

Will the Scarcity of AI-Designed Clothing Influence Consumers to Purchase?

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Keywords: AI-designed clothing, perceived scarcity, purchase intention

Significance

Artificial intelligence (AI) is being increasingly utilized in the fashion industry, affecting various aspects from customer service, supply chain management, marketing, and forecasting to the design of products (Forbes, 2023). Traditionally, fashion brands are heavily dependent on designers' creativity. However, as AI continues to evolve, adapting AI-driven design systems seems inevitable. The significance of this study is exploring consumer responses to this new change. Specifically, we investigate the influence of perceived scarcity of AI-designed clothing on purchase intention, mediated by perceived monetary value. Additionally, we examine the moderating effects of fashion involvement in this relationship.

Application of Literature

Existing literature suggests that scarcity positively influences the value and desirability of products, thereby influencing purchase intention (Barton et al., 2022). While marketers deliberately create the perception of scarcity to influence consumers' purchase decisions (e.g., enforcing restricted time windows to purchase products and signaling low inventory levels), this is not the case for AI-designed clothing as the market in this sector is still in its beginning stage of diffusion with a great scarcity among general consumers. Owing to the persuasive effect of scarcity, the perceived scarcity of AI-designed clothing will have a positive influence on the purchase intention of the clothing (H1: The perception of scarcity in AI-designed clothing will increase purchase intention). Moreover, because scarce products are generally more expensive, consumers who perceive AI-designed clothing as highly scarce might expect a higher price tag for such scarce clothing. However, when the price is not as high as expected (e.g., similar to regular non-AI-designed clothing), the consumer will perceive the clothing as a good deal. In other words, increased scarcity of an AI-designed clothing can create a perception of monetary value of the clothing (H2: The perception of scarcity in AI-designed clothing will increase the perception of monetary value).

According to the prospect theory (Kahneman & Tversky, 2013), consumers seek value maximization under conditions of uncertainty. Thus, in the current situation of high uncertainty toward AI-designed clothing because of limited to no exposure, their purchase decisions will be derived from value gains, which include monetary value. Accordingly, the monetary value will increase the purchase intention of the AI-designed clothing (H3: The perception of monetary value in AI-designed clothing will increase purchase intention). Combining the influence of scarcity on monetary value and that of monetary value on purchase intention, we hypothesize that the impact of scarcity on purchase intention will be mediated by monetary value (H4: The

perception of scarcity in AI-designed clothing will increase purchase intention through the perception of monetary value in AI-designed clothing).

Finally, we explore how consumers' involvement in fashion influences the impact of scarcity on monetary value and purchase intention, considering the significant role of fashion involvement in previous studies (e.g., O'Cass, 2004; H5: Fashion involvement will moderate the impact of scarcity on [a] monetary value and [b] purchase intention in AI-designed clothing). The hypothesis is intentionally left open without directionality, because either direction could work. For example, consumers with low involvement might be more susceptible to the impact of scarcity, leading to a higher perception of monetary value and an increase in purchase intention. Otherwise, consumers with high involvement might be more appreciative of the scarcity of AI-designed products leading to positive responses regarding the perception of monetary value and purchase intention.

Methods

Participants were recruited from Amazon Mechanical Turk, and an online survey was conducted. After watching a short video on AI technology in clothing design, participants viewed a picture of a jacket with product descriptions (i.e., unisex grey bomber jacket, designed by AI technology, retail price of \$85.00). The retail price of the jacket was established by referencing the pricing of a comparable product from a popular fashion brand (i.e., J. Crew). Then, they responded to a series of questions regarding the presented AI-designed jacket and about themselves. Specifically, perceived scarcity, perceived monetary value, purchase intentions, and fashion involvement were measured on Likert scales using items from previous studies. The collected responses ($N = 311$) were analyzed using SPSS 28.0.

Results

The results from the PROCESS Macro Model 8 with 5,000 bootstrap samples for the moderated mediation model showed the following results: Scarcity had no significant direct effect on purchase intention ($b = .145$, $p = .386$, 95% CI $[-.183: .474]$; H1 rejected); it did have a significant direct effect on monetary value ($b = .723$, $p = .000$, 95% CI $[.341: 1.105]$; H2 supported); and monetary value had a significant direct effect on purchase intention ($b = .325$, $p = .000$, 95% CI $[.230: .419]$; H3 supported), which also showed the indirect effect of scarcity on purchase intention through monetary value (H4 supported).

Additionally, fashion involvement moderated the impact of scarcity on monetary value but not on purchase intention. The strength of the mediation effect of monetary value was moderated by fashion involvement ($b = -.094$, $p = .003$, 95% CI $[-.156: -.032]$). The effect of scarcity on purchase intention mediated by monetary value was stronger when their fashion involvement was low ($-SD$ and mean level of fashion involvement; $b = .075$, 95% CI $[.042: .114]$ and $b = .026$, 95% CI $[.026: .085]$, respectively). However, when participants' fashion involvement was high ($+SD$ level of fashion involvement; $b = .027$, 95% CI $[.000: .070]$), the moderated mediation model was not as strong. In other words, the impact of

scarcity on monetary value leading to purchase intention was stronger in the low fashion involvement group. Therefore, H5[a] was supported, whereas H5[b] was rejected.

Discussion

Although the scarcity of an AI-designed clothing alone may not significantly increase purchase intentions, fashion brands can leverage the perception of scarcity if the product can be perceived as of good value for the money. The effect will be particularly stronger if the brands' target consumers tend to have low involvement in fashion.

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

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