

Feel Bad to Discard a Fashion Product: How AI Designers Influence Individuals' Sustainable Consumption

Ha Kyung Lee, Chungnam National University
Dooyoung Choi, Old Dominion University

Keywords: Artificial intelligence, designer types, emotional attachment, perception of AI humanness, sustainable consumption

Introduction

The integration of advanced technology can promote an environmentally conscious approach to design, production, and consumption, thereby contributing to a more sustainable fashion ecosystem. However, there has been limited research on how the application of artificial intelligence (AI) technology in the fashion industry influences consumers' sustainable consumption. Thus, this study aims to explore AI technology as a design source by comparing consumers' responses to fashion products between different designer types (AI vs. Human); in particular, the impact of designer types on individuals' emotion toward discarding fashion products, mediated by their emotional attachment to these products were investigated. We further investigated that this mediation effect will vary based on individuals' perception of AI humanness.

Literature review

Emotional attachment to products is defined as the bond between a person and a product (Shaver & Yan, 2022). The attachment-aversion theory, as proposed by Park et al. (2013), suggests that individuals are inclined to develop attachments to objects that align with their identity, provide comfort, or have sentimental value. Fashion items designed by humans often embody these qualities more prominently due to perceived human creativity, craftsmanship, and emotional investment, which are viewed as extensions of human experience and expression. This sense of personal and emotional connection may not be as pronounced with AI-generated products, which are often seen as the result of algorithmic processes lacking in personal touch or emotional depth. Further research has shown that emotional attachments can form between humans and various entities, including animals, places, brands, and even anthropomorphized products or services (e.g., AR systems, Schweitzer et al., 2019; AI voice assistants, Guerreiro et al., 2023).

The literature also makes connections between emotional attachment and sustainable consumption. Consumers who perceive a product as more valuable are likely to view it as less disposable, indicating that emotional attachment can encourage sustainable consumer behaviors, such as using products for longer periods and purchasing less frequently. For example, Shaver and Yan (2022) demonstrated that the mass-customized apparel could lead to stronger emotional attachment and longer product use. This increased longevity is attributed to the added value the product gains through the emotional bond formed with it. Nevertheless, this mediation effect may alter when individuals perceive AI as being similar to humans. Guerreiro et al. (2023) observed that consumers develop emotional attachments to AI voice assistants through varied

interactions, forming an attachment-aversion relationship. Therefore, this study anticipates that individuals' perceptions of AI humanness will moderate the proposed mediation effect, influencing sustainable consumption behaviors.

Study1: The mediating effect of emotional attachment

Study 1 aims to explore the effects of designer types on individuals' negative emotions regarding discarding a fashion product, with emotional attachment as a mediator. This study utilized a single-factor between-subjects design, comparing two types of clothing designers: human and AI, where participants were asked to choose between two jackets: one designed by an AI system and the other by a human.

A total of 75 data was collected and analyzed with ANOVA using SPSS 26.0. The results of ANOVA showed a significant main effect of designer types (AI vs. Human) on negative emotion but not on emotional attachment. Participants felt a greater negative emotion towards discarding the product designed by a human (vs. generated by AI). However, the designer types did not have a significant effect on emotional attachment. The reason individuals' emotional attachment did not differ based on the designer types might be attributed to individuals' personal characteristics, which may moderate the effect of designer types on emotional attachments.

Study2: The moderated mediation effect by perception of AI humanness

Study 2 aims to investigate whether the effect of different types of designers on emotional attachment is influenced by individuals' perceptions of AI humanness. This study employed a between-subjects design with a single factor, comparing three categories of clothing designers: human, humanoid AI, and non-humanoid AI. To ensure uniformity across conditions, participants were presented with an image of the same dress, purportedly designed by the different entities, embedded within an Instagram feed setting.

A total of 193 data was collected and analyzed using ANOVA and PROCESS Macro using ANOVA 26.0. The results of ANOVA with designer types as independent variables and emotional attachment and negative emotions as dependent variables showed a significant main effect and interaction effect. Individuals who believe that AI has humanity have an emotional attachment to products designed by non-humanoid AI; however, individuals who believe that AI does not have humanity have an emotional attachment to products only designed by human or humanoid AI. The result of PROCESS Macro using model 7 with 5,000 samples also revealed a significant moderated mediation effect (index=-.4173, 95% CI [-.7536: -.1436]). This indicates that individuals who believe that AI do not have humanity demonstrated a stronger effect of human designer on negative emotions toward discarding a fashion product, mediated by emotional attachment, compared to those who believe AI possesses humanity.

Conclusion

The findings of this study highlight the significance of addressing emotional attachment to foster sustainable consumption practices by amplifying the negative emotions associated with discarding fashion products. In particular, individuals who ascribe human-like qualities to AI tend to form stronger emotional attachments to products generated by AI. Given the expanding opportunities for utilizing AI in fashion design, it is important for brands to cultivate a sense of

connection and emotional investment in items produced through technology. This approach, centered on building emotional connections with technology-driven fashion items, is crucial for shifting consumer behaviors towards more sustainable consumption patterns.

This work was supported under the framework of international cooperation program managed by the National Research Foundation of Korea (NRF-2022K2A9A2A20097609).

References

- Guerreiro, J., & Loureiro, S. M. C. (2023). I am attracted to my cool smart assistant! Analyzing attachment-aversion in AI-human relationships. *Journal of Business Research*, *161*, 113863.
- Schweitzer, F., Belk, R., Jordan, W., & Ortner, M. (2019). Servant, friend or master? The relationships users build with voice-controlled smart devices. *Journal of Marketing Management*, *35*(7-8), 693-715.
- Shaver, J., & Yan, R. N. (2022). Examining sustainable consumption behaviors through the mass customization context: Emotional product attachment and environmental attitude perspectives. *Journal of Sustainability Research*, *4*(3), e220010.
- Park, C. W., Eisingerich, A. B., & Park, J. W. (2013). Attachment-aversion (AA) model of customer-brand relationships. *Journal of Consumer Psychology*, *23*(2), 229-248.