

Does Sophisticated AI Ease or Inflame Luxury Decision Fatigue and Purchase Postponement? The Moderated Serial Mediation Effect of Service Embarrassment

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Background and Significance: Despite its critical importance, *purchase postponement* (delayed or deferred purchases) has received little attention in the existing literature (Sharma et al., 2023). A recent report by McKinsey (2024) highlights that 30-35% of US consumers have postponed their purchases, while nearly 50% of global consumers delay the purchase of big-ticket items (Shah, 2023). Luxury fashion retailers are particularly vulnerable to this issue, as the acquisition of luxury products is often perceived as a “big-ticket” decision for consumers. In fact, the repercussion of postponed purchases is detrimental, as consumers may engage in browsing or trying luxury products but ultimately delay or abandon the purchase (Pymnts, 2023). Then, why do consumers defer their purchases, and how can luxury retailers mitigate their purchase postponement? With the advancement of retail technologies such as artificial intelligence (AI), both luxury fashion retailers and consumers anticipate its adoption to revolutionize shopping experiences. However, as AI becomes increasingly sophisticated (more advanced than can better understand humans) and offers personalized options or recommendations based on algorithms, consumers may become overwhelmed by choices and thus heightened *decision fatigue* (an impaired ability to make decisions) (Pignatiello et al., 2020), ultimately leading to purchase postponement. Nevertheless, highly sophisticated AI also holds the positive potential to facilitate consumer decision-making processes and mitigate purchase postponement by, for example, subconsciously detecting consumers’ emotions to identify their product preferences (Harvard Business Review, 2019). Given these observed mixed consequences of sophisticated AI, this study aims to first examine how different levels of AI sophistication (high vs. low) influence luxury consumers’ purchase postponement (Study 1) and to investigate whether highly sophisticated AI can mitigate luxury consumers’ decision fatigue and purchase postponement, as well as, to elucidate the underlying mechanisms driving these effects (Study 2).

Theoretical Framework: Previous research has delved into various causes of consumer purchase postponement, including consumer confusion, choice uncertainty, time pressure, and price concerns (Sharma, 2023). However, there is a dearth of research examining the impact of retail technologies or varying levels of AI sophistication on purchase postponement. Based on the theory of mind perception (Gray et al., 2007), it is inferred that the degree of AI sophistication depends on consumer perception of its mental states, focusing on two dimensions: agency (pertaining to thinking and cognition) and experience (related to feeling and emotion). That is, consumers may perceive highly sophisticated AI as possessing greater cognitive and emotional capabilities. Building on this premise and the literature, this study hypothesizes that consumers may perceive greater trust and empathy when interacting with high-sophistication AI-enabled services compared to low-sophistication ones, thereby alleviating decision fatigue and ultimately mitigating purchase postponement. Furthermore, in the presence of (high vs. low)

sophistication AI during service encounters, consumers may experience varying degrees of *embarrassment* (a feeling of awkwardness), especially in private settings such as fitting rooms (Pitardi et al., 2022). On the one hand, a less embarrassing service encounter could foster greater trust and empathy, which could improve decision making and lead to prompt purchases. Conversely, embarrassment could also expedite the shopping process to accommodate their negative feelings (Singh & Singh, 2023; Sun et al., 2023). Given the conflicting results in the literature, this study further seeks to examine the moderating effect of service embarrassment in either exacerbating or mitigating consumers' purchase postponement.

Study 1 Methods and Results: The objective of Study 1 is to examine how different levels of AI sophistication influence luxury consumers' purchase postponement. An online experiment was conducted with 278 participants (screened as luxury consumers) recruited from MTurk. Participants were first asked to indicate their cognitive goals (Katyral et al., 2022) on a continuum, ranging from the tendency to achieve "good enough" to striving for the "best". They were then randomly assigned to either a high ($n = 140$) or low ($n = 138$) sophisticated AI condition and instructed to watch a video (created by authors and validated through a pretest) to virtually experience the AI service in a luxury fashion store's fitting room. In the high-sophisticated condition, the AI mirror was able to personalize their shopping experiences and recognize their emotions to offer product and styling recommendations. In contrast, the low-sophisticated condition featured an AI mirror that merely offered product selection and payment services. A manipulation check was established: perceived greater sophistication in the high (vs. low) sophisticated AI scenario, $t(276) = 1.86, p < .05$. Finally, participants were asked about their perceived trust and inclination to postpone the purchase. Utilizing PROCESS Model 7 (Hayes, 2013) with 5,000 bootstrapped samples, it was found that an increased AI sophistication reduced purchase postponement through the mediation of perceived trust (indirect effect = $-.24, SE = .09, 95\% CI [-.424, -.067]$), particularly among individuals who tend to achieve a "good enough" state (Index = $.23, 95\% CI [.026, .427]$).

Study 2 Methods and Results: The objective of Study 2 is to investigate the underlying mechanisms of how and why greater AI sophistication can mitigate purchase postponement. To reduce potential bias, Prolific was used to recruit 446 participants for the second online experiment. Participants were randomly assigned to either a high ($n = 219$) or low ($n = 227$) sophisticated AI scenario. They were then asked about their mind perceptions toward the AI (agency/experience), perceived trust/empathy, service embarrassment, decision fatigue, and purchase postponement. Study 2a employed a serial mediation model using PROCESS Model 6 (Hayes, 2013) with 5,000 bootstrapped samples to elucidate the effects of sophisticated AI on purchase postponement: consumers perceived a greater agency/experience from a high-sophistication AI (vs. low), resulting in enhanced perceived trust/empathy, consequently leading to reduced decision fatigue and purchase postponement (indirect effect = $-.02, SE = .01, 95\% CI [-.043, -.002]$; indirect effect = $-.03, SE = .01, 95\% CI [-.064, -.010]$). Furthermore, Study 2b employed PROCESS Model 85 to examine the moderated serial mediation effects of service embarrassment. The results demonstrated that the mitigated decision fatigue and purchase postponement were further alleviated when consumers perceived greater embarrassment during the service (Index = $-.015, 95\% CI [-.026, -.006]$; Index = $-.004, 95\% CI [-.009, -.000]$).

Contribution: This study pioneers the exploration of sophisticated AI in mitigating consumer decision fatigue and purchase postponement, making novel contributions to the existing literature in luxury retailing research. It also adds theoretical rigor to the mind perception theory by highlighting the role of service embarrassment, as a human-like-minded AI even amplifies consumers' perceived embarrassment, further expediting purchases during services. Luxury fashion retailers are advised to consider integrating highly sophisticated AI services to facilitate consumers' decision-making processes. Moreover, retailers can also leverage the concept of embarrassment, such as deploying humanoid service robots to exert moderate attention or pressure on luxury consumers, thereby stimulating their purchase decisions.

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