



## Roads Task Force – Technical Note 16

### Understanding why people change behaviour

#### Introduction

This paper forms one of a series of thematic analyses, produced to contribute to the Roads Task Force Evidence Base. This note discusses the evidence on why people change behaviour and switch modes, including what the motivations and triggers are. Key sources are the London Travel Demand Survey (LTDS) and associated Follow-on Surveys, and TfL's Car Ownership and Use Exploratory Study.

#### Summary

- Most changes in car use (in excess of 90 per cent) are associated with a change in circumstances or a life event, most commonly a change in jobs, moving house, or a change in family circumstances.
- Not all of these events lead to a change in travel, but they do act as a trigger to thinking about travel, which otherwise is simply governed by habit.
- Once drivers do think about their travel, other motivations come to play, particularly a desire to save money, and a desire to improve health & fitness levels.
- There is therefore relatively little direct mode shift (the same journey being made by the same person but using a different mode) – as opposed to net change in mode share.
- In terms of interaction between modes, the strongest link with car is travel by bus, so if car use is decreased the mode most likely to be used more is bus (and vice versa).
- The chances of one or more of these life events occurring is linked to life stage, with more change at younger age categories.
- An underlying influence is the trend towards car reliance: once someone has learned to drive and then purchased a car there is a tendency to feel increasingly dependent on it, with some decisions (such as where to live) reinforcing this.
- There is therefore a tension between some personal motivations such as wanting to have a healthier lifestyle, and feelings of being dependent on car.

#### Background

On an aggregate level, travel behaviour in London changes very little and very slowly. Underneath this relative stability at the aggregate level is a much greater level of change at the individual and household level, known as 'churn'.

Very broadly, people make 'common sense' choices for their trips, taking into account (largely automatically) the value they place on the trip and their time, their disposable income, and the options available to them. These individual choices may be influenced by many factors, including attitudes, social norms, and habit, which vary considerably by life stage, ethnicity, social group and geography. However, inertia also plays a major part in this decision-making process.

Over time, the provision of new infrastructure or changes in the cost or quality of different transport options will lead to changes in travel behaviour amongst individuals and at an aggregate level. In some cases, where this change is sudden and substantial, the impacts can be directly identified. Three examples of situations where changes to transport provision or costs led directly to changes in travel behaviour are:

- the London 2012 Olympic Games – three quarters of London travellers made a change to their travel during the Games, equivalent to around a third of people each day;
- the very rapid rise in fuel prices in 2008 – between January and July 2008 prices at the pump increased by around 15 per cent, prompting 30 per cent of drivers to consider costs and resulting in a 2.5 per cent reduction in GB road traffic;
- the introduction of congestion charging – resulted in a 30 per cent reduction in potentially chargeable vehicles entering the charging zone.

This paper explores the factors that drive behaviour change at an individual and household level, as revealed through various research studies conducted by TfL over the past five years.

#### **Car ownership & use exploratory study (2008)**

The Car Ownership and Use Exploratory research study was a major undertaking by TfL involving two consultancies (Steer Davies Gleave and MVA) in order to examine the reasons behind current trends in ownership and use and explore whether these trends could be expected to continue. The study used a range of qualitative and quantitative research techniques, supported by an expert panel. Three of the study's key conclusions are highly relevant to understanding why people change behaviour and these are summarised below.

#### ***An external “trigger” is usually required to initiate change***

Travel patterns are dominated by habit so a significant change typically requires something else to happen to get people to think about their travel. Key trigger factors are:

- changing job;
- moving house;
- change in health (especially amongst older people);
- change in family circumstances (especially amongst younger people); and
- changes to the transport network and the costs of travel.

Two other factors that appear significant are a desire to improve fitness (improving fitness was identified as a reason for changing travel behaviour by 26 per cent of survey respondents, and typically results in a shift away from the car and more walking and cycling), and a desire to reduce your carbon footprint.

#### ***There is a substantial amount of change in most people's lives***

Although at an aggregate level, travel patterns change very slowly, underlying that gradual change is constant 'churn' in travel patterns at an individual level, as changes to personal circumstances, employment activity and individual preferences drive travel behaviour change.

A third of online survey respondents had made a substantial change to their travel behaviour within the last year, and 61 per cent had done so in the last three years. Many had experienced significant lifestyle changes, many of which had led them to re-evaluate their travel options:

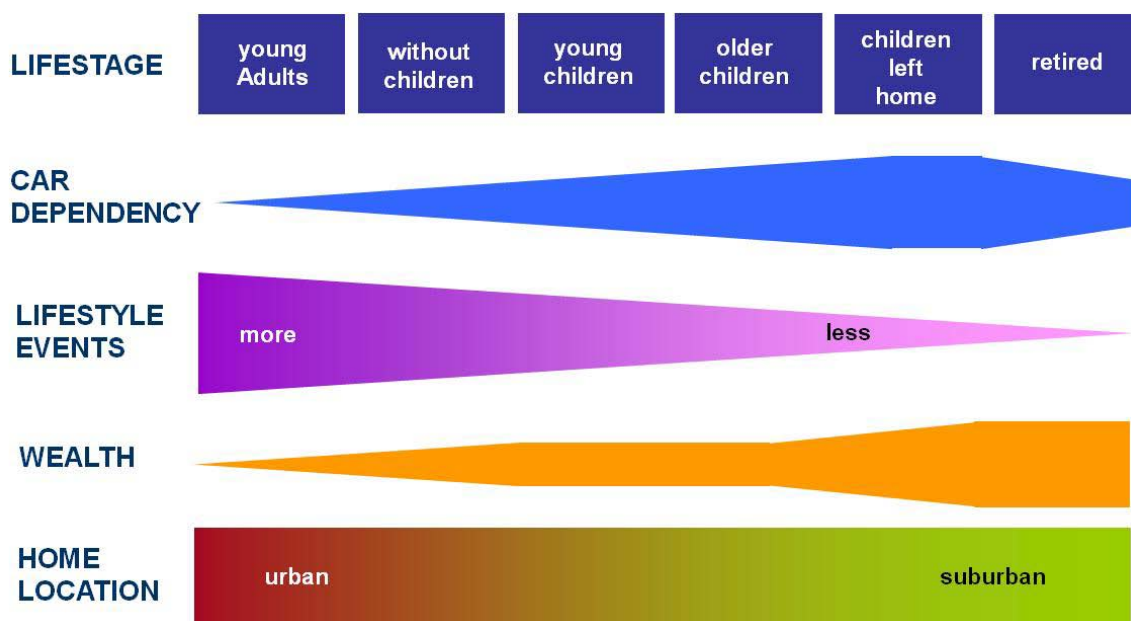
- 21 per cent had moved house in the last 2 years (and 34 per cent in the last 4 years);
- 25 per cent had moved job location within the last 2 years; and
- 34 per cent had changed their car in the last 4 years.

**There is a close link between life stage and car ownership & use**

Life stage and family circumstances are crucial influences on both car ownership and use, with many other influences being related but (to some extent) subordinate factors. This is illustrated in Figure 1 in terms of broad trends with regards to car dependency:

- the frequency of “lifestyle events” (such as changing jobs or moving house) changes by life stage with younger households experiencing more change, as people’s careers take off, they climb up the housing ladder, and start a family.
- Wealth (and disposable income) varies by life stage, although in quite a complex fashion. Broadly, people’s income increases as they get older, but so also does their expenditure, particularly with children (and indeed, with divorce). Once children leave home, disposable income tends to increase, particularly when the mortgage is paid off. On retirement, income may be much lower, but so will expenditure, while assets will be greater.
- People tend to move from an urban location (typically in a flat) when they are students and young adults, to a more suburban (or even semi-rural) location when there are children in the family, stereotypically in a semi-detached house. This has an impact on travel choices, with car use greater in suburban areas.

Figure 1 Level of ‘Car Dependency’ and influences of life stage.



Source: Car Ownership and Use Exploratory study (SDG 2008)

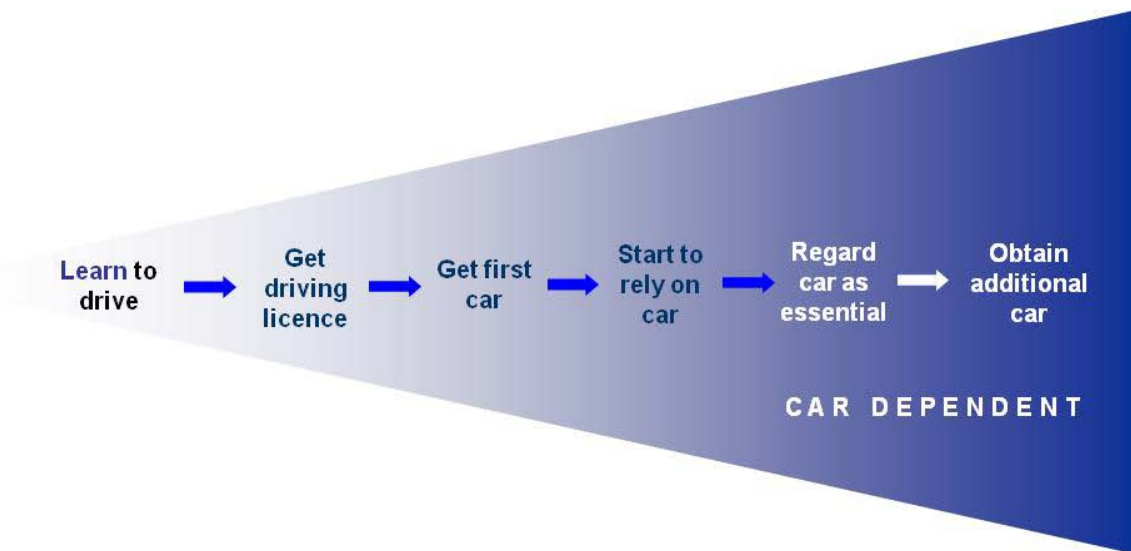


**Car owners tend to become more car dependent over time**

There is a natural progression to greater ‘car dependency’, where being ‘car dependent’ is believing that owning a car is essential and that it would be very hard to do without a car (whether or not this is actually the case).

Six particular steps were identified which tend to take people to another level of dependency, so the sequence is, you (1) learn to drive and then (2) get a licence with these steps largely being just part of growing up. Getting a first car (3) is then a significant step, and as the car is used, it becomes integrated into the owner’s lifestyle with them becoming increasingly reliant on it (4). This translates into a feeling that the car is essential (5), and at this stage there is a tendency to reject information which contradicts this view or makes the driver feel bad about owning a car, and to seek out information which confirms their beliefs and reassures them that they are not ‘bad’. Finally, this can lead to the perceived need for a second car (6) so that in a two adult family, both adults can have the freedom and flexibility car provides.

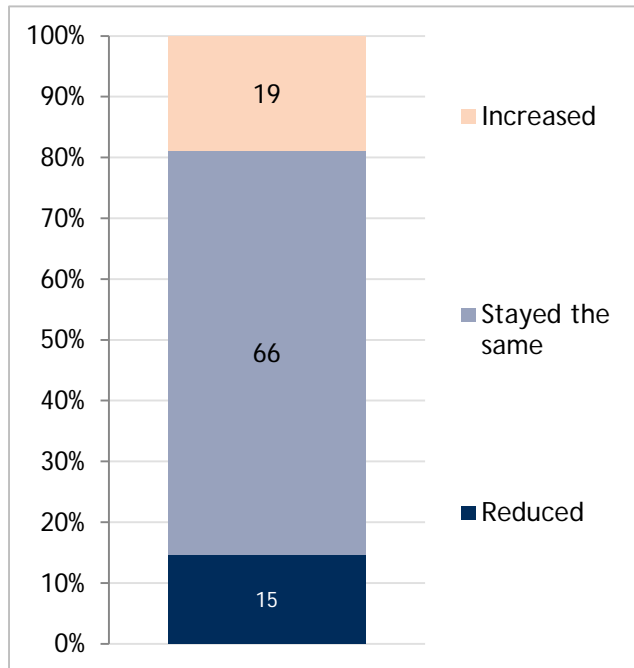
Figure 2 Six steps towards ‘Car Dependency’.



Source: Car Ownership and Use Exploratory study (SDG 2008)

**Car ownership & use exploratory study, second phase (2009)**

Following on from the initial Car Ownership & Use Exploratory Study 1,000 car users were re-surveyed one year later to explore car ownership and use changes over that year. This revealed that 19 per cent had increased their car use and 15 per cent had decreased their car use over a 12 month period between 2008 and 2009 (illustrated in Figure 3). Again, this illustrates the underlying level of churn which sits behind an apparently stable situation at an aggregate level.

**Figure 3** Change in car use between 2008 and 2009.


Source: Car Ownership and Use Exploratory study, second phase (SDG 2009)

The key reasons for the changes made were: a desire to save money or to improve fitness; a change in lifestyle such as changing job; a change in family circumstances; or a change in health. The overall conclusion is that to lead to a reduction in car use, there typically needs to be (1) a trigger; (2) a personal motivation; (3) a viable alternative; and (4) awareness of that alternative and how good it is.

**Figure 5** Reasons for reducing car use and increasing use of other modes.

Life event triggers	Personal motivations	Transport triggers
Changing jobs	Financial	Change in car availability
Moving house	Health / fitness	Rapid change in costs
Having a child	Environment	New transport service
Retiring		
Child changing schools		
Illness		

Source: Car Ownership and Use Exploratory study, second phase (SDG 2009).

### LTDS Follow-on Surveys

Since 2009, surveys have been carried out following-up respondents to the London Travel Demand Survey, in order to understand how travel behaviour changes over time. Comparing the behaviour of the same people in 2008/9 and 2010 from the LTDS and LTDS follow-on survey reveals that a fifth (22 per cent) of Londoners who continued to routinely travel to work or education switched changed mode between 2008-09 and 2010. This includes 6 per cent switching from private transport to public transport, walk or cycle and a similar proportion moving in the other direction.

Most of this is down to churn, people changing their use of one mode for another, and being replaced by someone else making a change in the opposite direction. The result of this is that the apparent net change is just 3 per cent in main mode share for the usual journey to work or education.

In the 2012 LTDS follow-on survey, the extent of different lifestyle changes was explored, that is, changes in:

- Home location
- Job location
- Family circumstances
- Health
- Place of education
- Car ownership

In all, the average number of these changes in the last 12 months was 0.89, with half making no changes. An overview of the changes made is provided in Figure 6. This shows the following:

- 1) Affected in last 12 months – the proportion experiencing the life event change in the last 12 months, plus the proportion of those not experiencing any of the life event changes who still changed their travel behaviour;
- 2) Change in car driver travel – the proportion of those experiencing the life event change (or change in travel behaviour unconnected to a life event change) who also experienced a change in their car driver use (either an increase or decrease);
- 3) per cent of all changing – column (1) x column (2), the proportion changing their car driver travel expressed as a per cent of the entire sample;
- 4) per cent of those changing – the proportion of those people changing their car driver use who did so due to the life event;
- 5) Direction of change – for those changing their car use, the per cent increasing their use less the per cent decreasing their use to give a net change.

Note that at the time of this survey the housing market was very depressed and this is likely to have affected the relative importance of house moves as a factor leading to a change in car use.

The key overall finding is that in excess of 90 per cent of those changing their car driver use did so at least in part because of a life event triggering consideration of travel habits.



Figure 6 Extent of changes by life event.

	Affected in last 12 months	Change in car driver travel	per cent of all changing	per cent of those changing
Family	14 %	32 %	4.5 %	26 %
Work location	12 %	35 %	4.0 %	23 %
Other life event	6 %	43 %	2.4 %	14 %
Health	4 %	40 %	1.8 %	10 %
Other travel behaviour change	3 %	44 %	1.5 %	9 %
Home	6 %	24 %	1.5 %	9 %
Education	4 %	32 %	1.3 %	8 %

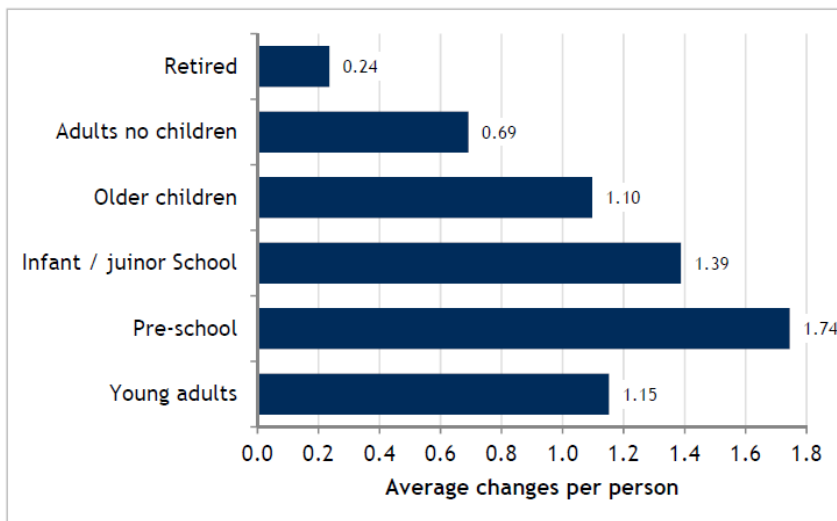
Source: LTDS Follow-on survey 2012.

Note: Family life events include having a new child, a child leaving home, having a child start a new school, getting married, and getting separated or divorced;

"Other life events" include: retirement, a death in the family

The relationship between the number of changes and life stage is illustrated in Figure 7, with those in the pre-school stage making seven times as many changes (on average) as the retired.

Figure 7 Average number of lifestyle changes by life stage.



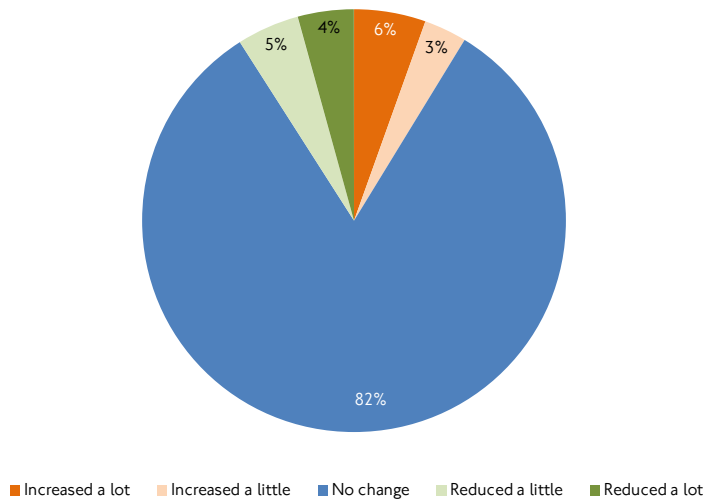
Source: LTDS Follow-on survey 2012.

The examination of changes in this study led to the conclusion that “the vast majority of change in transport use can be linked to change in personal circumstances, rather than to changes in transport provision or performance”.

### LTDS 2011/12 change question analysis

In the most recent wave of the LTDS (2011/12) a series of questions were asked concerning changes in travel over the previous year. In Figure 8 the overall extent and direction in stated change of car use is shown. This illustrates that although car use remained roughly constant, underneath this was 9 per cent increasing their car use and an equivalent number decreasing their use.

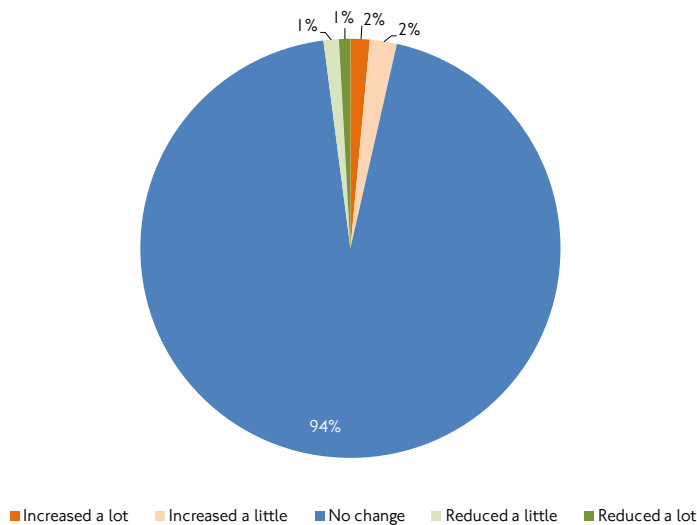
Figure 8: Stated change in car driver use from previous year.



Source: LTDS 2011/12 [1].

As shown in the following chart, the extent of change in car passenger trips was considerably lower than for car driver trips (6 per cent compared with 18 per cent).

Figure 9: Stated change in car passenger use from previous year.

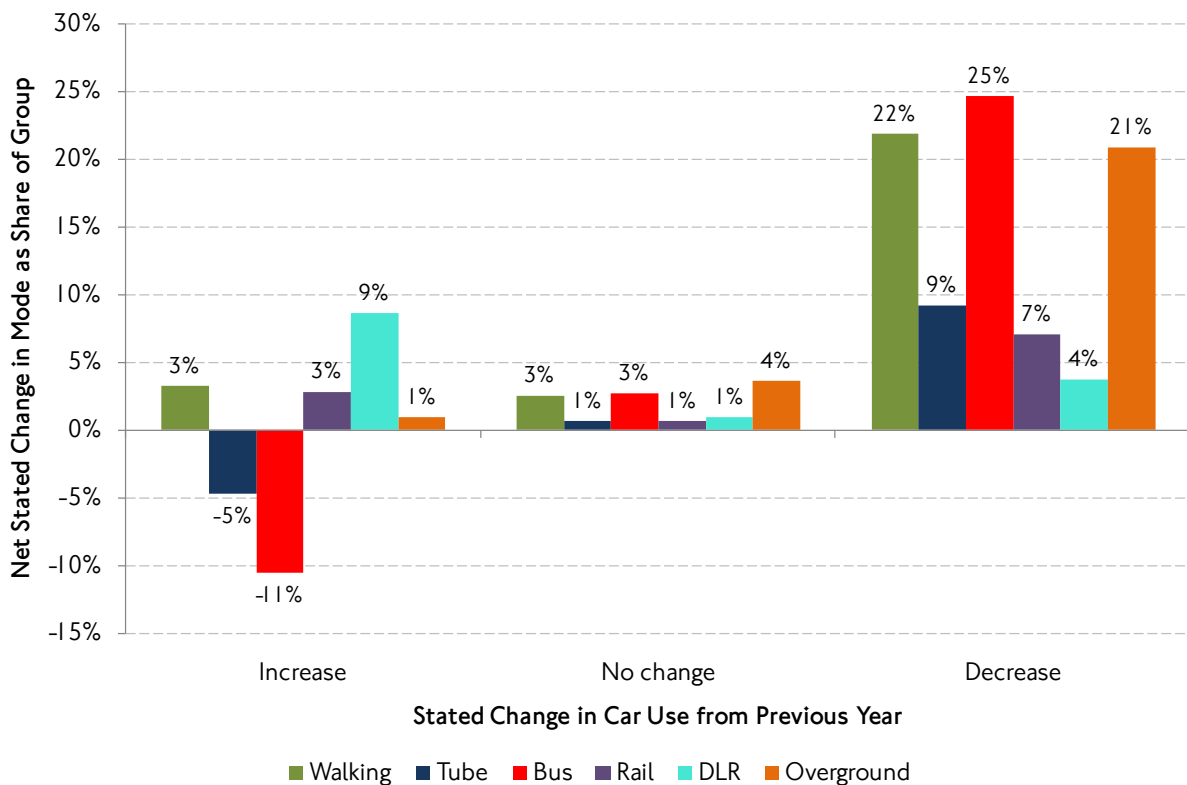


Source: LTDS 2011/12 [1].



In Figure 10 we explore the trends in switching between modes. So, for example, for those increasing their use of car, the mode car drivers were most likely to reduce using was bus. This was also true (in reverse) for those reducing their use of car. Interestingly, there was a stronger relationship between modes for a decrease in car use than for an increase: the implication is that additional car trips are more likely to be generated trips than switched from another mode.

Figure 10: Stated change in car use by change in other modes.



Source: LTDS 2011/12 [1].

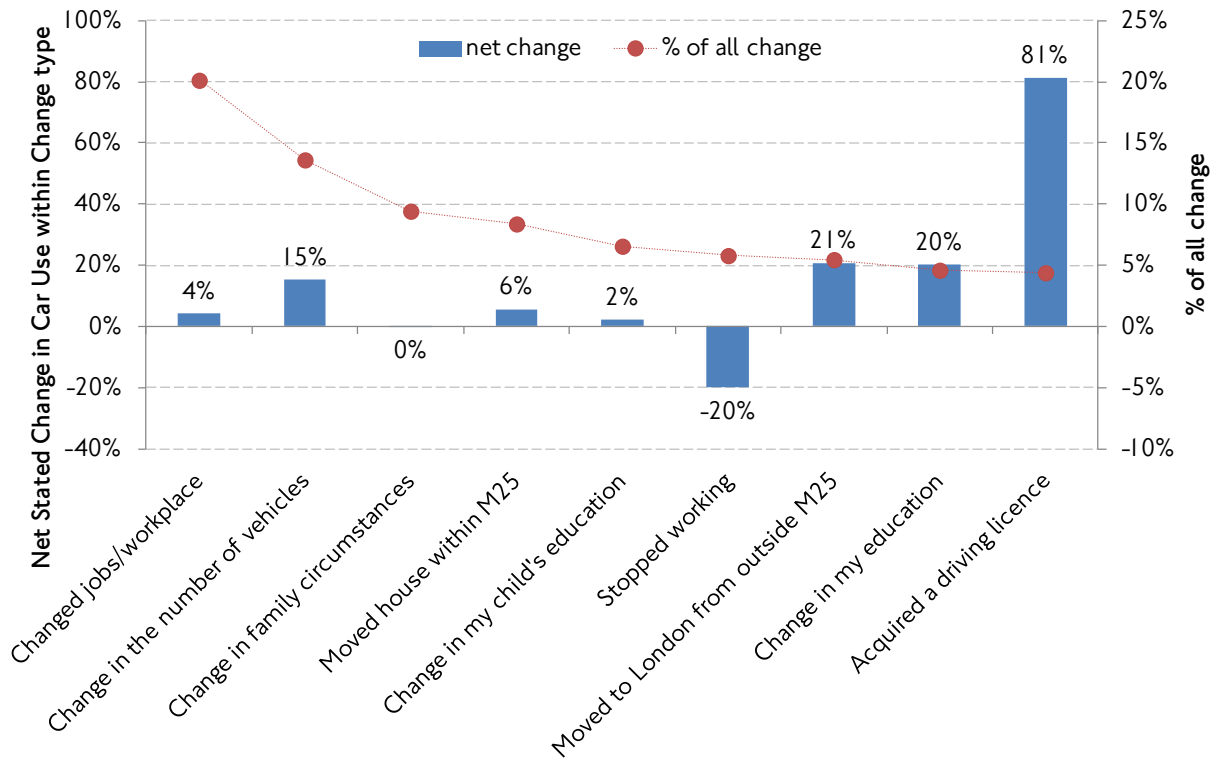
**Stated change in car use by change in circumstances**

The interaction between a change in circumstances and car use is illustrated in Figure 11. This chart shows both the extent of the change in car use associated with a change in circumstances and the net direction of that change. For example, a change in jobs is the type of change in circumstances which results in the most change in car use (both an increase and decrease). In this case, the increases in car use are largely cancelled out by reduces in use, with the net change a 4 per cent increase.

Most changes in circumstances appear to result in a net increase in car use, the exception being stopping working. In the case of getting a driving licence, this is one change which only leads to an increase in car use so shows the largest net increase of any change. However, it is a relatively uncommon event, so in fact only accounts for 8 per cent of the increases in car use.



Figure 11: Stated change in car use by change in circumstances.



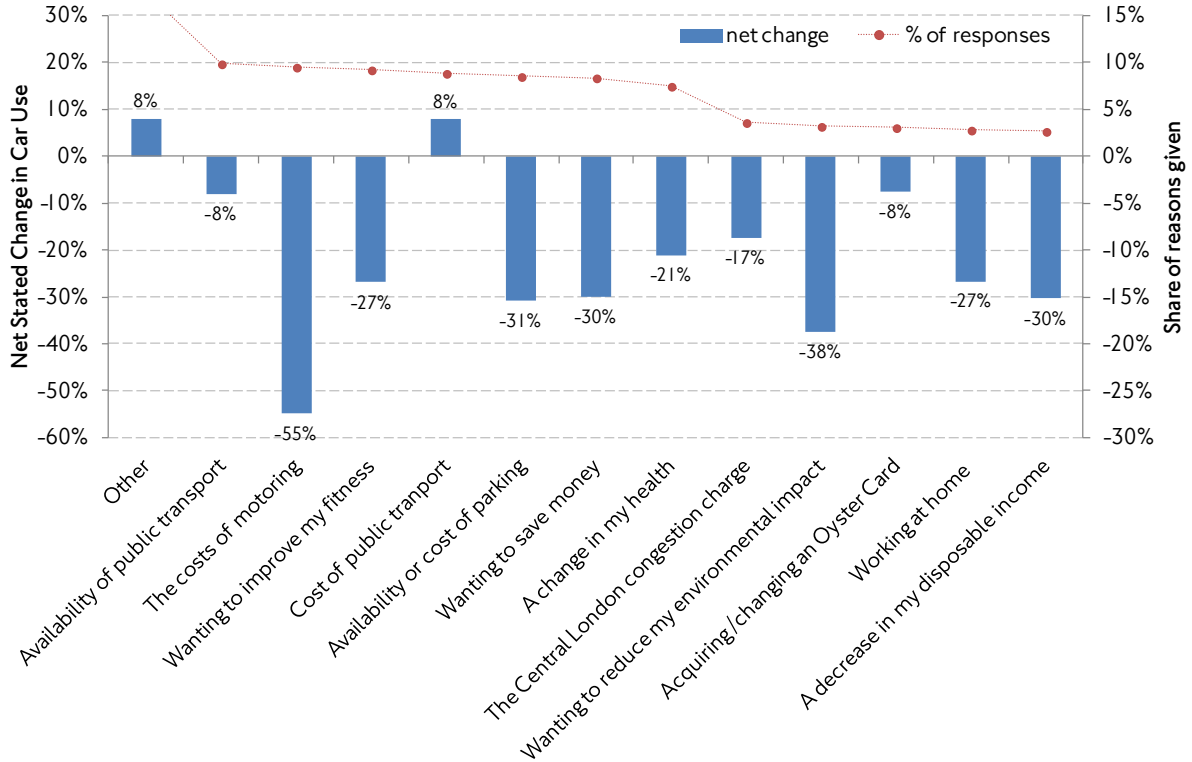
Source: LTDS 2011/12 [1].

### Stated change in car use by reasons for change

Whereas a change in circumstances tends to lead to an increase in car use (see Figure 12 above), some of the key reasons associated with a reduction in use are an increase in the costs of motoring (including parking); a desire to save money; a desire to improve health or fitness; and an improvement to public transport (see Figure 12 below, which shows all those reasons which account for at least 3 per cent of responses). Note that since this was a prompted question, it may be affected by post-rationalisation in which the respondent looks to explain their behaviour in rational terms.



Figure 12: Net stated change in car use by reasons for change.



Source: LTDS 2011/12 [1].

Note: based on a multi-answer prompted question "Are there any other reasons you have changed the amount of travel you do or the means of travel you use in the last 12 months?"

Note: 17 per cent of responses were "Other reason"

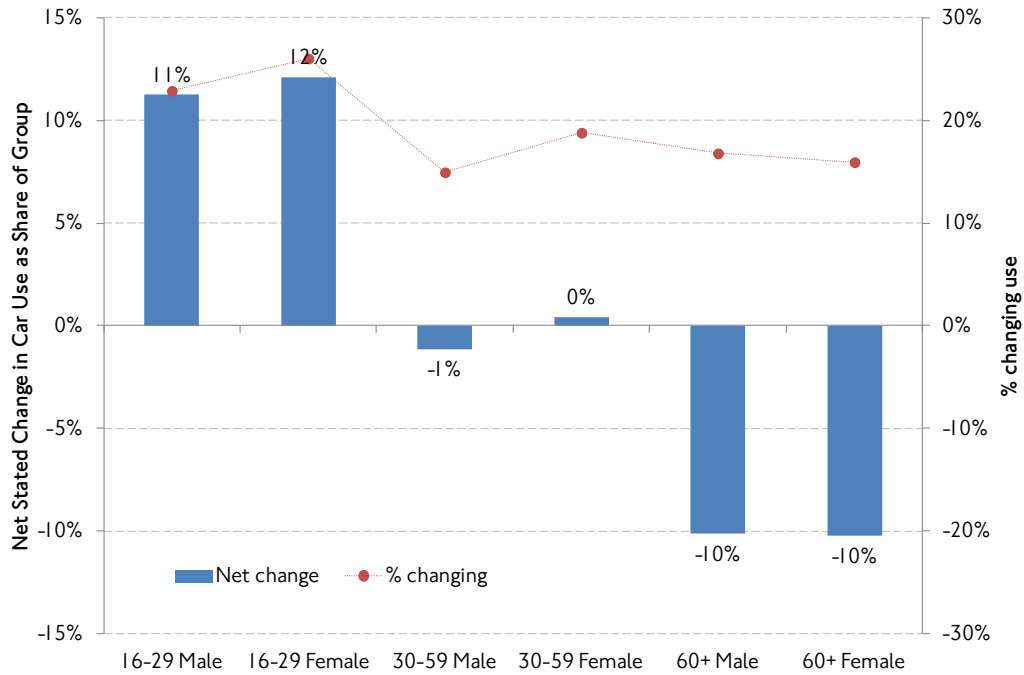
### Stated change in car use by personal characteristics

At an individual level, the stated change in car use varies by age (as shown in Figure 13), with net increases in car use associated with younger people, and net decreases by older people.

Young people are also somewhat more likely to make changes: for example, 23 per cent of men aged 16-29 had changed their car use, compared with 17 per cent of men aged 60+.



Figure 13: Stated change in car use by age and gender.



Source: LTDS 2011/12.