EXECUTIVE SUMMARY

The Bicycle Accounts

Putting numbers to the bicycle effect.

ConBici
COORDINADORA EN DEFENSA DE LA BICI

Qualification:

Bicycle Accounts. Putting figures to the bicycle effect.

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The bike matters. Its advantages and virtues over motorized means of transport give this means of travel the capacity to stimulate social and ecological change within the framework of the United Nations Sustainable Development Goals (SDGs) (The use of the bike is directly related to the fulfillment of 11 out of the 17 SDGs).

This revitalizing capacity of the bicycle makes it a fundamental element of a series of government strategies and plans approved in recent years. These include the Sustainable Development Strategy, the Spanish Urban Agenda, the Road Safety Strategy, the Public Health Strategy, the National Integrated Energy and Climate Plan, and, obviously, the Safe, Sustainable and Connected Mobility Strategy. From this strategy, the State Bicycle Strategy has emerged, with its motto of the "BICYCLE EFFECT": a promotion of the bicycle's advantages and virtues.

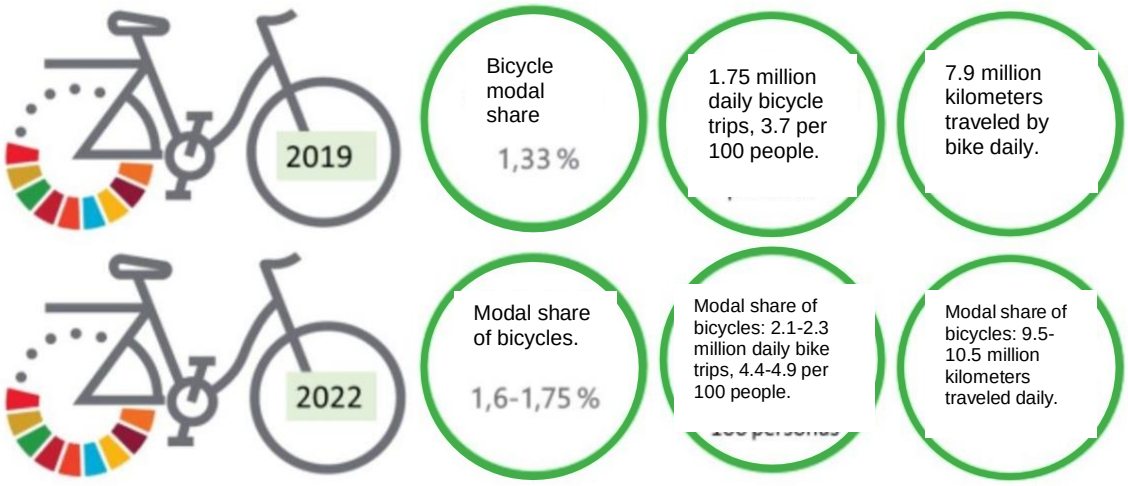
But, despite this leading role in the institutional agenda, Spain lacks a specific data system for cycling that allows a better understanding of the role of this mode in the general framework of the evolution of mobility and rigorous support for the arguments in their favor and, with this, reinforce public policies to promote and improve active modes of travel, particularly the bike.

The Bicycle Accounts come to fill this gap, constituting a tool for the orderly presentation of the figures and main arguments related to this means of transport, whose main objective is to highlight the social, environmental and economic interest of the public policies that support for the bike.

The starting point of the study consists in obtaining an image of the use of the bicycle in Spain and its trends, based on an important consideration, that of its relative universality as a means of transport compared to the automobile, a vehicle that is not accessible autonomously to more than 21 million people in Spain, simply because they do not have a license to drive it. In this regard, the figures for the vehicle fleet are also significant: compared to an estimated fleet of 34.8 million bicycles, the passenger car fleet reaches 24.6 million.

As regards its use, the analysis of regional, metropolitan and large-city mobility surveys has made it possible to estimate some of the fundamental variables that characterize daily cyclist mobility and, in particular, the number of trips by bike, the percentage they represent with respect to the total and the distances traveled:

Estimation of modal split, number of journeys and km traveled in 2019 and 2022



These results for the current use of the bicycle can be seen as disappointing or, on the contrary, as encouraging. Despite the significant growth in its use in recent years, especially in some territories and cities, the bike still covers a small share of daily trips (around 1.7%), a small figure, especially in relation to other European countries.

These results on the current use of the bicycle can be viewed as either disappointing or encouraging. Despite significant growth in its use in recent years, especially in some territories and cities, the bicycle still only represents a small share of daily trips (around 1.7%). This figure is relatively small, especially when compared to other European countries.

Seen from another angle, the data and the comparison with other countries also suggest an enormous potential for expanding bicycle use in all territories and modalities.
Thus, for example, most of the trips by car on which the modal change policies have to be applied, in coherence with the entire set of strategies and plans of the administration mentioned, have cyclable distances, that is, they cover routes daily journeys of less than 7 km and, therefore, could be replaced by journeys on foot and by bicycle.

Additionally, another encouraging factor is that when rigorous cycling policies have been applied consistently, the normalization of bicycle use has been observed. Evidence of this normalization can be seen in the increased participation of women and people of all age groups in cycling. In territories or cities with low bicycle use, women only represent around 25% of cyclists, while in areas where cycling infrastructure has been consistently expanded, women now represent between 33 and 40% of total cyclists.

In this context, the Bicycle Accounts appraise the objectives to be achieved throughout this decade, proposing three reference scenarios for 2030:

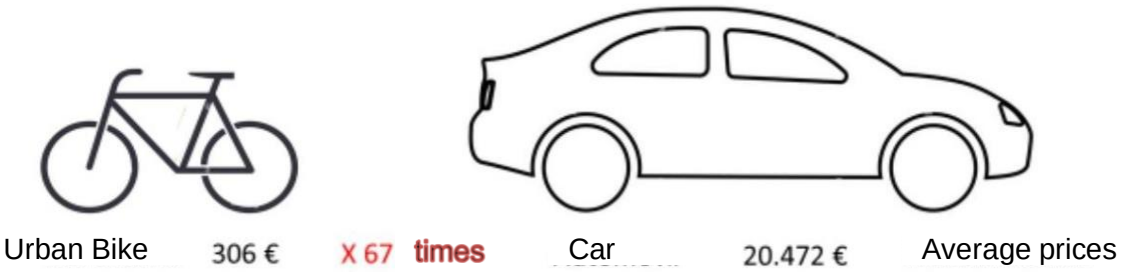
- **Trend scenario**. It contemplates a growth in the use of the bicycle similar to that which has occurred in the last decade, which would translate into reaching a share of around 2.5% of the number of daily trips in the next two complete periods of local and regional governments. of the country, doubling what it had before the pandemic, as indicated below.

- **Transition scenario.** It proposes intensifying the growth of bicycle use until reaching a modal share of 5% in 2030, almost quadrupling what it had in 2019. This scenario is consistent with the National Integrated Energy and Climate Plan 2021-2030 (PNIEC), approved by the
  Council of Ministers in spring 2021.

- **Disruptive scenario.** Consider the much more ambitious objective that the bicycle reaches 10% of the modal share or distribution of trips in only two periods of local and regional governments, a goal similar to that proposed by the Network of Cities for the Bicycle in the Senate in April of 2022.

The Bicycle Accounts also analyze the economic dimension in this way, both relative to its costs and the economic activity associated with the sector. In relation to the first of these factors, beyond the interest of the breakdown that is made for each phase of the complete travel cycle, the comparison with the costs of the car is especially relevant, which in the case of the average costs of purchase multiply by 67 times those of an urban bicycle and represent the equivalent of three quarters of the average salary in the country (27,570 euros).

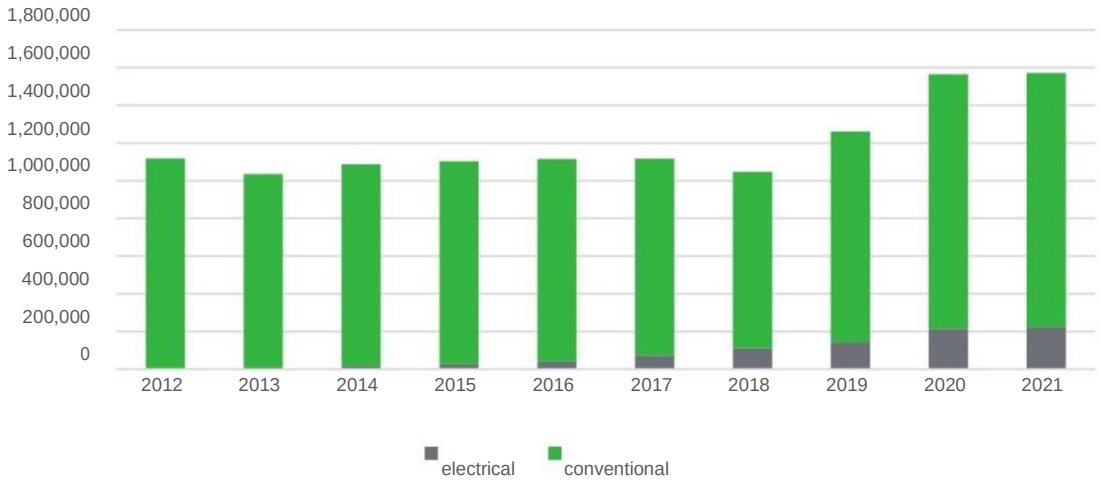
Comparison of the acquisition costs of urban bicycles and average cars in 2021



These same orders of magnitude present the costs of maintenance and repair of vehicles, while only the car incurs travel costs (fuel). Thus, it is verified that the bicycle is the most accessible vehicle for the population.

Regarding economic activity, the Bicycle Accounts paint a picture with the presence of 6 bicycle and component factories that in 2019 produced 219,374 bicycles, with an accumulated value of 124.1 million euros; in addition to 2,951 shops selling, repairing or renting bicycles, whose sales volume in that year amounted to 1,871 million euros, of which 46% corresponds to the sale of complete bicycles. As a whole, the manufacture and sale of bicycles and their components employs more than 22,500 people in Spain. To which should be added the activity and employment linked to other professions and sectors associated with cycling (cycling tourism, technical personnel, trainers, etc.).

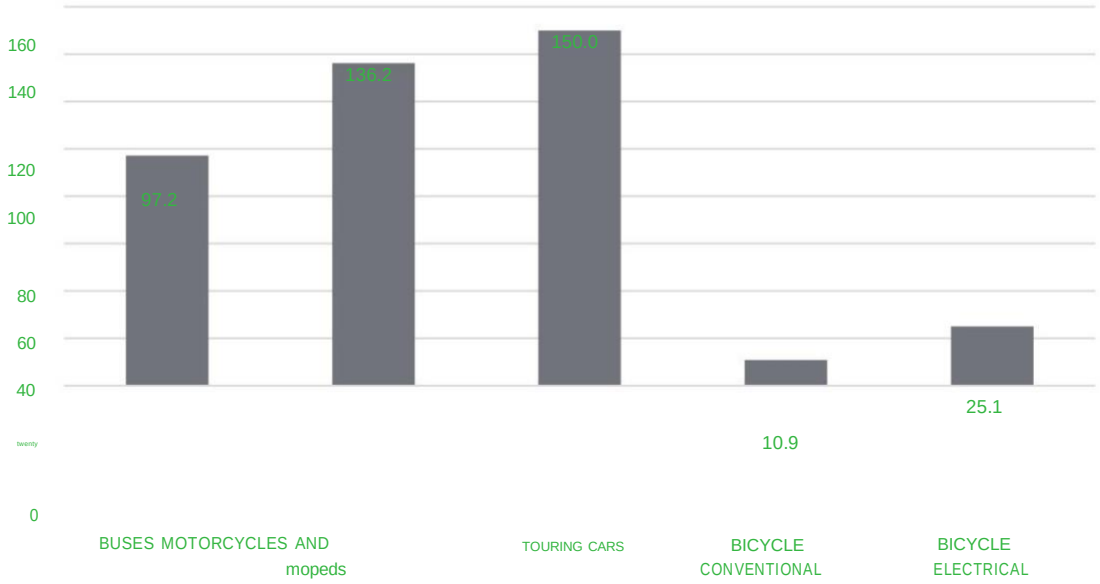
Evolution of bicycle sales in Spain



The Bicycle Accounts also confirm the virtues of the bicycle in mitigating climate change, with much lower emissions than motorized vehicles throughout the entire journey generation cycle. Considering only the modes of transport for people, the emissions of the bicycle (187 kt CO2-eq) representing 0.23% of the total GHG emissions of these modes (110,885 kt CO2-eq), if they are not considered the emissions associated with the construction of infrastructures (which are often carried out jointly).

This comparison is conditioned by the volume of trips made in each mode, being much higher in the case of road modes. But the goodness of the bicycle in terms of its contribution to the fight against climate change is evident when establishing the comparison in terms of unitary emissions (g CO2-eq/km), where it is observed how GHG emissions per person transported and kilometer the bicycle route, both conventional and electric, are notably lower than those of road modes of passenger transport (7% and 16% lower than those of passenger cars, respectively):

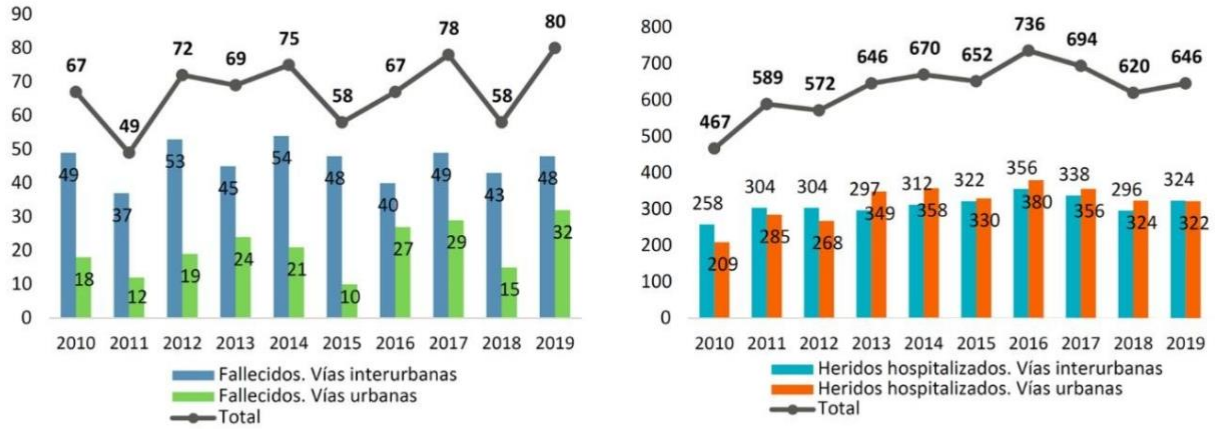
Unit GHG emission factors (g CO2-eq/km)



The Bicycle Accounts also shed light on other virtues of this mode of travel in the environmental and health spheres, by emphasizing the quality of the bicycle to reduce air pollution and noise to the extent that it replaces motorized travel. As well as the contribution of the bicycle as a means of active travel to a healthy life, with a lower burden of diseases derived from a sedentary lifestyle. With the current figures for use, an estimated 377 premature deaths are prevented per year thanks to the physical activity associated with pedaling, which could be multiplied by three in the future if regular use of the bicycle is also multiplied by that figure.

Another of the key aspects analyzed by the Bicycle Accounts is its accident rate and the perception of safety in cyclist traffic, which all opinion polls on cyclist mobility place as the greatest obstacle to its use. This analysis is necessarily based on the record of road accidents in which bicycles are involved, whose official figures present a relatively unstable but upward trend.

Evolution of deaths and injuries hospitalized by bicycle in Spain (2010-2019). Urban and interurban roads



However, when these figures are contextualized with the mobility variables, that is, when they are analyzed in terms of risk, the figures for cyclist accidents have improved moderately in the last decade, with a reduction in the risk of death and serious injuries to almost 30% and 18% respectively in the period 2010-2019:

Estimation of the risk of cycling mobility (2010-2019)

Year	per million km cycled daily	seriously injured per million km cycled daily
2010	12.7	88.6
2019	9.0	72.5

But it is not so much about the registration of cyclist accidents, which is also important and is thus reflected in these Bicycle Accounts, but about how road safety is perceived and the position of the bicycle on the roads. Such perception is essential to establish strategic options in relation to cyclist mobility and its infrastructure since the transfer of journeys from cars to bicycles can only take place with increased confidence in the safety of cycling, closely linked to the way roads are designed and managed.

Consequently, it is also important to have, as the Bicycle Accounts do, a representation of the current state of the cycling infrastructure, which would have to be complemented with a review of the rest of the road where the bicycle has to coexist, since the policies traffic calming will be essential to achieve the objectives proposed in the scenarios proposed for 2030.

In conclusion, the bicycle is, as these accounts indicate, an emerging element of urban and metropolitan mobility, but its emergence, as a standard form of travel throughout the country, requires a considerable and lasting effort to align public policies. The figures will indicate in the coming years if this change has occurred with the urgency required by the challenges that the bicycle can respond to.

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