Fashion Consumers' Adoption of AR-Based Virtual Fitting Rooms: Effects of Perceived Interactivity and Augmentation

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Introduction Virtual Fitting Rooms (VFRs), simulation technologies that enable consumers to virtually try on inventories, have received tremendous attention from online retailers as the way to provide in-store like fitting experiences (Gültepe & Güdükbay, 2014). VFRs have recently evolved into a new format that primarily utilizes Augmented Reality (AR) for the basis of virtual fitting (Javornik, Rogers, Moutinho, & Freeman, 2016). Unlike typical VFRs, AR-based VFRs can precisely replicate users and their surrounding environment in a more realistic way using a camera-based technology with the exception of products that are virtually simulated (Javornik et al., 2016). Hence, it can generate a mixed reality with the unique features, bringing different psychological processes of users with the subsequent effects on their responses (Javornik, 2016). However, despite the great potentials of AR-based VFRs, VFRs are still considered in the early stage of adoption. Thus, the purpose of this study was to determine the effects of perceived media characteristics and subsequent immersive experiences on their attitude and adoption intention toward AR-based VFRs. Additionally, the moderating effect of a particular personal trait, sensation seeking tendency, was examined to account the influence of individual differences in their usage, skills, and experience of technology.

Literature Review AR-based applications are characterized by interactivity and augmentation, which can lead to immersive experiences (Javornik, 2016). Based on the Theory of Interactive Media Effects (TIME) (Sunder, Jia, Waddell, & Huang, 2015), these media characteristics are affordances, referring to the action possibilities presented by perceived technological features. Users perceive psychologically salient and relevant functionalities and these perceptions bring immersive experiences and finally cognitive, affective, and conative responses (Sundar et al., 2015). In the VFR literature, telepresence, derived from perceived interactive features, was found to be a key intermediate variable that explains immersive experiences (Fiore, Kim, & Lee, 2005). However, because the use of AR-based VFRs involves consumers' voluntary intent to augment their self for trying virtual fit, the psychological process can differ by consumers' motivation and traits (Javornik, 2016; Sundar et al., 2015). Considering consumers have increasing demands for experiential aspects (Lam & Yee, 2014; Merle, Senecal, & St-Onge, 2012), it was proposed that their perceptions, attitudes, and adoption varied by individual differences in terms of their sensation-seeking tendency.
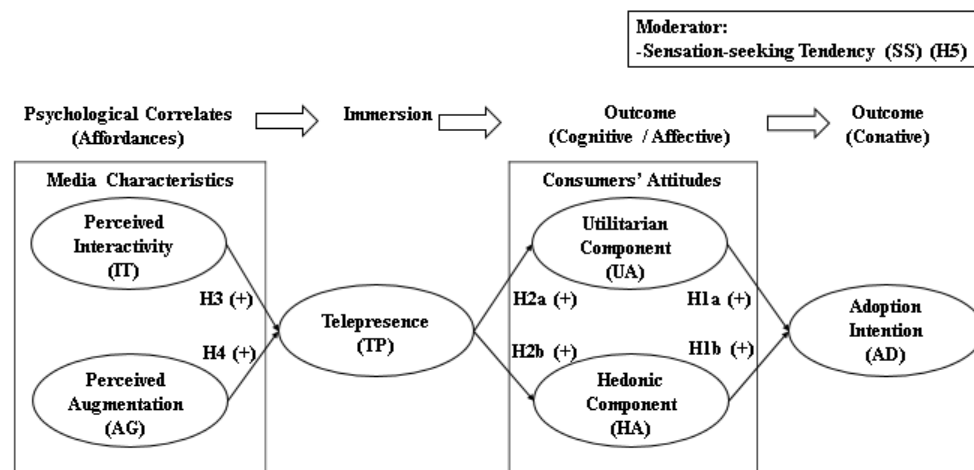
Figure 1. Research Framework

Methodology
Data were collected from 352 university students, in their 20s, via a paper survey. A convenience sample was used, and prior to filling out the questionnaire, the subjects were asked to download and use Zeekit, a mobile AR-based VFR, which was found to be appropriate to use in the pretest. The survey included 7-point Likert scales with items adapted from existing scales with acceptable reliabilities ($\alpha > .70$). Then, structural equation modeling from AMOS 22 was used to test the proposed relationships (Figure 1). Multi-group comparison was conducted to test the moderating effect of sensation-seeking tendency.

Results Both the measurement model ($\chi2$=1539.633, df=449, p=.000, SRMR=.043, TLI=.913, IFI=.921, CFI=.921) and the structural model ($\chi2$=1660.655, df=453, p=.000, SRMR=.059, TLI=.904, IFI=.913, CFI=.913) showed acceptable fit. The SEM results suggested that media characteristics, interactivity (IT) and augmentation (AG), had a significant positive influence on telepresence (TP) and subsequently on consumers' utilitarian/hedonic attitudes (UA and HA) and adoption intention toward AR-based VFRs (AD) (H1-H4, supported). The multi-group comparison results suggested a moderating effect of sensation-seeking tendency (SS) on consumers' VFR adoptions with a significant $\chi2$ difference between the SEM models for the two sub-groups, hence supporting H5. Specifically, the influence of IT on TP was only significant for the group with high SS, whereas the influence of AG on TP was significantly greater for the group with low SS. Also, the influence of HA on AD was greater for the high SS group unlike the influence of UA, which was greater for the low SS group. However, the paths from TP to either UA or HA did not significantly differ by the two SS groups.

Conclusion Academically, the results of this study confirmed the significant relationships between media characteristics, telepresence, and consumers' cognitive, affective, and conative responses toward AR-based VFRs through the lens of TIME (Sundar et al., 2015). Additionally, the results of this study revealed that the successful adoption of VFRs is contingent upon consumers' sensation-seeking tendency. Managerially, the findings from this study lend insightful implications to the practitioners in their endeavors to encourage consumers' adoption

of AR-based VFRs, by suggesting the importance to 1) enhance interactivity and augmentation to enhance telepresence, a key to excel the formation of utilitarian and hedonic attitudes and subsequently adoption intention and 2) stay sensitive to individual differences in marketing.

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