



Apparel Professionals' Readiness Toward Sustainable Technology: A Conceptual Model

Md Arif Iqbal, California State Polytechnic University, Pomona
 Jin Su, The University of North Carolina at Greensboro

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Introduction and Purpose: Worldwide, various stakeholders of business organizations are stimulating sustainable economic development, and the regulations are urging firms to reduce their energy consumption and waste. The literature suggests that adopting technology can be one of the most efficient ways to address sustainability (Fu et al., 2018; Gupta et al., 2021). Sustainable technologies can be integrated into design and manufacturing operations and products (Gupta et al., 2021), effectively accomplishing sustainable development. Technologies that are being adopted in apparel firms worldwide in order to improve the social, environmental, and economic performance of the firms can be termed sustainable technologies (Díaz-Chao et al., 2021; Papahristou & Bilalis, 2017). The most common examples of these sustainable technologies are high-speed sewing machines, Radio Frequency Identification (RFID), computer-aided design, or other advanced technologies used in manufacturing apparel products with a reduced amount of energy, water, and chemicals (Díaz-Chao et al., 2021; Iqbal & Su, 2021, 2023, 2022). Despite the significance of sustainable technology in the apparel industry for achieving sustainable development, existing literature ignored addressing apparel managers' technology readiness in the context of sustainability. Thus, this study aims to bridge the research gap by developing a conceptual framework to examine the antecedents to apparel professionals' sustainable technology readiness and their intention to adopt sustainable technology.

Literature Review and Theoretical Grounding: The diffusion of innovation theory (DOI), the unified theory of acceptance and use of technology (UTAUT), and the technology readiness index (TRI) are utilized in an integrated way to provide the theoretical grounding of this paper. UTAUT depicts four core factors (performance expectancy, effort expectancy, social influence, and facilitating conditions) affecting the intention and use of technology (Venkatesh et al., 2003). Diffusion of innovation theory perceives innovations as being within a particular social system and communicated across particular channels throughout time (Rogers, 1995). Technology readiness can be defined as people's propensity to adopt and use new technologies to achieve their personal and professional goals (Parasuraman, 2000). The dimensions of technology readiness (optimism, innovativeness, discomfort, and insecurity) denote the overall attitudes of an individual toward new technologies rather than their competencies to use those technologies (Stanford et al., 2009). Technology readiness literature substantiated the role of individuals' characteristics in affecting their technology readiness (Blut & Wang, 2020; Purnomo et al., 2021; Sun, 2016). Figure 1 demonstrates how the three theories are integrated to provide the overarching theoretical grounding for this study. TRI explains the relationship between personal characteristics and sustainable technology readiness. DOI explains the relationship between sustainable technology readiness and managers' technology adoption. UTAUT and DOI together explain the relationship between other factors (relative advantage, facilitating conditions, and social influence) and managers' technology adoption.

Conceptual Model: Previous literature found that individual characteristics positively impact technology readiness (Blue & Wang, 2020; Celik & Kocaman, 2017; Sun, 2016). Celik and Kocaman (2017) investigated the involvement of fashion consumers

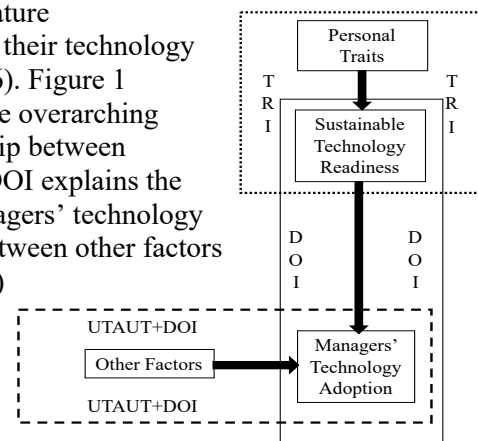


Figure 1: Theoretical Framework

as an antecedent of technology readiness and found that consumer involvement positively impacts technology readiness. Sun (2016) found that user characteristics and technology experience positively impact technology readiness. Purnomo et al. (2021) found previous knowledge about technology as a significant factor influencing technology readiness in the context of technology adoption in SMEs. Because findings in this area are limited and inconclusive, this conceptual paper considers personal characteristics (involvement and knowledge) as the antecedents of sustainable technology readiness. Previous literature also suggests that demographic characteristics such as experience and education level of individuals may play a moderating role in the relationships between their personal characteristics and technology readiness (Chawla & Joshi, 2018).

There is an agreement in the literature that individuals' technology readiness has a positive impact on their adoption behavior (Reynolds et al., 2020; Zeithaml et al., 2002). Moreover, based on DOI, previous studies reliably substantiated the positive relationship between relative advantage and technology adoption (Agarwal & Prasad., 1997; Chong et al., 2009). In addition, according to UTAUT, social influence and facilitating conditions are significant antecedents of technology adoption intention in various contexts (Venkatesh et al., 2012). Thus, based on the synthesis of relevant literature, an integrated conceptual model was proposed (Figure 2). The model posits that the apparel managers' personal characteristics (personal involvement in technology, apparel technology knowledge, and knowledge about the impact of apparel production on the environment) affect their readiness toward sustainable technology. Furthermore, managers' sustainable technology readiness, together with social influence, facilitating conditions, and relative advantage, impacts their intention to adopt sustainable technology. The model also posits that managers' education level and experience moderate the relationships between managers' knowledge and involvement and their sustainable technology readiness.

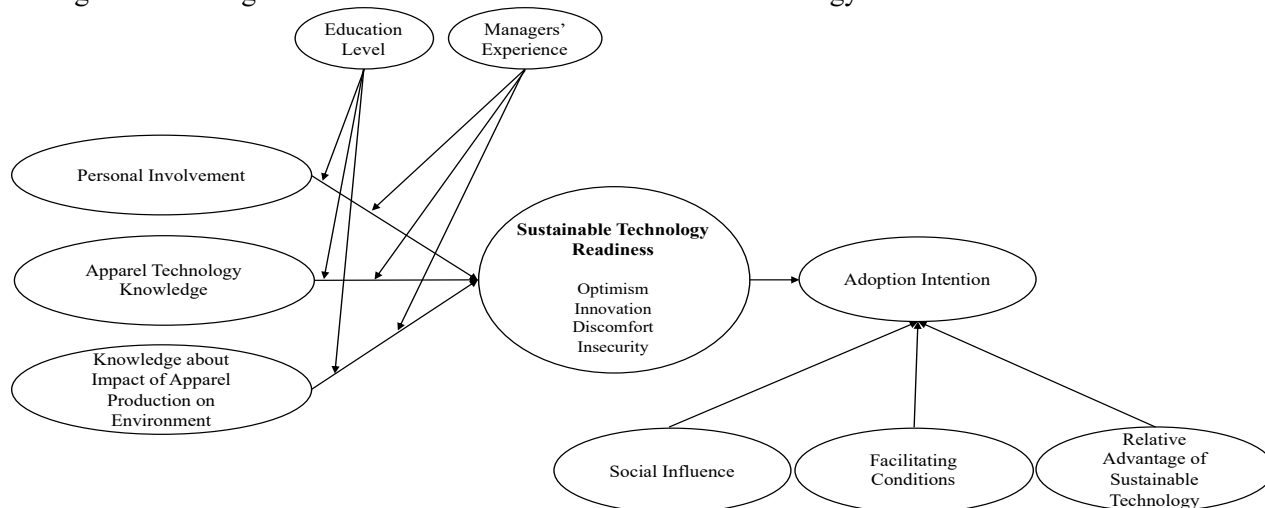


Figure 2: Conceptual Model

Discussion and Conclusions: Theoretically, this model would expand our understanding of the causal flow among cognitive variables of apparel managers to assess their readiness and intention to adopt sustainable technology. Based on this conceptual model, the authors will develop a quantitative research study and test the relationships between the constructs by collecting data from apparel managers. The findings of future quantitative research would provide theoretical and managerial implications for the apparel industry.

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