

An Integrative Framework Capturing Consumers' Aesthetic Consumption Experiences of Smart Apparel

Sonia Bakhshian & Young-A Lee, Auburn University, USA

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Introduction and background. Smart apparel, one of the newest subcategories of wearable technology, integrates information technology with wearable computing devices and can be comfortably worn on the human body (Chen et al., 2016). In fact, by embedding high technology into apparel, smart apparel is facilitated with features beyond the usual apparel through computing, tracking, and recording personal data. As one of the latest generations of wearable technology, smart apparel is still at the initial stage of growth. However, for the past several years, its ability has been continuously improved, which leads more of consumers' interest to its use.

In the scholarship of consumer behavior, numerous studies were conducted focusing on consumers' adoption of wearable technology using various existing theories; however, less attention has been given to holistically integrate those associated concepts from these theories when studying consumers' adoption behavior of smart apparel. Through a comprehensive analysis of the existing literature on consumer adoption of wearable technology, two major gaps were identified. First, despite various consumer behavioral models were applied in the past research, limited studies addressed the aspect of consumer decision-making process reflecting their affective and cognitive information processing systems. Second, the concept, *aesthetics*, was heavily studied as design attributes in previous studies but limited to address *aesthetics* as one of the high-tech embedded product attributes. We can conclude that previous studies did not provide the full reflection of consumers' aesthetic shopping experiences associated with smart apparel. Thus, in this study, we aimed to develop and propose an integrative framework to holistically depict consumers' aesthetic consumption experiences in the smart apparel context.

Integrative framework of consumers' aesthetic consumption experiences. Based on the extensive literature review in the area of consumers' adoption of high-tech embedded products, aesthetics theories, and shopping experiences from various fields including marketing, consumer behavior, textiles and clothing, and psychology, this study proposed a conceptual idea integrating concepts from various models, which include stimulus-organism-response (S-O-R) (Mehrabian & Russell, 1974), consciousness-emotion-value (C-E-V) (Holbrook, 1986), cognition-affect-behavior (C-A-B) (Fishbein & Ajzen, 1977), functional-expressive-aesthetic (FEA) consumer needs (Lamb & Kallal, 1992), and Crilly et al.'s (2004) product development. As shown in Figure 1, this integrative framework is rooted in S-O-R model (Mehrabian & Russell, 1974) and states that individuals' interaction with *stimuli* can create an internal state which leads them to the *response* phase. *Stimulus* was classified into three broader categories (object, physiological, and social-psychological) by Slama and Tashchian (1987). In the context of using smart apparel, object stimuli refer to an individual's perception towards various smart

apparel features including various cues: form (Crilly et al., 2004), functionality, aesthetics, and expression (Lamb & Kallal, 1992). Physiological stimuli refer to an individual's five main

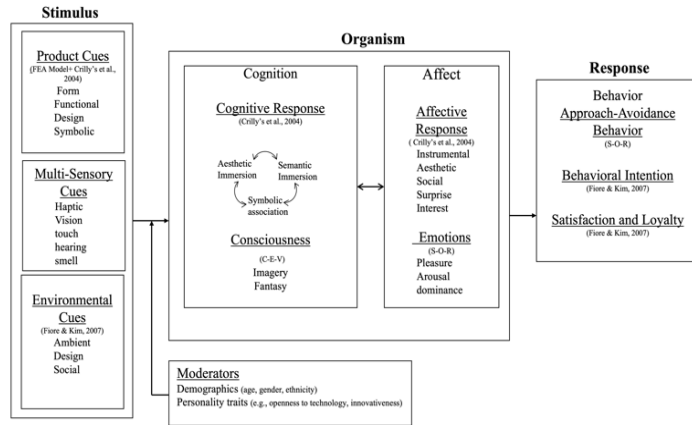


Figure 1. An inclusive framework of this study.

physiological senses including tactile, taste, vision, smell, and hearing (Peck & Childers, 2003). Social-psychological stimuli refer to any external environmental stimuli (Moon et al., 2018), including ambient, design, and social cues (Fiore & Kim, 2007) in various contexts. By integrating these three *stimuli*, this proposed framework holistically capture the potential influence of product, physiological, and environmental determinants on consumers' aesthetic and experiential consumption behavior of smart apparel.

In the framework, *organism* plays a mediating role between *stimuli* and *response*. According to the C-A-B model (Fishbein & Ajzen, 1977), *organism* consists of the phase of cognition and affect, which are mutually interrelated (Norman, 2002). Cognition, defining as an individual's beliefs, thoughts, and perceptions, is formed through interaction with the product and shopping environment. Cognition consists of two parts including consumers' cognitive response (Crilly et al., 2004) and consciousness (Holbrook, 1986). By considering cognitive response as one of the cognition phase, we can demonstrate the mechanism of individual's cognitive information processing system. Aesthetic immersion, semantic interpretation, and symbolic association under the cognitive response are highly interrelated. By integrating the concept of consumers' consciousness, this framework also reflects a higher-order mental process that influences consumers' aesthetic consumption experience of smart apparel. The affect phase within *organism* consists of affective response (instrumental, interest, aesthetic, surprise, and social) (Crilly et al., 2004) and emotions (pleasure, arousal, and dominance (Mehrabian & Russell, 1974). By integrating both affective response and emotions, this framework can capture the mechanism of an individual's emotional response appraisal towards smart apparel. It can also explain how the individual's emotions and feelings shape by their physiological senses and interaction with their shopping context.

Response in the framework is the result of the internal process of *organism*, consisting of three components: approach/avoidance behavior (Mehrabian & Russell, 1974), behavioral intention (Fiore & Kim, 2007), and satisfaction and loyalty (Fiore & Kim, 2007). These three synthesized parts were adopted from shopping experience literature from various fields. By integrating these into the *response* phase, the framework can depict a holistic view of the individual's potential responses to the internal organism process. Lastly and most importantly, *demographics* (e.g., age, gender, ethnicity) and *personality traits* (e.g., innovativeness, openness to technology), dominantly addressed by prior studies on consumers' adoption of high-tech

products, can play a moderating role between *stimuli* and *organism* within this framework. Moderators are added to this framework to enable for capturing the psycho-demographic differences within the smart apparel market.

Conclusion. In this conceptual study, we proposed an inclusive overarching framework, explaining consumers' aesthetic consumption experiences through considering cognitive and affective information processing systems simultaneously. This framework is useful for academia through orienting the diverse body of existing shopping experience literature to researchers and helping them to conduct empirical studies in a more inclusive context. For industry professionals, the interactive relationships among the concepts may be able to guide the development of successful shopping experience systems. Our goal of this study was not empirically testing the proposed inclusive framework but bringing the attention to it, which suggests future research directions and facilitates further dialogue of building an inclusive framework within the consumer behavior research community.

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