Perceived Diagnosticity of Virtual Try-on Technologies and Attitudes toward the Product: A Case for Male Consumers

Changhyun Nam and Fatma Baytar, Iowa State University, USA
Young Do Kim, University of Nebraska Kearney, USA

Keywords: virtual try-on, perceived diagnosticity, perceived risk

Virtual try-on technologies have been gaining popularity among apparel e-tailers. These technologies offer the use of high quality three-dimensional (3D) renderings of products and virtual try-on options in an online retail setting. By using their personal electronic devices, consumers can experience products virtually and be less-hesitant to purchase apparel online. Yu, Lee, and Damhorst (2012) found that consumers' experiences with virtual products can lead to positive attitudes toward the products and increase purchase intentions. Moreover, research revealed that virtual try-on technologies can minimize perceived risks about product attributes (Shim & Lee, 2011). Perceived diagnosticity is the extent to which consumers believe a product experience is helpful for them to evaluate products when shopping online (Jiang & Benbasat, 2005). Consumers' perceived diagnosticity when using virtual try-on applications can positively impact on attitudes towards purchasing products through reducing perceived risks about products; however no research has investigated this particular relationship so far. Furthermore, research on virtual try on technologies has been heavily focused on female college students as consumers and there is a need to understand male consumers' perceptions as well. Therefore, the purpose of this study was to investigate the influence of virtual try-on technologies on male consumers' perceived diagnosticity, attitude, and purchase intentions. The conceptual model investigated perceived risk as a mediator between perceived diagnosticity and attitude toward the suit.

A cross-sectional, within-subjects research design was developed to empirically test the conceptual model. The target population was males who previously purchased apparel online. A Qualtrics questionnaire was administered in Amazon Mechanical Turk to make sure that study findings would reflect responses from a diverse population. Questions were adopted from existing literature and all answers were assessed on a 7-point Likert-scale (1: strongly disagree, 7: strongly agree). Participants were directed to a website to virtually try Hugo Boss suits in different sizes on their personalized avatars and evaluate the visual feedback on product fit, and then returned back to the questionnaire. The questionnaire consisted of questions on perceived diagnosticity, perceived risk, attitude towards the suit, and purchase intentions. Structural regression analysis was conducted to test the research hypotheses by using Mplus 6.0. Confirmatory Factor Analysis (CFA) was conducted via Robust Maximum Likelihood with the Satorra-Bentler scaling collection method to analyze the overall factor structure and construct validity of the scales.

A total of 264 usable data were collected after eliminating missing data. Slightly over three-fourths of the participants were born between 1982 and 1994 (Generation Y). Approximately

34.8 % of the participants were college and graduate students followed by professional (17.8%), manager/official (9.5%), sales (7.6%), and others (30.3%). The majority was European American (73.9%) and Asian/Asian American (11%). The measurement model fit the data well (S-B χ^2=133.470, df = 71, p < .001, CFI=.971, SRMR=.041, RMSEA=.058). Factor loadings ranged from .44 to .91. The average variance of the extracted values for each construct was greater than .54, providing evidence of convergent and discriminant validity. As a next step, Structural Equation Modeling was used to examine the hypothesized interrelationships among the constructs. The fit of the structural model was acceptable (S-B χ^2=170.172, df = 73, p < .001, CFI=.956, SRMR=.071, RMSEA=.067). With respect to the role of perceived risk as a mediator, first, perceived diagnosticity significantly affected perceived risk ($\gamma = -.341$, p < .01), which in turn significantly influenced attitude ($\gamma = -.135$, p < .05). In addition, the direct path from perceived diagnosticity to attitude was positive and significant ($\gamma = .640$, p < .01). Next, the indirect effect of perceived diagnosticity ($\gamma = .046$, p < .05) on attitude was significant. However, the effect size of the mediated path was not greater than the direct effect from perceived diagnosticity to attitude ($\gamma = .640$, p < .01). The results indicated that perceived risk partially mediates the influence of perceived diagnosticity on attitude. The predictors in the hypothesized mediation effect collectively explained 49% of the variance in attitude. Finally, the direct path from attitude to purchase intentions was positive and significant ($\gamma = .654$, p < .01).

Study findings indicate that perceived diagnosticity of virtual try-on technology plays an important role in reducing male consumers' perceived risks regarding fit of products. Additionally, perceived diagnosticity can positively influence male consumers' attitudes toward products and increase their purchase intentions. The implications of this study suggest that menswear e-tailers and technology developers should continue to develop and implement virtual try-on technologies and provide detailed visual information regarding attributes (e.g., garment, color, size, fit, and appearances on the body) of products to enhance perceived diagnosticity, thus increasing male consumers' attitudes towards the products. Future studies should compare gender differences based on the framework proposed in this study.

References:

Jiang, Zhenhui, & Benbasat, Izak. (2004). Virtual product experience: Effects of visual and functional control of products on perceived diagnosticity and flow in electronic shopping. *Journal of Management Information Systems*, *21*(3), 111-147.

Shim, S. I., & Lee, Y. (2011). Consumer's perceived risk reduction by 3D virtual model. *International Journal of Retail & Distribution Management, 39*(12), 945-959.

Yu, U. J., Lee, H. H., & Damhorst, M. L. (2012). Exploring multidimensions of product performance risk in the online apparel shopping context visual, tactile, and trial risks. *Clothing and Textiles Research Journal*, *30*(4), 251-266.