Impact on users' experience: Findings from the eC4D user surveys

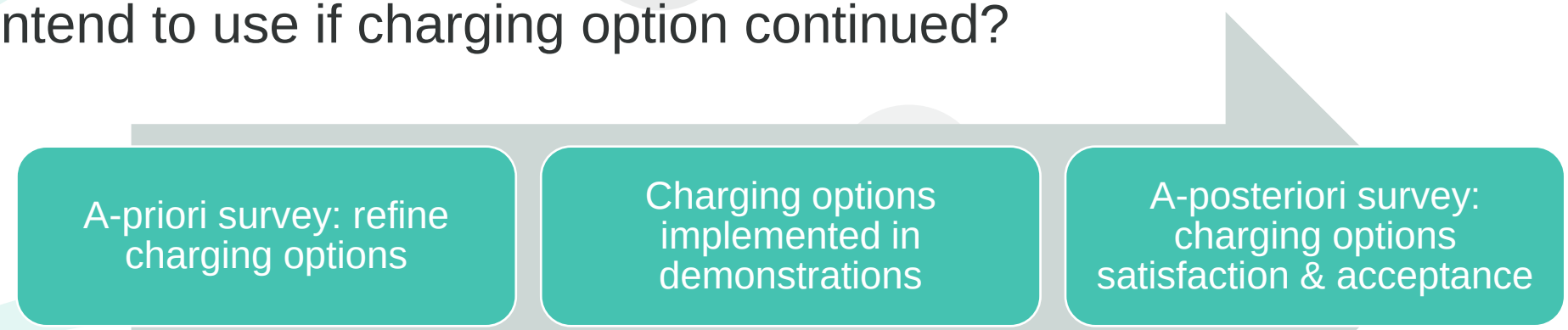
Lieselot Vanhaverbeke , Gabriela Barrera
VUB MOBI

eCharge4Drivers Final Event
Barcelona, 7 November 2024

Why assess user experience?

Aim: convenient charging options for users to remove barriers and increase market uptake

- eC4D assessment, 2 survey periods:
  - A-priori: Which charging option would users like to have/intend to use in the future if available?
  - A-posteriori: Are they satisfied with the charging options tested? What do they intend to use if charging option continued?

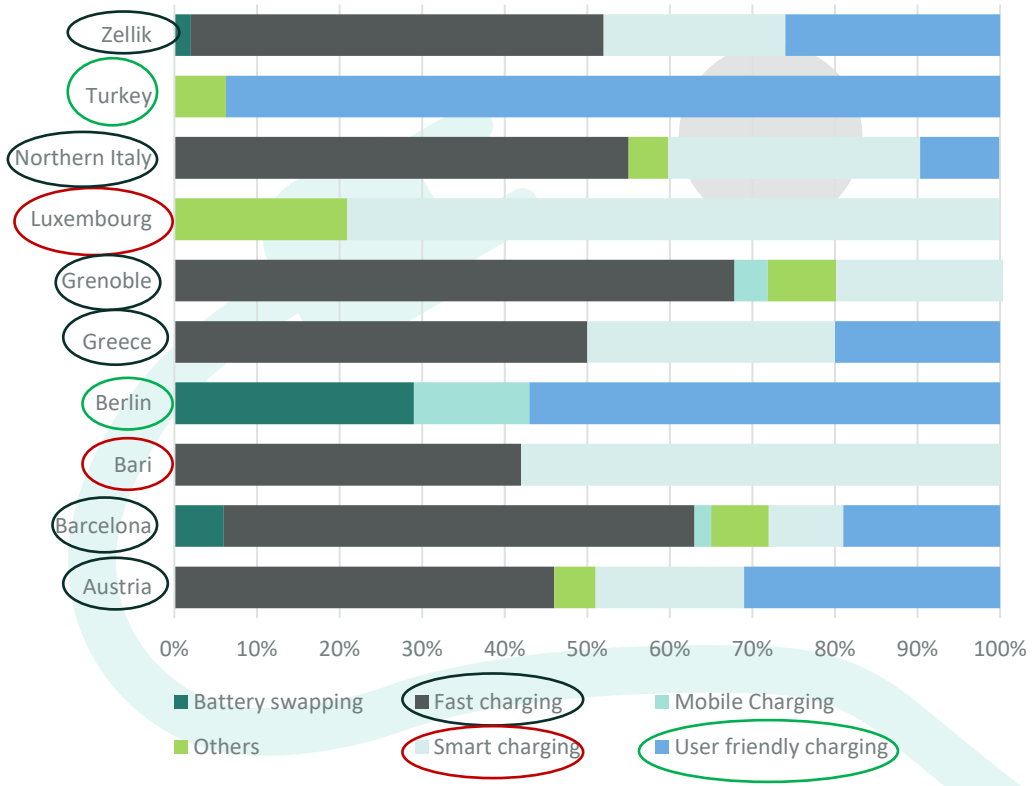


A-priori users' concerns survey

- Survey 23/11/2020-8/03/2021 in 10 pilot areas
- EV passenger cars, light electric vehicles, and non-EV drivers
- Charging options listed per site
  - Smart charging
  - Battery swapping
  - Mobile charging services
  - User-friendly charging stations: advanced and user-friendly interfaces (supporting Plug & Charge)
  - Fast charging options
- 4,703 participants, 2,966 eligible
- Results per pilot and comparison between sites

EV drivers: which charging option in the future? (solutions listed per site)

- Preference



- Intention to use 0-7 score,
  - 6 & 7 agree/strongly agree
- Limited variation across demo areas and solutions

	Austria	Barcelona	Berlin	Greece	Grenoble	Luxembourg	Northern Italy	Zellik
Smart charging	▲ 6,1	– 5,9	▼ 5,6	▲ 6	– 5,7	▼ 5,5	▲ 6	▲ 6

	Austria	Barcelona	Greece	Grenoble	Northern Italy	Zellik
Fast charging	▲ 6,2	▲ 6,1	▼ 5,8	▼ 5,7	▲ 6,2	▲ 6,2

	Barcelona	Greece	Northern Italy	Turkey	Zellik
User friendly charging	▲ 6,1	▲ 6	▼ 5,7	▲ 6,1	▼ 5,6

	Barcelona	Berlin	Zellik
Battery swapping	5,8	5,7	5,7

	Barcelona	Berlin	Grenoble
Mobile Charging	– 5,2	▲ 6,5	▼ 3,1

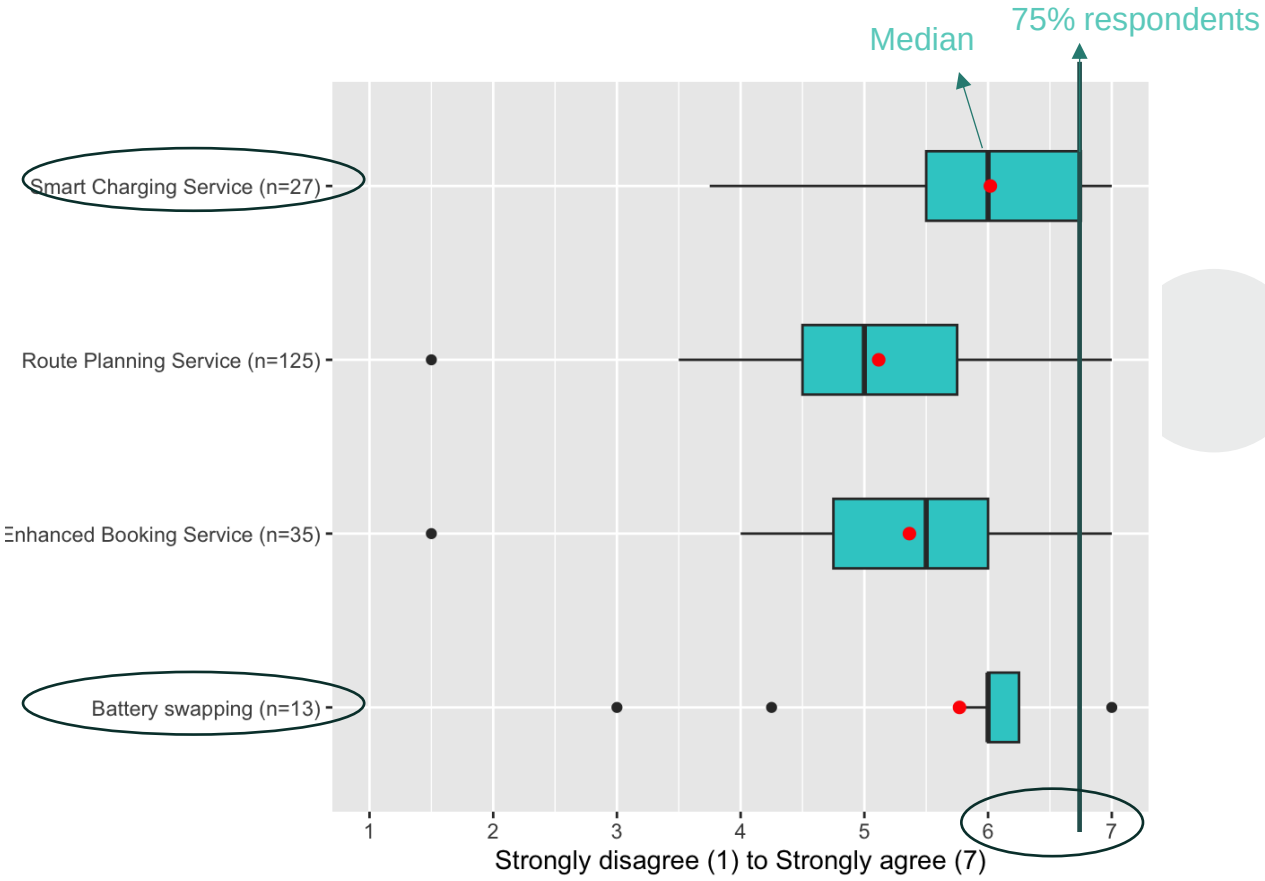
A-posteriori survey: impact on user experience and acceptance

- Survey 09/02/2024-30/06/2024 in 10 pilot areas
- Only EV drivers, no difference type of users, vehicles
- 1,479 participants but issues with filled-in surveys, two datasets:
  - Satisfaction charging options: 196 eligible
  - Acceptance charging options: 210 eligible
- **Low numbers for some solutions: careful with interpretation!**

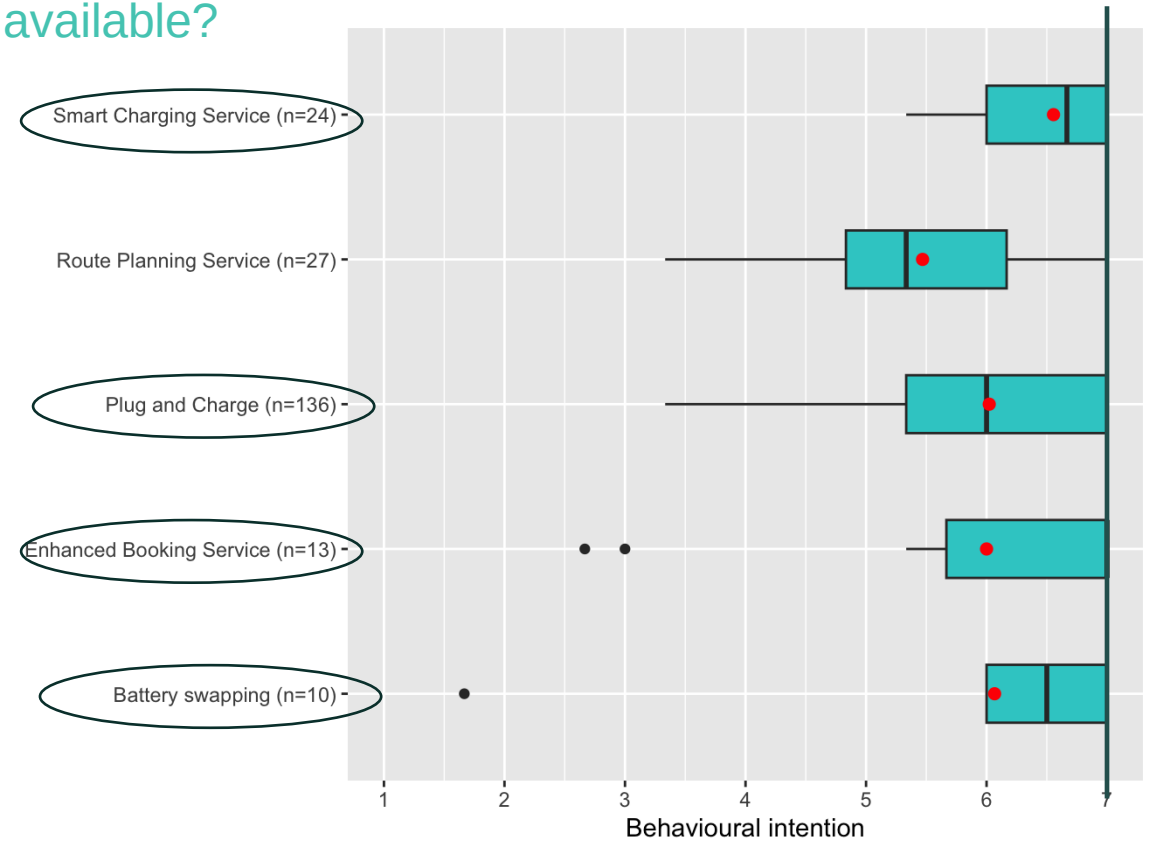
- Aggregated results per charging option tested
  - Smart charging
  - Battery swapping
  - Route planning
  - Enhanced booking
  - Battery swapping
  - Plug & Charge (acceptance only)

EV drivers: satisfied with charging options, intention to use?

Satisfied with the information, support and in general tested solutions?

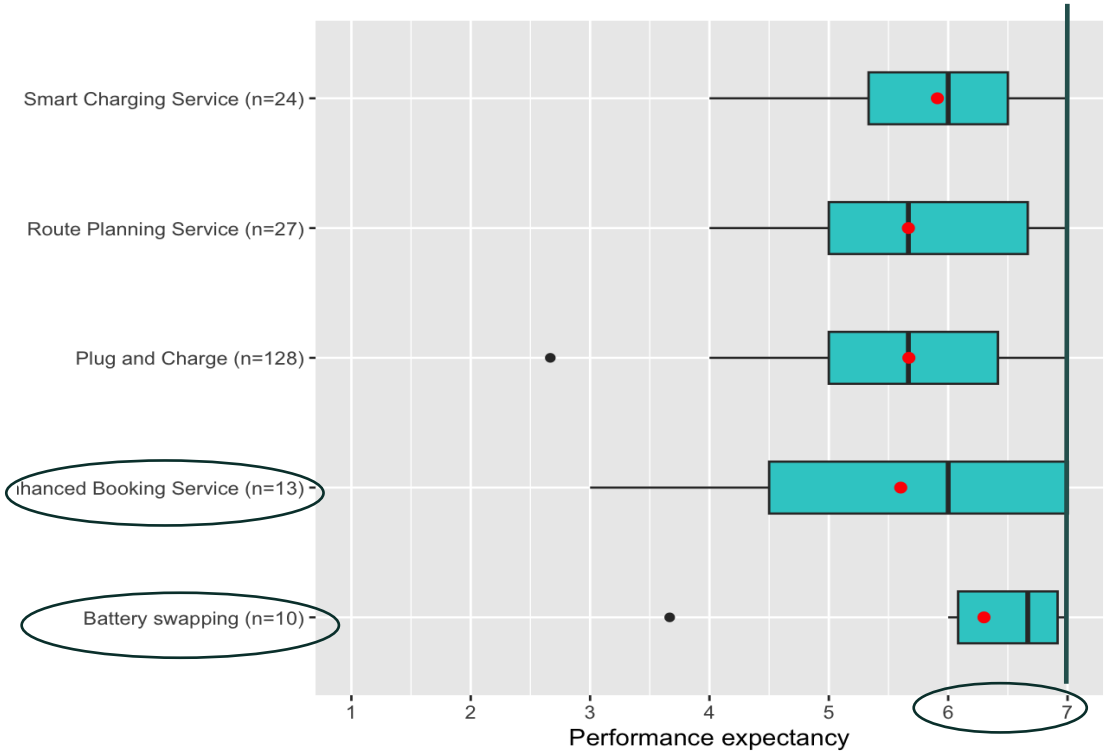


Acceptance: would you choose the charging option in the future? Do you plan to use it if permanently available?

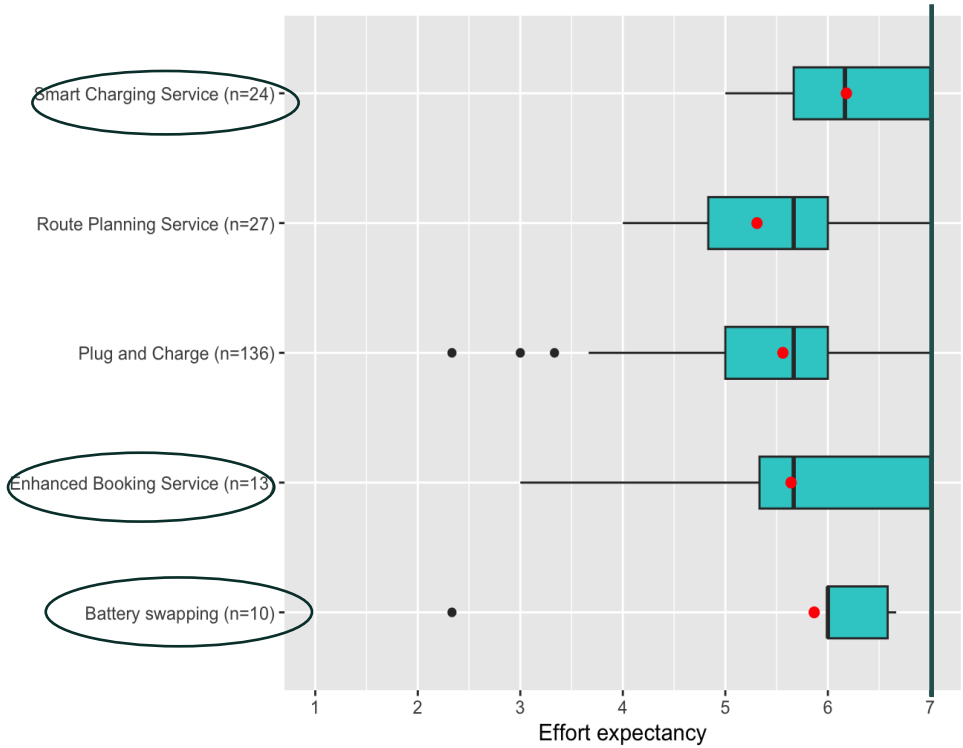


EV drivers: satisfied with charging options, intention to use?

Acceptance: is the charging solution useful, will help to reach preferred state of charge?

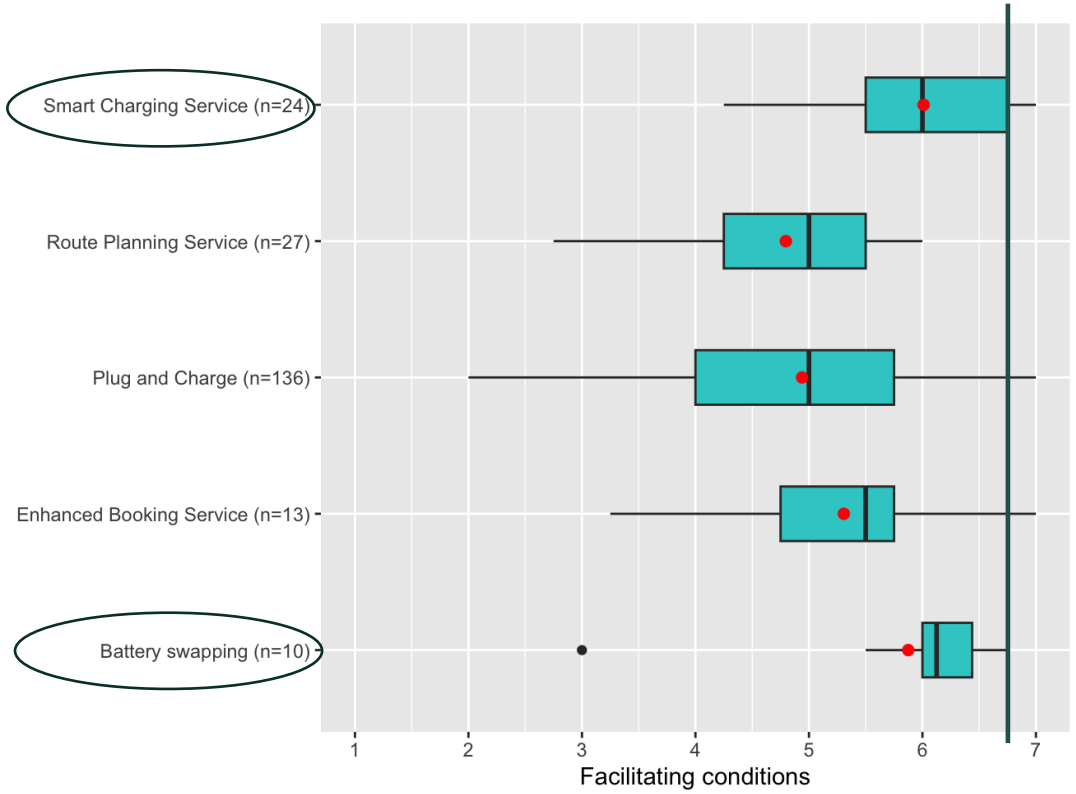


Acceptance: is the charging solution understandable, easy to use and easy to learn?

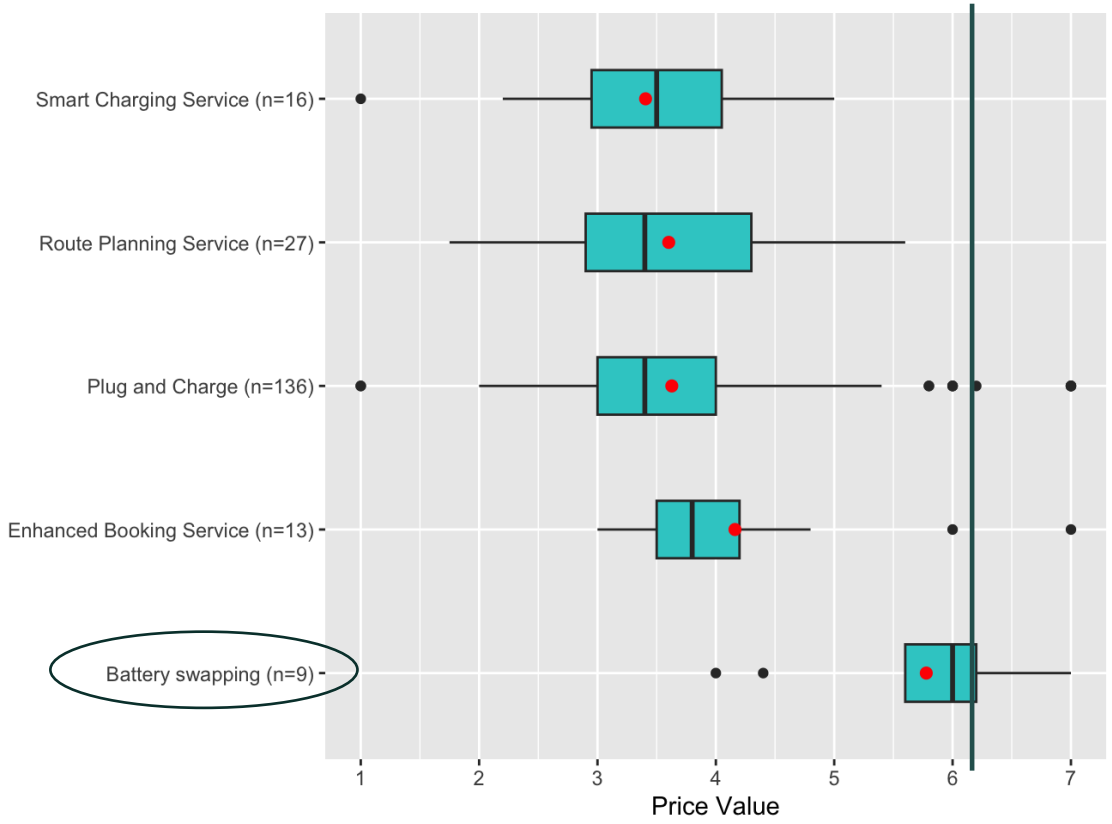


EV drivers: satisfied with charging options, intention to use?

Acceptance: do you have the necessary resources/knowledge to use charging solution?



Acceptance: is the charging solution useful, will help to reach preferred state of charge quickly?



Main takeaways

A priori:

- Preference: Fast, user-friendly & smart charging
- Intend to use all charging options in the future

Main takeaways

A posteriori:

- **Satisfaction with all**
  - Outstanding: Smart charging, battery swapping
- **Intention to use all if made available**
- Performance/effort
  - Outstanding: Smart charging, enhanced booking, battery swapping

A posteriori:

- Facilitating conditions
  - Outstanding: Smart charging, battery swapping
- Price:
  - Outstanding: Battery swapping

Engage with EV users to understand different profiles, what worked and what could be fined tunned

eCHARGE 4DRIVERS

x.com/Charge4E

eCharge4Drivers

Lieselot.vanhaverbeke@vub.be
Gabriela.barrera@vub.be

www.echarge4drivers.eu

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 875131 (Innovation Action)