

Title of the measure:	FRA 17 “Free” bike rental system (Vélo en libre service)
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General description

An innovating bike rental system is available in big cities (Nantes since 2008, Paris, Toulouse, Marseille since 2007, Lyon since 2005, and Rennes since 1998, etc).

The first thirty minutes are free. After, the user must pay a certain amount, depending of the city and the network.

The aim is to share the bike instead of keeping it all day long.

In fact, if the user keeps the bike, it will be really more expensive than a classic bike rental system.

It is made for tourists and inhabitants of the city. In fact, it can be used for one day, in this case, the user have to buy “a card” to borrow the bike for 24hours.

For the inhabitants who get a subscription for the local public transport network, they can use the same card (they have to pay 30€ for example in Paris, for a subscription of one year).

Impact evaluation (methods and results)

Follow-up :

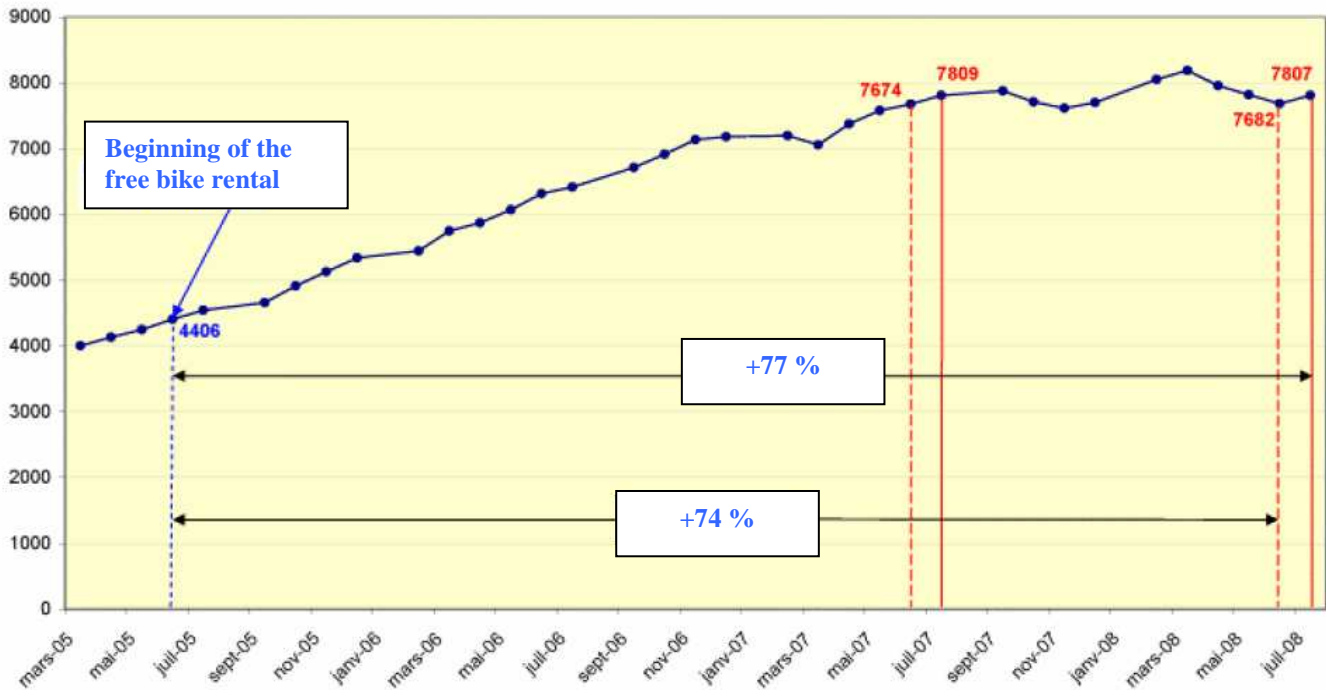
In 2008, about **20 cities** have a free bike rental system. It represents a total of **32 000 bikes in France and 2500 bike stations**. Paris, city with the biggest bike rental system has 20 600 bikes and 1450 stations. Nice, with the second biggest system, has 4000 bikes and 360 stations. Other cities have between 350 and 2000 bikes.

Lyon has many data on its bike rental system.

Table 1 – Figures on Lyon’s free bike rental system

Number of bikes	4000
Number of rentals in 2008	6.5 millions
Average number of rentals per day per bike	4.5
Total number of km covered	13.2 millions
Average distance covered with a rental (km)	2

Graph 1 – Evolution of the number of bikes running in Lyon (16 cross-roads have been observed)



Thus, travels with free bike don't have replaced travels with private bikes but have been added to travels with private bikes.

It even seems that free rental system also have a virtuous effect on private bikes: it could indirectly led to the increase of the number of private bikes.

Table 2 – Results of a survey in Lyon : percentage of free bike users who would have travelled by private car, private bike, public transport or by foot without the free bikes.

By private car	7%
By private bike	3%
By public transport	51%
By feet	37%
Wouldn't have travelled	2%

Methods :

The hypothesis is that other French cities have similar behaviour

Table 3 – Hypotheses for the evaluation

Number of bikes in France	32 000
Average number of rentals per day per bike	5
Average distance covered with a rental (km)	2
Percentage of users who would have travelled by private car	10%
Percentage of users who would have travelled by private bike	5%
Percentage of users who would have travelled by public transport	50%
Percentage of users who would have travelled by feet	35%

Percentage of users who wouldn't have travelled	0%
Average cost of investment and exploitation per car per year	2500€
Environmental cost (noise nuisance, local contamination and green house gaz)	5c€/km

Economic results

	(M€ per year)
Financial cost (investment, exploitation)	-80
Public funds opportunity costs (difference between cost and benefits of the rental system)	-19.2
Cost due to a decrease of public transport use	-2.30
Cost of road safety for bikes	-0.3
Total cost	-101
Benefits for bikers	77.9
Less traffic jams	3.5
Less overpopulation in public transport	26.3
Environmental benefit (noise nuisance, local contamination and green house gaz)	0.6
Total benefits	108
Balance	6.8

CO2 savings

The total distance covered in France with free bike in 2008 is 32 000 (number of bikes) * 5 (number of rentals per day) * 2 (average distance per rental) that is to say 116 880 000 km.

As 10% of users would have travelled by private car, it makes **11 688 000 km made by bike instead of car.**

The average consumption of cars was around 170 gCO₂/km in 2008, hence the following result.

Ex-post evaluation	2008
direct CO ₂ (kt)	2
Energy (TJ) (Fuels/Electricity)	

Note: It is not a totally "carbon free" measure, because there are some cars which take the bikes from too used stations to take them to another less used, in order to try to keep a balance between all the stations. For example, at the bottom of a hill, there are more people who go down...and not so many who climb up the slope.

Besides, a lot of maintenance must be done on these bikes, about the different networks existing, there are more damaged bikes compared to a classic rental system.

Measure Impact Level

low

medium

high

Definition of impact:

Low: CO2 savings < 0.1% of overall CO2 emission in transports

Medium: between 0.1 and 0.5%

High: > 0.5%

Explanation:

For 2008:

CO2 savings represent 2 kt and the emissions of transports in 2008 represented 135 Mt. Thus the ratio is around 0.0015%.

Interaction of measures

Historical data

Some similar systems existed before in little cities, for example La Rochelle. But, there were only ten stations where the users could take or leave the bikes; it was more difficult to find a station near the place where the user wanted to go, even if the city is smaller.

References

<http://www.ademe.fr>

Websites of the different systems in Paris, Lyon, Toulouse...

<http://www.velib.paris.fr/>

<http://www.velov.grandlyon.com/>

<http://www.velo.toulouse.fr/>