CIVITAS
Sustainable and smart mobility for all
2030

CIVITAS indicators

Car ownership index: registered cars per 1000 inhabitants (TRA_CC_CO2)

DOMAIN

Transport	Environment	Energy	Society	Economy

TOPIC	**Car Centrality**	
IMPACT	**Car ownership** *Reducing car ownership*	**TRA_CC**

Category

Key indicator	Supplementary indicator	State indicator

CONTEXT AND RELEVANCE

Car ownership refers to the possession of private vehicles for transportation needs. A high rate of car ownership leads to increased car usage in urban areas, contributing to challenges such as air and noise pollution and sedentarism. Car use in cities also impacts urban planning, as roads and parking take up valuable space that could otherwise be used for public amenities, green spaces, or pedestrian-friendly infrastructure.

This indicator provides a measure of car ownership in the experiment city. **It is a relevant indicator when the policy action is aimed at decreasing car ownership. A successful action is reflected in a LOWER value of the indicator.**

DESCRIPTION

This indicator measures the **number of registered cars per 1000 inhabitants** in the experiment city.

The unit of measurement is **cars per 1000 inhabitants**.

METHOD OF CALCULATION AND INPUTS

The indicator should be computed exogenously, by applying the method described and then coded in the supporting tool.

The indicator relies on vehicle registrations and census data as inputs; as such, it is straightforward to compute and fully significant. **The requirement for its application is that data on registered cars is available at the required level of detail**. Often data on registered cars is published only at a level of spatial aggregation coarser than the pilot area (e.g., NUTS 3 regions) and only with reference to one period (e.g. at the end of the year). This issue is especially relevant if the pilot area is just one part of a municipality and if the pilot is expected to last less than one year.

Method	
Calculation of the index based on vehicle registrations and census data	Significance: **1.00** 
INPUTS **The following information is needed** to compute the indicator: a) **The number of cars** registered in the experiment city at the latest available date. This is to be obtained from vehicle registrations. b) **The number of inhabitants** of the experiment city at the date closest to the available vehicle registration data. This value is to be obtained from census data. The experiment would result in a modification of the number of registered cars.	
METHOD OF CALCULATION	

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

- **Retrieval of the number of registered cars in the experiment city** at the latest available date**.**
- **Retrieval of the population count for the experiment city** at the date closest to the available vehicle registration data.
- **Estimation of the indicator** (see the following equation).

EQUATIONS

The equation computing the index (last step of the method of calculation) is the following:

$$\boldsymbol{CarOwnIndex} = \frac{\boldsymbol{RegCar}}{\boldsymbol{Pop/1000}}$$

Where:

$RegCar$ = Number of registered cars in the experiment city

Pop = Population count of the experiment city

ALTERNATIVE INDICATORS

This indicator assesses car ownership in the experiment area using data from vehicle registrations and census. Alternative indicator **TRA_CC_CO1** relies instead on data collected via a sample survey. TRA_CC_CO2 is more significant, since it uses whole population data rather than considering a sample. In addition, TRA_CC_CO2 may be less complex to calculate, since no survey needs to be administered; instead, the required inputs are collected from governmental registers. It should be however noted that TRA_CC_CO2 only allows to assess whole city experiments, since data on registered cars is oftentimes published only at a level of spatial aggregation coarser than sub-city areas. Meanwhile, TRA_CC_CO1 can be used **for both local and whole city experiments**, as sample respondents may be selected as needed. Furthermore, the two indicators **differ slightly in meaning and scope**: TRA_CC_CO1 assesses cars available to households for personal use, while TRA_CC_CO2 considers all registered cars, including, for example, fleets for business use. As such, the former indicator is the most appropriate if the intention is to evaluate motorization rates for personal uses, while the latter is a more accurate representation of the global presence of vehicles in an urban area, regardless of their use type.