
Photo: Trivector

# Carrier-provided data for improved sustainable urban transport planning

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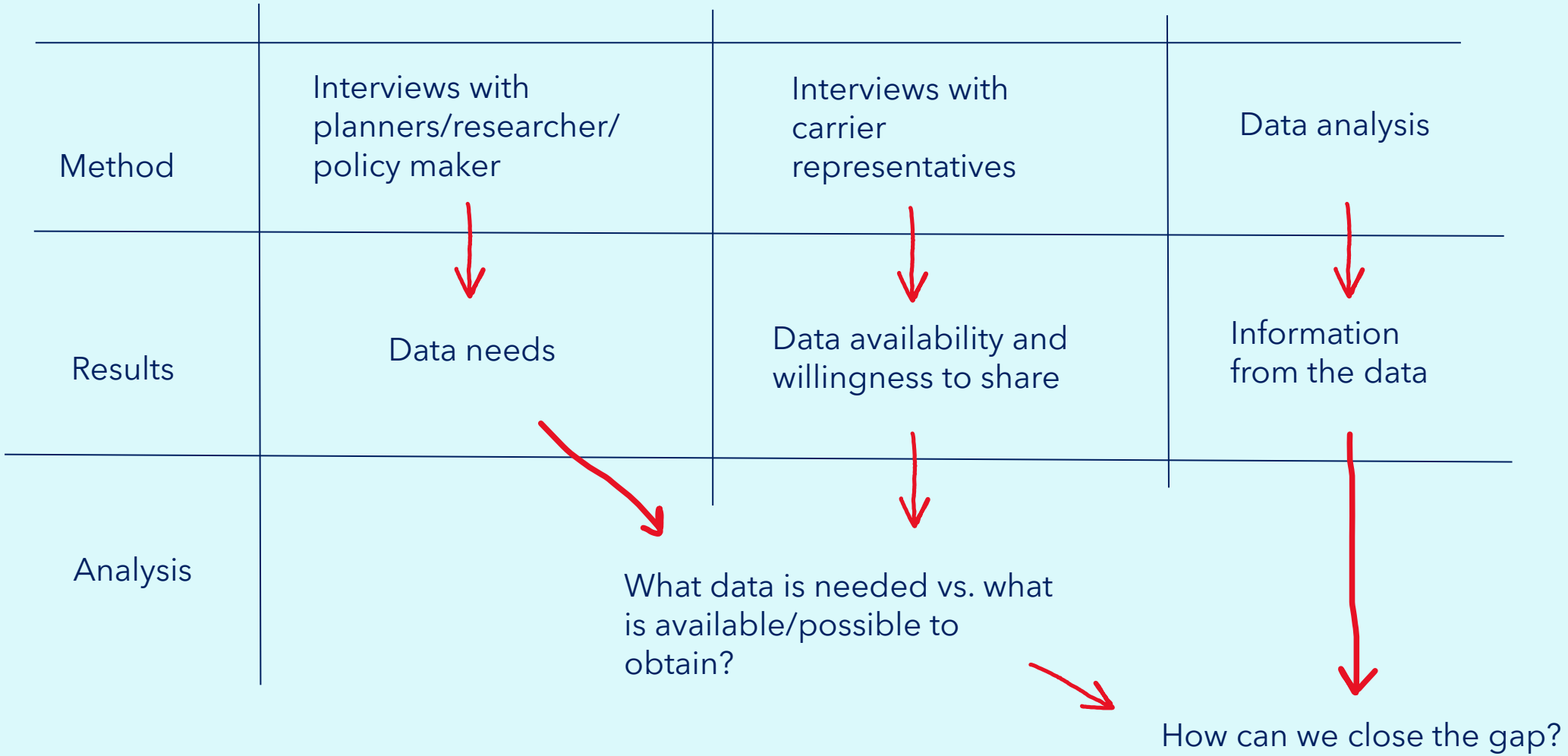
# Motivation and approach

Sustainable cities ← Better planning / Better decision making ← Better models ← Better data ← Know carriers collect data

# How?


Method
Interviews with planners/researcher/ policy maker
Interviews with carrier representatives
Data analysis
Results
Data needs
Data availability and willingness to share
Information from the data
Analysis
What data is needed vs. what is available/possible to obtain?
How can we close the gap?

# From the carriers themselves

"If those who make plans in the city centre have a **better basis for decision making** than they have today, that is **positive**"

"To share data in general can be valuable if it is linked to an **overall plan** for freight transport in cities. You cannot just say that we should supply data, you need a plan for what the data is used for, **a goal**"

"Access to data that makes it possible to **analyze** or to **show analyses** in order provide a better basis for decision making related to what to consider with regards to **deliveries e.g. in the city centre**"

“As soon as we share data, in principle in many ways we **share trade secrets**. We share what customers we have, how much goods we deliver, and how much goods the customer receive. So we share not only our own trade secrets, but **also that of our customers**, which may make me worried"

# What are the carrier conditions for sharing data?

| Goal | Requirement |
|---|---|
| To see value in sharing data and know how/whether they can contribute. | The goal of the data collection must be better city logistics, including improved distribution conditions for the carriers. |
| | There must be a defined plan and purpose for the data, including a clear framework and boundaries for the use of the data. |
| To comply with market considerations and preserve their competitive advantages. | Data security must be ensured. |
| | Data must be anonymized and reported at aggregated level. |
| | "All" carriers must contribute with data. |
| To minimize the resources needed to collect data. | The data should be easy to access, extract, and transfer from the carriers' systems. |

# What carrier data is needed for urban mobility planning?

| | Impact category | | |
|---|---|---|---|
| | **Environment and Climate** | **Extent of freight operations** | **Delivery performance** |
| **Data Needs** | Truck types (size and fuel) | Number of deliveries | Delivery time stamp (time of arrival and dwell time) |
| | Fleet utilization | Volumes delivered | Truck type (fuel and size) |
| | Total transport | Origin and destination of delivery | Number of vehicles |

# What insights did the obtained data give?

| Sector | Carrier | Time of delivery | Stop times | Weight | Volume | Quantities | Delivery address | Delivery postal code | Delay | Delay at stops | Vehicle size | Routes | Commodity flows | Sender postal code | Sending number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G | 1 | x | x | | x | | x | x | x | x | x | x | x | | |
| | 2 | x | | | x | | | | | | x | x | | | |
| L | 3 | x | | x | | x | x | x | | | | | x | | x |
| | 4 | x | | x | x | | x | x | | | | | x | x | |
| | 5 | x | | x | x | x | | x | | | | | | x | x |
| C | 6 | x | | x | x | x | x | x | | | | x | x | x | |

Lacking: vehicle fleet, route, (utilization)

# Main findings

- Data on freight is necessary for sustainable urban planning
- Data from the transport sector can be available under certain conditions
- The data they already collect contain some of the information needed
- Requires iterations and communication with all stakeholders involved

# Upscaling the data collection in conjunction with the model

- Who should be responsible for data collection and handling?
- Who should have access to the data (or information from it?)
- What data should be focused on collecting?/ What carrier data is needed to better incorporate freight transport into urban mobility planning?

# Thank you for having us!

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1. Under what conditions will carriers share operational data from their systems?
2. What carrier data is needed to better incorporate freight transport into urban mobility planning?
3. What relevant information can be found in existing carrier data for use within the context of urban mobility planning?
4. What needs to be considered to exploit the data on a large scale to be used within holistic urban mobility planning?

Results

Discussion

# Sample

**Planners/researcher/decision maker**

| | N (interviews) | N (interviewees) | Rolle | Sector |
|---|---|---|---|---|
| | 4 | 4 | Planner | Privat |
| | 1 | 1 | Researcher | Research institute |
| | 3 | 6 | Planner | Public |
| | 1 | 1 | Decision making | Communal |
| Total | 9 | 12 | | |

**Carriers**

| | N (interviews) | N (interviewees) | Sector |
|---|---|---|---|
| | 2 | 2 | Grocery |
| | 3 | 3 | 3PL/Logistics |
| | 1 | 1 | Construction |
| Total | 6 | 6 | |

Data from the same carriers analysed

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| | Fleet utilization | Volumes delivered | Truck type (fuel and size) |
| | | Origin and destination of delivery (address/postal number/establishment type/terminal type) | Number of vehicles |

- increased attention on emissions and climate reporting
- a basis for determining emission taxes or fees

- magnitude of urban freight more tangible for decision makers
- to follow up on zero-growth goals
- prediction of future volumes and prognoses

- calculate societal benefits and benefits for carriers

- Desire to link delivery data and vehicle fleet data, as to identify vehicle data (fuel type and size) for the delivery and routing
- Data at the same spatial resolution to allow for interaction and integration with people-transport modeling
- The temporal resolution should allow for simulation of transport over the course or the data, particularly in and out of peak hours
- Data should capture the heterogeneity seen within urban freight transport in terms of types of goods and within the fleet data, including type of vehicle, size, and high accuracy emissions information