand the variables that favour the creation of a positive destination image through VR, and the effects of destination image on the tourist's behavioural intentions. Moreover, it should be noted that the user perceives more

complexity in VR-generated destination images than (s)he does in images formed by traditional marketing tools, for example, videos (Jorge *et al.*, 2023). Consequently, more research is needed to understand the effects of the VR experience on behavioural intentions and on destination image.

Regarding the immersive experience, VR technologies can be non-, semi- or fully immersive (e.g. 360° tours, 360° images, virtually recreated spaces) (Alyahya and McLean, 2022; Calisto and Sarkar, 2024). Yung *et al.* (2021) suggested that, to influence tourists' responses, particular attention should be paid to immersion, rather than to the pursuit of realistic VR technologies. Most research on the impact of destination image on tourists' behavioural intentions has treated VR content homogeneously, that is, without measuring the impact of the various available technologies (e.g., 2D videos, 360° tours, 3D virtual world) (Griffin *et al.*, 2023). The technologies used to access VR (non-, semi- or fully immersive) have a major impact on the user's experience and behaviours (Beck *et al.*, 2019). However, to date, few studies have compared the effects of VR stimuli with different levels of interactivity and immersion on users' experiences in the VR representation of a destination (Griffin *et al.*, 2023; McLean and Barhorst, 2022).

Furthermore, several studies have shown that the strength of tourists' intentions to visit a destination varies based on their familiarity with the destination (Rasoolimanesh *et al.*, 2021). That is, the tourist's level of knowledge of, or familiarity with, a destination affects his/her intentions to go there (Shi *et al.*, 2022). Fan *et al.* (2022) argued that tourists who have previously "visited" a destination using a VR-based tourism application have a clearer mental image of it than those who have not so visited. However, how destination familiarity influences the user's experience in a VR environment has not hitherto been evaluated.

Finally, the main focus of previous studies has been the analysis of the positive effects or consequences of immersive technology experiences, thus, little is known about the negative consequences (Fan *et al.*, 2022). In this sense, a highly immersive environment, featuring interactivity and sensory stimuli, can cause users to suffer VR sickness (e.g. nausea, fatigue), which can negatively influence the experience (Hennig-Thurau *et al.*, 2023; Santoso *et al.*, 2022; Wei *et al.*, 2023). VR sickness can lead users to pay less attention during the immersive experience (Mimnaugh *et al.*, 2023) and reduces their task performance (Pöhlmann *et al.*, 2023). The effects of VR sickness have been little analysed in the context of tourism experiences (see Kim *et al.*, 2023). Therefore, there is a need to better understand how VR sickness influences the tourist's VR experience, perceived destination image and visit intentions.

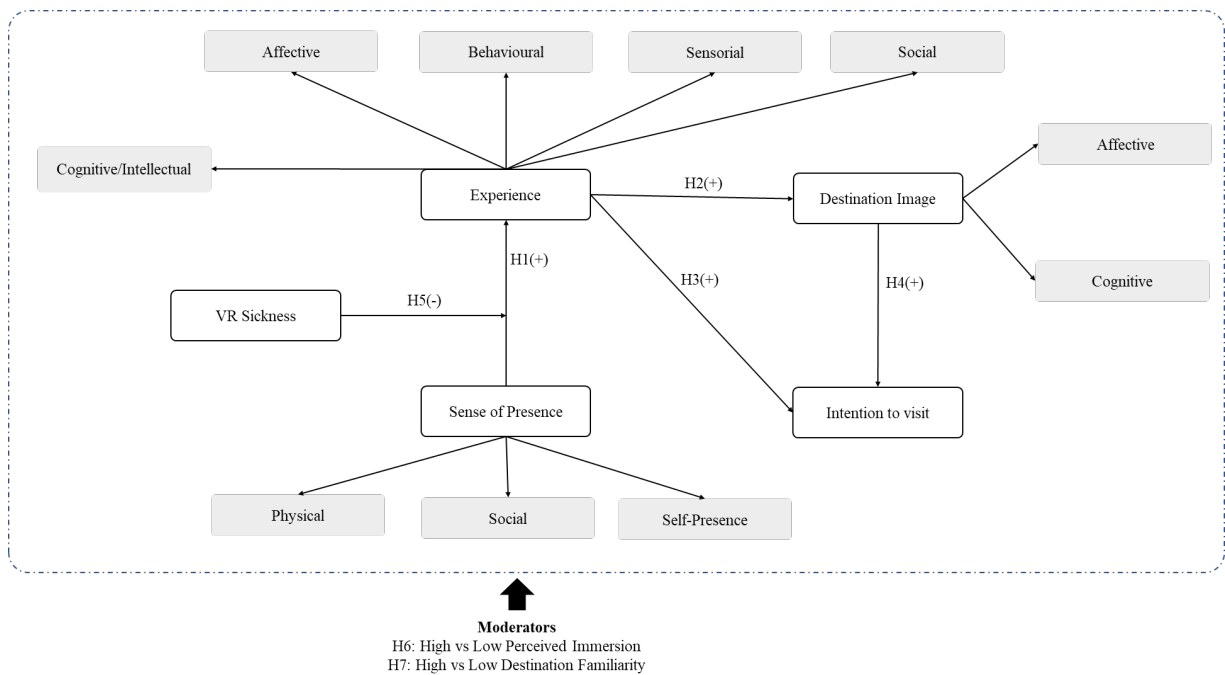
To explore the impact of tourist's VR experience on intention to visit, in this study we employ the SOR theoretical framework. The SOR model explains behaviours through a three-phase process; the individual's perceptions of external stimuli (S) influence his/her (O) emotional and cognitive states, which drive both his/her conscious and unconscious responses (R) (Mehrabian and Russell, 1974). Based on the factors identified by Fan *et al.* (2022) in their meta-analysis of the impact of immersive technologies on the tourism experience, in the present study we propose a conceptual model based on three theoretical constructs: sense of presence (Steuer, 1992) as an independent variable in the first stage of the mental process of the assimilation of perceived sensorial input; the customer experience (Bleier *et al.*, 2019; Brakus *et al.*, 2009), as a psychological evaluation of the interactions customers go through with destinations using VR; and destination image and visit intentions (Baloglu and McCleary, 1999) as consequences. Therefore, this study explores the effects exerted by a stimulus (sense of presence) on the consumer's

experience (O), which, in turn, affects destination image (O), with both influencing visit intentions towards the destination visited virtually (R).

Sense of presence is considered a key factor for ensuring that a VR experience is immersive and successful (Yu *et al.*, 2024). This entails the user experiencing a deep connection with the virtual content and being able to interact with it effectively and satisfactorily. A successful VR experience should induce positive emotions and behavioural intentions in the user (McLean and Barhorst, 2022). The VR user's tourism experience, measured through the customer experience construct, reflects the mental/psychological experience (s)he undergoes in his/her interactions with the technology. This experience determines his/her behavioural responses (Yuan and Hong, 2023). The image the user forms of the destination is a consequence of his/her processing of the information (s)he receives and is a fundamental antecedent of his/her intention to visit the place (Molinillo *et al.*, 2018).

The proposed model includes three moderating factors. VR sickness (characterised by fatigue and nausea), a factor little examined in the literature, is the negative reaction of users to the technology. Familiarity with the destination (destination familiarity) influences the user's predisposition and, therefore, his/her ability and propensity to be teleported to the virtual world. The level of immersion provided by the technology can be a key factor in determining the sense of presence experienced by the user and, therefore, of the overall experience. In addition, the model includes four control variables: gender, age, educational level and previous experience with VR.

Figure. Theoretical model



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