

Factors affecting satisfaction with AI speakers: Focusing on perceived anthropomorphism and technical characteristics

Abstract

With technology development, expectations are rising for media devices to form relationships with users beyond just products that incorporate innovative technologies. AI speakers respond to users' questions with artificial intelligence algorithms mounted on devices, a key device expected to expand its role to create dialogue employing the users' voice. This paper examined the impact of satisfaction through variables reflecting users' tendency to perceive AI speakers as interaction objects. Theoretically, our research applied perceived anthropomorphism, flow theory, and TAM. The study's variables included external factors classified into anthropomorphic and technical characteristics. The anthropomorphic characteristics included the users' tendency to perceive AI speakers as interaction objects. The technical characteristics reflected the characteristics of AI speakers, products that incorporated innovative technologies. The anthropomorphic characteristics included five variables: 'rational and emotional support,' 'rationality,' 'denseness,' 'propriety,' 'cognitive openness,' and the technical characteristics had two variables: 'information quality' and 'system quality.' The mediating variable consisted of flow, perceived usefulness, perceived ease of use, and the dependent variable was satisfaction verifying the structural relationship between each variable. Data collection was from October 19 to October 22, 2020. A professional research company conducted an online survey and collected responses accounting for gender and age. We analyzed 779 responses and performed the structural equation using R for analysis. All anthropomorphism characteristics, except 'propriety,' had significant effects on the flow. Variables in anthropomorphism characteristics except 'denseness' significantly impacted perceived usefulness and perceived ease of use. In contrast, the technical characteristic variables significantly impacted perceived usefulness and perceived ease of use, respectively. As a result of the analysis of the influence relationship between the mediating variables, the flow and the perceived ease of use significantly impacted perceived usefulness. Regarding each mediating variable's effect on the dependent variable, the flow, perceived usefulness, and perceived ease of use significantly impacted satisfaction. This study has several implications. In academics, it contributes to expanding technology acceptance research by designating innovative technology products as interaction objects using anthropomorphic variables with TAM. In practice, with growing technology applications to AI speakers, this study gives important insights about relationship access beyond simple, innovative technology products. Specifically, since the impact relationship was verified by categorizing the anthropomorphic characteristics into five factors, management can refer to the significance of increasing the user's satisfaction by focusing on this study's results.

Keywords: AI speaker, perceived anthropomorphism, flow, TAM, SEM.