

# Package: MobilityDataPT (via r-universe)

September 15, 2026

**Title** Get Mobility Related Data for Portugal

**Version** 1.0

**Description** A collection of methods to get mobility related data for Portugal.

**License** GPL

**URL** <https://github.com/U-Shift/MobilityDataPT>,  
<https://u-shift.github.io/MobilityDataPT/>

**Depends** R (>= 4.1.0)

**Imports** dplyr, tidyselect, httr, jsonlite, sf

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**Repository** <https://u-shift.r-universe.dev>

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census\_od

*Fetch Census Origin-Destination Data***Description**

Retrieves Census Origin-Destination (Home/Work & Study) data from INE for a given home location.

**Usage**

```
census_od(id = "PT")
```

**Arguments**

**id** Region category filter ID (default "PT"). See `MobilityDataPT::census_od_regions()` for available IDs.

**Details**

Refer to [INE website](#) to access the indicator online.

**Value**

A `data.frame` containing the aggregated Census OD records with columns:

- `geocod`: Home location code
- `geodsg`: Home location designation
- `dim_3`: Sex category code
- `dim_3_t`: Sex category designation (H, M, HM)
- `dim_4`: Employment status code
- `dim_4_t`: Employment status designation (Empregada, Estudante, Total)
- `dim_5`: Working location code
- `dim_5_t`: Working location designation
- `ind_string`: Count / resident population value in string format
- `valor`: Count / resident population value in numeric format
- `Periodo`: Reference period (2011, 2021)

**Note**

Data source: Instituto Nacional de Estatística (INE) ([https://www.ine.pt/xportal/xmain?xpgid=ine\\_main&xpid=INE](https://www.ine.pt/xportal/xmain?xpgid=ine_main&xpid=INE)).

**See Also**

```
MobilityDataPT::census_od_regions()
```

**Examples**

```
od_data <- MobilityDataPT::census_od(id = "PT")
od_data |> dplyr::sample_n(5)
```

---

|                   |                                                          |
|-------------------|----------------------------------------------------------|
| census_od_regions | <i>Fetch Census Origin-Destination available regions</i> |
|-------------------|----------------------------------------------------------|

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**Description**

Queries the INE metadata API for the available regional filtering options available for `MobilityDataPT::census_od()`.

**Usage**

```
census_od_regions()
```

**Value**

A data.frame with columns `id` and `name`.

**Note**

Data source: Instituto Nacional de Estatística (INE) ([https://www.ine.pt/xportal/xmain?xpgid=ine\\_main&xpid=INE](https://www.ine.pt/xportal/xmain?xpgid=ine_main&xpid=INE)).

**See Also**

```
MobilityDataPT::census_od()
```

**Examples**

```
regions <- MobilityDataPT::census_od_regions()
head(regions)
```

---

get\_postal\_code\_coordinates

*Get Postal Code coordinates*


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## Description

Retrieves spatial coordinates and geometry for specific postal code(s) from the Eurostat GISCO postal code database.

## Usage

```
get_postal_code_coordinates(
  postal_codes = NULL,
  cntr_id = "PT",
  year = 2024,
  crs = 4326,
  download_dir = NULL
)
```

## Arguments

|              |                                                                                                                                                                |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| postal_codes | Character vector of postal code identifiers (e.g., "1000-001" or c("1000-001", "2800-001")). If NULL, returns coordinates for all postal codes in the dataset. |
| cntr_id      | Two-letter country code to filter by (default "PT"). Pass NA or NULL to return all countries.                                                                  |
| year         | Release year of the dataset. Allowed values are 2020 or 2024 (default 2024).                                                                                   |
| crs          | Coordinate Reference System (EPSG code) of the dataset. Allowed values are 3857, 3035, or 4326 (default 4326).                                                 |
| download_dir | Directory where downloaded GeoPackage files are stored. Defaults to the MOBILITYDATAPT_DOWNLOAD_DIR environment variable or ~/.local/share/R/MobilityDataPT.   |

## Value

An sf object containing matching postal code records and geometries.

## Note

Data source: Eurostat GISCO Postal Codes (<https://ec.europa.eu/eurostat/web/gisco/geodata/administrative-units/postal-codes>).

## See Also

MobilityDataPT::postal\_code\_database()

Examples

```
MobilityDataPT::get_postal_code_coordinates(c("1000-001", "2800-001"))
```

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|                      |                                            |
|----------------------|--------------------------------------------|
| postal_code_database | Access Eurostat GISCO Postal Code database |
|----------------------|--------------------------------------------|

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Description

Downloads and reads the GISCO Postal Codes dataset provided by Eurostat. Files are cached locally in the directory specified by the MOBILITYDATAPT\_DOWNLOAD\_DIRECTORY environment variable, defaulting to ~/.local/share/R/MobilityDataPT.

Usage

```
postal_code_database(  
  cntr_id = "PT",  
  year = 2024,  
  crs = 4326,  
  download_dir = NULL  
)
```

Arguments

|              |                                                                                                                                                                    |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cntr_id      | Two-letter country code to filter by (default "PT"). Pass NA or NULL to return all countries present in the dataset.                                               |
| year         | Release year of the dataset. Allowed values are 2020 or 2024 (default 2024).                                                                                       |
| crs          | Coordinate Reference System (EPSG code) of the dataset. Allowed values are 3857, 3035, or 4326 (default 4326).                                                     |
| download_dir | Directory where downloaded GeoPackage files are stored. Defaults to the MOBILITYDATAPT_DOWNLOAD_DIRECTORY environment variable or ~/.local/share/R/MobilityDataPT. |

Value

An sf object containing spatial postal code boundaries/points. Returned columns include:

- POSTCODE: Postal code identifier (e.g. "1000-001")
- CNTR\_ID: Country identifier (e.g. "PT")
- LAU\_NAME: Local Administrative Unit name ("freguesia" for Portugal)
- NUTS3\_2024: NUTS level 3 region code
- Shape: Point of postal code location.

Note

Data source: Eurostat GISCO Postal Codes (<https://ec.europa.eu/eurostat/web/gisco/geodata/administrative-units/postal-codes>).

## Examples

```
db <- MobilityDataPT::postal_code_database()

db |> dplyr::select(POSTCODE, LAU_NAME, Shape) |> dplyr::sample_n(5)
```

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|                     |                                            |
|---------------------|--------------------------------------------|
| tools_for_itinerary | <i>Compute toll costs for an itinerary</i> |
|---------------------|--------------------------------------------|

---

## Description

Encapsulates the calculation functionality of the web service provided by **Infraestruturas de Portugal**. Queries IP API to calculate expected toll costs across vehicle classes (C1, C2, C3, C4) for a given spatial itinerary.

## Usage

```
tools_for_itinerary(sf_itinerary)
```

## Arguments

`sf_itinerary` An sf object containing route geometry (LINESTRING coordinates).

## Value

A named list containing toll costs in Euros for each vehicle class (C1, C2, C3, C4).

## Note

Data source: Infraestruturas de Portugal (<https://portagens.infraestruturasdeportugal.pt/>). Terms of service apply.

## Examples

```
sf_itinerary <- sf::st_read(system.file("extdata/samples",
  "tool_itinerary_25AbrilBridge.gpkg",
  package = "MobilityDataPT"
), quiet = TRUE)

MobilityDataPT::tools_for_itinerary(sf_itinerary)
```

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