



Partner Institutions



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Projects

Multimodal Transit for Accessibility and Sustainability (MuTAS), ANR JCJC, 2022-26

Data-Driven Models of Multi-Modal Transit" (2D3MT), BayFrance, 2022-23

AI for more accessible cities (AI-4-MAC), Hi!Paris, 2023-24

Ride-sharing for Transit, Intercarnot, 2021

Publications

Badeanlou, Amirhesam, Araldo, Andrea, and M. Diana. "Assessing transportation accessibility equity via open data". In: hEART 2022.

Calabrò, G., Araldo, A., S. Oh, R. Seshadri, G. Inturri, and M. Ben-Akiva. "Integrating Fixed and Demand Responsive Transportation for Flexible Transit Network Design". In: TRB 2021.

Badeanlou, Amirhesam, Araldo, Andrea, M. Diana, and V. Gauthier. "Scoring transit lines based on accessibility distribution equity : An open-data based approach". In: TRB 2023

Y. Chaabouni, A. Araldo, A. D. Palma, and S. Arib. "PoolLines: Modeling Carpooling as Ephemeral Lines in GTFS for effective integration with Public Transit". In: ACM SIGSPATIAL IWCTS 2022

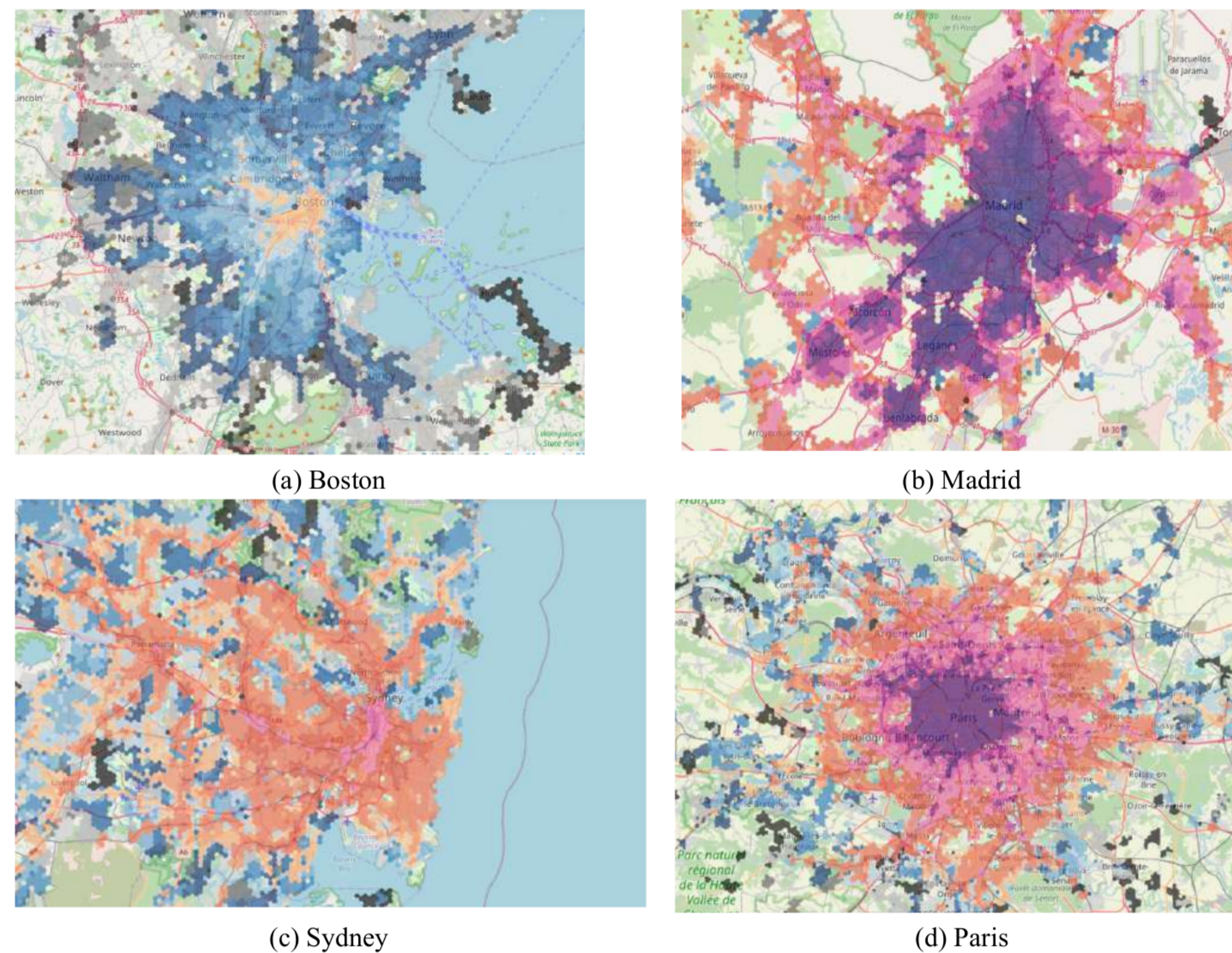
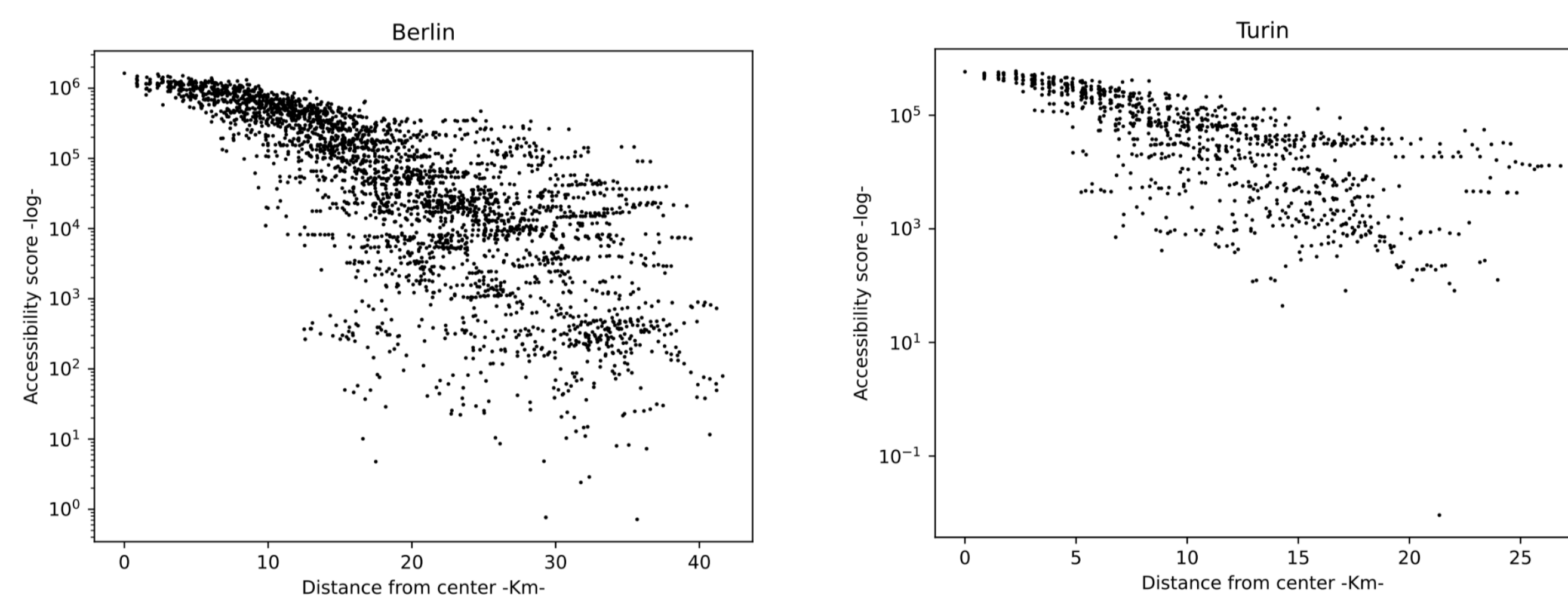


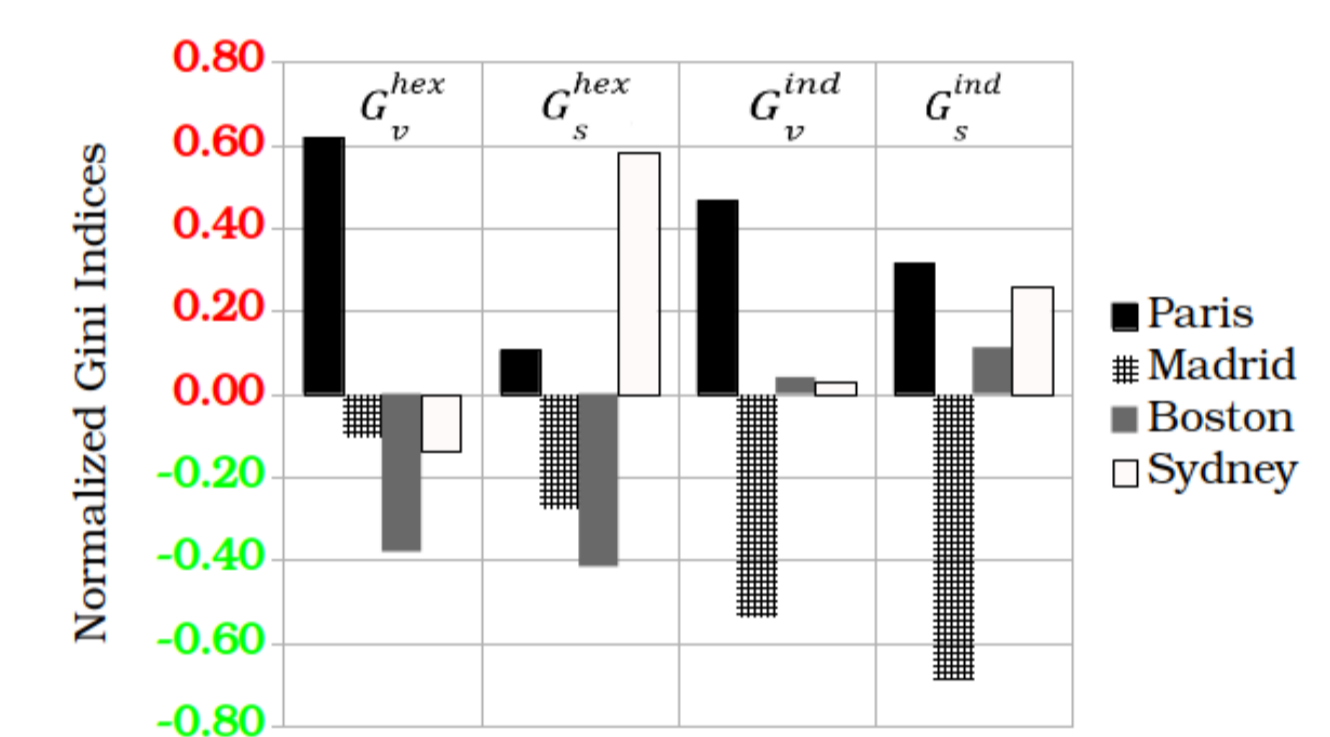
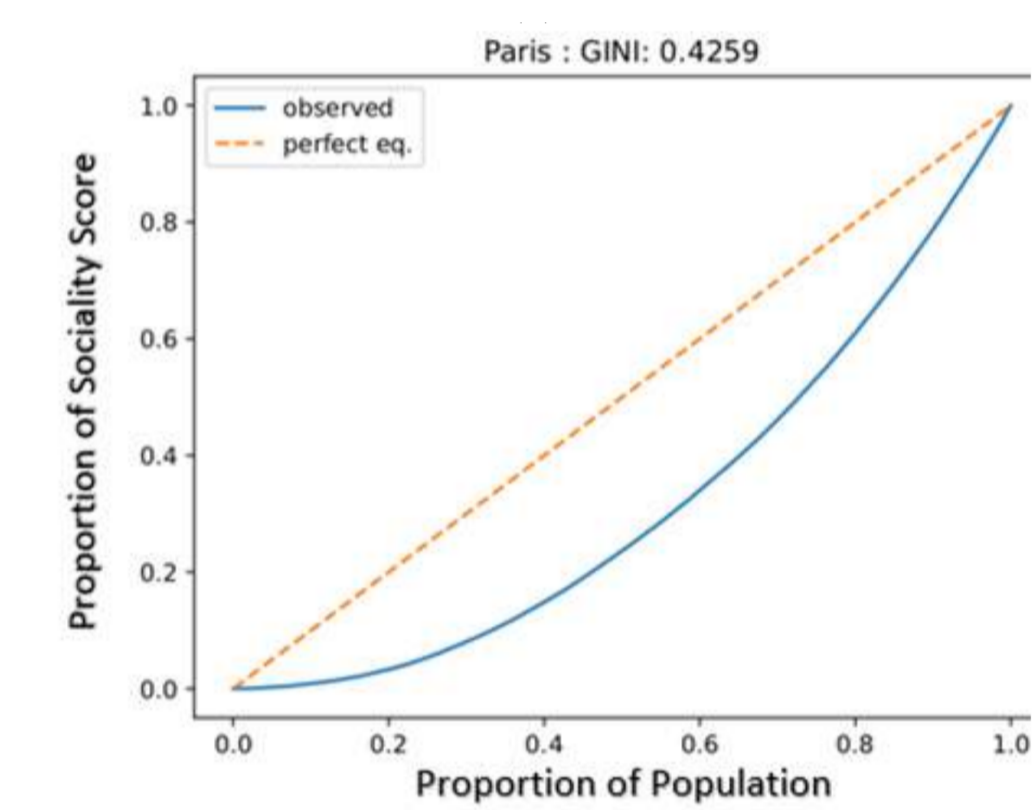
Figure A2: Sociality scores



Measurement

Accessibility of public transit is *unequal*

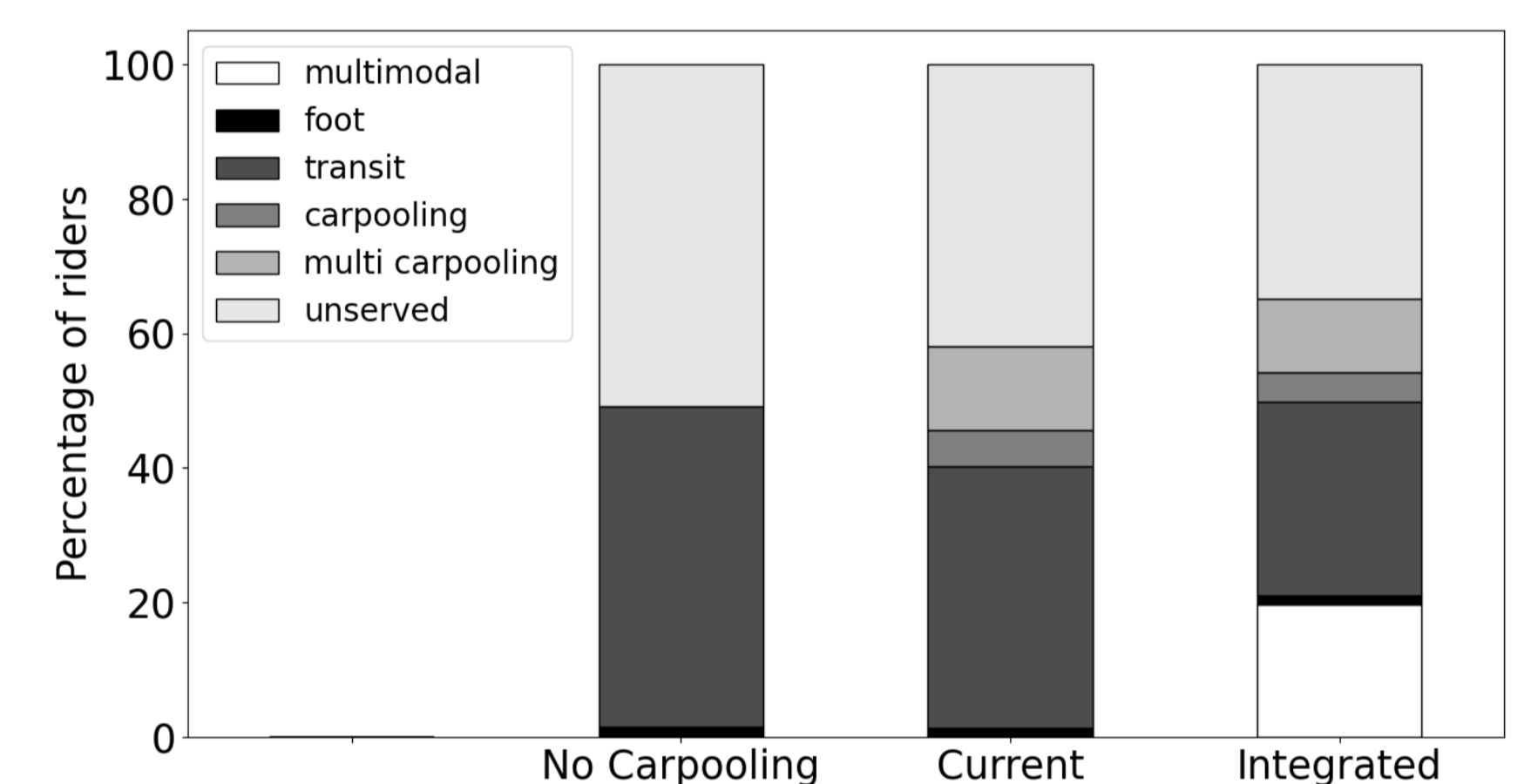
- ▶ The **accessibility** of a location measures the ease of reaching surrounding *opportunities*
- ▶ **Open data** (GTFS) allow to measure its distribution in a urban area
- ▶ We can quantify **inequality** via the Gini index



Multimodal solution 1

Integrating public transit and carpooling

- ▶ **Synchronize** carpooling routes to transit schedules
- ▶ Increase of travel opportunities for users
- ▶ Reduction of **car dependency**
- ▶ Preliminary study in Portland: carpooling routes are integrated into **GTFS** data



Multimodal solution 2

Adaptive transit

- ▶ Optimally combining traditional public transit (fixed lines) and demand-responsive transit
- ▶ Analytic model (continuous approximation)
- ▶ Interior-point method for resolution

