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EXPLORING SOCIAL INTERACTION OF AI ROBOT ON EMPLOYEE ENGAGEMENT

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ABSTRACT

Artificial intelligence (AI) can be regarded as an algorithm capable of reproducing human behaviors and solve tasks (Loureiro, Guerreiro, & Tussyadiah, 2021). For Kaplan and Haenlein (2019, p. 15) artificial intelligence is,

"a system's ability to correctly interpret external data, to learn from such data, and to use those learnings to achieve specific goals and tasks through flexible adaptation".

The intelligence of this algorithm is explained by the capability of learning and improvement by itself from experience, adding value to its initial knowledge. This way, it is possible to solve non-routine tasks. In other words, this algorithm is not only capable of reproducing repetitive behaviors (Ashfaq, 2020). AI technology gives machines the opportunity to act and think like humans. This technology can use natural language processing, accepting and answering voice commands, which is crucial for in-home voice assistants (Kumar, Kumar, & Ramachandran, 2020; Loureiro, Japutra Molinillo, & Bilro, 2021).

We can find in literature diverse studies that attempt to link AI with the concept of engagement (Loureiro, Guerreiro, & Tussyadiah, 2021; Romero et al., 2021), yet more studies are needed to explore engagement between human and AI in the workplace. Employee engagement (EE) aggregates five main dimensions: employee satisfaction, employee identification, employee commitment, employee loyalty and employee performance (Kumar & Pansari, 2016). Social interaction (SE) is expected to enhance employee engagement, but how it occurs? Following Chi, Denton and Gursoy, (2020), here we consider three components of SI: use self-efficacy (SIRUSE), anthropomorphism (SIAN) and effort expectancy (SIEEX). Robot use self-efficacy consists of the personal perception of the ability to use a robot (Turja, Rantanen & Oksanen, 2017). Employees with higher levels of robot use self-efficacy are more willing to interact with AI service robots (Latikka, Turja, & Oksanen,2019). Anthropomorphism is the level of similarity of the robot when compared with humans. Xu (2019) found that users, employees, and customers, are more willing to trust a robot with human-like voice instead of machinelike voice. Thus, anthropomorphism influences users' ability to trust the robot (Chi et al., 2021). Effort expectancy is the effort, perceived by users, needed to interact with a robot in a service transaction (Gursoy, Chi, Lu & Nunkoo, 2019). When users perceive that a significant psychological effort is required to learn how to interact with AI robots, they tend to have lower levels of trust in AI robots. For these reasons, the effort expectancy is one of the aspects that influence users to trust AI robots (Gursoy et al., 2019). Based on the

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above, we consider that: H1: SIRUSE influences EE; H2: SIAN influences EE; H3: SIEEX influences EE.

Data were collected through an online survey where participants answered the questions about employee engagement and social interaction, after reading a scenario with AI robot to introduce them to the context. We received and validated 203 responses well-balanced in terms of gender. Regarding data treatment, the results reveal that that 19.4 % of the variability of EE is explained by the explanatory variables – SIRUSE, SIAN and SIEEX. The three hypotheses were supported. The following multiple regression model was obtained:

$$EE = \beta_0 + \beta_1 \times SIRUSE + \beta_2 \times SIAN + \beta_3 \times SIEEX + \mathcal{E}$$

(t=2.710) (t=0.203) (t=0.230) (t=-0.269)

Analysing the standardized coefficients, it is possible to conclude that SIAN (β = 0,213) is the component with the highest impact on EE. In contrast, SIRUSE (β = 0,187) is the component with lowest impact. With a negative Standardized Coefficient, SIEEX (β = -0,255) has a negative impact on the dependent variable – EE. Although more data should be collected in the future to consolidate de findings, anthropomorphism is truly relevant to engage employees to work and cooperate with AI robots. Robot builders should be aware of such findings to facilitate the learning process of AI algorithms in order to become closer to humans and reduce the effort of human employees to interact with AI robots. This research has practical implications by shedding light on the important of anthropomorphism and effort efficacy on the interaction between human employee and AI robot employee.

Keywords: social interaction, anthropomorphism, self-efficacy, effort expectancy, employee engagement, AI robot

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