

## Examining the Drivers and Barriers of Intention to Use AI Chatbot to Purchase Apparel Online

Mon Thu Myin and Kittichai (Tu) Watchravesringkan, PhD,  
University of North Carolina at Greensboro, USA

Keywords: AI chatbot, online apparel shopping, Technology Acceptance Model, Behavioral Reasoning Theory, technological readiness, psychological readiness

**Background and Purpose.** AI chatbot or chatbot is an artificial intelligence (AI) software that can interact with human beings with the help of natural language processing (NLP). It is reported that the use of AI chatbot in retail sales is expected to grow to \$22 billion by 2023 from \$2.6 billion in 2019 (Tracy, 2019). AI chatbot can help customers by answering their questions, asking follow-up questions to customers, and providing suggestions for searching products (Huang et al., 2007). Therefore, many apparel brands such as Louis Vuitton, Burberry, Tommy Hilfiger, Victoria's Secret, Levi's, and H&M have adopted AI chatbot technology to interact with their consumers via Kik messaging application, Facebook messenger, or Twitter messenger. Consumers just need to tell the AI chatbot what outfit they want and what color and design they like and choose recommendations from the chatbot. Although AI chatbot is a growing platform in the apparel retail industry, there is little knowledge about this phenomenon. One prior study by Chung et al. (2018), explored the impact of the use of chatbot on customers' satisfaction regarding luxury brands. If the use of chatbot can impact customers' satisfaction, it would be equally important to understand consumers' perceptions of the use of AI chatbot. Thus, the purpose of this study is to investigate the drivers and barriers of apparel consumers' intentions to use AI chatbot purchasing apparel online.

**Conceptual Framework and Hypotheses.** The study's conceptual framework was derived from integrating the Technology Acceptance Model (TAM) (Davis, 1989) and behavioral reasoning theory (BRT) (Westaby, 2005) with two research streams: technological readiness and psychological readiness. According to TAM, perceived ease of use (PEU) and perceived usefulness (PU) are two beliefs that determine an individual's attitude towards the use of technology, which in turn influences his/her intention to use such technology. BRT also suggests that two reasons - reason for and reason against - serve as important determinants of an individual's intention to engage in performing a specific behavior. Literature also suggests that technological readiness (TR), defined as people's propensity to embrace and use new technologies for accomplishing goals (Parasuraman, 2000), and psychological readiness (PR), defined as psychological values and beliefs that impact the use of new technology (Ghasemaghaei, 2019) can be used to further explain an individual's intention to use new technology. Thus, *optimism*, *innovativeness*, *discomfort*, and *insecurity* dimensions of TR are expected to influence perceived ease of use. The four dimensions of PR (*convenience*, *relative advantage*, *complexity*, and *resistance to change*) are proposed to serve as antecedents and are

expected to influence perceived usefulness. Based on the information discussed above, we proposed the following hypotheses. **H1:** Perceived ease of use will be significantly influenced by a) optimism, b) innovativeness, c). discomfort, and d). insecurity of technological readiness. **H2:** Perceived usefulness will be significantly influenced by a). convenience, b). relative advantage, c). complexity, and d). resistance to change of psychological readiness. **H3:** Attitudes toward using AI chatbot will be significantly influenced by a) perceived ease of use and b) perceived usefulness. **H4:** Intention to use AI chatbot will be significantly influenced by attitudes toward using AI chatbot.

**Methodology and Results.** Five hundred US adults from an online panel called Amazon Mechanical Turk (mturk.com) participated in this study in exchange for a small cash incentive. According to Grohol (2010), online panels are commonly used to reach participants that meet certain requirements and the results of an MTurk survey are just as reliable when compared to the Internet survey (Buhrmester et al., 2011). For participants who have no experience with AI chatbot usage, they were explained what AI chatbot is and how it works with a brief description and YouTube video before starting the survey. Of the usable data ( $n = 353$ ), 40% were female and 60% were male, 29% were aged between 26 -30 years old, and 65% indicated no experience of using AI chatbot for apparel shopping. All measures were adopted from existing literature (e.g., Lin & Hsieh, 2007; Liu, Forsythe, & Black, 2011) and were all assessed using a 7-point Likert-type scale.

Pursuant to Anderson and Gerbing's (1984) recommendation, the two-step approach was performed in order to avoid confusion when interpreting from a one-step approach. A confirmatory factor analysis (CFA) using maximum likelihood estimation via LISREL 9.30 was conducted to confirm unidimensionality, discriminant, and convergent validity. CFA results showed that the measurement model was reliable and valid. Next, structural equation modeling (SEM) was subsequently employed to test the conceptual model and proposed hypotheses. According to SEM results, the chi-square of the conceptual model ( $\chi^2$ ) was 2,560.79 ( $df = 1185$ ,  $p < .001$ ) with a  $\chi^2/df = 2.16$ , CFI = 0.91, RMSEA = 0.058, IFI = 0.91, and TLI = 0.90, suggesting that the hypothesized structural relationships fit the data satisfactorily. Each proposed relationship was examined based on path significance. In testing H1, it was evident that only optimism and innovativeness dimensions of technological readiness had a significant, positive effect on perceived ease of use ( $\gamma_{11} = 0.54$ ,  $t = 6.82^{***}$  and  $\gamma_{12} = 0.16$ ,  $t = 2.22^*$ , respectively). Thus, H1a and b were partially supported. In testing H2, it was evident that while relative advantage and complexity dimensions of psychological readiness had a significant, positive effect on perceived usefulness ( $\gamma_{26} = 0.75$ ,  $t = 4.87^{***}$  and  $\gamma_{27} = 0.27$ ,  $t = 3.92^{***}$ , respectively), resistance to change dimension of psychological readiness had a significant, negative effect on perceived usefulness ( $\gamma_{28} = -0.15$ ,  $t = -2.26^*$ ). Hence, H2b, c, and d were also partially supported. Furthermore, results showed that both perceived ease of use and perceived usefulness had a significant, positive effect on attitudes toward using AI chatbot ( $\beta_{31} = .10$ ,  $t = 3.22^{**}$  and  $\beta_{32} = .90$ ,  $t = 22.83^{***}$ , respectively), supporting H3a and b. Lastly, results also revealed that attitudes toward using AI chatbot had a significant, positive effect on the intention to use AI chatbot to shop for apparel products online ( $\beta_{43} = .83$ ,  $t = 19.39^{***}$ ), supporting H4.

**Discussion and Conclusions.** Findings revealed that optimism and innovativeness of technological readiness positively influenced the perceived ease of use of AI chatbot. Findings also showed that while relative advantage and complexity of psychological readiness positively influenced the perceived usefulness of AI chatbot, resistance to change of psychological readiness negatively influenced the perceived usefulness of AI chatbot. Like previous studies on TAM, the study also found that perceived ease of use and perceived usefulness were two significant predictors of attitudes toward using AI chatbot, which in turn influenced intention to use AI chatbot to shop for apparel products online. This study contributes to the apparel and retail literature in that the study's proposed model successfully explained consumers' intention to use AI chatbot to shop for apparel products online. The study's results would also provide retailers and marketers a roadmap on how they should maximize drivers and minimize barriers to increase consumers' AI chatbot usage. Future study should conduct cross-cultural studies to see whether the same findings hold true with consumers in other cultures.

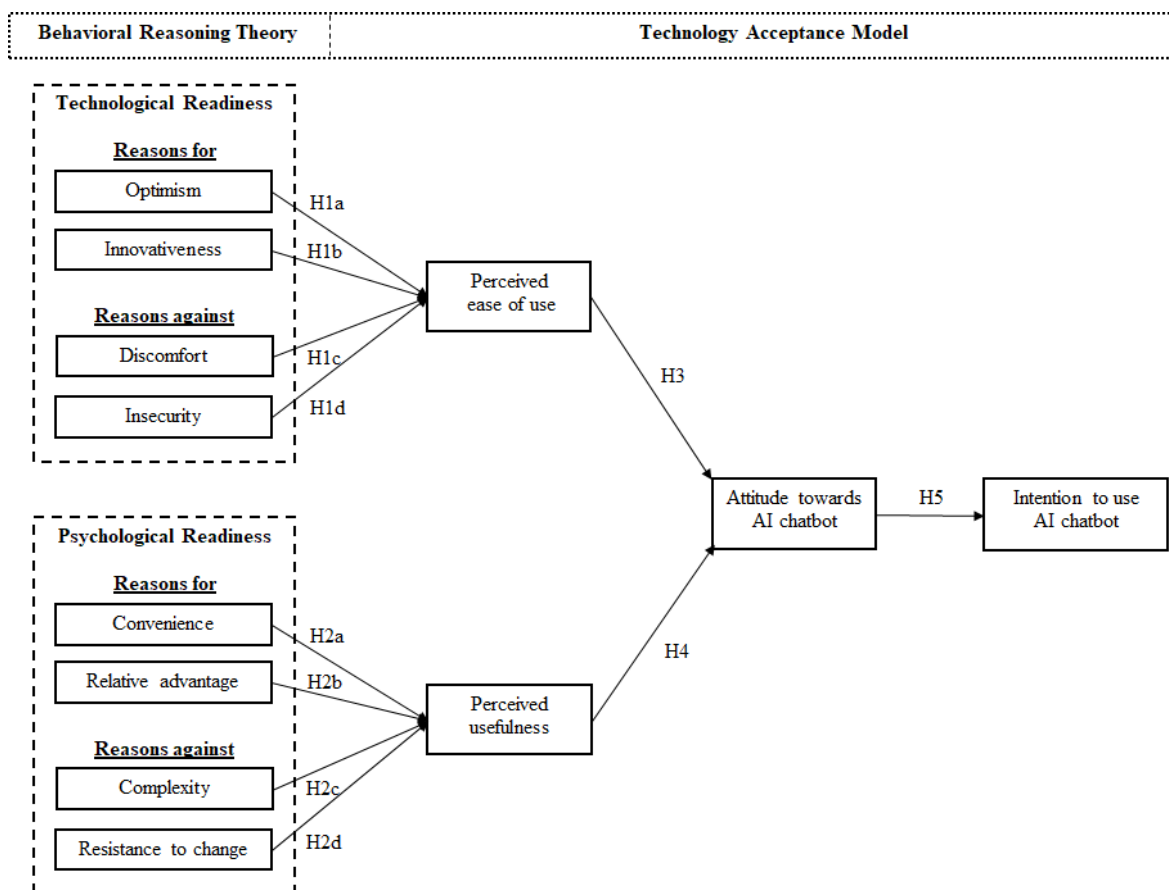


Figure 1. Proposed Conceptual Framework

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