

# THE USE OF ACTIVE MODES IN FRANCE

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## ABSTRACT

In France, the extraordinary development of the car which took place during the period 1950 - 1990 and the almost total failure to take walking and cycling into account in transport planning at that time led to a decline in their use. Walking as a practice, however, started to stabilize during the nineties.

The first decade of the 21<sup>st</sup> century has been marked by a stabilisation in the number of journeys made using human-powered transport modes (walking, cycling) in France. Given the decline in these modes over the previous decades, such a stabilisation represents a major turning point. Furthermore, it is a trend confirmed by all household travel surveys carried out in recent years. More restrictive environmental and economic factors, ever greater traffic congestion, and voluntarist transport policies (such as the implementation of self-service bike-hire schemes) are other factors that also explain this change.

However, if we look beyond this combined trend for all human-powered modes, we can see that walking and cycling each have different usage patterns, which need to be analysed if we are to gain a better understanding of existing margins for progress.

First, let's consider walking. It may sound like a cliché, but this is a predominantly female mode of transport that is frequently used for shopping, strolling for pleasure and travelling to one's place of study. It is a mode that is used in urban areas in particular. In France, schemes such as the *Code de la rue* ("Rules of the Street") will serve to encourage its use in dense urban zones, but it is also important to promote walking for short journeys in areas where there are few constraints on car use.

Let's now turn to cycling. This is the mode that has seen the most striking changes: cycle use is on the rise in towns and cities, but declining in periurban and rural areas. More and more people in France have bikes, and many of these people use them occasionally; nonetheless, bicycle use overall remains low. If the current trend of growth is to continue, and if cycling is to be seriously developed as a daily mode of transport, then progress will have to be made in terms of providing secure cycle parking facilities and improving road layouts to enable safer cycling, particularly between city centres and outlying suburbs.

*Keywords: active modes, walking, cycling, bicycle, mobility, modal share, journey, user, household travel survey*

## INTRODUCTION

In France, the extraordinary development of the car which took place during the period 1950 - 1990 and the almost total failure to take walking and cycling into account in transport planning at that time led to a decline in their use. Walking as a practice, however, started to stabilize during the nineties.

Today, environmental questions are present all around us. Problems of congestion are on the increase in urban areas. The economic difficulties related to the increasing prices of fuel and the drop in purchasing power might encourage households to re-examine their mobility strategy. As regards urban development, a decree deriving from the "Code de la rue" (Rules of the Street) programme introduced, in July 2008, the "vehicle/pedestrian" zone, a pedestrian priority area in which vehicle speed is limited to 20 km/h.

All these developments are helping towards more consideration being given to active mode mobility. The latest French national survey transport and travel survey (ENTD 2008) provided the occasion to take stock of how these modes are put into practice. It highlights a number of outstanding results and developments<sup>1</sup>, including:

- a trend towards stability of the use of active modes, both walking and cycling<sup>2</sup>: the modal share of walking went from 23.2% in 1994 to 22.3% in 2008. Cycling accounts for 2.7% of trips in 2008, as against 2.9% in 1994;
- a continued increase in the number of bicycles: the number of adult bicycles rose from 21.3 million in 1994 to 26.7 million in 2008;
- changes in the way bicycles are used: they are being increasingly used in central urban areas and less so in rural and periurban areas. Also, workers are tending to use them less and executives more.

## WALKING AND CYCLING ARE TENDING TO STABILIZE

In 2008, the French made on average 250 million trips on foot and 32 million trips by bicycle each week. Mobility on foot is 0.70 trips per day and per person during the week (0.54 on Saturdays and 0.44 on Sundays). Mobility by bicycle is 0.08 trips per day and per person during the week (0.08 on Saturdays and 0.07 on Sundays).

Table I – Changes in modal share for local trips made on weekdays

	1994	2008
Walking	23.2%	22.3%
Cycling	2.9%	2.7%

On weekdays<sup>3</sup>, walking accounts for 22.3% of trips (table 1). This modal share is stable as compared to 1994. The modal share of cycling is 2.7% of trips, slightly lower than in 1994.

<sup>1</sup> All the results presented in this article relate to local trips, over a radius of 80 km as the crow flies, around the home.

<sup>2</sup> As the 1993-1994 survey did not list trips on foot at the weekend, the change relates to mobility on weekdays.

<sup>3</sup> Weekend trips are examined below in a special paragraph.

Nevertheless, in view of the large drop in the use of walking and cycling observed between 1982 and 1994, the last decade marks a clear upturn in the trend.

## **PHYSICAL DISCOMFORT, SPORT AND THE USE OF ACTIVE MODES**

### **More and more people experience physical discomfort when travelling**

In 2008, 10.5% of people aged 18 and over declare that they experience physical discomfort or are limited in the trips they make outside their home. This figure was 8.4% in 1994. 54% of them cannot travel around alone on all routes. These people are obviously mostly to be found amongst the elderly : among people aged 75 and over, the share of affected people went from 49%<sup>4</sup> in 1994 to 46% in 2008.

6.3% of people declare that they have difficulty in walking a few hundred meters and 4.9% have difficulty cycling or motor-cycling.

This considerable percentage of people who have difficulty moving around will undoubtedly be growing in the future. It is today essential to take them into account in urban development.

### **More than one person out of three cycles**

While trips by bicycle account for only 2.7% of all trips, 40% of people aged 6 and over say that they cycle occasionally or regularly. Of these, 82% like to travel by bicycle, while 7% do not.

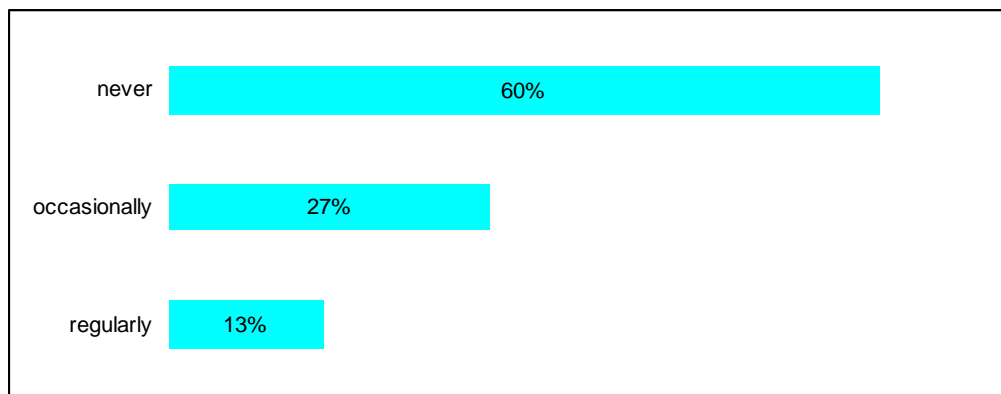


Figure 1 – Percentage of people aged 6 and over claiming to travel by bicycle

### **Is cycling only for the athletic?**

42% of people aged 6 and over say that they play some form of sport at least once per week. It should be noted that people who say that they play some form of sport at least once per week are also the people who travel the most by bicycle.

<sup>4</sup> Madre JL (1997). How the elderly and/or disabilities move, RTS 56, 87-95

In addition, 59% of people aged 6 and over say that they walk on average more than half an hour per day, this being the amount of time recommended by the french ministry for health as part of the national health and nutrition programme.

### Few people wear a helmet when cycling

77% of the people who cycle never wear a helmet, while only 14% of people wear one as a matter of course. Children aged between 6 and 10 are the best protected, as 43% of them always wear helmet while cycling.

0.28% of individuals said they had had an accident as a pedestrian in the 5 years prior to the survey. This figure is 0.35% for cyclists. This represents a reported accident every 1800 years for pedestrians, and every 600 years for cycling. Accidents to cyclists, as cycling itself, greatly decrease with age.

#### Good reasons for not cycling

The 2005 permanent survey of living conditions (EPCV) dealing with the year 2004 is consistent with the ENTND since it gives an estimated 62.5% of people as not using a bicycle during the year of the survey.

Among the reasons put forward for not using a bicycle, the following are the most frequently quoted:

- "I don't have time" 28.2%
- "I don't have a bicycle" 12.5%
- "I don't want to" 9.3%
- "I'm afraid of the traffic" 8.0%
- "I don't like cycling" 7.8%

## MORE AND MORE HOMES WITH BICYCLES

In 2008 the French had over 35.7 million bicycles, 69% of which were used during the 12 months prior to the survey (table 2). There are 26.7 million adult bicycles. Their number has doubled since 1982 and increased by 25% since 1994.

Table II – Owning et using bicycles

number of bicycles (in millions)	1982	1994	2008				
	available to households		used over the last 12 months	%	used at least once a week	%	
<b>Adult bicycles</b>	13.1	21.3	26.7	17.4	65%	6.7	25%
<b>Children's bicycles</b>	n.a.	n.a.	9.0	7.3	81%	n.a.	n.a.
<b>Total</b>	n.a.	n.a.	35.7	24.7	69%	n.a.	n.a.

During the 12 months prior to the survey, 55% of households did not use a bicycle and 25% of households had bicycles that were not used. The presence of children in the household is a factor influencing the use of bicycles, and the households that have bicycles use children's bicycles (81% of bicycles used) more than adult bicycles (65% of bicycles used).

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Table III – Bicycles ownership in households

	No bicycles		One bicycle		Several bicycles	
	1994	2008	1994	2008	1994	2008
Adult bicycles	50%	47%	23%	23%	27%	31%
Children's bicycles	n.a.	80%	n.a.	9%	n.a.	10%
Total	n.a.	42%	n.a.	20%	n.a.	37%

Like vehicle ownership, more and more bicycle are owned in households, especially because of the increasing trend to own more than one bicycle (table 3). Between 1994 and 2008 bicycle ownership went from 93 bicycles to 109 bicycles per 100 households, or an increase of 17%.

However, in spite of this increase in the number of bicycles, mobility using cycling has stabilized, as was noted above: bicycles are therefore used less and less.

Lastly, bicycle ownership by households increases with vehicle ownership (table 4), and this is true independently of the income effect. On the other hand, for a given level of vehicle ownership, bicycle ownership increases with the size of the household.

Table IV – Bicycles ownership in households according to vehicle ownership

Car ownership	N° of adult bicycles for 100 households	
	1994	2008
No car	34	29
One car	87	83
Two cars	151	158
Three cars and above	185	223
<b>Together</b>	<b>93</b>	<b>109</b>

### Nearly 50% of bicycles are adult mountain bikes

48% of bicycles in France are adult mountain bikes (figure 2). Racing cycles, which account for 19% of all bicycles, often belong to men aged between 50 and 75. Women tend to have hybrid bikes and town bikes when they are over 40. Men tend to favour mountain bikes.

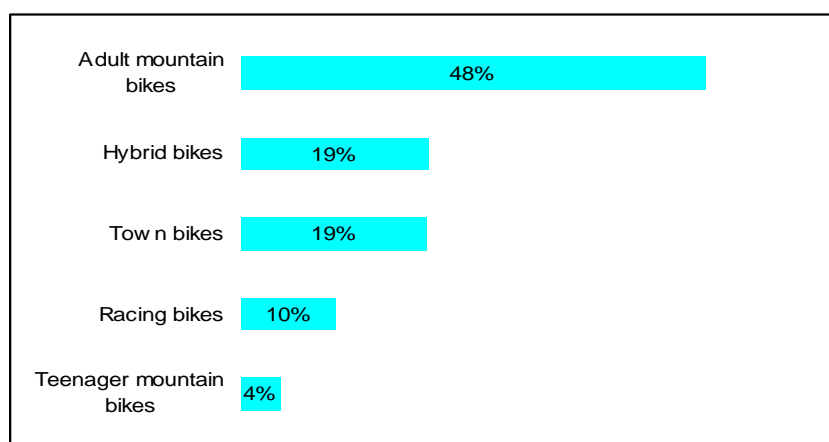


Figure 2 – Breakdown of bicycle ownership by type of bicycle

## Theft makes people reluctant to cycle

2.1% of households claim to have had a bicycle stolen during the 12 months prior to the survey. 24% of these households have witnessed one of their member giving up cycling as a result of the theft. Quite understandably, the number of thefts is lower when there is a bike shed in the common areas of flat.

## ACTIVE MODES FOR SPECIFIC REASONS

Walking and cycling each have specific reasons for being used (table 5). Walking and cycling are traditionally forsaken for work-related trips, for which reason trip distances are the longest. They are of course a means of taking exercise or walking around, but they are also used to go to one's place of study. Walking is also used for shopping and cycling to visit parents or friends.

Table V – Modal share percentage in weekday trips, by reason for travel, in 2008

Reason	Walking	Cycling	Public transport	Motor vehicles	Other
Work	13%	2%	93%	28%	78%
Study	32%	33%	23%	14%	37%
Shopping	18%	22%	3%	9%	68%
Visits	15%	35%	4%	4%	68%
Exercise	49%	89%	4%	0%	41%
Other	23%	1%	5%	9%	68%
Total	23%	27%	8%	17%	69%

## Trips for studies: a change in the trend at last?

On weekdays and in their preferred sector, active modes are changing in contrasted ways as compared with previous surveys.

Walking continues to lose market shares for “studies” reasons, but the drop is less marked than between the previous two surveys (figure 3). The continued use of a motor vehicle for this reason has, in addition, considerably fallen off as compared to the previous decade. This downturn has also been observed in the latest surveys carried out in Lille and Lyon in 2006. The modal share of cycling increased from 2.8% in 1994 to 3.3% in 2008, which is a reversal of the trend. Measures in favour of eco-mobility for school children (school journey plans, the Pédibus and Vélobus schemes - for going to school on foot and by bike respectively, etc) will, in the coming years, have an important role to play in this trend.

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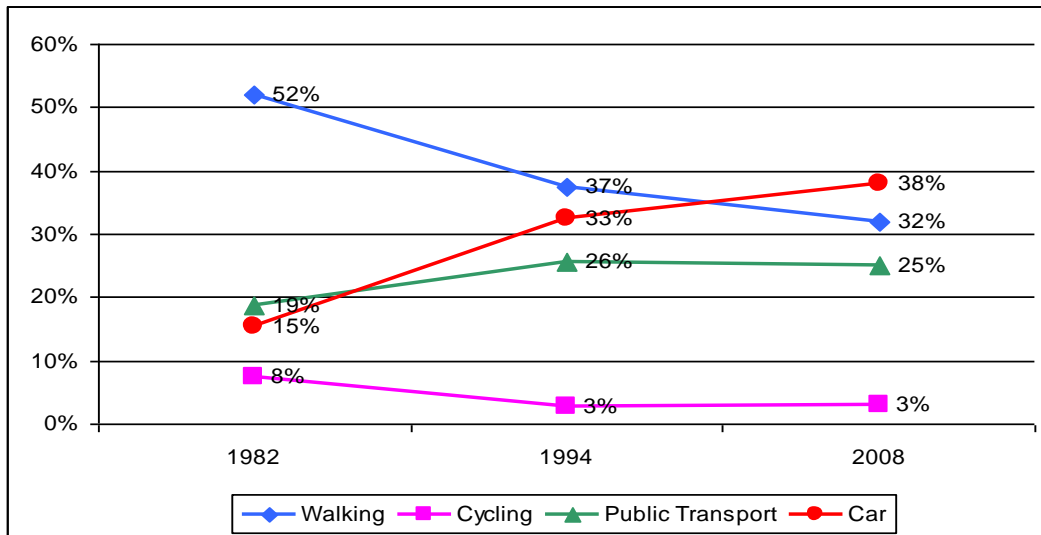


Figure 3 – Changes in modal share for trips made on weekdays for studies

For “shopping” trips, the modal share of walking can be seen to be stabilizing, with 27% (as against 45% in 1982!). And yet in 66% of cases, motorists come back empty-handed from their shopping trip or with purchases that they could carry in their pockets or in a basket.

## THE TIME ASPECT OF ACTIVE MODES

### Special use of active modes at the weekend

In terms of the modes used or the reasons for travel, weekend mobility has its own special features. The number of trips made by people each day is lower by 12% on Saturdays and by 41% on Sundays.

The bicycle is used especially at the weekend. 26% of bike trips are made at the weekend (as against 23% for trips using all modes). Its modal share is 3.0% on Saturdays and 3.6% on Sundays, as against a modal share of 2.7% on weekdays.

In contrast, recourse to walking at the weekend is not so clear-cut. In comparison to trips during the week, its market share is lower on Saturdays (19.4%) and higher on Sundays (23.5%).

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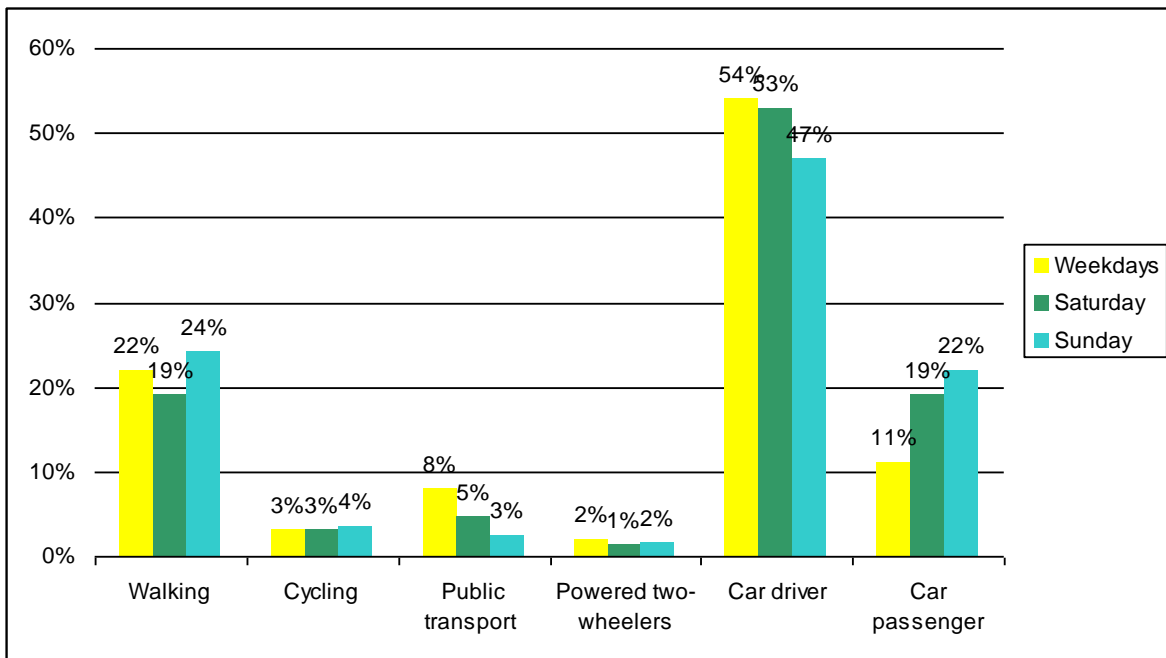


Figure 4 – Breakdown of trips by mode on weekdays and at the weekend

An analysis by reason for travel brings out several interesting points:

- Saturday, a day when more than a third of trips are made for shopping reasons, is the day of the car. Walking is in particular much less used for this reason on Saturdays (modal share of 20%) than on weekdays (27%);
- sports activities take on more importance at the weekend than on weekdays (up to 22% of trips made on Sundays). For this reason, the active modes are of course very much used, especially cycling for which the modal share is 9%;
- school-children walk less and use public transport less on Saturdays, and more cycling and the car than on weekdays to go to their place of study;
- finally, Sunday visiting, which accounts for 28% of trips on that day, is mainly done by car, and very little on foot (modal share 13%).

**Active modes do not like the cold**

Walking is not an activity influenced by the season or the weather. Only strong rain or temperatures below 0°C lead to a slight reduction in its use.

Just like walking, the use of cycling falls in temperatures below 0°C. But light showers do not discourage cyclists. Cycling, though, does seem to be influenced by the season: its modal share varies by a factor of one to three between November-December and the summer months.



## THE GEOGRAPHY OF ACTIVE MODES

### Active modes belong in dense zones

Because of stronger imperatives brought to bear on traffic and car parking, and better-quality pedestrian areas and cycle tracks, sustainable modes are more used in central city areas. But they are neglected in rural areas (figure 5). A parallel can be drawn with the type of housing: collective housing encourages the use of active modes. The high modal share of cycling in isolated towns (3.4%) should be noted, whereas the modal share of walking is fairly low in such towns.

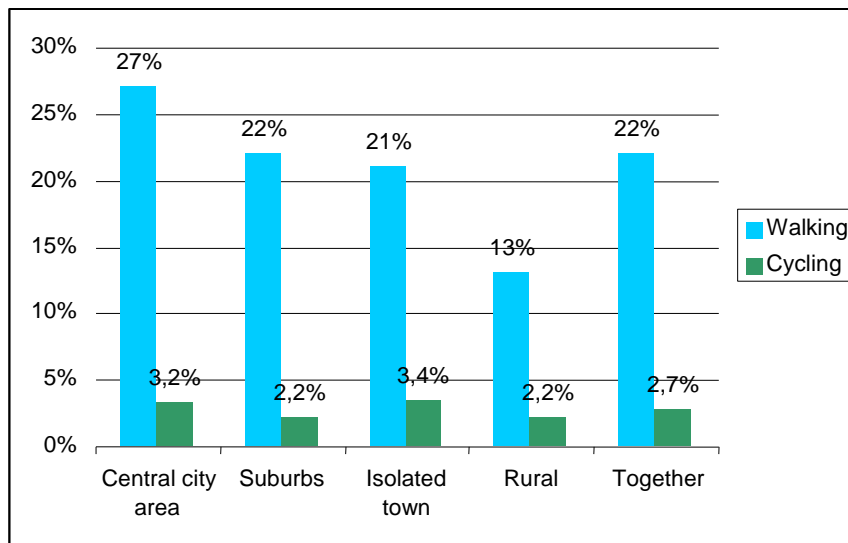


Figure 5 –

of active modes for trips made on weekdays by area of origin

Percentage

Compared to 1994, changes with regard to cycling are notable: while the drop continues markedly in rural and suburban environments, a clear recovery of the modal share in central city areas is to be observed (from 1.9% in 1994 to 3.2% in 2008). This recovery of cycling in town is a striking feature of the last decade, also noted in certain household travel surveys carried out in French urban areas since 2006. Setting up self-service bike-hire systems should reinforce this trend in the coming years.

### An upturn in cycling in Paris

Walking dominates trips within Paris and its inner suburbs. In Paris, its modal share went from 51% in 1994 to 55% in 2008. Walking is also increasing in the Centre-East (from 22 to 26%) and in the East (from 22 to 26%) regions, but is falling in the Nord-Pas-de-Calais (from 30 to 20%) region.

A remarkable upturn of the use of the bicycle, whose modal share went from 0.5% in 1994 to 2.9% in 2008, can be observed. The start of the Vélib' bike hire system in July 2007, at the beginning of the survey, is undoubtedly largely responsible for this. Less remarkable rises in the use of cycling are also to be observed in the Paris inner suburbs or in the east of France.

On the other hand, noticeable decreases are to be noted in the Nord-Pas-de-Calais region, in the west and in the south-west.

## THE DEMOGRAPHY OF ACTIVE MODES

### Walking is feminine and cycling is masculine

As mentioned above, the use of active modes greatly differs according to sex (figure 6). Walking is becoming more and more of a feminine activity: on weekdays, 61% of trips on foot in 2008 were made by women as compared with 58% in 1994. This feminine tendency of walking is to be observed throughout Europe. In contrast, the masculine nature of cycling remains unchanged.

It should be noted that at the weekend walking is less female than on weekdays, while cycling is even more male.

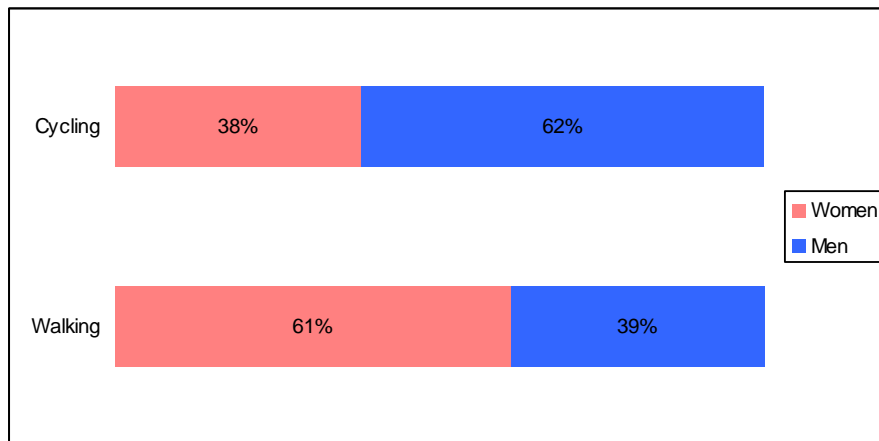


Figure 6 – Percentage of active modes used on weekdays by sex

Age is also a key determining factor of the use of active modes. As in 1994, it is mostly young people (aged 6 to 17) who walk, and also the oldest, especially women. Girls aged between 11 and 14 walk more than boys.

As in 1994, cycling gets its highest modal shares from boys aged between 11 and 17. Men aged between 65 and 74 are also cycling enthusiasts.

Analysis according to social category confirms that the pensioners and students are some of the main users of active modes. Pensioners, however, walk less than in 1994. Other people who do not work (the unemployed, people at home, etc.) are also walking and cycling enthusiasts.

People in work walk less than those out of work. But of those who work:

- the staff of personal service companies and the professions walk the most, while craftsmen, company directors and foremen walk the least;
- the modal share for cycling is higher for the staff of personal service companies and for executives in the public sector. As compared with 1994, the modal share for cycling is dropping for workmen while it is growing for executives and the professions. As a general rule, employees in the public sector cycle more than employees the private sector.

Finally, it should be pointed out that people who have a driving license cycle more those who do not.

## **TRAVEL TIMES USING ACTIVE MODES**

Compared to 1994, the average duration of a trip is on the increase for all modes. The active modes are no exception to this trend, since the average duration of a trip on foot has moved from 12.6 minutes to 13.4 minutes and that of a bicycle trip from 13.9 minutes to 16.2 minutes (table 6).

Table VI – Average trip time on weekdays by mode



While the majority of trips on weekdays (65%) take less than 15 minutes, this is even truer for walking, which is found to be a good option for short trips: 79% of trips on foot take less than 15 minutes.

Considering average travel speeds to be stable in time<sup>5</sup>, it can be observed that 75% of trips on foot are made over less than 900 meters and that 75% of cycling trips are made over less than 3.2 km.

The relatively significant modal share (3.8%) of cycling should finally be noted for trips of over 90 minutes: these are probable cycle rides for exercise.

### **Reliable journey times in active modes**

The active modes are the most reliable modes in terms of being able to forecast the journey time. Pedestrians and cyclists find the actual journey longer than planned less often than public transport users or motorists (approximately 6% of pedestrians or cyclists experience delays, as against 10% for other users). Conversely, cyclists are most frequently pleasantly surprised by the brevity of their journey time.

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<sup>5</sup> The 1994 survey took into account average journey speeds on foot and by bicycle of 3.6 km/h and 9.7 km/h respectively.

### **And elsewhere, in Europe? ...**

Because of survey methods that differ from one country to another, the available data are often not homogeneous and do not allow geographical comparisons. Only changes over time, for a given country, can be analysed..

- In Switzerland:

In a context where distances covered per person at national level are becoming stable, an increase of 20% in the distances covered on foot and a reduction of 20% in the distances covered by bicycle were observed in Switzerland between 2000 and 2005. This trend is also noticeable in the main urban areas (Zurich, Basle, Bern, Geneva and Lausanne), where the modal share of walking is increasing substantially and the modal share of cycling is decreasing slightly. These changes relate in particular to children and teenagers travelling to get to their place of study.

- In the United Kingdom:

As in Switzerland, the distances covered have overall remained stable in the United Kingdom since the beginning of the 2000s. The average number of trips on foot per person and per year fell by 16% between 1996 and 2003, and has stabilized since then. The average distance covered by the British each year remained stable between 1995 and 2006, at around 200 miles per person and per year. The use of the bicycle is characterized by a drop of approximately 15% in the number of trips and distances covered between 1996 and 2003, then by stabilization since 2003.

- In Belgium:

While it is not possible to observe the changes, one should at least underline the impact of the “cultural” aspect on bicycle use: in 1999, the market share of the bicycle was 2% in Wallonia... and 13% in Flanders!

- In the Netherlands:

The Netherlands are known for their strong cycling culture. Figures confirm : the national modal share of cycling is 26% of trips. It reaches 34% for trips of less than 7.5 km, which represent 70% of trips. It should be noted that this strong cycling is more to the detriment of public transport than the car.

Source:

- Switzerland: 1994, 2000 and 2005 micro-censuses, OFS/ARE
- The United Kingdom: National Travel Survey, Department for Transport
- Belgium: 1999 MOBEL survey, Federal services for Scientific, Technical and Cultural Affairs
- The Netherlands : Ministerie van Verkeer en Waterstaat, Bicycle in the Netherlands, 2009

## CONCLUSION

The first decade of the 21<sup>st</sup> century has been marked by a stabilisation in the number of journeys made using human-powered transport modes (walking, cycling) in France. Given the decline in these modes over the previous decades, such a stabilisation represents a major turning point. Furthermore, it is a trend confirmed by all household travel surveys carried out in recent years. More restrictive environmental and economic factors, ever greater traffic congestion, and voluntarist transport policies (such as the implementation of self-service bike-hire schemes) are other factors that also explain this change.

However, if we look beyond this combined trend for all human-powered modes, we can see that walking and cycling each have different usage patterns, which need to be analysed if we are to gain a better understanding of existing margins for progress.

First, let's consider walking. It may sound like a cliché, but this is a predominantly female mode of transport that is frequently used for shopping, strolling for pleasure and travelling to one's place of study. It is a mode that is used in urban areas in particular. Schemes such as the *Code de la rue* ("Rules of the Street") will serve to encourage its use in dense urban zones, but it is also important to promote walking for short journeys in areas where there are few constraints on car use.

Let's now turn to cycling. This is the mode that has seen the most striking changes: cycle use is on the rise in towns and cities, but declining in periurban and rural areas. More and more people in France have bikes, and many of these people use them occasionally; nonetheless, bicycle use overall remains low. If the current trend of growth is to continue, and if cycling is to be seriously developed as a daily mode of transport, then progress will have to be made in terms of providing secure cycle parking facilities and improving road layouts to enable safer cycling, particularly between city centres and outlying suburbs.

One observation common to walking and cycling is that they are both modes that few people use to travel to work. Why is this so? Are employees optimising their "travel chain"? Are home-to-work distances too great? Is cycle parking provision once at work insufficient? Does cycling have a negative image in the workplace? PDEs (*plans de déplacements d'entreprises* – company transport plans), in addition to their primary function, are also a means of changing mentalities and practices, and of promoting human-powered modes in particular (walking and cycling, as well as push scooters, electrically assisted bicycles, etc).

Finally, let's not forget that an increasing proportion of the population has physical difficulty in getting about. At a time when the population is getting older, it is important to make the whole "travel chain" more accessible for everyone, and in particular ensure that pedestrians with physical difficulties are able to enjoy optimum mobility.

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