Consumers' emotional and cognitive responses when using and interacting with intelligent technologies: practical applications on autonomous cars and chatbots

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Background and research gap

The last decades have witnessed a dramatic technological development which has been reshaping society and daily life activities (Shariff, Bonnefon, and Rahwan 2017). For instance Artificial Intelligence (AI) agents, which are defined as both complex and simple algorithms used to make decisions, are one of the main innovations (Rahwan et al. 2019). Despite the skepticism surrounding AI, individuals have already started to use and interact with intelligent technologies, sometimes deliberately, sometimes not. For instance, autonomous cars and virtual assistants are some examples of how these technologies are already assisting humans who accept to delegate tasks and decisions to machines (Mende et al. 2019). Despite the potential benefits that AI could bring, there are still many doubts concerning how individuals are going to interact and use these technologies.

Research aim

By applying different research methodologies, we investigate consumers' responses to artificial intelligence across two intelligent products: semi and fully autonomous cars (paper 1 and paper 3) and intelligent conversational agents, in particular chatbots (paper 2 and paper 3). This double perspective allows better comprehending two important aspects of consumer behaviors related to AI: usage and interaction with intelligent technologies which use machine learning techniques and natural language processing.

If on the one hand driverless cars permit to investigate consumers responses when delegating control to an autonomous technology; on the other hand, conversational agents allow to comprehend how individuals verbally interact with machines when the technology is able to mimic human-like conversations.

Research questions

- How do consumers cognitively and emotionally respond when delelgating control to semi and fully autonomous cars?
- How do they cognitively and emotionally respond when verbally interacting with conversational agents?

References

- Mende, M., Scott, M. L., van Doorn, J., Grewal, D., & Shanks, I. (2019). Service robots rising: How humanoid robots influence service experiences and elicit compensatory consumer responses. *Journal of Marketing Research*, *56*(4), 535-556.
- Shariff, A., Bonnefon, J. F., & Rahwan, I. (2017). Psychological roadblocks to the adoption of self-driving vehicles. *Nature Human Behaviour*, *1*(10), 694-696
- Rahwan, I., Cebrian, M., Obradovich, N., Bongard, J., Bonnefon, J. F., Breazeal, C., & Wellman, M. (2019). Machine behaviour. *Nature*, *568*(7753), 477-486.

Structure of the thesis:

By following a paper-based structure,
the thesis is divided into three main articles:

Paper	Title	Methodology
Paper 1	*From semi to fully autonomous cars: investigating customers 'emotional and cognitive responses as automation increases.*	
➢ Study 1	Expectation towards fully autonomous cars.	Online survey
➢ Study 2	Consumers' emotional and cognitive responses when driving a level 2 semi autonomous car.	Field study Simulator study
➢ Study 3	When automation increases: delegating control to a fully autonomous car.	
Paper 2	*Rage against the machine: experimental insights into customers' emotional responses, attributions of responsibility and coping strategies in AI-based service failure.*	
➢ Study 1	Comparing human–human versus human–chatbot service failure interactions.	Online experiment Online experiment
➢ Study 2	Human–chatbot service failure interactions, anthropomorphic visual cues and coping strategies.	Online experiment
➢ Study 3	Human–chatbot service failure interactions, anthropomorphic visual cues and attributions of responsibility.	
Paper 3	*Consumers' perspectives on AI ethics and trust*	
➢ Study 1	Investigating consumers' ethical concerns towards autonomous cars.	Mixed methods: topic modeling and SEM
➢ Study 2	Investigating consumers' ethical concerns towards chatbots.	

Affiliations

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