The Compensatory Interaction Between User Capabilities and Technology Capabilities in Influencing Task Performance: An Empirical Assessment in Telemedicine Consultations

Christina Serrano and Elena Karahanna

Abstract

Although technology-enabled task performance has been a long-standing outcome of interest in information systems research, existing studies primarily emphasize characteristics of the technology and task, rather than the user, in shaping performance outcomes. Given that both technology and people have inherent limitations, a worthwhile research pursuit is to examine how one might compensate for the limitations of the other in order to achieve successful task performance. We propose a new conceptualization of user abilities, task-specific user capabilities, and examine their compensatory effects with technology capabilities in shaping performance outcomes within the context of e-consultations (i.e., technology-mediated expert consultations). Specifically, we theorize the user capabilities of presentation (information giving) and elicitation (information seeking) as the task-specific user capabilities in this context. Leveraging the theory of compensatory adaptation, we propose that these user capabilities can overcome the limitations of technology and result in successful task performance outcomes. We employ mixed methods (qualitative field study, survey field study, and a lab experiment) to develop and test our model within the context of telemedicine consultations, a form of e-consultation. Convergent findings across the studies suggest that both user capabilities and technology capabilities are important facilitators of task performance and that these capabilities compensate for each other.

Keywords: Task–technology fit, system use outcomes, task performance, user capabilities, technology capabilities, telemedicine, telehealth, health information technology