



## Changes in French behaviour in terms of transport: generational effect and new mobility services

Analysis of the daily mobility of French households reveals some changes in their use of the different modes of transport available to them. While use of the private car is still predominant, the use of other transport modes is changing, depending on the socio-economic characteristics of households and areas of residence. New mobility services such as car pooling or car sharing now complement the transport facilities available to individuals.

The daily mobility of French households, which for a very long time have been focused on growing use of the private car, are now seeing a diversification to other modes of transport, particularly with the appearance of new mobility offers. Analysis of behaviour, covering socio-economic, spatial and generational dimensions, helps to identify trends in daily travel more precisely. Transport choices made have significant consequences in terms of energy consumption and the environment. The development of new forms of mobility should therefore be assessed, in order to evaluate its impact.

### Reasons and choices of transport modes for daily travel and trends

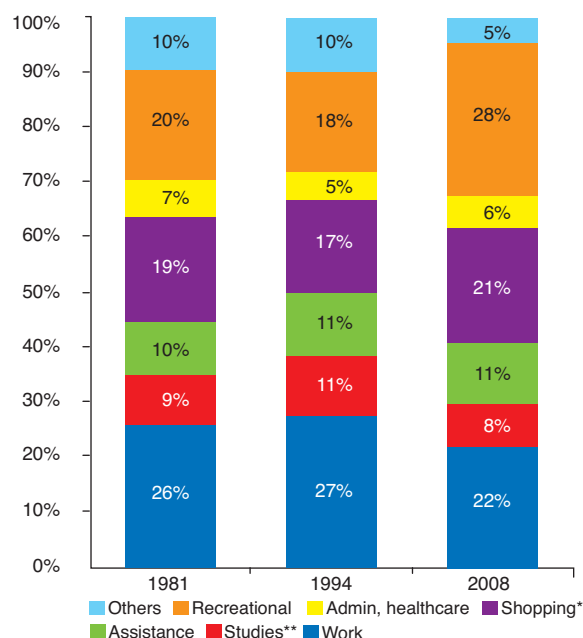
Between the early 1980s and the end of the 2000-2010 decade, there were few changes in the distribution of travel patterns, although there was a decline in journeys for work and studies in favour of journeys for leisure and shopping purposes, which may be explained by the shorter working week (Fig. 1).

The car is the main transport mode used, followed by walking, public transport and finally "two-wheelers". The other transport modes account for a tiny share of the means used for daily travel (Fig. 2).

When the distances travelled are taken into account, the car represents approximately 80% of passenger transport (measured in passenger-kilometres), followed by public transport at around 10% (General Commission on Sustainable Development (CGDD),

SOeS, 2013). In addition, while the vast majority of journeys use a single transport mode, households also account for combinations. The most common appears to be walking and public transport, or walking and car use.

Fig. 1 – Trends in distribution of travel patterns in French households



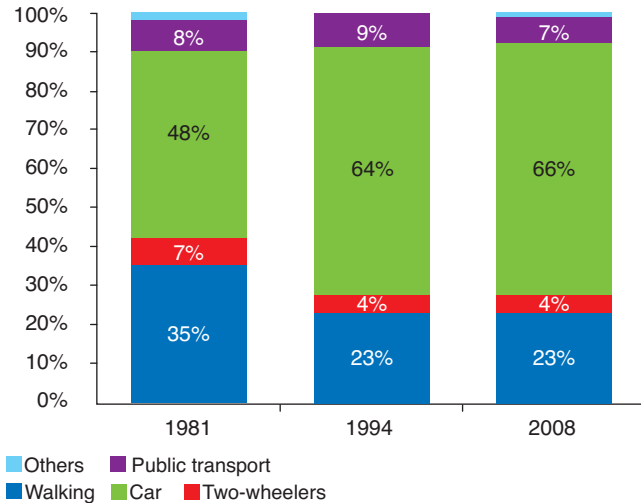
\*Household shopping trips

\*\*Accompanying children to and from school

Sources: Transport surveys – 1981-1982 – (1982), INSEE; Transport and communications – 1993-1994 – (1994), INSEE; Transport and travel (ENTD) – 2008 – (2008), SoeS (Statistical Observatory of the French Ministry of Ecology, Sustainable Development and Energy), Centre Maurice Halbwachs (CMH)

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Fig. 2 – Trends in distribution of travel modes of French households by number of journeys



Sources: Transport surveys – 1981-1982 – (1982), INSEE; Transport and communications – 1993-1994 – (1994), INSEE; Transport and travel (ENTD) – 2008 – (2008), SoeS, Centre Maurice Halbwachs (CMH)

An analysis of modal choices reveals the rational decisions made by households, combining possibly multiple travel needs and associated transport costs. The programme for the day and the locations frequented, together with the structure of the household, are key factors in these choices, as highlighted by the works of sociologists<sup>1</sup>. The car then appears as an appropriate solution to meet a variety of travel needs. Conversely, public transport offers less flexibility, particularly due to time constraints.

While the car's share in daily journeys increased, to the detriment of other transport modes, until the mid-1990s, it then stabilized and has even tended to decline since the beginning of the 2010s. By contrast, a rise has been observed recently in cycling, walking and the use of public transport. Cycling applies to journeys over a short distance. In most cases, a personal bicycle is used, but the share of rental bicycles, in urban environments, is rising. Lastly, new modes of car use are appearing and are also rising. These mainly concern shared car use modes, implementing a strategy of adaptation to the high cost of running a car. Car pooling now concerns a growing number of journeys, mainly for commuting purposes, but also for weekends and holidays. According to studies carried out by BIPE, within the framework of its Observatory of Mobility and Car Usage (OMA), the percentage of the population practising car pooling has risen from 7% in 2010 to 14% at the end of 2013.

(1) In particular Kaufmann (1997, 2000), Bassand et al. (2001), Montulet (2005), Rocci (2007)

### Car ownership and generational effects

The rise in private car use has been accompanied by a rise in household car ownership. The French fleet of private cars has grown constantly for over sixty years and now stands at over 31.5 million vehicles. The vast majority of households now own a car, with the household ownership rate rising from 71% in 1980 to almost 83% at the start of the 2010s (almost 47% of households own one car, 36% own more than one, and 17% do not own a car). Car ownership varies greatly according to the socio-economic characteristics of households, such as income and the number of people in the household. The ownership rate is also linked to generational effects, and to the location of individuals.

Analyses conducted on the basis of survey data on household car ownership<sup>2</sup> reveal the phases of private car distribution in France, marked by changes in the economic situation and living standards of the population. From after the second world war until the mid-1960s, all consecutive generations increased their level of ownership. The trajectories of the different generations then became practically parallel until the 1980s. The difference between the trajectories of the last two generations then reduced, a situation characteristic of a saturation phase.

Mobility patterns, or again car distribution among the population, can therefore be defined by the combination of two movements, one related to evolution of the pyramid of ages, and the other to changes in behaviour due to generational or period effects. Car ownership saw a positive generational effect until the generation born between 1952 and 1963. The generations born after the 1960s were less likely than the previous generation to own a car at the same age. According to INSEE<sup>3</sup> and SOeS studies, the ownership level of 18-24 year olds, which was 68% for the generation born between 1952 and 1963, fell to 59% for the generation born between 1978 and 1990. This indicates a phenomenon of ownership saturation rather than a phenomenon of relinquishing ownership, resulting in a rise in the age of first car ownership. The ownership level in the 31-44 age bracket is 87% for generations born between 1937 and 1977.

Moreover, car ownership trends vary according to the residential area of the household. In rural areas, household ownership continues to rise along with the generations, while since the 1952-1963 generation, ownership has fallen in the greater Paris area. Ile-de-France residents effectively have alternatives to the private car and are

(2) Mainly the works of Madre and Gallez (1993)

(3) Institut national de la statistique et des études économiques

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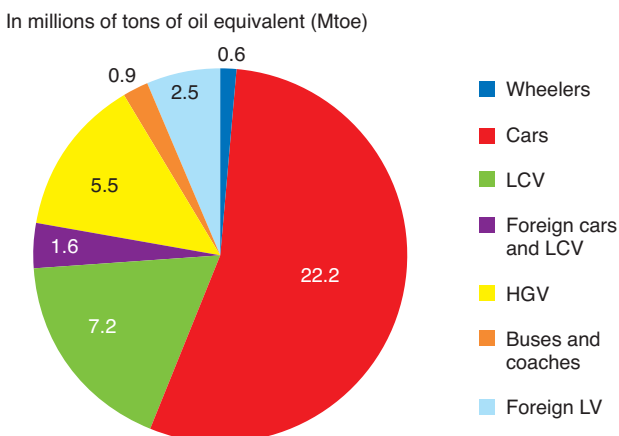
subject to greater constraints on car use (urban congestion, parking, etc.) than those living in other residential areas.

The household budget structure is a key factor underlying choices in terms of ownership. Also, the pressure of housing costs on the budget of the under-30s contributes to explaining the decline in car buying for this age bracket, which fell from 6.7% to 4.2% of their budget between the end of the 1980s and the 2000-2010 decade<sup>4</sup>.

### Transport choices with an impact on fuel consumption

Choices of transport modes for daily travel have a significant influence on fuel consumption. For instance, private car consumption accounts for over half of fuel consumption in France. As a result of motorization choices, automobile diesel consumption increased during the last two decades and recently stabilized at around 18.9 million cubic metres (Mm<sup>3</sup>), while petrol consumption has followed a very marked downward trend and now stands at around 7.8 Mm<sup>3</sup>. In overall terms, automobile fuel consumption is slightly down since the start of the 2010s, while at the same time the consumption of mopeds/motorbikes, buses and coaches has risen slightly, reflecting changes in the use of transport modes (Fig. 3). Indeed, SOeS surveys show a decline in the average car kilometrage per year, from 13,539 km in the early 2000s to 12,692 km in 2011. In parallel the average number of km travelled by bus and coach rose from 30,165 to 36,175 km over the same period.

Fig. 3 – Distribution of road fuel consumption in 2012



Source: CPDP, 2013  
Cars: Private cars  
LCV: Light Commercial Vehicles

<sup>(4)</sup> Sources: National accounts, Eurostat and family budget survey, INSEE

### New mobility services

New mobility services are based on new ways of using existing transport resources such as cars, bicycles or buses. The most common are car sharing, car pooling, self-service bicycle schemes and demand-responsive transport. These are individual mobility schemes carried out using a vehicle that does not belong to the person travelling, sharing use of the individual vehicle between several users. The new car mobility services are in line with the concept of a service economy, defined as a model in which selling a product is replaced by selling the use of the product.

Car pooling, or organisation of a journey by several people in a car belonging to one of them, has been growing for the past ten years. It is based either on a personal initiative, or on an outside body associated with a corporate commuting programme, or on a specialist operator such as BlaBlaCar<sup>5</sup> which is the main French entity in this sector. Since the beginning of the decade in 2010, car pooling for commuting purposes has increased sharply: the percentage of the population using this mode of transport rose from 3% in 2010 to 7% in 2013 according to the BIPE's OMA. A change of the same order has been observed for weekend and holiday journeys, which rose from 3% to 6% over the same period.

Car sharing schemes use fleets of vehicles, available for self-service hire for less than a day<sup>6</sup>. Car sharing therefore allows pooling of car use by making individual journeys in a car that does not belong to any particular individual, thereby reducing the automobile fleet in circulation<sup>7</sup>. However, it applies to densely populated areas. In recent years, car sharing has been used by less than 1% of French people, according to the BIPE's OMA.

These different forms of shared use of the private car, if they grow, may therefore have a noticeable impact on fuel consumption and therefore CO<sub>2</sub> emissions due to transport in France.

### Conclusion

The private car is the mode of transport most commonly used by French households. It therefore accounts for a significant share of road fuel consumption. But recent

<sup>(5)</sup> [www.covoiturage.fr](http://www.covoiturage.fr)

<sup>(6)</sup> Car sharing may also concern sharing private cars (private car sharing). However, this is still very marginal

<sup>(7)</sup> In a study conducted in 2005, Cervero and Golub estimate that 30% of households belonging to a car sharing scheme have either sold their car or not bought any

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weak signals indicate that its preponderance in household travel is being called into question, with potential consequences in terms of energy consumption and the environment.

Private car ownership, travel needs (distance to be travelled) or residential area density are all key contributing factors to the choice of the car as a daily mode of transport. New forms of mobility, mainly car sharing and car pooling, meet the needs of urban users, young people and higher socio-professional categories. Generally speaking, the projections made show that when households decide to forego car ownership, the biggest switch is to public transport.

The diversification of modes of transport is a response to the distinct needs of households depending on their socio-professional situation and their geographic location. Households are seeking the best combination of transport resources depending on the facilities available to them. The new forms of mobility therefore provide a response to new needs, mainly related to urban populations. However private car use is still very widespread, due to the flexibility it offers in terms of multiple uses.

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