

## The place of the bicycle in micromobility: a mobility challenge

Mathieu Rabaud, Cyprien Richer

#### ▶ To cite this version:

Mathieu Rabaud, Cyprien Richer. The place of the bicycle in micromobility: a mobility challenge. Velo-city 2024, Jun 2024, Ghent, Belgium. halshs-04645165

#### HAL Id: halshs-04645165 https://shs.hal.science/halshs-04645165

Submitted on 11 Jul 2024

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



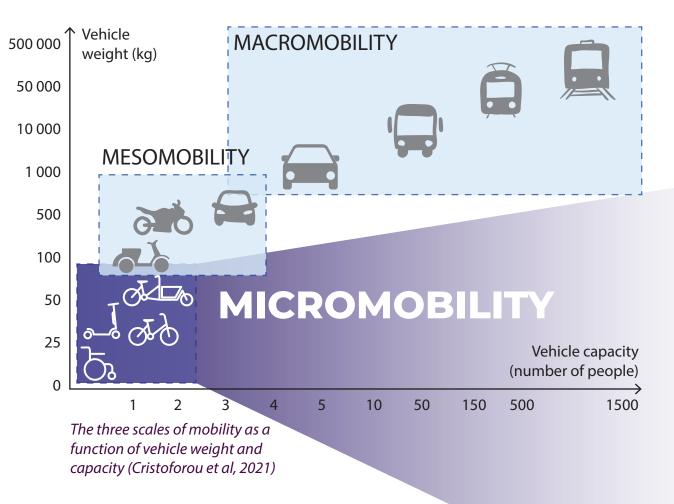
# Place of the bicycle in micromobility a mobility challenge!

**Mathieu Rabaud & Cyprien Richer** 





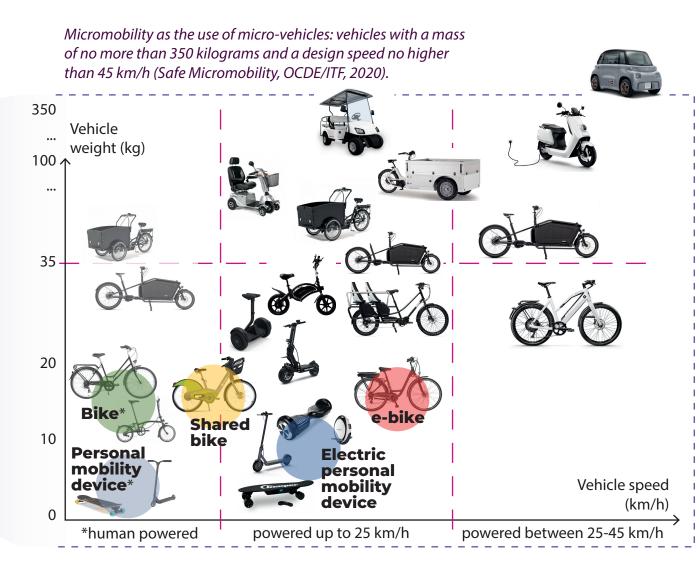
## Question



Cities are becoming more and more multimodal as the diversity of transport modes increases (Amar, 2010). In particular, the field of **micromobility** has been disrupting urban travel. Micromobility involves the ability to move using minimalist means, typically referring to small, lightweight vehicles (Ki Eom et al. 2023), such as bicycles, e-bikes, and e-scooters (Boglietti et al., 2021), possibly shared. This diversity of efficient modes for short-distance mobility or first-to-last-mile service has the potential to overcome the shortcomings of the existing automobile-dependent transportation system.

Are these micro-vehicles modes competing against each other or are they **complementary**?

What can we say about the issues of intermodality? In particular, it is a question of understanding whether the development of cycling is impacted by the growth of e-scooters and other light transport vehicles.



#### **Data**

**Household Travel Surveys map** 

### Results

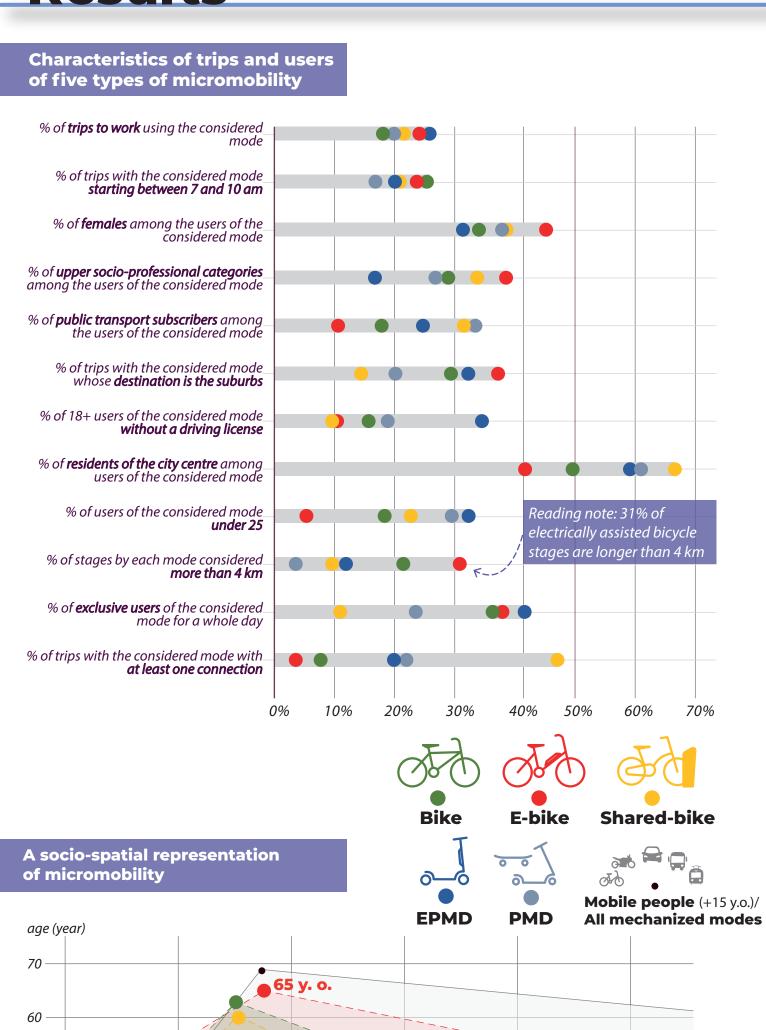
50

20

15

0,35 km

18 y. o.



included in the unified database Valenciennes 2019 Caen 2022 Agglo. Thionville 2019 Le Havre 2018 Lannion 2022 Brest 2018 **Evreux** 2018 Angers 2022 Besançon 2018 **Tours 2019** Vendée 2020 Nevers 2023 Poitiers 2018 St-Étienne 2021 Les Sables d'Olonne 202 Angoulême 2023 Chambéry 2022 Grenoble 2020 Bordeaux 202 Ferrand 2023 Rodez 2020 Gap 2018 Toulouse 2023 Marseille 2020 Toulon 2022 Guadeloupe 2021

The data used is from the **Unified Household Travel Survey Database**, which is a combination of different household travel surveys from cities in France. By using 25 surveys carried out since 2018 all over France, and focusing on people who are more than 14 years old to avoid toys, we identified more than 12 000 trips by bike, 1 300 by e-bikes; 600 trips by e-scooters and 200 by human powered micromobility devices (except bike).

15th and 85th percentile by mode

on the criteria of user age and

distance traveled per stage

85th centile

85th centile

median

15th centile

Distance (km)

15th centile

median

## Conclusion

The human-powered bicycle occupies a central place in micromobility, with generally an average position in relation to the different characteristics we analyzed. EPMDs and PMDs cover mobility different from bikes: users are younger and from lower social classes, distances are shorter. Shared bicycles have a profile closer to human-powered bicycles in terms of age criteria but they are used over shorter distances. Competition with personal bicycles is very relative because shared bicycles are often used in an intermodal combination and essentially in an urban context. Electric bikes concern older people and those from higher social categories. They allow longer trips outside the city center. Micromobility is thus distinguished from other mobilities by a younger audience and shorter distances. The challenge is to increase the possibilities of **intermodality** for EPDM in particular and to increase distances through adapted infrastructure. Finally, the performance of micromobility requires more inclusive practices, particularly towards older people who are still poorly represented among current users.