The Impact of Service Robots in Retail

Author: Laurens De Gauquier
Promotors: prof. Malaika Brengman, Ph.D and prof. Kim Willems, PhD

Abstract

Given the rise of e-commerce and online shopping, traditional brick-and-mortar stores are challenged to stay relevant in an ever-digitizing retail environment. The use of in-store technology has been praised to be one of the major drivers of shopping behavior. A particular in-store technology that is expected to have great potential for physical retailers is service robots. This dissertation aims to examine how traditional retailers can effectively integrate service robots into the retail store environment and drive shopper behavior. Moreover, a dyadic perspective is put forward, investigating both customers’ and frontline employees’ perceptions towards service robots in the retail frontline.

- Study one: The rise of service robots in retailing: Literature review on success factors and pitfalls.
- Study two: Spice up your store with Pepper: Experimental field study assessing the impact of a humanoid robot on shopper impressions and behavior.
- Study three: From stopping to shopping: An observational study comparing a humanoid service robot with a tablet service kiosk to attract and convert shoppers.
- Study four: In or out? A field observational study on the placement of entertaining robots in retailing.
- Study five: Together or alone: Should service robots and frontline employees cooperate at the POS?
- Study six: Expectations on working with robots in retail: A curse or a blessing?

Based on the results of the studies two to five conducted in an airport shopping context, service robots were found to be a more rich and more vivid medium than a tablet kiosk. As a result, service robots were able to deliver a better user experience and convert more passersby into shoppers. Next, we found that service robots positioned just outside the store were better in driving sales conversion versus service robots positioned inside store. Lastly, we found that consumers still value the ‘human touch’ in retail services, as a frontline employee outperformed a service robot in driving sales conversions. Study six revealed that frontline employees expect that working with robots would result in (i.a.) less job security and career opportunities, but robots could take over mentally and physically heavy work. The overall findings suggest that service robots are attention getters, which can outperform traditional self-service technologies in driving sales. The human touch is still an important factor in retail services (both for customers and employees), and optimization is needed regarding effective communication strategies performed by robots (i.a. optimization of content and context).

Although the results of this thesis offer new insights, they also raise questions for further research. Other studies could look into different types of service robots and other types of retail stores, as well as conduct longitudinal research to control for the novelty effect of service robots. Privacy concerns
and ethical questions regarding human-robot interaction are important aspects to investigate to drive a rapid adoption of service robots at the point of sales.