

Do Enjoyment and Concerns regarding Fashion Service Robots Interplay to Influence Adoption Propensity?

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Introduction. Equipped with conversational AI, Fashion Service Robots (FSRs) are transforming customer service by welcoming customers, taking orders, answering inquiries, locating products, and fostering a sense of social presence, all while providing personalized and intelligent service automation (Song & Kim, 2022). While these service robots offer personalized high-tech shopping experiences previously exclusive to human clerks, consumer acceptance is not merely determined by their technological advancements; it is rather heavily based on users' participatory factors in interacting with the robot, such as their enjoyment and concerns toward using it. Therefore, fashion retail practitioners are investigating ways to increase consumers' propensity to embrace new AI technologies. This involves identifying the emotional dynamics, spanning from the excitement of novelty that is often experienced by tech-savvy consumers to the anxiety that is commonly found among autonomy-minded consumers. While the majority of service robot research is centered on their benefits for the elderly (Asgharian et al., 2022; Di Napoli et al., 2023) and on categorizing or identifying different types of service robots (Belanche et al., 2020; Mele et al., 2021), there is a notable gap in understanding the specific consumer traits that trigger positive or negative emotions towards FSRs, especially given their emergent nature. Furthermore, the distinct and combined effects of these emotions on the propensity to adopt FSRs remain underexplored, highlighting a critical area for further investigation in the field. Thus, guided by the affect balance theory, our study proposed a research model (Figure 1) and investigated how consumers' innovativeness and autonomy positively influence their participatory enjoyment of and concerns about using the FSR. In turn, we examined how such participatory enjoyment and concerns influence FSR adoption propensity. Most importantly, we investigate how two types of emotions of participatory enjoyment and concerns interplay to enhance consumers' propensity to adopt the robot in the fashion retail sector.

Theoretical Background. In light of the propensity for innovative consumers to eagerly embrace novel technologies (Pham & Ho, 2015), we anticipate that those who exhibit higher levels of consumer innovativeness will experience increased participatory enjoyment, when interacting with FSRs. Thus, *H1: Consumer innovativeness will increase participatory enjoyment*. On the other hand, consumers who value autonomy tend to prefer direct control over their actions and environment (Hyman et al., 2023), and therefore they are concerned about the delegation of personal tasks to robots, potential privacy issues, and the reliability of the technology. Thus, *H2: Consumer autonomy will increase participatory concerns*. Enjoyable experiences with technology typically foster a propensity to use it more. Thus, *H3: Participatory enjoyment will increase FSR adoption propensity*. Conversely, if consumers are preoccupied

with concerns, their inclination to adopt FSRs will diminish. Thus, *H4: Participatory concerns will reduce FSR adoption propensity.*

The foundation of this study is based upon the affect balance theory (Bradburn, 1969; Izard, 1977) that consumers seek to maintain and balance consistency in positive and negative emotions simultaneously when they make their decisions. Izard (1977) further elucidates that these emotions interplay in ways that can amplify or diminish one another, offering a nuanced perspective on their influence on individual satisfaction. Ki and Kim (2017) also demonstrate that enhancing positive emotions can mitigate the adverse effects of guilt, thereby boosting the intention to repurchase luxury items. Empirical evidence indicates that positive experiences can hasten the recovery from negative emotions, implying that in the FSR context, increased enjoyment may lessen the inhibiting impact of concerns. Thus, *H5: The interplay between enjoyment and concerns experienced by consumers from interacting with FSRs will positively influence FSR adoption propensity, in such a way that greater participatory enjoyment will weaken the negative association between participatory concerns and FSR adoption propensity.*

Methods and Results. This study developed a simulated store environment utilizing video footage, showcasing a Pepper that acted as a FSR interacting with a customer. Adopting a video clip sourced from YouTube, the content was revised to include FSR's product recommendations comprising product information, pricing, and live inventory updates. We conducted a web-based online survey distributed to consumer panels and collected 442 usable responses. The largest ethnic group was Caucasian (62.7%). The respondents' genders were evenly distributed (female 52.5%) and their ages ranged 18-81 years old, with a median age of 41. All scale items were measured on a 7-point Likert-type scale and modified from existing measures in the context of FSRs: consumer innovativeness from Kulviwat et al. (2007), consumer autonomy from Rijdsdijk and Hultink (2003), participatory enjoyment (e.g., I would enjoy interacting with retail service robots) from Childers et al. (2001), participatory concerns (e.g., I fear that using the retail service robot would reduce the confidentiality of my personal information) from Wang et al. (1998), and FSR adoption propensity from Davis (1989). The main data analysis was performed with R Statistical Software (v.4.3.3). The results of CFA indicated that our measurement model had an acceptable fit: χ^2/df ratio = 3.465, $p < .001$, CFI = .937, RMSEA = .075. The variables' construct validities were evaluated with both convergent and discriminant validities. The structural model was tested using SEM and yielded an acceptable fit: χ^2/df ratio = 3.031, $p < .001$, CFI = .926, RMSEA = .068 (Figure 1). All proposed hypotheses were supported (Figure 1).

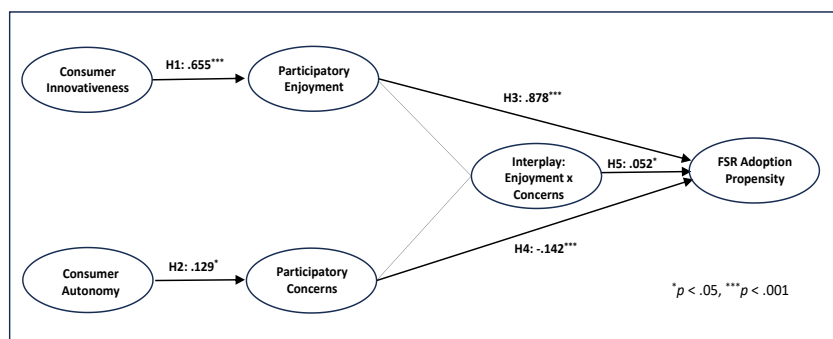


Figure 1. Research Model

Conclusion. This study's investigation into FSRs unveils key factors influencing consumers' adoption propensity, highlighting how consumer innovativeness and autonomy influence participatory enjoyment and concerns, which, in turn, affect their adoption of FSRs. Notably, despite the concerns raised by consumer autonomy, the positive aspects of FSR interaction, exemplified by enhanced enjoyment, tend to outweigh apprehensions, leading to a stronger inclination towards embracing robotic service technologies. The research underscores the importance of emphasizing consumers' positive emotions with FSRs, alongside addressing users' participatory concerns and counterbalancing both emotions, thus paving the way for successful FSR integration in the fashion retail environments.

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