1. Beyond Reality: Exploring Product-Environment Congruency in Immersive Virtual Environments

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Extended abstract

Introduction & Objective
This study is currently in progress and is part of a doctoral thesis.
Global challenges like climate change and the rise of lifestyle-related illnesses have prompted policymakers worldwide to promote sustainable practices that improve the overall welfare of societies (Larceneux et al., 2012). This remains a significant challenge today, especially in resource-intensive industries like the fashion one (Olson, 2022). With growing consumer interest in purchasing environmentally friendly products, companies have begun to develop green marketing strategies to meet profit goals, foster sustainable purchasing behavior, and improve brand trust (Majeed et al., 2022). Despite adopting green practices, communicating sustainability values remains a significant challenge, particularly for new brands. Indeed, these brands are less known and often priced higher than their non-sustainable counterparts, facing difficulties in gaining consumer trust. Previous research suggests two main major communication appeals when dealing with sustainable values: functional or fact-based signaling and emotional or image-based signaling (Schmuck et al., 2018). Functional appeals are based on objective product attributes and are communicated through labels and product information, while emotional appeals can include visual representations of natural landscapes and evocative pristine views (Hartmann & Apaolaza-Ibáñez, 2009). Although research has largely focused on the effects of functional green branding attributes, this approach has certain limitations since a product's environmental impact typically does not directly translate into immediate individual benefits for the buyer (Chen, 2010; Chen et al., 2020). Therefore, this research focuses on emotional appeals, in particular on natural images that can activate feelings similar to those experienced in actual contact with nature, a phenomenon termed virtual nature experiences (Hartmann & Apaolaza-Ibáñez, 2008). Previous studies have shown that virtual nature experiences result in more favorable brand evaluations (Schmuck et al., 2018) and increased purchase intentions (Hartmann & Apaolaza-Ibáñez, 2008). A possible interpretation of this phenomenon can be explained through the lens of emotional conditioning (Kim et al., 1998). Brands can be linked through communication campaigns on a perceptual level with images of nature, thus leading to positive evaluations of neutral stimuli. However, recent research started to explore the possibility that the associative learning effect extends beyond just transferring liking; it can also be used to modify associations regarding specific brand attributes and properties, such as being green or organic

(Lutchyn & Faber, 2016). These are called non-evaluative beliefs, and the formation process of these beliefs is known as non-evaluative conditioning. Therefore, the first objective of this paper is to investigate the potential of virtual nature experience to generate non-evaluative implicit associations between novel brands and green value. The second objective of the study is to investigate the role of immersive technologies in enhancing this effect. Immersive technologies are coming to the fore in the contemporary marketing landscape, and a notable evolution is underway as industry practitioners embark on the virtualization of retail spaces and pop-up stores. Virtual Reality (VR) can be employed as an advertising tool for new product launches, providing product details through vivid imagery and interactive prompts while stimulating the consumers' imagination (Bin Kim & Jung Choo, 2023). The virtualization of retail environments allows for the modification of contextual cues in a way that is more effective and efficient than altering the physical layout and style of a traditional brick-and-mortar store, thus potentially facilitating the generation of emotional experience. More importantly, immersive technologies can create a profound sense of presence, which is the psychological feeling of "being there" within a simulated environment (Slater & Wilbur, 1997). VR has been shown to increase the strength of affective reactions during consumer experiences, with mental imagery and presence being significant factors influencing emotions and purchasing decisions (Loureiro et al., 2022). The emotional responses provoked in these immersive settings are often on par with those triggered by real-life experiences; thereby, we expect VR technology to intensify and enhance the conditioning process effectively, with respect to traditional media such as websites. While a significant body of literature has explored the influence of green contextual cues on user behavior in the e-commerce domain, there is a lack of research into the virtual environment's potential to generate desired non-evaluative associations in immersive contexts. Our study has the objective of addressing the aforementioned gaps by adopting a laboratory approach involving an implicit metric of non-evaluative association.

Methods

To test our hypotheses, we employ a laboratory investigation involving 200 participants between 18 and 35 years old in a one-factor (media: VR headset vs. website) between-subject design. In the VR condition, participants are asked to freely navigate virtual space through a Meta Quest 2 VR headset. During the experience, participants can grab the products using a replica of their hands in the virtual environment. In the website condition, participants navigate a fictitious website and can interact with the product using a mouse and a PC. In this condition, products are presented through static images. The brand, the products, and the info are consistent across all conditions. A novel brand is selected to mitigate the confounding effects of brand familiarity. To evaluate the impacts of virtual nature experiences, both conditions are characterized by graphical elements reminiscent of natural features. The virtual store is depicted as being situated atop a mountain, with products upon it. Similarly, the website features a naturalistic background with virtual products presented upon it. In both conditions, participants are asked to freely navigate the website (or the VR environment) and to discover new products. A time limit of 10 minutes is given to all the participants. After the exposure, participants are asked to run an Implicit Association Test to assess non-evaluative associations between brand and green value (Greenwald et al., 1998). This test operates on the premise that individuals may hold unconscious biases that influence their attitudes and behaviors, which can be revealed through reaction time patterns in association tasks.

This research highlights (VR) practical implications in green marketing, suggesting that VR can significantly enhance consumer perception of sustainability. By employing VR, companies can create immersive and engaging experiences for new product launches that promote a deeper internalization of green values.

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