

## Looking at embarrassment in consumer-technology interactions

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Embarrassment is a social emotion in which a person experiences an adverse state of shame and chagrin as a result of unintentional mistakes or social situations (Miller, 1995; Modigliani, 1968). Although embarrassment can occur in private or public, by self-appraisal or others appraisal (Krishna et al., 2019), consumer research mostly considers public embarrassment which necessitates the observation and assessment of actual or imaginary audiences (e.g., Brumbaugh and Rosa, 2009; Kilian et al., 2018; Verbeke and Bagozzi, 2022; Wang et al., 2017). Moreover, marketing and consumer research concentrate on examining public embarrassment situations that occur due to salespeople or customers' inappropriate or offensive attitudes and behaviors (e.g., Brumbaugh and Rosa, 2009; Grace, 2007, 2009; Kilian et al., 2018; Verbeke and Bagozzi, 2002, 2003), due to being in uncomfortable environments such as luxurious stores (e.g., Lunardo and Mouangue, 2019), due to watching socially sensitive advertisements (e.g., Puntoni et al., 2015), or due to buying/consuming sensitive products such as condoms (e.g., Dahl et al., 2001), hearing aids (e.g., Iacobucci et al., 2003), self-help books (e.g., Kumar, 2008), and products featuring lucky charms (e.g., Wang et al., 2017).

However, concerning embarrassment due to consumer-technology interaction (CTI), we noticed a lack of information and investigations. In this context, in embarrassing service encounters, Pitardi et al. (2022) suggest that service robots (compared to frontline employees) mitigated consumer embarrassment because they do not have feelings and are incapable of making moral or social judgements. The authors of this study thus suggest that technology is a solution for embarrassing service encounters.

However, we believe that technology can also be a cause of embarrassment. In this vein, Liu and Mattila (2019), investigating Apple Pay as a payment method, found that embarrassment and coolness mediate the relationship between payment method and satisfaction. The study also considers the moderating role of encounter outcome (payment success vs. failure). Although this study investigates a CTI embarrassing situation, (1) it is done at the level of payment methods comparing Apple Pay to card payments, hence, more research should consider consumer embarrassment at the level of more advanced technologies such as artificial intelligence (AI) powered assistants (e.g., Alexa and Siri) which became a part of people daily life and include longer-time interactions, (2) the study does not look to many variables such as consumer personality, relationship closeness with the observer, gender of the observer, and experience of using such technologies. For example, Kilian et al. (2018) have considered some of these variables but at the level of service encounters that do not include technology presence.

Based on the above discussion, the current study aims to:

- Identify the main antecedents and behavioral outcomes of embarrassing situations that occur due to consumer interaction with technologies such as AI-powered virtual assistants.
- Identify the potential factors that can play a role in changing the relationship between CTI embarrassing situations and behavioral responses to this technology.
- Examine the moderating role of these potential factors.

**Figure 1.** Initial research model.

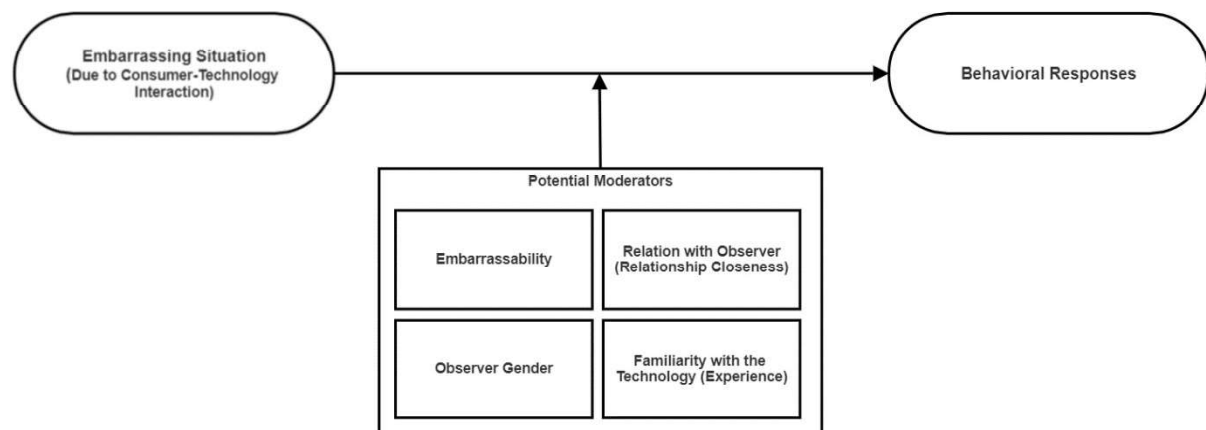


Figure 1 demonstrates our initial research model. To test this model, the following empirical studies (some, all, or more) will be conducted:

- **Pilot study.** Relying on the Critical Incident Technique (CIT) (Flanagan, 1954), we will ask several individuals to report embarrassing stories that occurred to them due to interaction with technologies such as AI-powered virtual assistants, AR, VR, or smart screens. Based on this study, we will be able to identify embarrassing situations to use in our experiments, moreover, we will be able to identify the main behavioral responses to consider as well (satisfaction, attitude, behavioral intention towards technology, etc.).
- **Empirical studies.** These studies will be online scenario-based or offline lab experiments where individuals will see or be subject to embarrassing situations due to CTI, based on that the relationship between embarrassing situations and behavioral responses will be investigated. In addition to that, we will test the moderating effect of factors such as embarrassability, relation with the observer, gender of the observer, and familiarity with technology (experience).

Based on the findings, theoretical contributions will be discussed, and managerial implications on how to design technologies that consider mitigating the negative effect of embarrassment will be provided. As applications for AI-powered and voice-based virtual assistants grow and become more diverse, it is important to deepen our understanding of human-AI assistants' interactions.

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