

TROJAN HORSE OR USEFUL HELPER? A RELATIONSHIP PERSPECTIVE ON ARTIFICIAL INTELLIGENCE ASSISTANTS WITH HUMANLIKE FEATURES

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Keywords: Artificial Intelligence Assistants; Anthropomorphism; Privacy of Personal Data; Social Exchange; Smart Personal Assistants; Empowerment; Consumer Well-being; Alexa.

Description: In this study, we investigate the beneficial and harmful effects of AIA (Artificial Intelligence Assistants) anthropomorphism by adopting a relationship perspective and propose three empowering interventions to attenuate the harmful effects of AIA anthropomorphism in relationships with consumers.

EXTENDED ABSTRACT

Research Question

Artificial intelligence assistants (AIAs) such as Alexa are prevalent in consumers' home. Due to their powerful artificial intelligence, consumers may perceive that AIAs have a mind of their own, that is, they are anthropomorphizing them. Past marketing research points to beneficial effects of AIA anthropomorphism for consumers and companies, while potential harmful effects have not been explored. To examine both beneficial and costly effects, the paper adopts a relationship perspective. Indeed, consumers spend large amounts of time with their AIA, potentially developing a relationship over time that builds on an exchange of benefits and (psychological) costs. In a field study and a field experiment with AIA users, we explore the effects of AIA anthropomorphism on users' human identity, their empowerment and concerns related to the privacy of their data and ultimately their well-being. In addition,

we investigate the role of relationship characteristics (e.g., relationship length and closeness) in the emerging of psychological costs that may be elicited by AIA anthropomorphism. In a field experiment we test three interventions to empower consumer in relation to their data.

Method and Data

In Study 1, we conducted an online consumer survey with AIA users who own a smart speaker in their homes. In a structural equation model: we linked AIA anthropomorphism to trust and identity threat, then these two variables to consumer privacy concerns, consumer satisfaction and consumer well-being (N=238). Study 2 investigated whether identity threat reduces consumer AI empowerment and tested three intervention strategies to enhance consumers' empowerment in their relationship with AIAs (N=601). For this purpose, we designed a randomized field experiment with measures before and after the interventions (a control and three intervention conditions). The control group completed a survey at both times. Intervention group (IG) 1 received information about two Alexa features related to data use and storage describing the features and potentially problematic aspects of them. IG 2 received the same information, and additionally, received a step-by-step illustration of how they can change their preferences related to these features. In addition to receiving the same information, IG 3 was explicitly asked to change their settings for these two features and keep using their device with the new settings for a week. After one week, all participants received an invitation for a second measurement.

Summary of Findings

Two empirical studies provide systematic and convergent evidence expressing the robust effects of AIA anthropomorphism-induced identity threat on consumer empowerment and subsequently on consumer well-being. In Study 1, we found that while a beneficial path emerges from the anthropomorphism of AIA, there is also a significant harmful path that emerges from AIAs' anthropomorphism. In this study we demonstrated this harmful effect

and its downstream effects on consumer well-being and privacy concerns, as well as the moderating effects of relationship closeness and length. Building on Study 1, in Study 2 we uncovered that the identity threat emerging from AIA anthropomorphism reduces consumer AI empowerment and tested three strategies to alleviate this harmful effect. The results of Study 2 confirmed the efficacy of our interventions that aimed to increase the knowledge of the consumers about ways to protect their privacy in their relationship with the AIAs.

Key Contributions

We contribute to the literature on human-AI relationships by investigating, to our knowledge for the first time, the interactions with AIAs through a relationship lens. While past research has used a stimulus-response approach, we suggest that a relationship perspective is necessary to investigate AIAs. Second, we contribute to past literature by providing a more balanced account of benefits and psychological costs of AI for consumers. While the benefits are well documented, a closer look at this phenomenon shows that there are psychological costs experienced by the consumers in the relationship over time. Our findings suggest that AI anthropomorphism is a promising strategy, but a haphazard use may undermine the potential of cutting-edge new AI technologies for both consumers and firms. Third, in an attempt to minimize the harmful effects of AIA anthropomorphism, managers should try to empower consumers regarding the protection of their personal data. We present three concrete and practical ways to empower users in relation to their data. Alleviating privacy concerns and improving well-being of the consumer could reinforce better consumer relationships and increase purchase through this unique purchase channel. Managing consumer privacy effectively can be a competitive advantage for the firms, rather than an undesirable extra cost.