

Social response to mobility innovations and policies (CAVs, EVs, TCS, Ridesharing app etc.).

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> Andromachi Mourtzouchou 17 May 2024

Joint Research Centre



Administrative information

- Beginning of the PhD program in Q2 2021
- Estimated defence in Q 024
- Q1-Q2 2025
- Focus of my study:
 - how different user groups will respond to transport innovations like CAVs, automated last mile delivery droids, EVs etc.
 - how Tradable Credit Schemes could improve sustainable mobility.



Activities







Connected and Automated Vehicles

- Exploration of expectations and concerns through Focus group discussions (qualitative method):
 - experts VS non-experts,
 - women,
 - teenagers



Analysis of the results

- MAXQDA software
- a combination of deductive and inductive category construction.



256 ##Fabian##

And then also, there is the tram in Luxembourg, which goes through Kirchberg and the centre of the city nowadays; and, while it is very convenient – you can just step in, step out, it's the least worrisome thing as practically – but it is a bit, it's quite uncomfortable. Aside from just the seats not being very nice, a lot of the time it's very overcrowded. I've had people try to pickpocket me in there. I've had people harass me and yelling at me, being drunk or whatever in there. In general, public transport is not always all that nice and, yes, that's just been what I've gathered across quite some time – because it's, oneoff events can happen, but on a large scale, it is sometimes very uncomfortable to be in there, especially later at night or whatever, on a Friday or something. It's not always, I don't always feel safe in there.

258 ##Moderator##

259 Yes. Okay, thank you, ##Fabian##.

260 ##Peter##





Trade-In Credits

Tradable Credit Schemes for Mobility

- LR on TCSs focused on the acceptability
- Explore acceptability when introduced at the JRC





Electric vehicles driving campaigns

- Explore primary challenges encountered by drivers when driving ICE-PHEV-BEV.
- Insights to develop effective strategies and interventions for EV adoption.
- Focus group discussions.



Electric vehicles driving campaigns



- Internal combustion engine (ICE),
- Plug-in hybrid electric (PHEV),
- Battery electric (BEV) vehicle

— 3 weeks each





Ride-sharing application

- Redesign the application's value proposition following a user-centered approach
- Design Thinking methodology applied

Test

Define

Ideate

Prototype

- a) In depth qualitative interviews with storyboards
- b) A quantitative ride-sharing survey
- c) Qualitative survey with carpoolers

Implem

European

Commission

Ride-sharing application (ongoing)

To achieve a profiling of users:

- Set of transportation behaviour questions
- Set of demographic questions

Of those willing to download the app

To be used:

• Ordered probit model



Last-mile delivery and drones



•2 pilot co-creation activities at the JRC Ispra site

- Office material
- Lunch delivery

Ongoing



•Acceptability of drones, preferences on uses, preferences compared with last-mile delivery droids

•Energy consumption



European Commission

Resulted publications

• Duboz, A., Mourtzouchou, A., Grosso, M., Kolarova, V., Cordera, R., Nägele, S., ... & Ciuffo, B. (2022). Exploring the acceptance of connected and automated vehicles: focus group discussions with experts and non-experts in transport. *Transportation research part F: traffic psychology and behaviour, 89*, 200-221.

• Mourtzouchou, A., Raileanu, I. C., Grosso, M., Duboz, L., Cordera, R., Alonso Raposo, M., ... & Ciuffo, B. (2022). Teenagers and Automated Vehicles: Are They Ready to Use Them?. Applied Sciences, 12(23), 12255.

• Giovanni Albano, Konstantinos Mattas, Andromachi Mourtzouchou, Ravi Seshadri, Bat-hen Nahmias-Biran, Carlos Lima Azevedo, Biagio Ciuffo, Tradable Credit Scheme for Mobility Management: State of the Art and Comparison of Theoretical and Experimental Research (in peer review process)

• Andromachi Mourtzouchou, Alessandro Tansini, Jaime Suarez, Monica Grosso, Andrés Laverde Marín, Ada Garus, Rubén Cordera, Georgios Fontaras, Biagio Ciuffo, Accelerating Electric Vehicle Adoption: Insights from a Qualitative Study Following a Real-World Driving Campaign (in peer review process)

Other publications

• Garus, A., Christidis, P., Mourtzouchou, A., Duboz, L., & Ciuffo, B. (2024). Unravelling the Last-Mile Conundrum: A Comparative Study of Autonomous Delivery Robots, Delivery Bicycles, and Light Commercial Vehicles in 14 Varied European Landscapes. *Sustainable Cities and Society*, 105490.

• Garus, A., Alonso Oreña, B., Alonso Raposo, M., Mourtzouchou, A., Cordera Piñera, R., Lima Azevedo, C., ... & Ciuffo, B. (2024). Estimation of Environmental Rebound Effect Induced by Shared Automated Passenger Transport Service in a Mid-Size European City via Microsimulation. Transportation Research Record, 03611981231223752.

• Garus, A., Raposo, M. A., Mourtzouchou, A., & Ciuffo, B. (2023). Living lab conceptual framework: co-creation and impact assessment of an automated last-mile delivery service. Transportation Research Procedia, 72, 3601-3608.

• Grosso, M., Mourtzouchou, A., Duboz, A., Raileanu, I. C., Raposo, M. A., Garus, A., ... & Cordera, R. (2023). Engaging with different transport user groups for a smooth: Transition to connected and automated mobility. Transportation Research Procedia, 72, 3688-3695.

• Grosso, M., Duboz, L., Raileanu, I. C., Nägele, S., Kolarova, V., Cordera, R., ... & Ciuffo, B. (2022). Women's opinions, attitudes and concerns about automated vehicles-If and how automated vehicles could fit into women mobility needs.

• VAN, W. A., ALONSO, R. M., ASCHBERGER, K., BRAUN, R., CIUFFO, B., DUBOZ, A., ... & STRAKBAUM, J. Welcome to the toolkit for Responsible Research for Policymaking: R you Ready?..

• Marques Dos Santos, F., Duboz, A., Grosso, M., Alonso Raposo, M., Krause, J., Mourtzouchou, A., Balahur-Dobrescu, A. and Ciuffo, B. (2022). An acceptance divergence? Media, citizens and policy perspectives on autonomous cars in the European Union. Transportation Research Part A: Policy and Practice, 158

• Garus, A., Alonso, B., Raposo, M. A., Grosso, M., Krause, J., Mourtzouchou, A., & Ciuffo, B. (2022). Last-mile delivery by automated droids. Sustainability assessment on a real-world case study. Sustainable Cities and Society, 79, 103728.

• Alonso Raposo, M., Mourtzouchou, A., Garus, A., Brinkhoff-Button, N., Kert, K. and Ciuffo, B., JRC Future Mobility Solutions Living Lab (FMS-Lab): conceptual framework, state of play and way forward, EUR 30906 EN, Publications Office of the European Union, Luxembourg, 2021, ISBN 978-92-76-44741-2



Skills developed (1/4)

CB11 - Understanding and applying research methods:

• LR on Tradable Credit Schemes, Evs, AVs, drones

CB12 - Conceiving, designing, and implementing research:

• Coding procedures for FG discussions and ethical assessment of projects.

CB13 - Contributing to knowledge expansion:

- Implementing a Tradable Credit Scheme at the Joint Research Centre.
- **CB14 Critical analysis and synthesis of ideas:**
 - LR, annual PhD evaluations (SWOT profile), and feedback from colleagues and supervisors.



Skills developed (2/4)

CB15 - Effective communication with academic and societal communities:

• Engaging with experts, women, teenagers, and Living Labs entities-companies.

CB16 - Promoting progress in society based on knowledge:

• Engagement with students and citizen activities, fostering creative thinking about future transport systems.

CA01 - Coping with limited information:

• Systematic LR and consultations with supervisors and teachers, addressing gaps in knowledge about teenagers.



Skills developed (3/4)

CA02 - Identifying key questions to solve complex problems:

• Scripting FG discussions to address relevant topics.

CA03 - Creating and undertaking innovative projects:

• Facilitated by participation in the Future Mobility Solutions Living Lab.

CA04 - Working in diverse teams and contexts:

• Collaboration with colleagues from diverse backgrounds, nationalities (JRC) and international organizations.



Skills developed (4/4)

CA05 - Integrating knowledge and making judgments with limited information:

• Research on teenagers, where literature is limited due to access difficulties and ethical concerns.

CA06 - Intellectual criticism and defense of solutions:

• Peer review process of journals and conferences, incorporating feedback to refine research solutions.



Thank you



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