Interactive Web Service and Risk Perception: Implication toward Virtual Try-On (VTO) Service

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Introduction

Fashion e-retailers have adopted Virtual Try-On (VTO) services based on 3D Avatars created with consumers' individual body measurements. Recently, they have also introduced 3D body-scanning technologies into VTO services to provide consumers with more accurate fits and enhanced virtual experiences (Robinson, 2021). Because Avatar-based VTO services provide user-friendly and interactive experiences online, it is necessary to identify the way this enhanced consumer experience influences their decision to use 3D body-scanning-based VTO services in future. In addition, as consumers have been reported to be concerned about providing their personal body information, this study identified the mediating role of the enhanced consumer experience in risk perceptions' negative influence on future decisions.

Literature Review

To understand consumers' experiences with Avatar-based VTO services and their effect on future adoption of 3D body-scanning-based VTO, we adopted the S-O-R framework (Mehrabian & Russell, 1974). This model, originated from environmental psychology, indicates that environmental stimuli (S) that affect a person (organism, O), explain his/her behavioral response (R) in turn. Within the framework, the perception of interactivity (S) refers to psychological experiences while interacting with a web-interface that consists of three dimensions—perceived control, responsiveness, and personalization (Wu, 2006). The organism's (O) experiences refer to consumers' experiences with diverse elements of VTO services, which ultimately explain their behavioral intention to adopt the services in future (R). In addition, early studies on VTO services found that consumers were concerned about their body information's privacy and security, which is a barrier in customizing the technology (Anderson-Connell et al., 2002; Almousa, 2020). However, it is unclear how consumers' concerns (i.e., privacy breach, shopping risk) influence their experiences and behavioral intentions and the way positive experiences mitigate the negative effect of those concerns on behavioral intentions. Therefore, we suggest that the S-O-R framework explains the effects of interactivity (S), consumer experience (O), and future behavioral intention (R) (Model 1), in which the effects of consumer concerns (i.e., privacy and shopping concerns) are examined (Model 2).

Methods

The survey included questions that measured service interactivity, including perceived control, personalization, and responsiveness (Wu, 2006). The second order concept of consumers' experiences was measured with three sub-dimensions, sensory, affective, and intellectual experiences (Manthiou et al., 2016). Further, information security risk and online shopping risk were measured (Roca et al., 2009). Finally, the future intention to use 3D body-scanning-based VTO services was measured (Ariffin et al., 2018). All questions were answered

on a 5-point Likert scale. Responses were collected through MTurk. All participants interacted with the VTO service by creating their 3D Avatar, providing their body measurements, and changing the avatar's outfits following the instructions provided. We adopted PLS-SEM to explore two-step analytical procedures with a separate evaluation of the measurement and structural models (Hair et al., 2017).

Results

The bootstrapping method was used to estimate the significance of the path coefficients for Models 1 and 2 (Hair et al., 2017). Model 1 demonstrated that perceived control (H1a), perceived personalization (H1b), and perceived responsiveness (H1c), respectively, had a positive effect on consumers' experience. Consumer experience (H2) influenced future intention to adopt 3D body-scanning-based VTO services positively. The paths related to information security risk and online shopping risk were added in Model 2, and supported H1 and H2 (H1a; H1b; H1c; H2). Information security risk had a negative effect on perceived control (H3a) and perceived responsiveness (H3c), while there was no effect on perceived personalization (H3b). Online shopping risk had a negative effect on perceived control (H4a), perceived personalization (H4b), and perceived responsiveness (H4c). Further, information security risk had a negative effect on the behavioral intention to adopt 3D body-scanning-based VTO services (H5), while online shopping risk did not explain behavioral intention (H6). With respect to indirect effects, consumer experiences mediated the positive effect of perceived interactivity (i.e., perceived control, personalization, and responsiveness) on behavioral intention in both models, which supported H7. Importantly, we identified a negative serial mediation effect of perceived control followed by consumer experience in the relation between information security risk and behavioral intention (H8), which showed that the enhanced consumer experience from the perception of control of the service web-environment did not mitigate information security's negative effect on future behavioral intention. Further, the enhanced consumer experience from the positive perception of personalization and responsiveness of the web-environment did not mediate information security's negative effect on behavioral intention, while the enhanced consumer experience from the perception of personalization mediated online shopping risk's negative effect on behavioral intention serially (H9).

Discussion and Conclusion

The results of this study have two important scholarly and managerial implications. First, the study confirmed the direct and indirect roles of consumer experience in explaining the behavior of adopting 3D body-scanning-based VTO services in future within the S-O-R framework. Second, the results provide practical suggestions to e-fashion retailers that adopt VTO services. Consumers' experience with the interactive services (i.e., perceived personalization and responsiveness) can buffer their negative perception of information security risk, but their positive experience acquired from the perception of control cannot buffer the negative effect.

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