Virtually Imagined Touch: Augmented and Virtual Reality's Impact on Product Expectations via Touch Simulation - An Abstract

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ABSTRACT

One of the challenges in online retail remains the inability of consumers to touch products before purchase. Touch is essential for gaining product information on elements like texture and hardness (Klatzky et al., 1985). This makes it difficult to assess the comfort of an online offering. Consumers often have to fill this sensory knowledge gap by looking at pictures or reading descriptions. This situation is less than ideal, causing uncertainty or avoidance of online shopping (Silva et al., 2021). However, previous research shows that enhanced comfort expectations increase purchase intentions (Yazdanparast & Ketron, 2023).

This research turns to immersive technologies such as augmented reality (AR) and virtual reality (VR) in response to this challenge. These technologies can activate touch simulation or the mental imagery of touching a product. However, a direct comparison of immersive technologies is largely lacking, with only a handful of marketing papers addressing this gap (e.g., Hilken et al., 2022; Kim et al., 2023; Park & Kim, 2023; Xi et al., 2024). Due to this, it remains unclear:

1) whether there is a difference in immersive technologies' ability to evoke touch simulation in order to enhance comfort expectations,
2) why there is or is not such a difference,
3) and what the effect is of enhanced comfort expectations on product return intentions.

In a first experimental study – comparing AR, VR, and 2D pictures of furniture items – this research delves deeper into local presence and telepresence as the mediating factors between immersive technologies and touch simulation. Touch simulation, in turn, was tested as the factor that enhanced comfort expectations. In a second study, this research explores the effect of enhanced comfort expectation on post-purchase product return intentions.

The findings reveal that both AR and VR enhanced comfort expectations compared to 2D. Parallel serial mediations indicate that AR mainly enhances expectation via local presence and touch simulation, while VR's influence runs mainly via telepresence and touch simulation. In addition, product return intentions were low for AR and VR because the enhanced expectations were confirmed, while in 2D, they were low because the perceived comfort was better than expected. New comparisons of immersive technologies, such as this one, will advance current knowledge, provide new avenues for future research, and allow us to make concrete suggestions about these technologies to retailers.

Keywords: Augmented reality; Virtual reality; Touch simulation; Comfort expectation

References Available Upon Request