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The Effect of Human Interference in Robotic Service Failures on Customer Comfort and Customer Aggression

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As the number of service robots (SRs) marketed throughout the world grows (IFR, 2021), some robots are perceived not as empowering but make people uneasy and threaten customers' power and human identity (Mende et al., 2019). Since robots are anticipated to potentially replace frontline service employees (Marinova et al., 2017), the dystopia even extended to humans losing their power to robots with extraordinary capabilities (Huang & Rust, 2018). Relatedly, individuals interfering with robots and their service functions in positive or negative ways are also likely to rise as service robots become widely deployed. Occurrences of robot failures are highly likely, especially when people around mess with them (Letheren et al., 2020). For example, two students were recently arrested on suspicion of vandalising a meal delivery SR (Smith, 2022).

In this research, we uniquely investigate how customers react to robotic failures, varying in the degree of physical human interference in these failures. Physical interference by humans to SRs and SR's failure is also closely related to how comfortable/anxious customer feels. Customer comfort in robotic services has just recently started to be investigated, despite its many crucial downstream consequences (Becker et al., 2022). Given the closely-knit relationship between physical human interference in robots and felt comfort (Čaić et al., 2022), we bring in empirical findings that one of the most desirable outcomes of service interactions as customer comfort.

Previous SR studies have used either qualitative methods (e.g., netnography, Gretzel & Murphy, 2019), theoretical/conceptual models (Belanche et al., 2020b; Huang & Rust, 2018; Wirtz et al., 2018), systematic literature reviews (Naneva et al., 2020), or have taken the managers' perspective (e.g., Xu et al., 2020). Answering the call for more methodologically varied research into service robots and their interaction with consumers (Granulo et al., 2021; Jörling et al., 2019; Mende et al., 2017), we ran two online between-subject experimental studies. We manipulated human interference in robotic service failure (without any human interference, with direct human interference, and with indirect human interference) using two distinct visual manipulation sets in each experiment (box lift failure and balanced standing failure). We measured customer comfort (Becker et al., 2022), customer aggression (Ben-Zur & Yagil, 2005), customer attitudes, and human interference manipulation checks. We consistently demonstrated that customers have more favorable attitudes towards a service robot if the failure was caused by indirect interference from a human instead of direct interference or no interference. This effect is mediated by customer comfort, which is, in turn, moderated by the degree of customer aggression. Marketers might emphasize that SR failed due to indirect interference from humans to alleviate the negative impact, decrease anxiety, and increase customer comfort.

Keywords
service robots, customer comfort, customer aggression

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