

Changes in «long-distance» mobility from 1993 to 2008

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Abstract

This paper presents some results coming from analysis of the French National Personal Travel Survey from 2008. This periodic, nation-wide survey provides wide information on mobility practices of people living in France. We will point out some decisive changes in mobility behaviours, from comparison with the previous survey made in 1993. The sample contains 20 000 households including about 50 000 individuals, aged more than six, chosen as to be representative of the whole French population. General information is collected on households, individuals within the household, car equipment and use, housing place and mobility practices. In our presentation, we will only focus on “long-distance” mobility. The notion of “long-distance”, here, is defined as to include all travels made by individuals at more than 80 km bird-eye from the origin place. We will then consider indicators of individual yearly long-distance mobility, such as individual yearly trip frequency (average number of travels made by an individual in one year), number of nights outside home and covered distance during long-distance travels, travel characteristics such as average covered distance (in km) and trip length (expressed into number of nights outside home), and eventually modal shares and trip purposes. Considering modal share, three modes will be mainly considered: car, train and plane. After a brief heading about general characteristics of trips, individual mobility will be studied, with respect to activity status and age, and, among working people, professional group. We will then confront these results with observable changes in the level of car ownership among these various population groups, showing a trend to growing disconnection between car ownership and use.

1. Preliminary general results about trips and average individual mobility

During the fifteen past years, “long-distance” trips of people living on the french metropolitan territory, aged more than six, grew up from 293 to 358 million, about 22 %, corresponding for one part to population growth, from 53 to 56 million, which is about 5,7 %, and for another part to the growth of average individual long-distance mobility. To illustrate this growth, yearly average individual long-distance trip frequency slightly increased from about 5,53 to 6,38, as well as average individual yearly covered distance, from 5200 to 6000 km, while cumulative annual number of nights outside home in long-distance trips remained almost stable, from 27,4 to 26,5 nights. Though still quite important, long-distance mobility growth has considerably slowed down, compared to previously measured growth between 1982 and 1994 surveys, which was estimated of about 68 % for cumulative number of long-distance trips made by individuals aged more than six, and about 50 % for individual long-distance mobility.

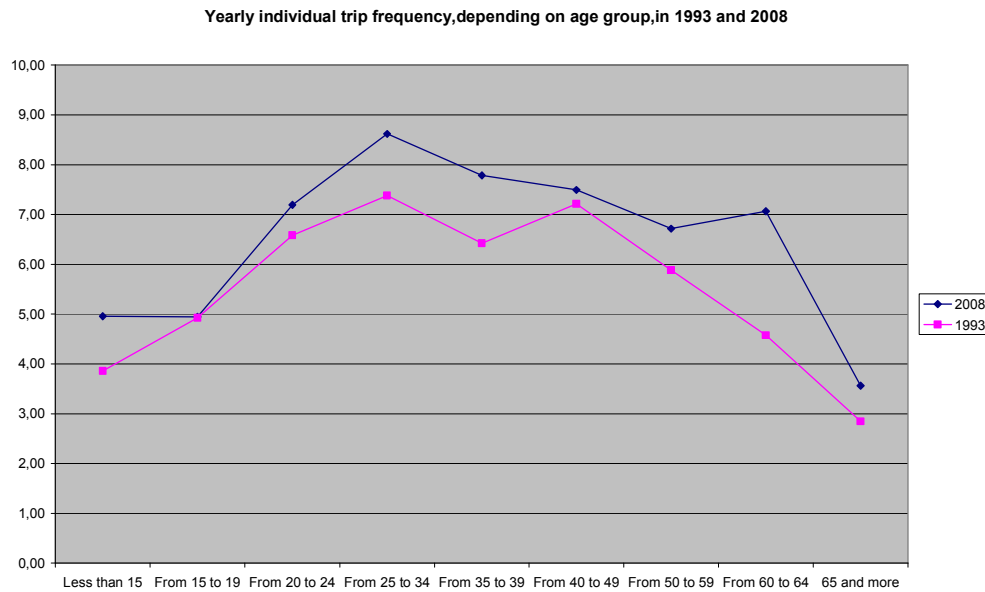
An average long-distance trip is thus shorter than fifteen years ago. Average long-distance trip length strongly decreased, from 4,95 nights outside home in 1993, to 4,16 in 2008, while the average covered distance by trip remained stable, around 945 km. Long-term trend thus turns towards a rundown in trip characteristics rather than individual trip frequency. Car long-distance trips grew from 215 up to 263 millions, about 22 %, while plane long-distance trips grew up from 14,5 to 20,5, that is to say about 41 %, and train long-distance trips from 40 to 62 millions, which represents more than 50 % growth. Though, long-distance trip growth was quite balanced between car and collective transport modes, unlike current modal shares. As a result, modal shares of collective transport modes have been growing to the expense of car share, which is quite a remarkable result, showing a breakdown with respect to past trends. The average yearly individual car, train and plane long-distance trip frequencies respectively increased from 4.05 to 4.68, 0.76 to 1.1, and 0.27 to 0.36. Plane and train shares respectively grew up from 5.1 to 5.8 % and 14.1 to 17.1 %, mainly at the expense of car and bus, of which modal shares respectively went from 75.2 down to 73.4, and from 4.4 down to 2.5 %.

Other significative changes are noticeable in trip purposes. Between 1993 and 2008, an average french individual changed his long-distance trip purposes the following way: among personal purposes, visits to parents and friends strongly increased from 1.81 to 2.27 yearly trips, leisure trips from 0.45 to 0.77, which is about 71 % growth, while holiday trips only slightly increased of about 7 %, from 1.38 to 1.48. Trips for professional purposes increased from 1.07 to 1.27, this growth being both caused by professional trips strictly speaking, and by daily or regular trips to a fix, long-distant workplace. Both personal and professional trips have become shorter, whatever the detailed purpose, except for leisure trips. Especially holiday trips have become much shorter, from an average 11,3 to 9,5 nights outside home by trip, but also professional trips, which are more and more often daily round-trips. Shortened professional trips may be a logical result of budget-controlling strategies of companies. Only leisure trips are longer than in 1994, more often involving nights outside home. Consequently leisure trips have become significantly both more frequent and longer, while holiday trips have only slightly increased, and strongly decreased in duration.

Though decisive proofs can't be given, a data-consistent explanation would be that individuals and households develop a strategy to control free-time budget in a context of decreasing average buying power and overall growing uncertainty about personal future situation. In order to do so, they would trade-off their expenses in favour of necessary expenditures such as housing or food, trying to master their free leisure-time expenses, such as holiday trips. Visits to family and friends or leisure activities, usually closer to homeplace, may prove themselves cheaper, as economies are feasible on accomodation and food. Individuals and households modified their long-distance mobility practices by increasing trip frequency, and reducing trip length, yearly cumulative time outside home during long-distance trips remaining almost stable from the previous survey to the current one, which is in some way counter-intuitive as we would have expected it to increase, notably as a result of French worktime-shortening policies within the workforce.

At second glance, this result may however look consistent, long-distance mobility and more generally free-expense being both dependent on the level of available financial resources of households and their trust in their future socioeconomic situation. As a result of weakly increasing, when not decreasing average buying power, additional free-time given by worktime-shortening is not necessarily transformed into additional time outside home during long-distance holiday trips.

2. Car mobility of retired people keeps on increasing, mobility of working people adapts to tougher economic conditions



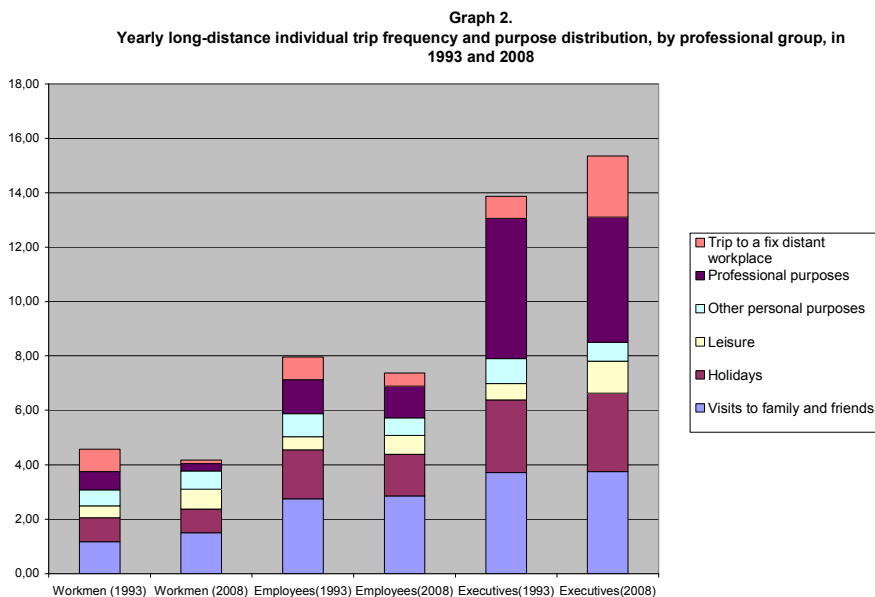
Long-distance mobility of working people grew up moderately, of about 9 % during the fifteen past years, from 7.2 to 7.88 yearly trips. The average trip length of a working individual decreased from 3.7 to 3.3 nights. Working people trip distribution by purposes also changed. Visits to relatives and leisure trips respectively grew up from 2.17 to 2.45 and from 0.45 to 0.77 yearly individual trip. Professional trips slightly increased from 2.28 to 2.47 yearly trip, however this moderate growth was mainly caused by regular trips to a long-distant, fix workplace, from 0.71 to 0.86 yearly trip, while professional trips, strictly speaking, remained almost stable, from 1.58 to 1.61. Holiday trip frequency didn't increase, from 1.58 to 1.55. All personal travels among working individuals increased from 4.92 to 5.4 yearly trips. Considering modal share among working people, car, train and plane individual long-distance trip frequencies grew up while bus trip frequency collapsed. However, trip frequency growth among working people was mainly brought by train and plane. As a result, car share decreased among working people, from 75.3 to 71.7 % and, on the contrary, train share significantly grew up from 13.4 to 19.6 %. Plane share also increased from 5.3 to 6.1 %.

On the contrary, among retired people, yearly individual trip frequency strongly increased, from 3.36 to 4.67, whatever the personal purpose, included holiday trips, from 0.94 to 1.33. Average trip length also shrunk down among retired people, from 7.3 to 5.8 nights outside home by trip. Retired people mobility growth is almost solely caused by car use, growing from 2.43 up to 3.78 yearly trips, whereas working people trip frequency growth is equally distributed on car, train and plane. As train trips remained almost stable among retired people, only growing from 0.42 to 0.46 yearly trips, and plane trips increased but remained very low, from 0.15 to 0.21, car share among retired people strongly grew up from 72.3 to 81 %, at the expense of every collective mode. Plane share remained stable at about 4.5 %, and train share decreased from 12.6 to 9.8 %, as well as bus share.

As a result, the mobility gap between working and retired people strongly decreased, the remaining gap being mainly caused by professional trips, while in 1993 there was a more significant difference even in personal long-distance mobility. Several factors may explain differential growth between working and retired people. One of them may be differential progress in buying power. However, it may not be only in terms of nominal income. Working people, especially among younger generations, also have to face tougher economic competition and uncertainty, which may induce in long-run more cautious economic behaviours with a preference for saving instead of free expense, while retired people may find more resources from their patrimony and retirement income for leisure time and holiday activities. However, the specific evolution of long-distance trips of retired people, characterized by a car-concentrated growth leads to put forward complementary explanation: people recently retired are much more accustomed to travelling by car than previous generations. In contrast with this result, we can notice a significative shift towards collective modes among working people, being mainly responsible for strong growth in plane and overall train long-distance trips.

3. Among working people, personal trip growth was caused by leisure and visits to family and friends rather than holidays. Professional trips decreased in all socioprofessional groups, except executives

We will consider by now another mobility analysis filter: professional group among wage earners. A basic distinction will be made between workmen, employees and executives, according to general professional groups retained by the French National Institute of Statistics and Economic Studies. This mode of picturing social gaps gives a first insight into trends about social disparities in mobility. Of course, trip frequency grows along with the level in professional hierarchy, which is strongly correlated to income. Between 1993 and 2008, at first glance, social gaps in mobility inside the wage system seem to have become more extended.



Indeed, workers and employees average yearly long-distance trip frequency decreased respectively from 4.57 to 4.17, and from 7.96 to 7.37. Only executives travel more than in 1993, from 13.87 to 15.35 yearly trips. However, purpose analysis reveals that personal trips increased

as much among workmen as among executives, and even decreased among employees: from 3.07 to 3.77 among workmen, from 5.88 to 5.73 among employees. Executives personal trip frequency increased moderately from 7.9 to 8.49 yearly trips, while professional mobility among executives increased from 5.87 to 6.86 yearly trips. At second glance, personal trips thus moved towards reduced social gaps. Professional trips are in fact responsible for the most important part of long-distance mobility growth among executives, and among professional trips, it looks like regular trips to a long-distant, fix, workplace are mainly responsible for this growth¹. Professional trips, on the contrary, are declining among low and middle-class social groups. Professional trip frequency shrank down from 1.49 to 0.39 among workmen, and from 2.08 to 1.65 among employees.

Within personal trips, holiday trips only slightly increased among executives, from 2.67 to 2.89, remained stable among workmen, at about 0.89, and reduced among employees, from 1.81 to 1.52. Eventually, if we consider time outside home in long-distance trips, it shrank down from 48 to 43 yearly nights among executives, from 30 to 27 among employees, and from 17 to 15 among workmen. Time outside home during long-distance trips remained stable for working people together, but this stability is hiding structural change as, simultaneously, socioprofessional structure changed with a higher weight of medium and higher social groups within working people (for instance from 11 to 13.5 % of executives, from 43.6 to 46.1 % of employees), and time outside home decreased in all socioprofessional groups. As we already mentioned before, this shrinkening in time outside home and holiday trips among wage earners may appear as a result of economic conditions long-term toughening and growing uncertainty of individual conditions in a highly competitive society, leading wage earners, whatever their position in social hierarchy, to be more cautious and prefer money savings to free expense, though it is partly compensated by social promotion, increasing the weight of middle and upper-class groups, or may be more exactly, constantly moving limits of social groups.

Considering modal distribution, the slight growth of long-distance car trip frequency is only due to higher social groups. Car trip frequency decreased among workmen and employees, respectively from 3.39 to 3.24, and from 6.3 to 5.74, and only slightly increased among executives, from 9.11 to 9.54. Simultaneously, train long-distance trips strongly increased among executives from 2.19 to 4.33, remained stable among employees around 1 yearly trip, and collapsed among workmen, from 0.73 to 0.42. This change may have been caused by higher fees associated with high-speed trains replacing more classical transport service. Train thus tends to become a more socially selective transport mode, whereas on the contrary, if we consider plane trips, their frequency increases more in lower-class professional groups. Low cost companies may have made this development possible.

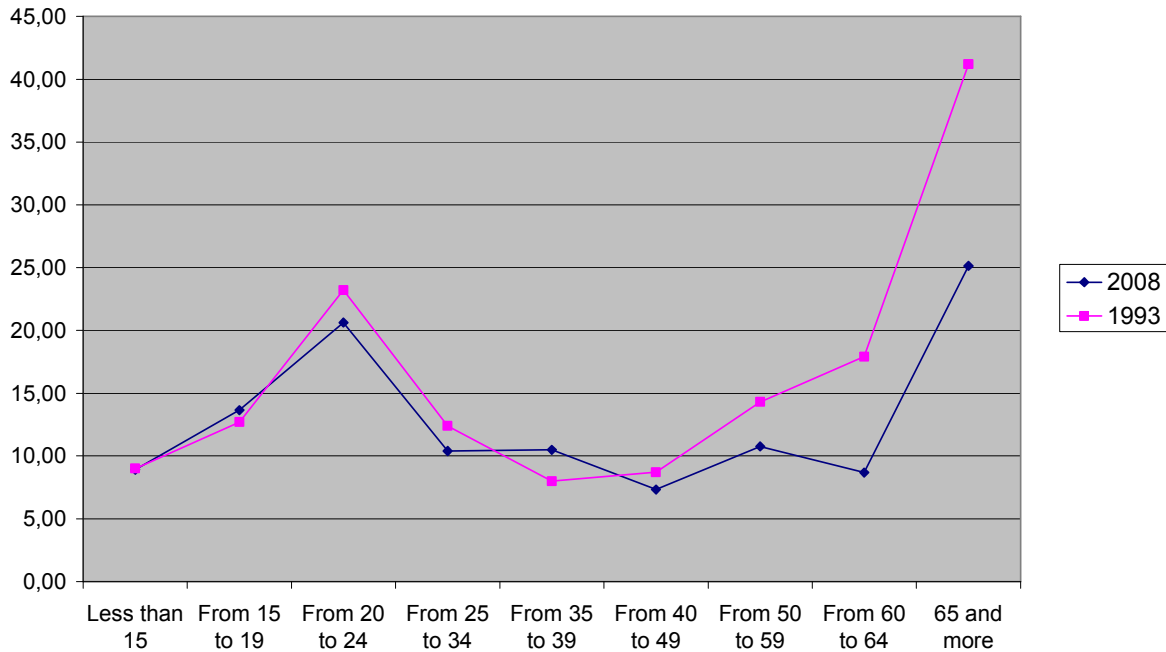
Speaking in terms of modal shares, bus share in long-distance trips collapsed in every socioprofessional group. Plane share made significative progress in popular groups and recuded in upper-class, from 1.5 to 5.7 % among workmen, 4 to 4.6 % among employees, and 12 to 9.1% among executives. Car share in long-distance trips grew up from 74.3 to 77.7 % among workmen, slightly decreased from 79.1 to 77.9 % among employees, and declined from 65.7 to 62.1 % among executives. Eventually, train share collapsed from 16 to 10 % among workmen, slightly increased from 12.2 to 14.4 % among employees, and strongly increased from 15.8 to 28.2 % among executives. As we can see, the public image of different transport modes may

¹ However, the distribution between strictly speaking professional trips and long-distant commuting is quite fragile and may be biased, especially at a disaggregate level, as knowledge of this purpose is only known through a small number of commuters.

have changed during the fifteen past years. Bus share in long-distance trips collapsed independently from professional group, while plane has become more popular, notably because of the expansion of low-cost companies, and train has become more socially prestigious with the replacement of classic by high-speed train associated with higher fees. It appears that trade-offs from car to train in modal choices among upper-class individuals are mainly caused by the substitution of train to plane in professional trips, while plane use has become more specialized on holiday and leisure activities during the same period. In return, higher train fees may lead low-class people to give up train rather than car in long-distance trips.

4. From disconnection between car ownership and long-distance mobility: need and potential

Graph 3.
Rate of individuals within households without a car, in 1993 and 2008 (%)



Complementary to the previous analysis, we examine the role of car ownership in explaining long-distance trip frequency contingent on activity status and professional group. In 1993 as in 2008, about three-quarters of trips are made by car, and thus car still remains the prevailing mode in long-distant mobility. By the way, household car ownership logically shows a determining variable of mobility intensity, along with household financial resources. Individual average long-distance trip frequency grows from about 3.6 in a household without a car up to 7.4 in a household with two cars. However, long-distance mobility and progress in car equipment reveal themselves growingly disconnected. Car ownership considerably progressed between 1993 and 2008, mainly through second vehicle ownership. The rate of individuals within households holding at least two-cars strongly grew from 34.3 up to 44.1% of the sample. Despite this quick advance in household car equipment, yearly average trip frequency only moderately increased. This seemingly growing disconnection may be analyzed further on by studying segmented population groups. Household motorization increased both among working and retired individuals. Rates of individuals within households holding at least two cars respectively

raised from 41.1 up to 51.1 % among working people and from 14.8 up to 27.4% among retired individuals. There is however some important difference in car ownership progress between working and retired people, as the rate of individuals in no-car households dropped down from 32.5 to 19.2 % among retired people, whereas it remained stable at about 10 % among working people. Considering age groups, it decreased after 50. On the contrary, individuals within single-car households decreased independently of age groups, in exchange of which more and more live in two-vehicles households.

We may interestingly notice that if there is effectively a relationship between car ownership progress and long-distance mobility among retired people, among working people, trip frequency only slightly increased despite a higher level of car equipment. Further clues of this disconnection may be obtained by analyzing car equipment through professional group hierarchy, among working individuals. Among workmen and employees, car ownership keeps on increasing: individuals belonging to households holding at least two vehicles respectively raised from 36 up to 49.5 %, and from 42.5 to 53.2 %. On the contrary, the rate of executives in a household without a car increased from 7.5 to 9.7%, while executives in households holding at least two cars decreased from 52.1 to 51.4 %. As we may observe, trip individual frequency decreased in low and middle-class groups, where car equipment though spread wider, and increased in higher professional groups in social scale, despite car ownership decline.

We may therefore advance an assumption consistent with data analysis, that car use for long-distance trips and car ownership don't have the same determiners. Car ownership is likely to have a strong relationship with daily/regular mobility needs such as house to work moves or scholarship, while long-distance mobility is related to mobility power, which depends both on car equipment and income. Yet, regular mobility needs are strained, and households don't have much choice in the number of vehicles, depending on a few parameters: household size, number of working people within household, number and age of children, and housing location within the urban area. Second vehicle may truthfully appear as an essential need within working couples living in suburbs and further peripheric city areas. As for the past decades households made of still working people have been growingly constituted of two working individuals, related to women's growing involvement in professional life, there was also a growing need in individual autonomy inside household.

However, equal progress in second vehicle equipment among working and retired people, indicates that desire for individual autonomy remains even when job constraints disappeared. Other parameter of car need: people in further peripheric areas, where transport networks are usually less efficient, usually have little choice but holding a car for their daily short-distance trips like house to work or other common purposes, whereas people living downtown may choose to live without a car. From this we can guess that car ownership among social groups has strong relationship with both household size and location within urban area. In 2008, about 40 % of executives lived within Paris urban area, which may explain way-of-life trade-offs such as giving up cars that we can point out for the central part of Paris area, with train and plane substitution in long-distance mobility. A growing trend to live single, and centre gentrification by upper-class households, may explain backward step in car ownership among executives, while low and middle-class social groups move stepwise to farther suburbs and areas, where car equipment is essential to daily life. Complementary explanation of stable car equipment within upper-class households may also be that attitudes to car have moved from a symbolic, subjective approach, for instance based on social glamour, towards a more sensitive approach based on utility, which would be consistent with what we said before on the perception of the precariousness of individual economic conditions in a competition-based society. Furthermore, upper-class groups are likely to have appropriated at a higher degree than popular groups,

changes in sociopolitical values and especially the image of car has become more dependent on its degree of perceived compliance with new “environmental” values.

Two main factors may finally explain progress in car equipment among households: mobility need, which may be satisfied to a more or less extent by modes alternative to car, and desire for individual autonomy. Under constant income and need, people tend to maximize individual autonomy. As a result, car equipment need tends to be more and more given by household size, as it is growingly becoming a strained expense in low and middle-class groups, with respect to housing location, while intensity change in long-distance personal mobility is rather related to differential change in residual free-expense budget depending on buying power and trust in future.

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