Toward an understanding of customer intention to co-create with anthropomorphic embodied conversational agents in customer-facing utilitarian-dominant services.

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With the advancements in technology, particularly the emergence of artificial intelligence (AI) and service robots with humanlike appearance, cognitive, affective, and behavioural capabilities, service firms have begun using them more than ever before, as a replacement or a complement to service employees. By serving as conversational agents (CAs), these AI-empowered technologies, such as physical service robots, disembodied CAs (DCAs), and embodied CAs (ECAs), have transformed service interfaces from primarily human-driven to predominantly technology-driven. Although still in its infancy, some service firms have begun offering customers the opportunity to be served by digital humans, a subcategory of ECAs designed to resemble humans in appearance and possess humanlike behavioural capabilities, enabling them to engage in autonomous, multimodal natural conversations using social content. As these digital humans are designed with a realistic humanlike (anthropomorphic) appearance and behavioural capabilities, we adopt the term 'anthropomorphic ECAs' (AECAs) to refer to digital humans in this study. Unlike the conventional technology where customers co-create value 'through' the technology, with AI, customers can co-create value 'with' technology in a joint sphere of interactions. However, why customers are interested in co-creating value with this technology during service encounters largely remains unanswered. Drawing on the computers as social actors paradigm, social response theory, and theories of anthropomorphism, this study aimed to understand the mechanism through which humanlike appearance and behavioural attributes affect customer co-creation intention in utilitarian-dominant customer-facing services. To achieve the study's aim, by adopting a video and scenario-based survey approach, this study collected data from Prolific among participants who have had at least some experience interacting with AI-powered chatbots. Two video stimuli, featuring a male and a female version of AECAs interacting with an individual in a banking home loan guidance scenario, were randomly distributed among the participants. The data collected from 431 respondents were analysed using SmartPLS 4.1.0.4, and the results of partial least squares-structural equation modeling (PLS-SEM) revealed that perceived humanlike appearance (PHA), perceived social interactivity (PSI), and perceived autonomy (PA) of the AECAs positively affected perceived agency (PAG), perceived emotional

intelligence (PEI), and perceived social presence (PSP), which in turn affected customer trust towards the AECA. Finally, this trust was found to have an effect on customer co-creation intention (CCI). Additionally, to understand how all the study variables are linked to CCI, a necessary conditions analysis (NCA) was performed. In terms of design considerations, based on the findings of PLS-SEM and NCA, PSI was found to be both a necessary and a sufficient condition for CCI, while PHA and PA were found to be necessary but insufficient conditions. Therefore, when designing AECAs, marketers need to focus on all three design considerations while prioritizing social interactivity. As both male and female versions of AECAs were used as stimuli, a multigroup analysis (MGA) was performed, and the findings of the MGA revealed that there were no significant differences in the strength of the paths between the two groups. However, it was evident that PHA had no effect on PAG in the female version, while PA had no influence on PEI in the male version. Moreover, PA was found to have no effect on social presence in the male version of AECA. Accordingly, by delving into the human-machine interaction aspects, this study provides valuable insights into the practice of using AECAs for service interactions with customers.

Keywords: Artificial intelligence, Anthropomorphism, Co-creation intention, Computers as social actors, Conversational agents

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