

Emotional artificial intelligence and its social and ethical implications in Japan: A mixed method study

Abstract

Emotional artificial intelligence (AI) is a narrow, weak form of AI systems that reads, classifies, and interacts with human emotions. This form of smart technology has started to become an integral layer of our digital and physical infrastructures. Thus, it will radically transform how we live, learn, and work in the years to come. This study is the first in the literature to bring the Technological Acceptance Model and the Moral Foundation Theory together under the analytical Three-pronged Approach (Contexts, Variables, and Statistical models) to study determinants of emotional artificial intelligence's acceptance in 10 different use cases in Japan. The statistical models in this study have successfully accounted for an average of 52.11% of the variation in the data (min = 38%; max = 67.8%). In the most successful case of statistical modeling, the case of Home Robots, our model accounts for 67.8% of the variation in the data, outperforming past models in the literature. Across all cases, we find women are more concerned about key ethical issues of emotional AI: algorithmic biases, data privacy, loss of autonomy, etc. Moreover, we find age is a negative correlate of attitude toward emotional AI applications, suggesting more public outreach efforts are needed to promote AI solutions for the elderly population—a major beneficiary of emotional AI technologies in the rapidly aging Japanese society. Interestingly and paradoxically, in many cases, accuracy concern, data management concern, and bias concern are found to be either non-significant or positively correlated with attitude toward emotional AI. These results suggest a willingness to adopt emotional AI applications despite its potential flaws and muddy issues around data management. This attitude relaxes the concern that many technologists

have raised over the hesitance of AI adoption due to its failure would be more psychologically jarring and salient. Yet, these results are worrying given the increasing number of immigrant workers and the lack of women in key decision-making positions in Japan. Based on the empirical findings, the final chapter provides seven lessons on algorithmic governance and AI ethics. Finally, the thesis calls for the development of theoretical frameworks that capture cross-cultural nuances in moral reasoning about effects of technologies on our daily lives for a better understanding of human-machines relationship in an era interactive AI.

Key words: emotional AI; technological acceptance model; Moral Foundation Theory; AI ethics