Conceptualizing Consumers' Decision-Making Process of Using Wearable Technology through the Sustainability Lens

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Introduction and background. Embedding high technology into products has changed individuals' lifestyles in many ways. Despite wearable technology's benefits (e.g., tracking physical and mental health conditions) for individuals' health and well-being, various issues related to its sustainability can be questioned. During the past few years, in many fields including social-psychology, marketing, textiles, and apparel, numerous studies were conducted to explain consumers' adoption and decision-making process of using wearable technology (e.g., Bakhshian & Lee, 2021; Melumad et al., 2021). Although, to date, a wide range of determinants (e.g., socio-demographics, phycological and personality traits, product attributes) has been explored in the consumer behavioral research, less attention has been given to how consumers' perception of sustainability pillars (environment, economy, and equity) and their pro-environmental values, beliefs, and concerns would impact their decision-making process of using wearable technology. Thus, in this conceptual study, we showcase the need for developing an inclusive theoretical framework to explain consumers' decision-making process of using wearable technology through incorporating different pillars of sustainability.

Theoretical framework. An extensive literature review has been conducted on consumer behavior and decision-making process, sustainability theories, and consumers' adoption of wearable technology. This broad review led us to integrate appropriate concepts within various theories, which provide a platform to discuss the inclusive framework proposed in Figure 1. This framework is divided into two main blocks to provide a comprehensive understanding of consumers' decision-making process.

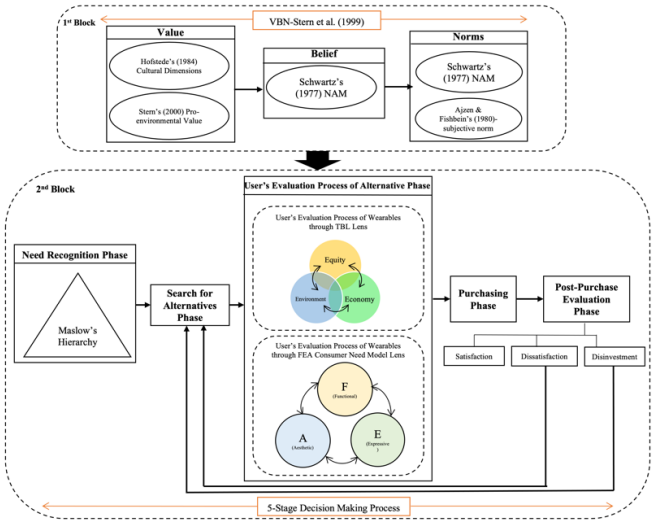

Figure 1. An inclusive framework of this study.

The first block includes the integration of (a) two models: value-belief-norm (VBN) theory (Stern et al., 1999) and norm activation model (NAM) (Schwartz, 1977) and (b) three constructs: cultural dimensions (Hofstede, 1980), pro-environmental value (Stern, 2000), and subjective norms (Ajzen & Fishbein, 1980). This block demonstrates how pro-environmental values, sustainability-related cultural dimensions (egoistic, altruistic, and bio-spheric), and beliefs

would shape personal and social norms. By integrating this block with the next block below, the framework can better depict the potential influence of pro-environmental beliefs, values, and norms on consumers' entire decision-making process.

The second block contains the five-stage decision-making process (Engel et al., 1968) integrating with Maslow's (1943) hierarchical needs, Elkington's (2004) triple bottom line (TBL), and Lamb and Kallal's (1992) functional-expressive-aesthetic (FEA) consumer needs model. This block reflects consumers' integrative evaluation and information processing systems of using wearable technology through the sustainability lens. *Need recognition*, the first and most crucial stage, refers to an individual's recognition of their needs for a particular service or product. Maslow's (1943) hierarchy of needs was integrated into the *need recognition* phase (Phase 1) to provide a holistic representation of an individual's different level of needs when interacting with wearable technology. Although high-tech embedded products can neither address nor satisfy physiological needs (Gerstein, 2014), other needs can be justified in relationships with technology. The following needs including safety (e.g., information privacy), social (e.g., making their networks and being connected to like-minded individuals through different channels), esteem (e.g., representing their status to others by wearing wearables), and self-actualization (e.g., gaining the best record of activity within the network) can be addressed by using wearable technology.

Consumers collect available information from various sources to search for a possible solution to meet their needs. At this stage of *searching alternatives* (Phase 2), branding, marketing, and advertising may play a significant role in providing sources of information about different wearables. The more available sources of information brands provide, the more information can be collected by potential users. At the *users' evaluation process of alternatives* stage (Phase 3), consumers start comparing the alternatives based on a set of criteria and select the final alternative. This process can be conducted through various lenses. By integrating TBL and FEA models into this stage, this proposed framework can further explain consumers' evaluation of alternatives through both the sustainability lens and critical product attributes. The more clear and broader information brands provide to the target market, the more holistic information processing can be achieved by consumers. Based on their needs and expectations, consumers may evaluate each process several times to assess its alternatives and eventually find the most appropriate one.

The *purchasing* stage (Phase 4) is the action stage where the actual purchasing happens. If a product or service satisfies an individual's needs and expectations, consumers then tend to purchase it. Following the evaluation of wearable technology through the sustainability lens along with critical product attributes, consumers will purchase the product, if their needs, criteria, and expectations are met. It is noteworthy to mention that the value-belief-norm block influences the wearables' purchasing phase in the decision-making process block. The last phase involves the *post-purchase experience* including satisfaction, dissatisfaction, and disinvestment introduced by Engel et al. (1968). According to Engel et al. (1968), there is a higher chance to repurchase or reuse a product or service by consumers in the future when they are satisfied with their previous purchases. By integrating these three post-purchase experience components, this

proposed framework allows being more inclusive to predict consumers' post-purchase experiences as well as the probability of repurchasing wearables in the future.

Conclusion. By proposing this inclusive theoretical framework to explain consumers' decision-making process through the sustainability lens, we open up for discussions to address the benefits of this framework for the industry and academia. This framework can assist industry professionals to develop, design, and manufacture more successful wearables by considering consumers' essential pro-environmental values, beliefs, and sustainability criteria. This study also urges our disciplinary researchers to give more emphasis on integrative theory building. Although our aim was not to empirically test the proposed framework, it may be worth it for future researchers to further refine and test this framework in different wearable technology contexts.

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