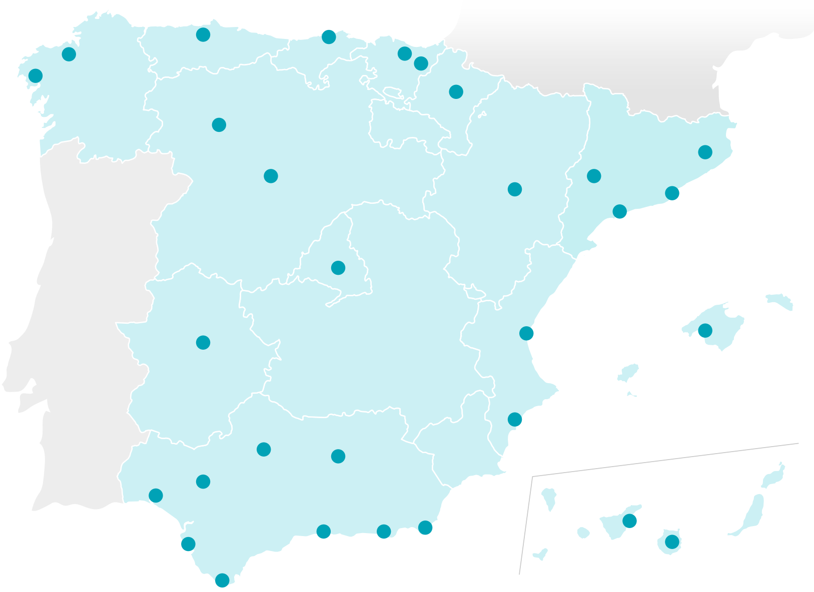

# METROPOLITAN MOBILITY OBSERVATORY 2025
## Summary Report 2023 and Advance 2024

The MMO is a forum of analysis and discussion formed by the public transport authorities (PTAs) of the main Spanish metropolitan areas. Its activities are supported by the Ministry of Transport and Sustainable Mobility, with the collaboration of the Ministry for Ecological Transition and Demographic Challenge, the General Directorate of Traffic (DGT), the National Railway Operator (RENFE) and other institutions, such as the Association of Urban and Metropolitan Public Transport Companies (ATUC), the Spanish Federation of Municipalities and Provinces (FEMP), INECO Consultancy, the Institute for Energy Diversification and Savings (IDAE), the Spanish Railway Foundation and the Trade Union Federation CCOO.

This report includes information from 25 PTAs*. These metropolitan areas represent some 59.4% of the country´s population. Other regular sources, such as RENFE, the Directorate General of Traffic (DGT), and the National Institute of Statistics (INE), provide the rest of the information.

This report contains the complete information for 2023 and an advance of some data available for 2024 at the time of publication. In this way, the report reflects the last urban and metropolitan mobility data set at the national level.



* Madrid, Barcelona, Valencia, Seville, Bizkaia, Malaga, Asturias, Majorca, Cadiz Bay, Saragossa, Gipuzkoa, Tarragona MA, Granada, Almeria, Alicante, Corunna, Huelva, Valladolid, Tenerife Island, Girona, Lleida, Pamplona, Gibraltar MA, Jaen and Leon.

## Main figures 2023-2024

- In **2023**, a total of **3,801 million trips were made by public transport modes:** 1,820 million by bus and 1,981 million by rail modes. The lengths of the corresponding networks are 142,856 km of bus lines and 3,882 km of rail network. In **2024, 4,012 million trips were made by PT:** 1,905 million by bus and 2,107 million by rail modes.

- The annual public transport length of journeys in 2023 was 25,114 million passenger-km (33% for bus and 67% for rail modes) and 28,361 million passenger-km in 2024, 13% more than in 2023.

- In 2023, the **public transport supply was 687 million vehicles-km for bus services and 362 million vehicle-km** for rail modes. In 2024, 675 million vehicles-km were offered for bus services and 415 million vehicle-km for rail modes.

- Out of the **1,596 million euros[1] invested in public transport in 2023,** 51.2% were dedicated to the maintenance or purchase of infrastructure, and 48.8% were used to renovate rolling stock. A share of 83.6% was invested in rail modes.

- The number of public transport trips per inhabitant per year differs according to the size of the metropolitan area. In 2023, the average was 132 trips per inhabitant in large metropolitan areas, 70 in medium-sized ones, and 59 in small areas.

- **The average cost coverage ratio[2] was 43%.** Transport systems in metropolitan areas that include rail modes have a lower coverage ratio than those with only bus supply.

1 The data corresponds to 12 Metropolitan Areas: Madrid, Barcelona, Valencia, Seville, Asturias, Majorca, Tarragona Camp, Alicante, Corunna, Valladolid, Pamplona and Leon.

2 The coverage ratio can only be calculated for areas where revenue and cost data were available. Data from Cercanías RENFE is not included.

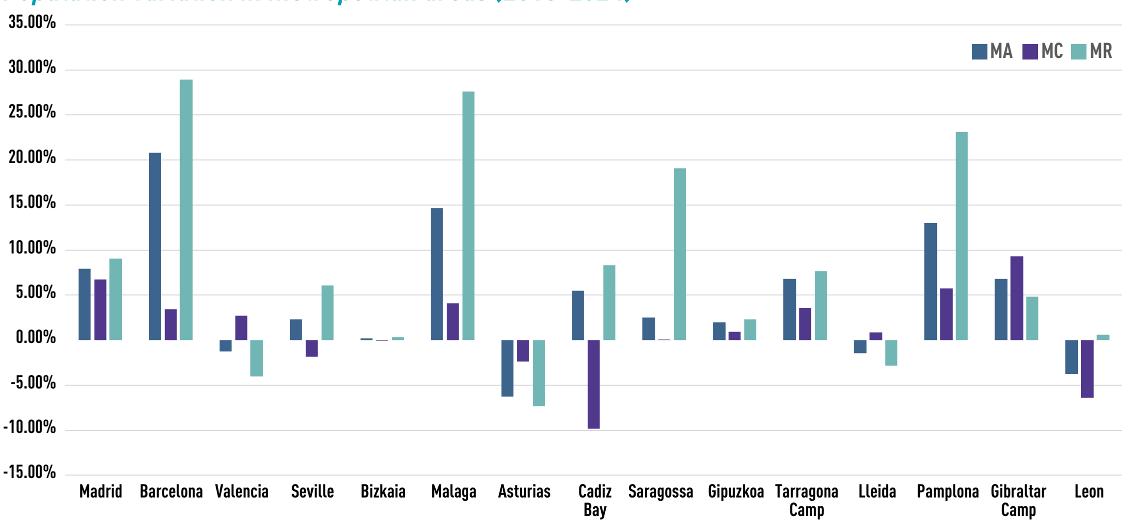
# General Characteristics of the Metropolitan Aareas by January 1st, 2023

| | Metropolitan Area | | | | | | | Main City | | | Population concentration ratio** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Surface (km$^2$) | Population | Density (inhab/ km$^2$) | Number of municipalities | Built up area (km$^2$) | Surface Ratio* | Urban density (inhab/km$^2$) | Surface (km$^2$) | Population | Density (inhab/ Km$^2$) | |
| Madrid | 8,031 | 6,871,903 | 855 | 179 | 928 | 11.50% | 7,274 | 605 | 3,340,176 | 5,521 | 49% |
| Barcelona | 3,239 | 5,184,100 | 5,195.40 | 36 | 636 | 52% | 8,177 | 102 | 1,655,956 | 16,250 | 50% |
| Valencia | 1,479 | 1,886,270 | 1,275 | 60 | 306 | 21% | 6,041 | 139 | 807,639 | 5,797 | 43% |
| Seville | 4,221 | 1,505,305 | 354 | 45 | 229 | 5% | 6,534 | 141 | 684,025 | 4,840 | 44% |
| Bizkaia | 2,217 | 1,154,334 | 521 | 112 | n.d. | n.d. | n.d. | 41 | 346,405 | 8,449 | 30% |
| Malaga | 1,432 | 1,095,709 | 765 | 15 | 75 | 5% | 15,372 | 395 | 586,384 | 1,484 | 54% |
| Asturias | 10,604 | 1,008,876 | 95 | 78 | 1,697 | 16% | 592 | 187 | 221,734 | 1,188 | 22% |
| Majorca | 3,640 | 940,332 | 258 | 53 | n.d. | n.d. | n.d. | 209 | 430,640 | 2,064 | 46% |
| Cadiz Bay | 3,312 | 825,041 | 249 | 12 | n.d. | n.d. | n.d. | 14 | 111,811 | 7,874 | 14% |
| Saragossa | 3,258 | 802,920 | 243 | 32 | 2,873 | 88% | 276 | 938 | 682,513 | 717 | 85% |
| Gipuzkoa[1] | 1,980 | 726,033 | 366 | 11 | n.d. | n.d. | n.d. | 73 | 188,102 | 2,576 | 26% |
| Tarragona C. | 2,999 | 663,465 | 221 | 132 | 191 | 6% | 3,372 | 65 | 138,326 | 2,121 | 21% |
| Granada | 861 | 548,405 | 637 | 33 | n.d. | n.d. | n.d. | 88 | 230,595 | 2,619 | 42% |
| Almeria[2] | 2,127 | 522,687 | 246 | 18 | n.d. | n.d. | n.d. | 296 | 196,851 | 665 | 38% |
| Cordoba | 3,972 | 491,556 | 109 | 21 | 85 | 2% | 5,089 | 1,255 | 319,515 | 255 | 74% |
| Alicante | 354 | 477,766 | 1,387 | 5 | 74 | 21% | 6,456 | 201 | 349,282 | 1,735 | 71% |
| Corunna | 494 | 419,110 | 848 | 10 | 57 | 12% | 7,353 | 38 | 244,700 | 6,439 | 58% |
| Huelva | 3,256 | 410,375 | 126 | 21 | n.d. | n.d. | n.d. | 151 | 141,854 | 939 | 35% |
| Valladolid | 955 | 406,842 | 426 | 25 | 125 | 13% | 3,282 | 198 | 297,459 | 1,504 | 73% |
| Tenerife | 318.5 | 395,612 | 1,242 | 4 | n.d. | n.d. | n.d. | 150 | 211,359 | 1,403 | 53% |
| Girona | 2,126 | 372,341 | 175 | 72 | n.d. | n.d. | n.d. | 39 | 104,038 | 2,659 | 28% |
| Lleida[3] | 5,586 | 361,911 | 65 | 149 | 182 | 3% | 1,989 | 212 | 140,403 | 662 | 39% |
| Pamplona | 92 | 361,343 | 3,942 | 18 | 50 | 54% | 7,140 | 25 | 205,762 | 8,201 | 57% |
| Gibraltar C.[4] | 1.530 | 276,335 | 180 | 8 | 432 | 28% | 634 | 88 | 123,943 | 1,413 | 45% |
| Jaen | 3,488 | 272,917 | 78 | 27 | n.d. | n.d. | n.d. | 424 | 111,888 | 264 | 41% |
| Santander | 268 | 272,325 | 1,016 | 8 | - | - | - | 36 | 172,606 | 4,795 | - |
| Leon | 913 | 201,182 | 220 | 16 | 21 | 2% | 9,531 | 39 | 121,281 | 3,074 | 60% |
| Caceres[5] | n.d. | 95,418 | n.d. | n.d. | n.d. | n.d. | n.d. | 1,760 | 95,418 | 54 | 100% |

** Built-up surface/ total surface of the metropolitan area.*
*** Population of the capital city/ population of the metropolitan area.*
*1: Surface data and main city data are from 2021.*
*2: 2018 data.*
*3: 2020 data.*
*4: Built-up surface data from 2007.*
*5: Main city data from 2017. Other data from 2021.*
*Source: compiled by authors based on data provided by PTAs.*

# Population trends and other socio-economic indicators

## *Population variation in metropolitan areas (2013-2024)*



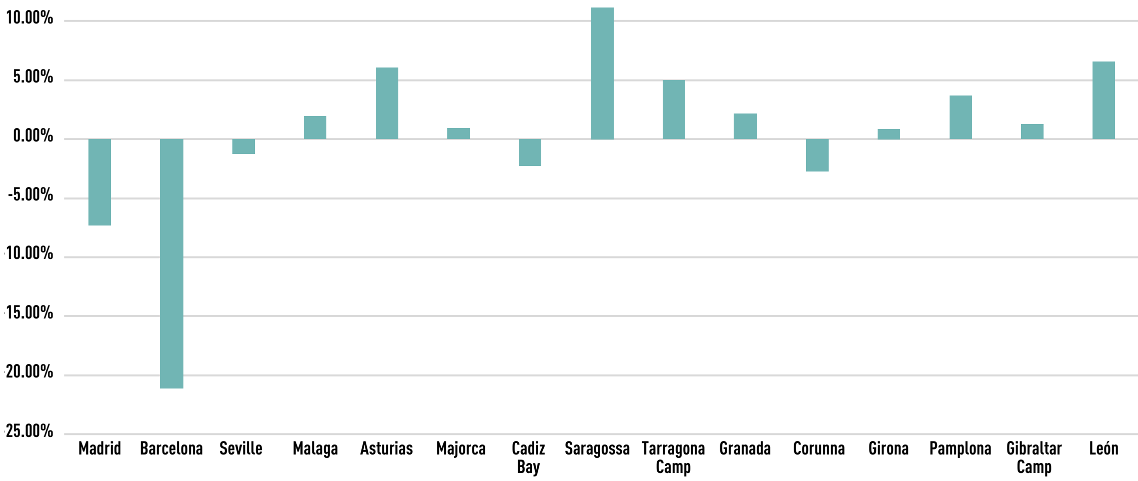

*Cadiz Bay and Saragossa have incorporated new municipalities into their areas over the years, hence with significant variations. Source: compiled by authors based on data provided by PTAs.*

The population in most Metropolitan Areas grew between 2013 and 2024, an average of 8.6%, most of which occurred in the peripheries (+12.3%). The population of the main cities has experienced slight growth (+3.4%). For the cities, Cadiz and Leon have seen the sharpest declines in population during this period, with values of around -9.8% and -6.4%, respectively.

In 2024, the positive trend of job creation from previous years continued: the unemployment rate was reduced to 10.6%. This same year, the unemployment rate in the analysed areas decreased by 7.9% compared to the previous year and by 56.7% compared to 2013 rates. Malaga (74.4) and Lleida (67) are the areas with the largest unemployment decrea- ses in the last year.

The motorization rate in 2024 was 0.52% higher than in 2013. During this period, the motorization rate evolution was very uneven, depending on the area. Saragossa and Leon have significantly increased their motorization rate (11.2% and 6.6%, respectively), whilst Barcelona and Madrid have decreased their rates (-21.1% and -7.3% respectively).

*Variation of the motorization rate (nºvehicles/1000 inhabitants) (2013-2024)*

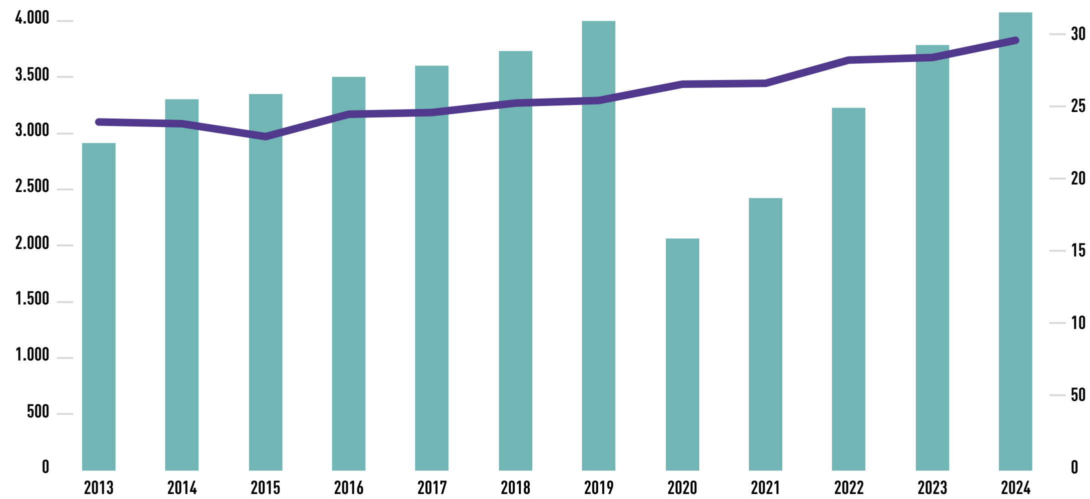



*Fuente: Elaboración propia a partir de datos de las ATP.*

## Demand for public transport

In 2024, travel demand increased by 7.7% compared to 2023: bus travel increased by 9.7%, and rail travel increased by 6.3%. The demand for travel continues to show a gradual recovery, to the point that pre-pandemic figures have already been reached and exceeded.

*Evolution of public transport trips vs population (2013-2024)*



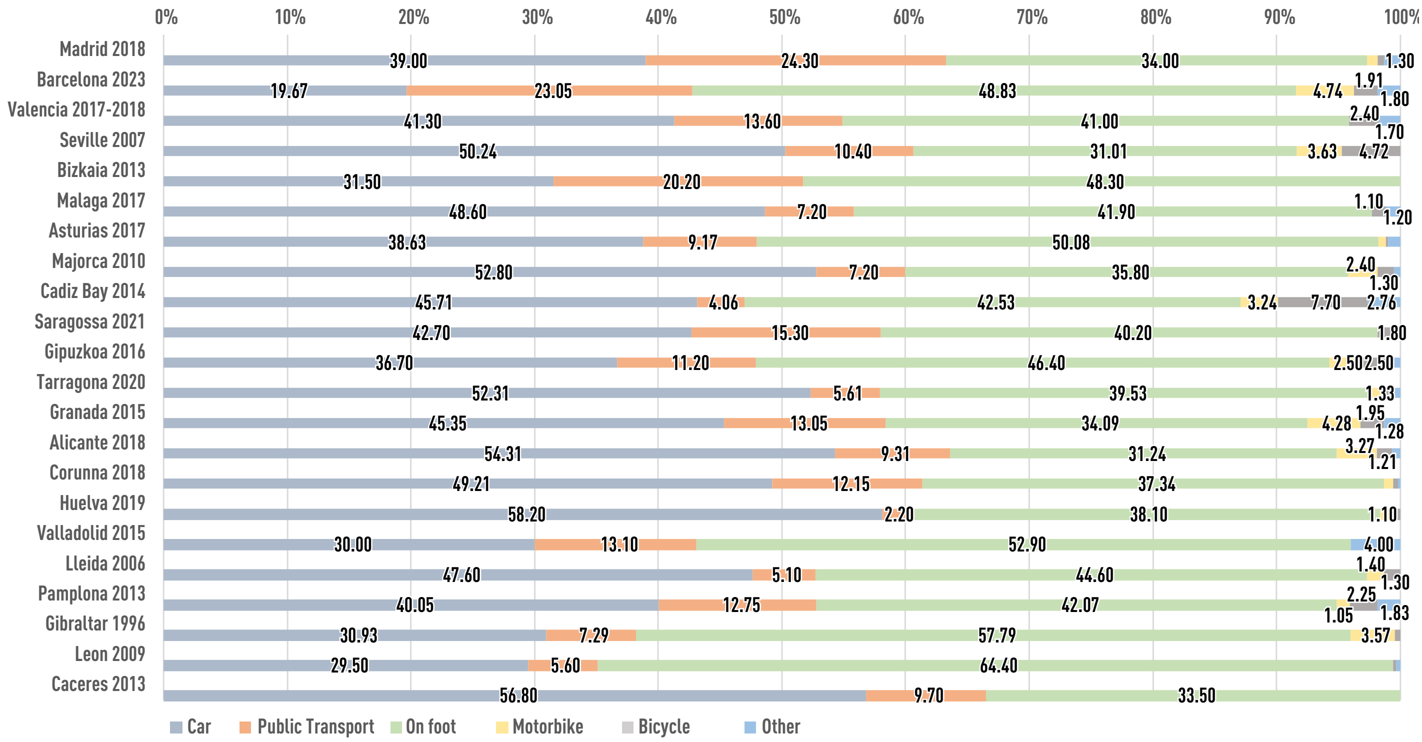

*Data from Madrid, Barcelona, Valencia, Seville, Asturias, Malaga, Cadiz Bay, Saragossa, Gipuzkoa, Tarragona Camp, Granada, Alicante, Pamplona, Cáceres and Leon. In cases where population data for an MA was not available, the figure from the previous year was used to avoid misleading data*

## MODAL SPLIT

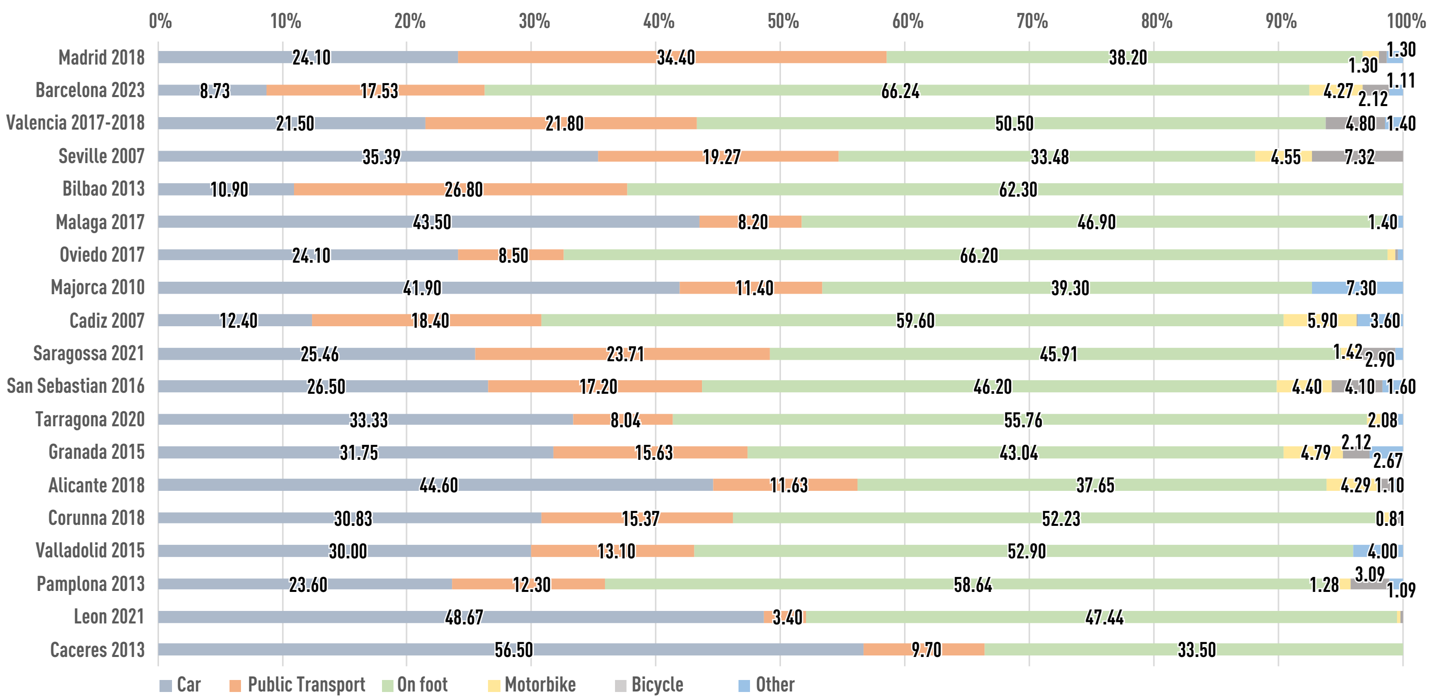
The public transport share on metropolitan areas trips is 11.1%. This figure varies greatly from area to area: in Madrid, it is 24.3%, while in Huelva, it is 2.2%. Bigger conurbations account for higher shares of PT patronage. Related to other modes of transport, non-motorized travel (walking and cycling) accounts for 44.0% of total trips, while motorized travel (private cars and motorbikes) has a 44.3% share of total trips in the metropolitan areas reported.

The two main cities, Barcelona and Madrid, show quite sustainable mobility patterns. Barcelona has a non-motorized trip rate of 68.4%, while in Madrid, 34.4% of trips are made by public transport. These two cities have different characteristics: Barcelona is denser with a rooted habit of walking or cycling, while Madrid is bigger because it includes all of the Madrid Region, therefore longer trips, but has a very well-integrated multimodal PT network attracting one-third of daily trips.

***Modal share for all trip purposes***




***Modal share in the Capital City***




*Source: compiled by authors based on data provided by PTAs.*

# Public transport supply

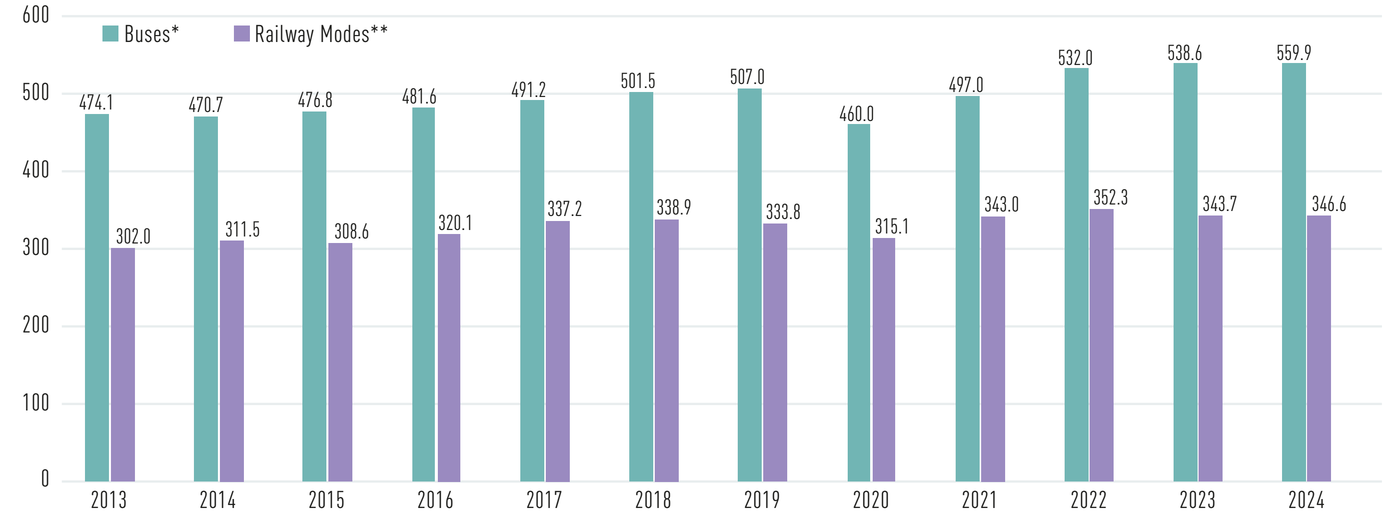
The supply of bus services (in vehicle-km) has increased by 16.6% from 2013 to 2024. The increase over the previous year, 2023, was 2.7%. The average density of the bus network was 4.9 km per 1,000 inhabitants. Asturias and Huelva are well above this value, with more than 10 km per 1,000 inhabitants. The highest density of the PT network by area corresponds to Barcelona with 8.5 km/km², Malaga with 4.2 km/km² and Pamplona with 4.1 km/km², and the global average is 1.8 km/km².

Commuter rail delivers services on longer distances. The density of the rail network is higher in the most populated areas. The average density of the rail network in Spain is 244.3 km per million inhabitants and 157.4 km per 1,000 km². Leon or Asturias have a significantly higher figure due to the length of the narrow-gauge commuter rail lines.

In 2023, the length of bus lines increased on average by 11.3% compared to 2022, the number of routes has also slightly increased. Between 2013 and 2024, the length of the bus lines in the studied areas increased by 14.9%, and the length of the railway network grew by 2.7%.

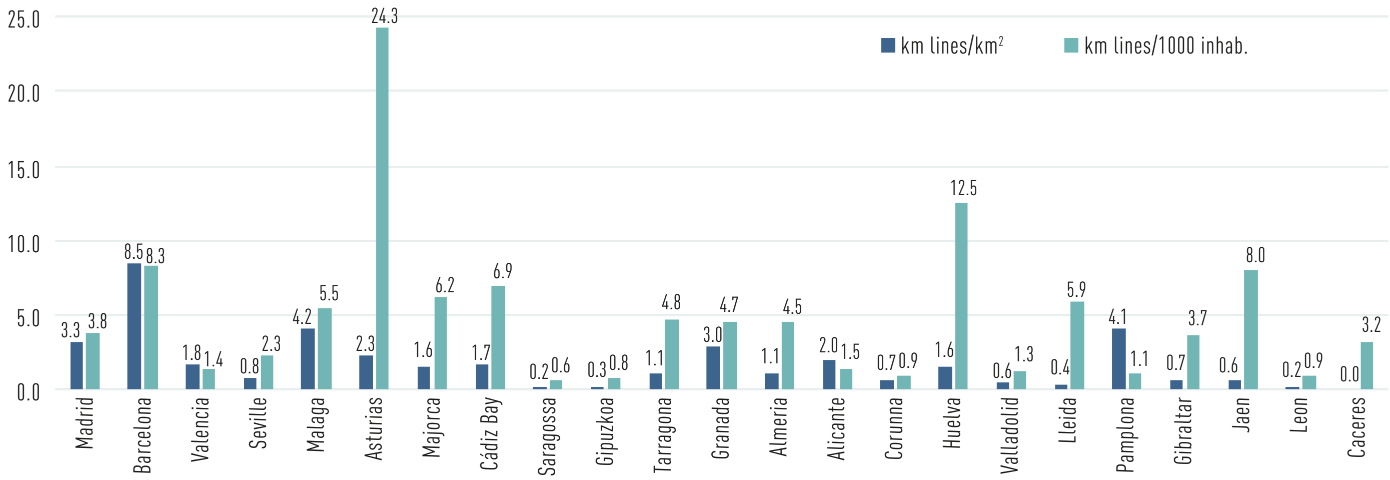
Passenger capacity offered by public transport is measured by the number of seat-km offered by each mode. In 2023, 49,657 million seat-km were offered in bus services and 90,833.8 million in rail modes, 1.2% less and 0.5% more than in 2022, respectively.

### *Evolución de los vehículos-km ofertados (millones)*



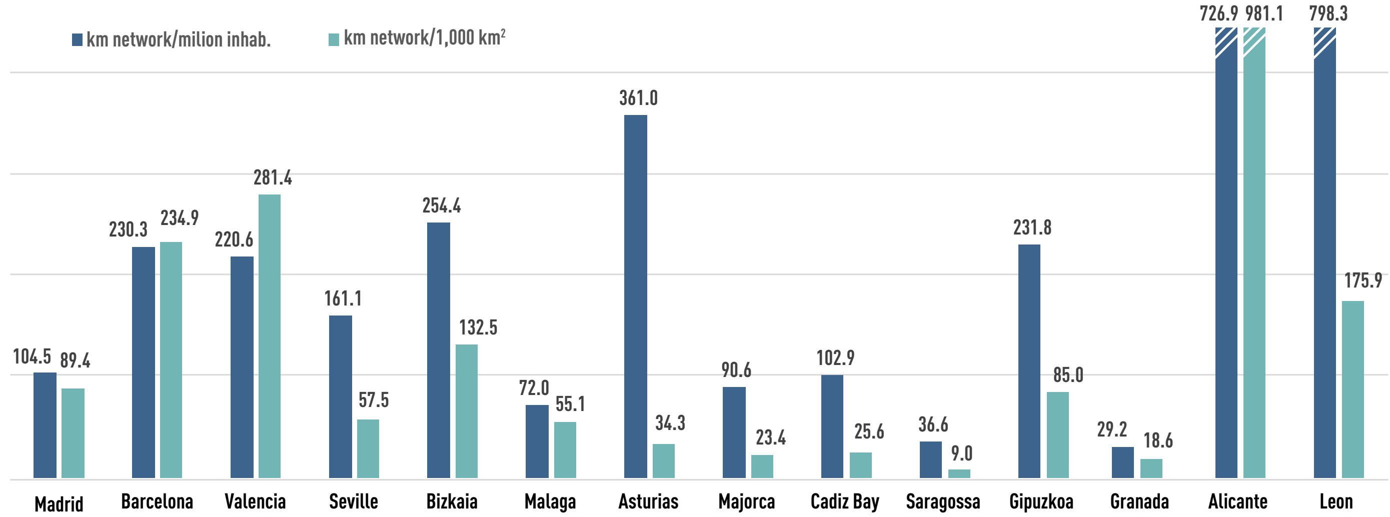

**Made with Madrid, Barcelona, Seville, Asturias, Cadiz Bay, Tarragona Camp, Granada, Alicante, Corunna, Pamplona, Gibraltar Camp and Leon data. In Asturias only Oviedo city bus is considered. In Cadiz Bay and in Gibraltar Camp only metropolitan bus is considered. In 2019, only data from the metropolitan bus is available for Granada. **Made with Madrid, Barcelona, Seville and Valencia data.*
*Source: compiled by authors based on data provided by the PTAs.*

### *Bus network density (2023)*




*Cadiz Bay, Gibraltar camp and Huelva only metropolitan bus.*

*Rail network density (2023)*

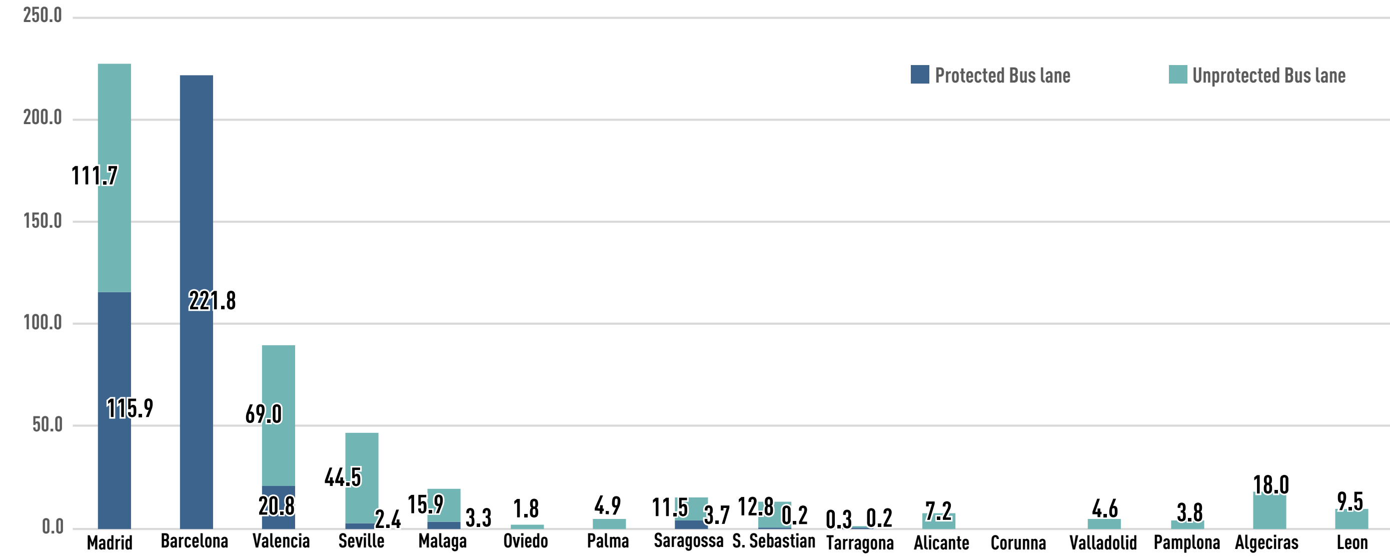



*Source: compiled by authors based on data provided by the PTAs and the RENFE Directorate General of Passengers..*

## Dedicated bus lanes

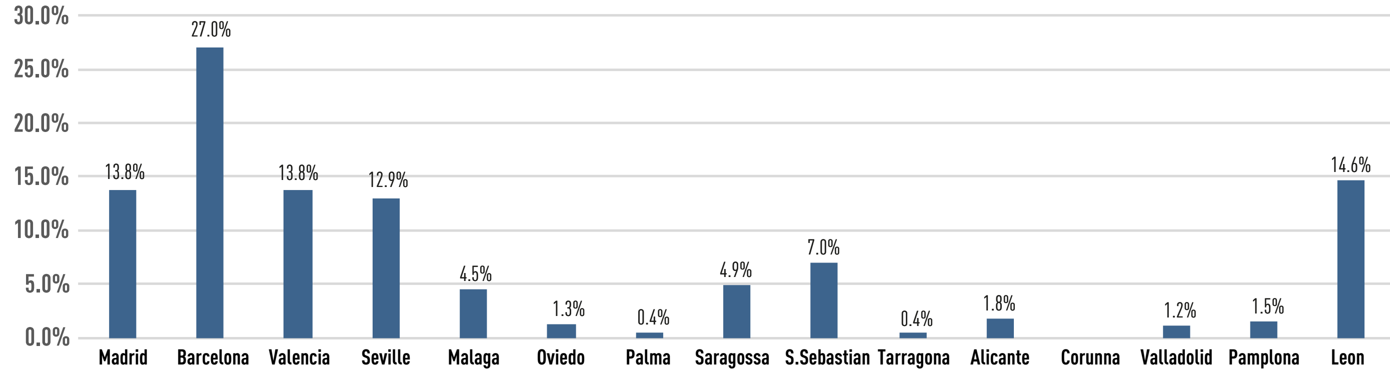
Dedicated and priority lanes for buses are essential to foster competition with private vehicles. Bus lanes are more effective if they are protected from car invasion. As for 2023, Madrid had the longest length of bus lanes network (227.6 km). Barcelona has the highest percentage of bus lanes with respect to the total network within the capital city (27%), followed by Valencia and Madrid (13.8%).

*Length of bus lanes in main city (2023)*




*Source: compiled by authors based on data provided by the PTAs.*

*Percentage of bus network with bus lanes in main city (2023)*




*Source: compiled by authors based on data provided by the PTAs.*

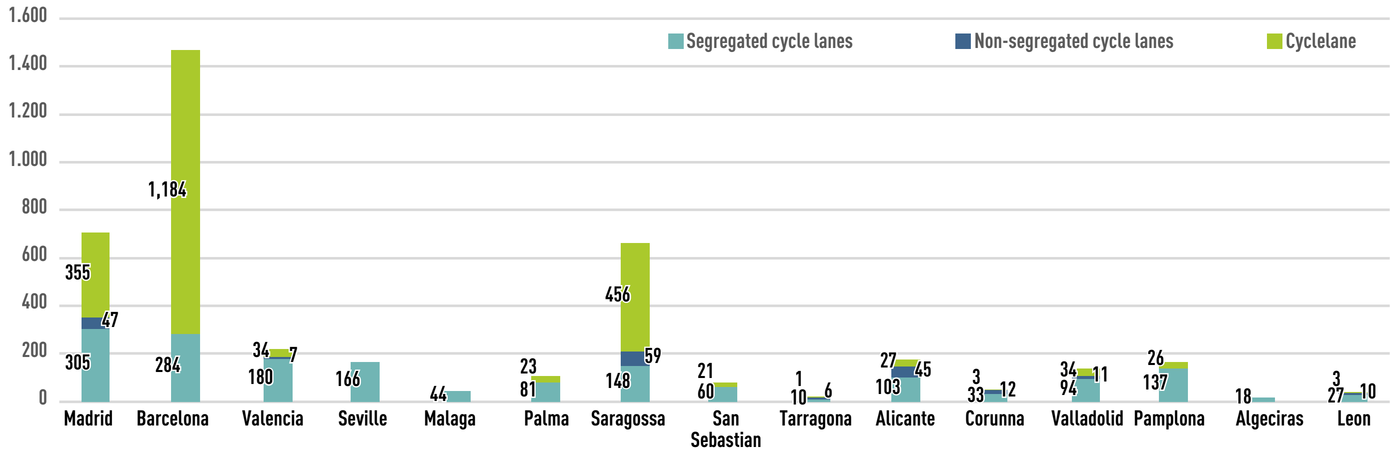
## Dedicated bike lanes

Bicycle use has increased by more than 7 percentage points compared to 2019. In 2023, nearly 20 million people use bicycles on a regular basis. Thus, from 2008 to 2023, the share of regular cyclists has almost tripled, rising from just over 10% to 32%. Bicycles are mainly used for commuting trips.

The support of local authorities for cycling is growing, given the multiple benefits of cycling for users (improved quality of life and health, lower economic costs) and the city (less road occupation and reduction of air and noise pollution). Promoting cycling in cities starts by having adequate, safe, and efficient spaces for cyclists to cycle and park.

The figure below shows the length of three different types of cycle lanes in Spanish cities: segregated or protected cycle lanes (cycle lanes with lateral physical separation from the rest of the road traffic), non-segregated (cycle lanes that run alongside the road, one-way or two-way), and cycle lanes (one-way streets with priority for cyclists). Barcelona and Madrid are the cities with the most extended network of bike lanes.

*Length of bicycle lanes in the main city in 2023 (km)*

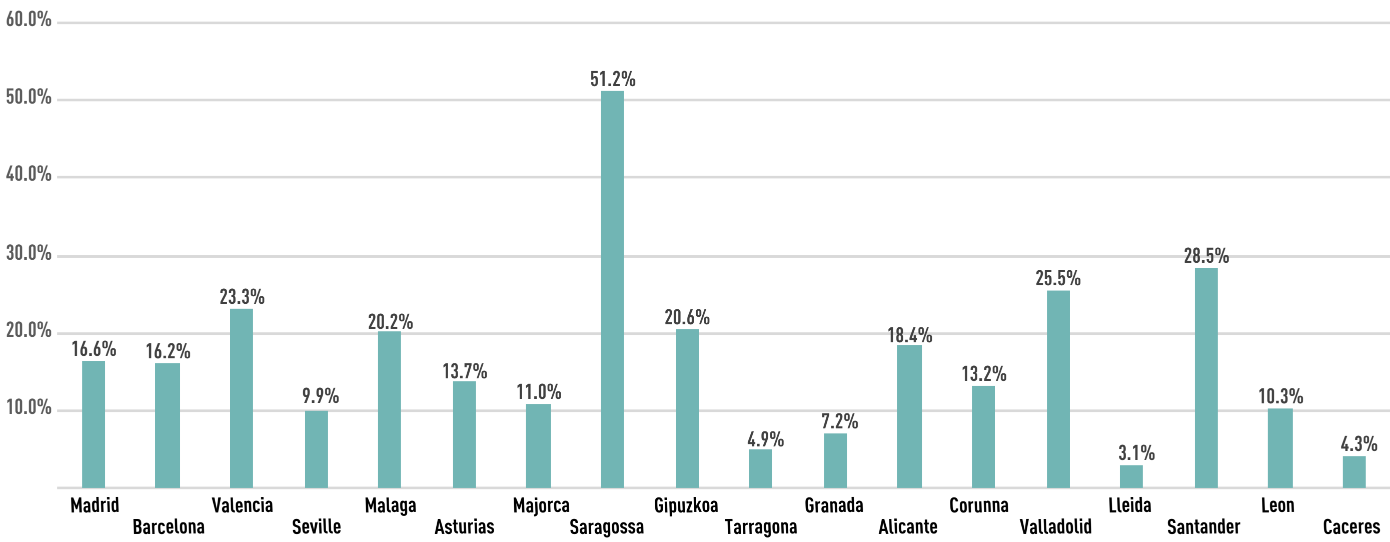



*Source: compiled by authors based on data provided by the PTAs.*

## ITS and information

Intelligent Transport Systems (ITS) increase public transport's efficiency, reliability, sustainability, and safety. They enable public transport operators to collect and share a large amount of data on the different services. Among the most important ITS are the OSS (Operational Support Systems), which monitor vehicles in real-time to facilitate the daily operation of public transport services, or e-ticketing, which improves and makes ticket purchases and payments more flexible and agile.

*% bus stops with real-time information screens (2023)*




*Source: compiled by authors based on data provided by the PTAs.*

Another key aspect for improving PT service satisfaction is the real-time information provided on the vehicle, stop, or station screens or through the various mobile applications (apps), available in all areas and for most modes of transport. These apps have different functionalities (display of maps and routes, journey planning, real-time waiting time, and disruption information), allowing users to choose both the route and mode of transport that suits them best and reducing waiting times and uncertainty on the journey.

The social networks of PTAs and operators are real-time, two-way communication channels with users. The Spanish population regularly uses social media when travelling by public transport, improving their travel experience. These communication channels provide real-time public transport service information at a minimum cost.

## Public shared bicycle services

Public shared bicycle systems allow citizens to use bikes, which are available in several spots located in the central areas, where they can collect and return. They have been implemented in many cities as a sustainable mobility alternative for urban travel and are usually managed by city councils. Users need to be registered to have access to public bicycle services. According to the Public Bicycle Observatory, several public bicycle systems exist in Spain. Management and technology of the system and the type of bicycle offered (conventional or pedelec) differ from one city to another.

Since 2010, many public bicycle-sharing services have been implemented. However, their number has decreased significantly: there are currently around 53 systems, 60% less than in 2010. Most of these systems closed due to a lack of economic viability.

The following table shows the supply and demand data for public bicycle services in the capital cities. Barcelona stands out as the city with the highest number of registered users in the year 2023, and Madrid as the city with the highest number of bicycles available.

***Offer and demand for public bicycles in the main city (2023)***

| | Lending points (no.) | Total number of anchorages | Available bicycles | Service area/ main city area ratio (%) | Operating hours | Registered users | No. of loans per year | Average travel distance (km) | Bicycle rotation* (daily use) |
|---|---|---|---|---|---|---|---|---|---|
| Madrid1 (BiciMad) | 611 | 9,776 | 7,500 | n.d. | 24 | 107,402 | 16,275 | 4.0 | 0.0 |
| Barcelona2 (Bicing) | 519 | 15,000 | 7,108 | 74 | 24 | 147,708 | 17,721 | 3.4 | 0.0 |
| Valencia (Valenbisi) | 277 | 5,502 | 2,750 | 97 | 24 | 37,560 | 3,509 | n.d. | n.d. |
| Sevilla (Sevici) | 260 | 2,600 | 2,483 | 100 | 24 | 20,835 | 2,282 | n.d. | 0.0 |
| Majorca (Bicipalma) | 78 | 1,486 | 930 | n.d. | 24 | 24,276 | 910 | n.d. | 4.2 |
| Saragossa (Bizi Zaragoza) | 130 | 2,778 | 1,300 | 5 | 18 | 11,666 | 940 | 1.5 | 2.3 |
| Gipuzkoa3 (Dbizi) | 46 | 799 | 511 | 100 | 18 | 57,161 | 488 | n.d. | 0.0 |
| Corunna4 (Bici Coruña) | 49 | 879 | 395 | 100 | 18 | 19,570 | 1,239 | 3.4 | 8.6 |
| Girona (Girocleta) | 29 | 750 | 300 | n.d. | 24 | 4,161 | 527 | n.d. | 0.0 |
| Valladolid (biki) | 97 | 1,895 | 827 | 100 | 24 | 23,359 | 416 | 3.0 | 3.4 |
| Pamplona (Ride On) | 42 | 834 | 400 | 100 | 24 | 43,306 | 503 | 2.5 | 3.4 |
| Leon (ALSA-Next Bike) | 27 | 243 | 300 | 100 | 24 | 4,768 | 90 | n.d. | 0.0 |

*1: Assuming that each station in the new 2023 model has an average of 16 docks*
*2: Operating hours: 21 hours on weekdays and 24 hours on public holidays.*
*3: Available bicycles: 120 electric +291 mechanical). Operating hours: 18 hours on weekdays and 24 hours on public holidays*
*4: Time slot: weekdays from 7:00 to 01:00*
**Annual average considering the number of uses and bicycles available.*
*Source: compiled by authors based on data provided by PTAs.*

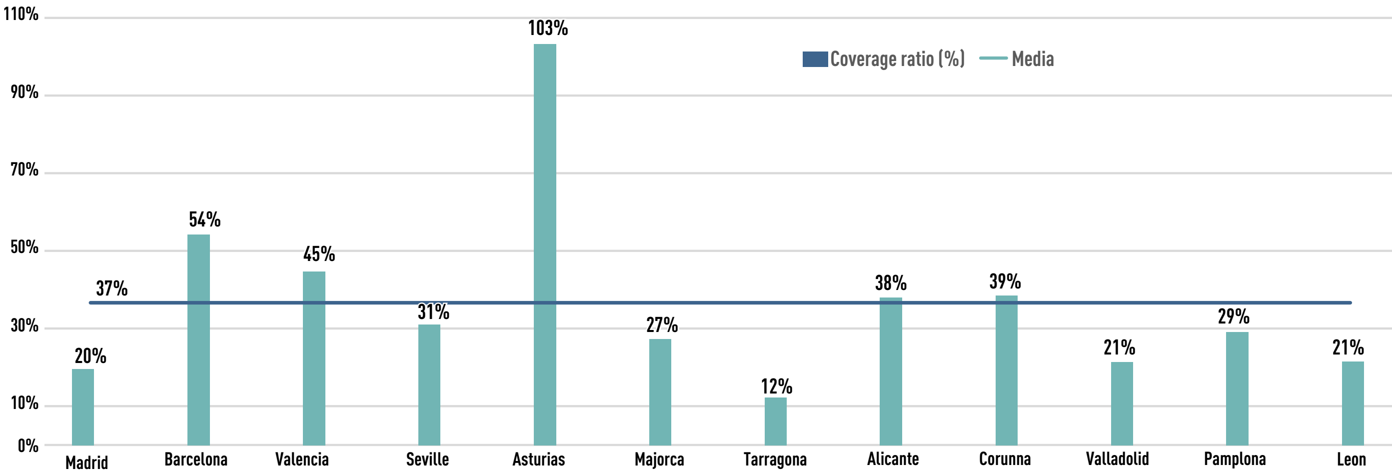
## Types of tickets and fares

There is great heterogeneity in the fare systems of the different urban areas, meaning there are many types of transport tickets according to different territorial and demographic contexts. The only common ticket in all areas is the single ticket, although the coexistence of different modes of transport means that fares differ within the same city. In Madrid, the monthly pass is the most widely used ticket (more than 80% of users). In Bizkaia, Malaga, Majorca, among others, wallet cards are the preferred transport pass used by more than 70% of travellers. Barcelona has the highest fare for a single ticket (€2.40).

## Coverage ratio

The percentage of operating costs covered by fare revenues (coverage ratio) averaged 37% in 2023. Outstanding cases are, on the one hand, Asturias and Barcelona, with ratios of 103% and 54%, respectively, and, on the other hand, Tarragona Camp and Madrid, with a ratio of 12% and 20%, respectively..

*Coverage ratio for PT systems in the metropolitan area (2023)*

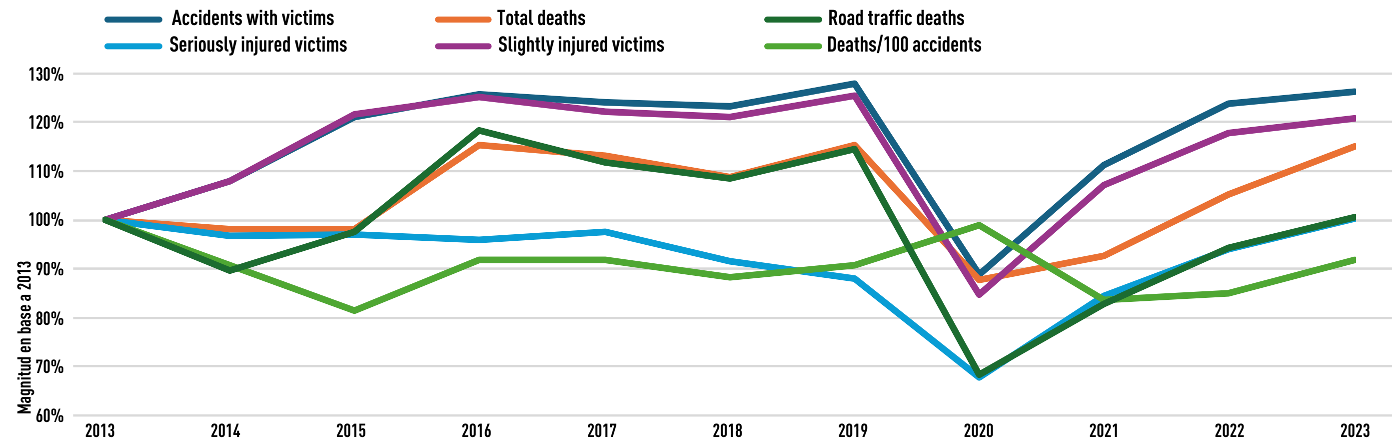



*Data from Cercanias Renfe is not included. Seville does not include tram or metropolitan bus but does include metro. Bahía de Cádiz does not include urban bus. Source: compiled by authors based on data provided by PTAs.*

## Urban accident rates

The urban accidentality rate followed a downward trend from 2000 until 2013 when there was a significant increase in the number of accidents with casualties. In the 2013-2023 period, the number of accidents with victims increased by 26% and the number of total deaths by 15%. In addition, the number of people hospitalized and the number of road traffic fatalities have not changed compared to the 2013 data. However, the fatalities per 100 accidents have decreased by 8%.

*Traffic accidents data evolution (2013-2023)*




*Fuente: elaboración propia a partir de datos de las ATP*

The graph below shows a rather irregular evolution of urban accident indicators from 2013 to 2019: some, like the number of seriously injured or fatalities per 100 accidents follow a negative trend, while others, such as the number of road traffic fatalities or the total number of fatalities, vary considerably from one year to the next. In 2020, all indicators, except the number of fatalities per 100 accidents, decreased considerably due to the drastic reduction of trips during the pandemic lock-out. In 2021, mobility increased compared to the previous year and, consequently, accidents. In 2022, the tendency remained rising for all indexes. In 2023, urban accidents rates stood, on average, at levels similar to those of 2019. There was a 14% increase in the number of people hospitalized and a 12% decrease in road traffic deaths, while the remaining indicators remained stable.

## Shared mobility services

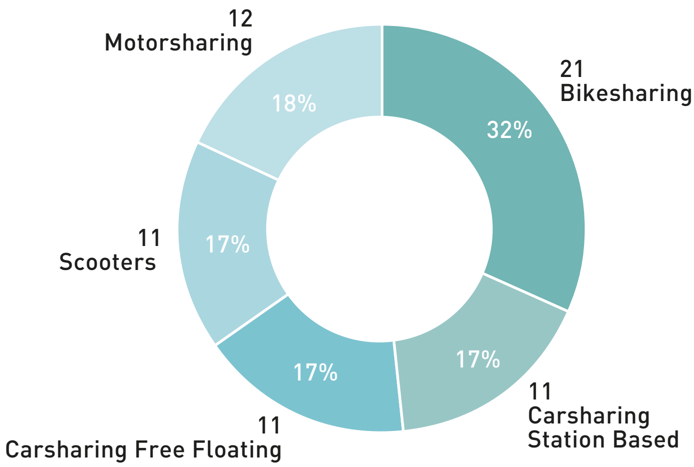
Shared mobility has become one of the essential elements of the new mobility services. They emerged as a response to the problems of modern cities, which are increasingly affected by pollution, climate change, congestion, and lack of physical space. It allows citizens to make their journeys by combining traditional sustainable urban transport modes (walking or public transport) with shared mobility modes (car-sharing, motosharing, bike-sharing), increasing the efficiency of the transport system, improving accessibility, reducing car dependency and, therefore, the emission of polluting gases.

Sharing services offer users a fleet of shared vehicles for individual use that can be rented through mobile applications. Users do not pay for the ownership of the vehicle, but for the minutes they use it. These vehicles are equipped with sensors and tracking systems that allow providers to share information in real-time about their location and status, as well as to calculate the approximate amount that the user must pay at the end of the journey (depending on the time of use, distance, type of vehicle, time of the day, location, among other factors), guaranteeing the efficiency and transparency of the service.

In Spain, larger cities have a greater variety of services, while medium-sized and smaller cities lack many. In recent years there has been a considerable increase in shared mobility companies operating in smaller cities. The spread of this type of mobility and plans to adapt to lower demands have allowed some of these services to be received with great success in these localities.

The following graph shows the percentage of companies offering vehicles for each sharing service type.

*Companies providing shared mobility services (2024)*



# METROPOLITAN MOBILITY OBSERVATORY MEMBERS

## Public transport authorities*

Autoritat de Transport Metropolità de València

Autoritat del Transport Metropolità de Barcelona

Autoritat Territorial de la Mobilitat Àrea de Lleida

Autoridad Territorial del Transporte de Gipuzkoa

Autoritat Territorial de la Mobilitat Camp de Tarragona

Autoritat Territorial de la Mobilitat Girona

Ayuntamiento de A Coruña

Ayuntamiento de Cáceres

Ayuntamiento de León

Ayuntamiento de Santander

Ayuntamiento de Valladolid

Cabildo de Tenerife

Concello de Vigo

Consorci de Transports de Mallorca

Consorcios de Transporte de Andalucía

Consorcio de Transportes de Asturias

Consorcio de Transportes de Bizkaia

Consorcio de Transportes del Área de Zaragoza

Consorcio Regional de Transportes de Madrid

Mancomunidad de la Comarca de Pamplona

Transporte Alicante Metropolitano

Transporte de Gran Canaria

* Alphabetical order

## Other permanent members

Dirección General de Tráfico

Asociación de Transportes Públicos Urbanos y Metropolitanos

Federación Española de Municipios y Provincias

Dirección General de Viajeros de Renfe

Instituto para la Diversificación y Ahorro de la Energía

Ingeniería y Economía del Transporte

Sindicato de Comisiones Obreras

Fundación de los Ferrocarriles Españoles

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