








CIVITAS indicators

Share of inhabitants participating in shared logistics (TRA_FR_ADC5)

DOMAIN

 <p>Transport</p>	 <p>Environment</p>	 <p>Energy</p>	 <p>Society</p>	 <p>Economy</p>
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TOPIC

Freight

IMPACT

Alternative urban freight transport

Increasing participation in shared logistics programmes

TRA_FR

Category

Key indicator	Supplementary indicator	State indicator
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CONTEXT AND RELEVANCE

Urban logistics is essential for delivering goods to businesses and consumers in urban areas, supporting local commerce and daily life. However, motorised freight vehicles contribute significantly to energy consumption, emissions, air pollution, noise, space occupancy, and congestion. These factors negatively impact quality of life and environmental sustainability in cities. Strategies that reduce or optimise motorised freight traffic, such as the use of cargo bikes, parcel lockers, autonomous delivery bots, drones, and shared logistics programmes, can help create healthier and safer urban environments.





This indicator measures the uptake of shared logistics programmes by residents in the experiment area. Shared logistics programmes involve residents collaborating to reduce the number of individual deliveries. Examples include neighbours collecting packages for households in their building, community parcel points, and other crowdsourced initiatives. **This indicator is relevant when the policy action aims to increase adoption of sustainable urban logistics initiatives. A successful action is reflected in a HIGHER value of the indicator.**

DESCRIPTION

This indicator measures the share of inhabitants of the experiment area participating in shared logistics programmes. The indicator is expressed as a **percentage**.

METHOD OF CALCULATION AND INPUTS

Two alternative calculation methods are available for the indicator, differing in the type of data source used. This allows the selection of the most feasible approach based on data availability and the possibility to collect the required information. In both cases, the indicator should be computed **exogenously** by applying the chosen method as described in this factsheet and then coded in the supporting tool.

METHOD 1	METHOD 2
Share of inhabitants participating in shared logistics programmes, based on a sample survey	Share of inhabitants participating in shared logistics programmes, based on registration data
Data collected through a sample survey with individuals in the experiment area	Data collected from the participant registration records of the programme
Complexity 	Complexity 
Significance 	Significance 
Method 1	

Share of inhabitants participating in shared logistics, based on a sample survey

Significance: **0.10**



INPUTS

The following information is needed to compute the indicator:

- a) Responses of a sample of individuals to a question on their participation in shared logistics programmes

A suggested formulation of the survey question is provided in the *Guidelines for surveys* which are part of the CIVITAS Evaluation Framework.

The experiment would be reflected in terms of different responses to the survey question.

METHOD OF CALCULATION

The indicator should be calculated based on responses collected through a sample survey, which may also gather additional information beyond what is required for this indicator.

Assuming that the survey question follows the formulation suggested in the *Guidelines for surveys* and reported below, the indicator is then computed exogenously using the equation provided in the following section.

Suggested survey question formulation

Q) Are you involved in a shared logistic programme?

- a) Yes
- b) No, I know of this programme but I do not how to join
- c) No, I know of this programme but I'm not interested
- d) No, I don't know of this programme

It should be noted that, for the purpose of calculating this indicator, only the number of 'Yes' responses to the survey question is required. However, collecting and analysing the reasons for non-participation can provide valuable insights to inform future actions.

EQUATIONS

The share of individuals participating in shared logistics programmes should be computed as:

$$ShLogIndex = \frac{\sum_i 1(\text{where } s_i = 'Yes')}{I}$$

Where:

s_i = Answer to survey question on participation in shared logistics programs by respondent i .

I = Total number of responses collected

Method 2

Share of inhabitants participating in shared logistics programmes, based on programme registration data

Significance: **0.15**



INPUTS

The following information is needed to compute the indicator:

- a) **The number of individuals participating in shared logistics programmes.** This information can be obtained from the organisation responsible for managing the shared logistics programmes.
- b) **The number of inhabitants in the experiment area.** This information can be retrieved from census data.

The experiment would be reflected in terms of different numbers of participants in shared logistics programmes.

METHOD OF CALCULATION

The indicator should be computed exogenously according to the following steps:

- **Retrieval of the number of participants in shared logistics programmes in the pilot area.**
- **Retrieval of the number of inhabitants in the experiment area.**
- **Calculation of the shared logistics participation indicator** (see equation below).

EQUATIONS

The share of individuals participating in shared logistics programmes should be computed as:

$$ShLogIndex = \frac{ShLogPart}{Pop}$$

Where:

ShLogPart = Number of participants in shared logistics programmes in the experiment area

Pop = Population in the experiment area

ALTERNATIVE INDICATORS

This indicator measures the uptake of shared logistics programmes by residents in the experiment area. Other indicators to assess the availability of alternative B2C urban freight distribution modes include **TRA_FR_ADC1**, **TRA_FR_ADC2**, **TRA_FR_ADC3** and **TRA_FR_ADC4**. These indicators respectively measure the number of cargo-bikes, parcel lockers, autonomous bots, and drones used for B2C deliveries. The choice of indicator depends on the scope of the experiment to evaluate.

If the experiment targets B2B deliveries, the relevant indicators are **TRA_FR_ADB1**, **TRA_FR_ADB2** and **TRA_FR_ADB3**.