HOW SOCIAL ROBOTS ENHANCE MY WELL-BEING IN THE HOSPITALITY INDUSTRY

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ABSTRACT

Technologies such as Artificial Intelligence (AI) or Robotics are emerging as a new way of improving services, readjusting and impacting all business industries and relationships among people (Loureiro et al., 2021; Makridakis, 2017; Mingotto et al., 2020). The hospitality industry is no exception to this (Mingotto et al., 2020) since a quick growth in the use of robots and AI in this industry has been seen, registering a turnover of 249 million U.S. dollars (International Federation of Robots, 2021). This demonstrates that these technologies have a huge potential to grow, being relevant to deeply study them.

Since very few of the existing studies highlight the robot-human interactions, further studies on the enhancement of human well-being through transhumanistic technologies, close relationship marketing capabilities, and the evolution of the engagement process between humans and AI-enabled machines are needed (Loureiro et al., 2021). To address the existing gaps and consider Susan Fournier's (1998) study on customer-brand relationships, the main goal of this study is to find support for this researcher by associating customer-brand relationship studies with a customer-robot relationship. It also aims to understand individuals' attitudes towards different types of social robots and the relationship process between social robots and humans, in the hospitality industry, and the influence of identification in the creation of attachment, connection, and commitment. The possible contributions of the customer-robot emotional relationship on customers' feelings of wellness were also studied.

To put forward our research and be able to withdraw some conclusions, quantitative research was conducted and four questionnaires concerning different stages of hospitality robots were carried out. The surveys were spread in Amazon Mechanical Turk, being their target audience USA residents, due to the fast-growing tendency of the use of robotics and AI seen in this country. Regarding the data collection, only 400 respondents (100 from each survey) were eligible, and the responses were uploaded to SPSS to calculate the sample profile and then to SmartPLS 3, to test the model.

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In regard to the surveys, each was associated with a teaser representing one hospitality social robot with a certain level of anthropomorphism. The descriptions were presented to the participants, starting from a less evolved robot that responds to a stimulus, named Robot 1, to a humanoid robot, such as Pepper named Robot 2, and then to a physically human-like robot, named Robot 3, ending up with what is expected to be the future, a yet non-existing, totally emotional robot, named as Robot 4.

In this study, we can claim that a deep human-social robot relationship can be established, with Customer-Robot Identification having a positive influence on the levels of the Customer-Robot Relationship (β=0.848, p<0.001). Customer-Robot Relationship was also crucial for the development of Customer Well-Being (β=0.942, p<0.001), a fact that was reinforced in the mediation analysis, as Customer-Robot Identification, alone, is not enough to promote customers' well-being (β=-0.014, p>0.05). The model explains 0.732 of the variance of the Customer-Robot Relationship and 0.868 of customer well-being. The Multi-Group Analysis shows that there aren't significant differences between the robots, so the level of anthropomorphism of these robots was indifferent.

This study gives relevant theoretical contributions to the research fields of Robotics and AI within the Marketing area, mostly regarding the customer-robot relationship created, and its possibility to promote well-being. As such, it is crucial that managers/ manufacturers of social robots acknowledge the importance of having robots that adapt and learn from experiences. Social robots are no longer just expected to be efficient; customers await them to be emotional and empathic as if they were human partners.

Therefore, those that deal with service management need to carefully develop strategies related to customer-robot relationships. There should be an effort to develop social robots with feeling intelligence as Huang and Rust (2021) suggested. In turn, customers' reactions will be essential to create marketing initiatives with more impact.

Keywords: Social robots, Hospitality industry, Customer-robot identification, Customer-robot relationship, Customer well-being

REFERENCES

Fournier, S. (1998). Consumers and Their Brands: Developing Relationship Theory in Consumer Research. *Journal of Consumer Research*, *24*(4). https://doi.org/10.1086/209515

Huang, M.-H., & Rust, R. T. (2021). Engaged to a Robot? The Role of AI in Service. *Journal of Service Research*, *24*(1). https://doi.org/10.1177/1094670520902266

International Federation of Robots. (2021). *World Robotics 2021*. Retrieved 31 August 2022, from https://ifr.org/news/service-robots-hit-double-digit-growth-worldwide/

Loureiro, S. M. C., Guerreiro, J., & Tussyadiah, I. (2021). Artificial intelligence in business: State of the art and future research agenda. *Journal of Business Research*, *129*. https://doi.org/10.1016/j.jbusres.2020.11.001

Makridakis, S. (2017). The forthcoming Artificial Intelligence (AI) revolution: Its impact on society and firms. *Futures*, *90*, 46–60. https://doi.org/10.1016/j.futures.2017.03.006

Mingotto, E., Montaguti, F., & Tamma, M. (2020). Challenges in re-designing operations and jobs to embody AI and robotics in services. Findings from a case in the hospitality industry. *Electronic Markets*. https://doi.org/10.1007/s12525-020-00439-y

* More references upon request