

An Expanded Model to Investigate Smart Clothing's Purchase

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Smart clothing refers to clothing or accessories that are empowered by information or electronic technologies (Duval, Hoareau, & Hashizume, 2010). By 2021, the smart clothing market is expected to significantly increase from 3.668 million units to 92.75 million units (Tractica, 2016). However, most studies of smart clothing have focused on technological development and ignored consumer needs (Duval et al., 2010). Therefore, the purpose of the current study was to investigate factors that influence the purchase intention of smart clothing.

Theoretical framework. The theory of planned behavior links consumer's beliefs and behavior intention (Ajzen, 1991). The Functional, Expressive, and Aesthetic Consumer Needs Model (FEA Model) identifies target consumer clothing needs (Lamb & Kallal, 1992). Based on these two theories and previous empirical studies, the relationships among functional value, fit, movement, expressiveness, aesthetics, attitude, perceived comfort, subjective norm, behavior control, and purchase intention were proposed (Ajzen, 1991; Lamb & Kallal, 1992).

Method. To make sure participants understood smart clothing, one page of reading material about smart clothing was created before an online survey. The survey included demographics and 10 measures. Most measures were adapted from previous studies and some measures (e.g., fit, movement, and expressiveness) were developed in the current study. Each item was measured by a 7-point Likert scale (1= strongly disagree, 7 = strongly agree). A total of 524 participants participated the study, including 246 males and 278 females.

Results and conclusion. The structural model had acceptable fit indices. Nine out of 10 hypotheses were significant (Figure 1). The data supported a FEA model (Lamb & Kallal, 1992), function, such as functional value ($\beta = .67$) and movement ($\beta = .14$), and aesthetic ($\beta = .21$) influenced attitude toward smart clothing. However, expressiveness ($\beta = .06$) did not influence attitude. In addition, different from the proposed positive relationship, fit ($\beta = -.10$) negatively influenced attitude. The result suggested that the consumers' attitude was determined by the function and aesthetics of the smart clothing, but not the expressiveness of the smart clothing. Consumers preferred more function, ease of movement, aesthetic pleasantness, and less fitting smart clothing. The reason might be because consumers are not interest in tight and fitting clothing in nowadays (Perry & Lee, 2017). Consistent with the theory of planned behavior (Ajzen, 1991), attitude ($\beta = .75$), subjective norm ($\beta = .18$), and behavior control ($\beta = .10$) influenced purchase intention. However, different from the proposed positive relationship,

perceived comfort ($\beta = -.10$) negatively influenced purchase intention. The reason might be because smart clothing, which is embedded with electronics, was perceived as not comfortable (Perry, Malinin, Sanders, Li, & Leigh, 2017).

The current study has both theoretical and practical application. Theoretically, it combined the FEA Model and the theory of planned behavior (Ajzen, 1991; Lamb & Kallal, 1992). Future studies may use these two models to assess other type of clothing products. Practically, it guided smart clothing companies to develop better smart clothing (e.g., function, movement, not so tight and fitting, and aesthetically pleasant clothing) to meet consumer needs.

