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The use of artificial intelligence in the hospitality industry: understanding customer service interactions with smart speakers

Type of manuscript: Extended abstract

Keywords: smart speakers; psychological ownership, customer responses

1. Introduction

Artificial intelligence machines exhibit human aspects such as human voice, human physical appearance, or a degree of human intelligence, allowing companies to use it in services such as the health care or hospitality ones (Huang and Rust, 2018). In this regard, the advent of artificial intelligence machines is changing customer frontline experiences in services such as the hospitality ones (e.g., Yoganathan et al., 2021). For example, customers can order food to a robot in a restaurant, ask for a drink to a voice assistant in a hotel, or converse with a chatbot in a company's website. Among all these initiatives, 78% of hotel companies consider that voice assistants devices would be in mass adoption for 2025 (Oracle, 2018). Specifically, voice assistants are "voice-controlled devices designed to provide personal assistance for users' daily activities" (Whang and Im, 2021, p.581), and the most known voice-assistant are the ones included in smart speakers such as Amazon Echo and Google Home. Smart speakers are devices provided with artificial intelligence which can perform several tasks such as reporting the weather forecast, switching off the light, or playing music (Romero *et al.*, 2021)g music (Romero *et al.*, 2021). These devices, employing artificial intelligence, are able to "converse" with people (Belanche *et al.*, 2020), arising perceptions of social interactions resulting in favorable customer responses (van Doorn *et al.*, 2017). Thus, this research aims to enhance the understanding of how and why customer-smart speaker interactions generates favorable customer responses in the hospitality industry. To do so, this research focuses on the influence of smart speakers in customers frontline experiences on the hospitality industry, specifically in hotels. Thus, we propose the following research questions:

RQ1: which positive aspects customers highlight in online reviews regarding their positive experiences using a smart speaker in hotels?

RQ2: which is the mechanism through which positive customer responses arise from the interaction with smart speakers in hotels?

RQ3: which are the actual behaviors from customers that interacts with smart speakers in hotels?

To answer these questions, this research conducts three studies that are detailed in the subsequent sections.

2. Methodology

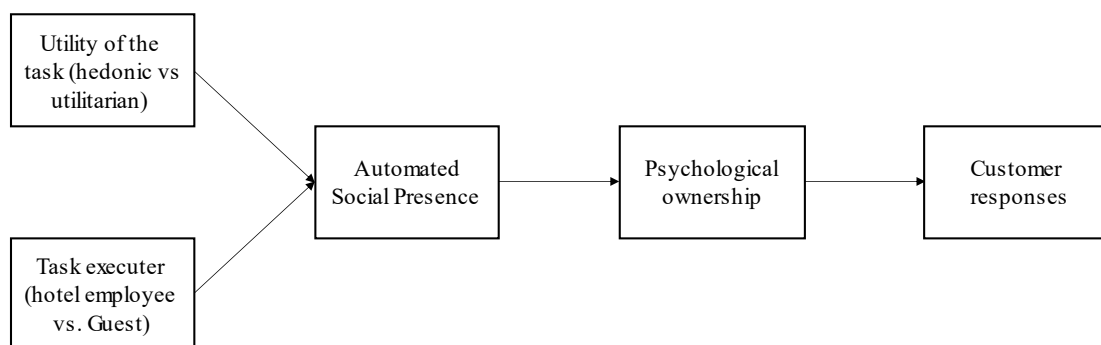
2.1 Study 1

This study aims to answer RQ1. To do so, focusing on hotels, we will download online reviews from TripAdvisor (English language) about hotels where interactions with smart speakers take place. Following, we will analyze whether such interactions are related to positive or negative feelings.

2.2 Study 2

This study aims to answer RQ2. To do so, using a 2 (hedonic vs. utilitarian) x 2 (guest task vs. employee task) experimental research design. We will present participants a situation where they enter an hotel room which has a smart speaker on it. Following, an audio will be reproduced presenting the smart speaker and explaining the tasks that can do for the customer. The audio will contain a hedonic/utilitarian list of tasks which, in the past, were attributed to be made by hotel customers/employees. We will present the same number of tasks in the four scenarios and randomly assigned the participants to each condition. Next, we will ask the participants to answer questions about social presence, psychological ownership, and customer responses such as word of mouth or revisiting intentions. Figure 1 shows study 2 research model. Additionally, we will include the Bagozzi et al. (2016) scale to measure the realism and credibility of our scenarios. The questionnaire will be implemented in Qualtrics and self-administrated by participants. The data will be analyzed by using Partial Least Squares (PLS). First, PLS is an appropriate method to develop theories in exploratory research, as in our case. Second, PLS can properly estimate type II reflective-formative second-order constructs, such as psychological ownership with the smart speaker in our research. Given that psychological ownership of the smart speaker is an endogenous construct in our research, we will estimate our model using a two-stage approach. (Hair *et al.*, 2017).

Figure 1. Proposed model.



Source: own elaboration.

2.3 Study 3

This study aims to answer RQ3. To do so, using an experimental research design, we will present participants a situation, employing virtual reality, where they are in a hotel room with a smart speaker on it. Following, while the participant is immersing in the virtual reality, the smart speaker, using the audios from study 2, will present itself and introduce the tasks that can do for the customer. Next, we will ask participants to answer questions regarding actual behaviors arising from the interaction with the smart speaker in the virtual reality. The questionnaire, as in study 2, will be implemented in Qualtrics and self-administrated by participants.

3. Expected contributions

This research aims to enhance the understanding of the influence of artificial intelligence, specifically smart speakers on customer responses in the hospitality industry. First, study 1 aims to identify from actual online reviews regarding customer's use of smart speakers in hotels, the elements that contribute to generate positive customer responses. Second, study 2 focuses on developing a framework to understand how and why customer "social" interactions with smart speakers in hotels generates such positive responses. Specifically, study 2 aims to

analyze how automated social presence influence customer psychological ownership regarding the smart speakers and the resultant customer responses. Additionally, this research aims to analyze if human substitution and task type are antecedents or not of social presence perceptions. Finally, study 3 aims to analyze actual customer behaviors regarding the use of smart speakers in hotels.

4. Originality of the paper

This research combines 3 studies using different methodologies (e.g., experiment design, online questionnaire, field study...) and measures (e.g., actual behaviors, customer perceptions...) to identify the influence of customer interactions with smart speakers on customers' responses in the hospitality industry. The aim is to explain how and why positive customer-smart speaker interactions in hotels generate positive customer responses.

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