Faculty Research & Publications

Beacom College of Computer and Cyber Sciences

2022

How Attractive is Artificial Intelligence? An Empirical Study of User Adoption of AI- Enabled Applications

Zhau, Gary

Omar El-Gayar

tu Cindy

Follow this and additional works at: https://scholar.dsu.edu/ccspapers

8-10-2022

How Attractive is Artificial Intelligence? An Empirical Study of User Adoption of AI Apps

Gary Yu Zhao
Dakota State University, gary.zhao@trojans.dsu.edu

Omar El-Gayar
Dakota State University, omar.el-gayar@dsu.edu

Cindy Zhiling Tu
Northwest Missouri State University, cindytu@nwmissouri.edu

How Attractive is Artificial Intelligence? An Empirical Study of User Adoption of AI Apps

TREO Talk Paper

Gary Yu Zhao
Dakota State University
Gary.Zhao@trojans.dsu.edu

Omar El-Gayar
Dakota State University
Omar.El-Gayar@dsu.edu

Cindy Zhiling Tu
Northwest Missouri State University
cindytu@nwmissouri.edu

Abstract

Prevailing AI technologies such as machine learning (ML), natural language processing (NLP), speech recognition, image recognition, etc., are being incorporated into a wide variety of existing and new applications. As an emerging technology, these AI applications (AI apps) have their own unique characteristics, such as machine learning capability, human-like interacting capability, knowledge representing and reasoning capability, and relative autonomy. Such characteristics of AI apps can help users complete their tasks effectively and efficiently. Further, AI apps combined with personal devices such as smartphones, tablets, laptops, and IoTs, provide users with utmost accessibility and pervasiveness. However, even though AI apps are often conveniently accessed and are free to use, people may not use them regularly. A recent survey showed that while 98% of iPhone users had used Siri, only 30% used it regularly and 70% rarely or only occasionally used it (Cowan et al., 2017). How attractive are AI apps to individual users? Why do people tend to or refuse to use AI apps? Research has been conducted on AI technology, its advantages, side effects, limitations, and its forthcoming impact on society. However, very little research has focused on individuals' adoption of AI apps and how AI apps' unique characteristics impact an individual's intention to use AI apps.

Accordingly, this study conducts an empirical study examining factors affecting an individual's intention to use AI apps with a proposed theoretical framework based on the Task-technology Fit (TTF) model. These factors include characteristics of task, characteristics of AI apps, the match between tasks and AI apps, users' self-efficacy in using AI apps, and users' perceived risks when using AI apps. An online survey is conducted on users who have installed AI apps on their computers or mobile devices to test the research model. SPSS and SmartPLS are employed to analyze the collected data and test the hypotheses.

This study addresses the AI acceptance issue from an individual perspective. Theoretically, this study focuses on how the unique characteristics of AI apps influence the task-technology fit and in turn influence the intention of use. So far, it has seldom been empirically studied in the literature and thus enriches the general TTF model and its relevance to emerging technology. Practically, the findings are also expected to help AI application developers better understand individual users' behavior regarding using their applications. Most notably, the findings can help researchers and developers evaluate the relative importance of AI app features, providing insights into the technology characteristics and identifying priorities for further research and development.

References

Cowan, B. R., Pantidi, N., Coyle, D., Morrissey, K., Clarke, P., Al-Shehri, S., Earley, D., & Bandeira, N. (2017). "What can i help you with?": Infrequent users' experiences of intelligent personal assistants. *Proceedings of the 19th International Conference on Human-Computer Interaction with Mobile Devices and Services*, 1–12. https://doi.org/10.1145/3098279.3098539