

## Roads Task Force – Technical Note 14

### Who travels by car in London and for what purpose?

#### Introduction

In this Thematic Note we examine the characteristics of people who travel by car, both as a driver and a passenger, and also consider the trips they make, including where, when, and for what purpose they make them.

This paper forms one of a series of thematic analyses, produced to contribute to the Roads Task Force Evidence Base. Subjects covered include car ownership and use, road traffic trends and road network operations, the potential for travel behaviour change, road safety, air quality, health and other topics.

#### Summary

- London residents aged 16+ make 4.6m car driver trips and 1.4m car passenger trips on an average day, of which 3.7m are within London, with the remainder involving travel to and from London. Non-residents make around 1 million car journeys a day to, from or within London.
- Six in ten car trips are made for shopping, leisure and personal business purposes and a fifth for work purposes. A third of car trips are shorter than 2km.
- There are more car journeys on Saturdays and Sunday than during the week, and the peak time periods for car travel and the inter-peak (10am–4pm) and afternoon peak (4pm–7pm).
- Around six in ten car driver trips are made alone, without any passengers, a quarter include one passenger and the remainder have two or more passengers.
- Londoners typically make more car trips if they live in outer London, live in areas with poor access to public transport, have a higher income, have a child in the household, or are of Western European nationality.
- Car use increases with age to a peak of 1.16 car driver trips per person per day among 40–49 year olds, and then starts to decline.
- Men make more car driver trips than women, with men making 0.83 driving trips per day compared to 0.65 for women.
- Up to household incomes of £75k, car use rises as income increases, flattening off after that point.
- Adults in households with at least one child make 0.93 car driver trips a day on average, compared to 0.58 by those in households without children.
- Car use varies substantially across London: at a borough level it ranges from 0.26 car trips per person per day in Islington to 1.30 car trips per person per day in Bexley.

## Background

There are 3.7 million car driver trips on an average day made by London residents in London. This represents just under two thirds of all car driver trips made in London on an average day; the remainder are made by London residents to and from London or by non-Londoners driving in London (each around 1 million car driver trips per day). On an average day, the typical London resident aged 16+ makes 0.73 trips per day by car as a driver and 0.23 trips per day as a passenger.

This paper presents the following analyses, each for London residents only:

- Characteristics of car journeys – car journeys by purpose, time, day and so on.
- Car use (based on trip rates per person per day) by demographic characteristics
- Car use (based on trip rates per person per day) by household characteristics
- Car use (based on trip rates per person per day) by geography

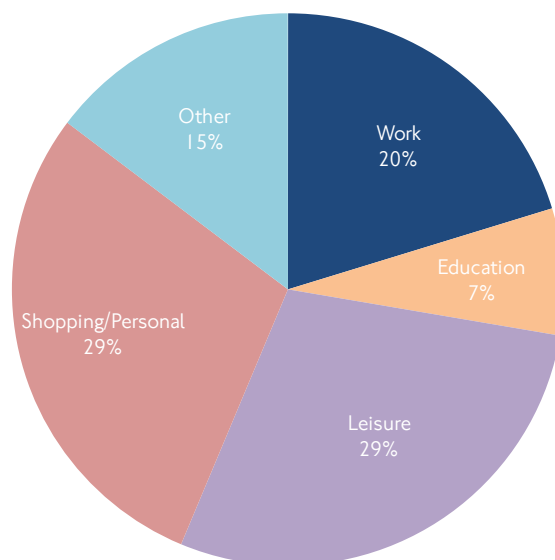
## Characteristics of car journeys

The following section describes the characteristics of car trips using the London Travel Demand Survey 2011/12, such as journey purpose, trip length, and time of day.

### *Car trips by journey purpose*

On an average day, London residents make 6 million journeys by car (as a driver or passenger) in London. Of these, nearly six in ten are for shopping, leisure and personal business purposes, 20 per cent are for work, 7 per cent for education and 15 per cent for other purposes (Figure 1).

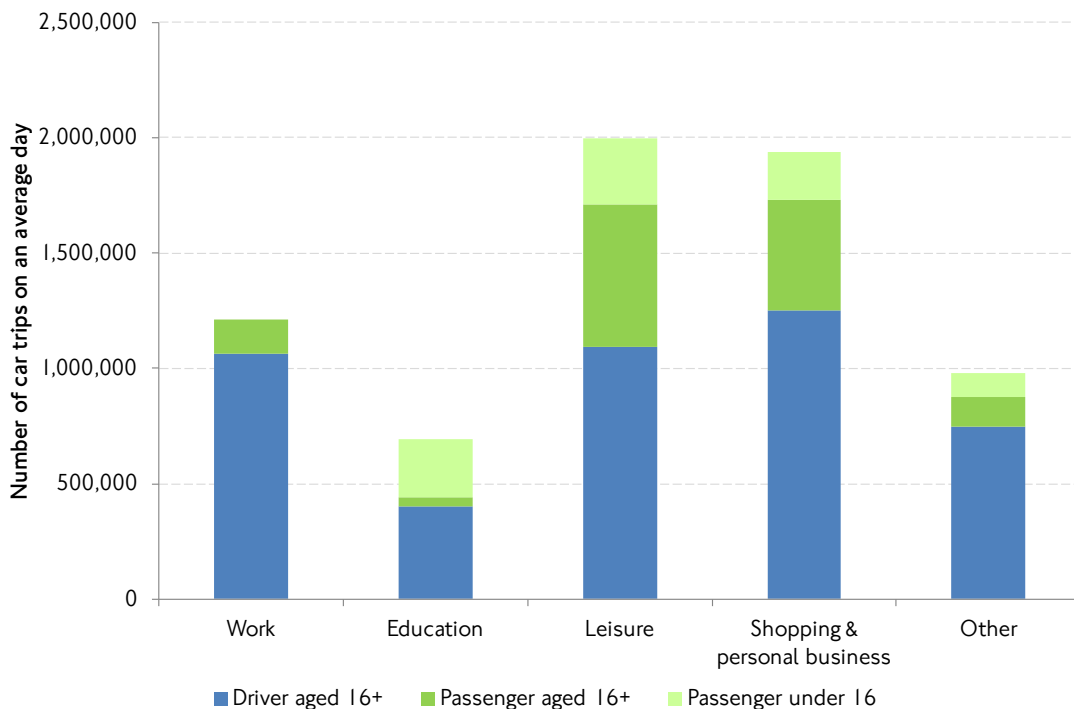
Figure 1 Car driver trips by journey purpose proportions, London residents.



Source: LTDS 2011/12.

There are noticeable differences between the purpose profiles of car driver and car passenger trips: trips for Work and 'Other' purposes had relatively fewer car passenger trips than driver trips when compared with trips for other purposes (0.1 and 0.3 passenger trips per driver trip respectively, compared to 0.6 for Shopping, 0.7 for Education and 0.8 for Leisure). As one would expect, Education trips were particularly likely to involve a passenger under 16, but in total 'Leisure' trips were the most likely to involve a passenger, with 0.8 passenger trips per car driver trip for this purpose.

Figure 2 Car trips by journey purpose and whether a driver or passenger, London residents.

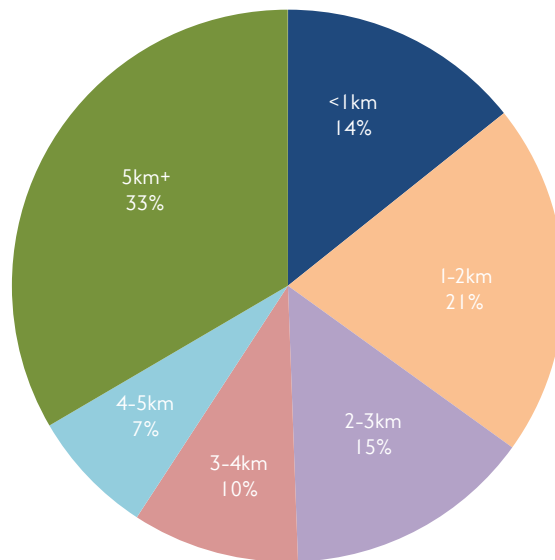


Source: LTDS 2011/12.

### Car trips by distance travelled

A little over a third (35 per cent) of all car trips are shorter than 2 km, just under a third (32 per cent) are between 2 and 5km and the remaining third are longer than 5km, as illustrated in Figure 3. Car driver and passenger trips are similarly distributed in terms of trip length.

Figure 3 Car trips by trip distance, London residents.



Source: LTDS 2011/12.

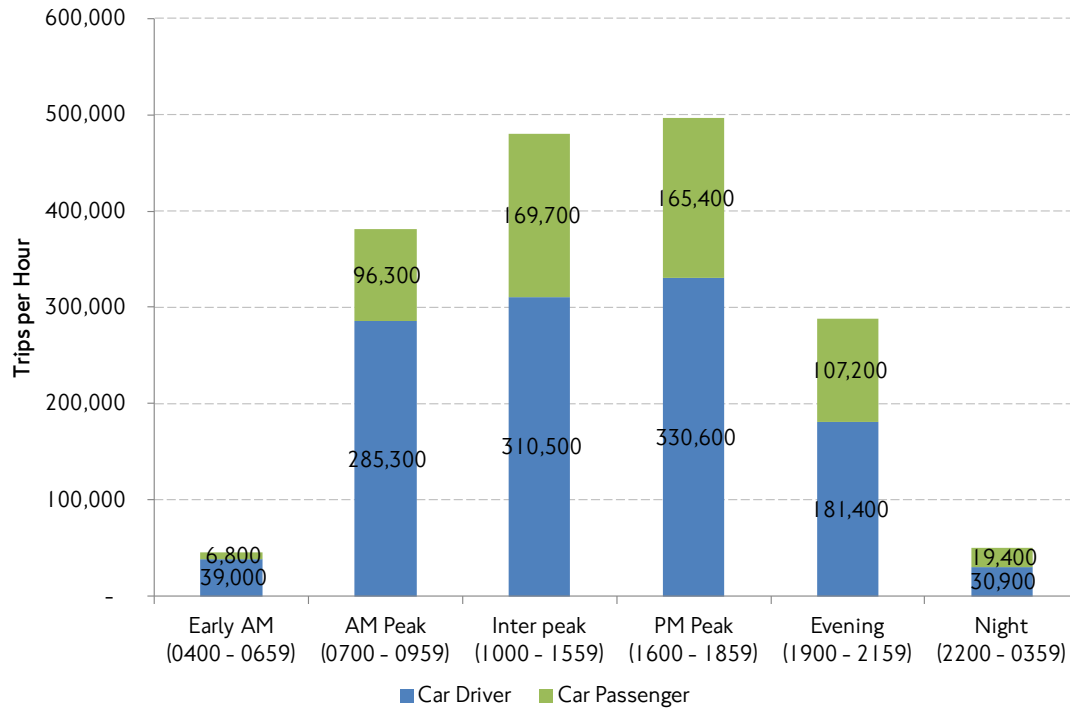
### **Car trips by time of day and day of the week**

The highest number of driver trips per hour occurs during the afternoon peak (4pm-7pm). This is also the peak for car driver trips, but there are slightly more car passenger trips per hour during the inter-peak period (10am-4pm). Figure 4 shows the number of car driver and passenger trips per hour, by time period.

In the early morning (4am-7am), there are 5.7 car driver trips for every car passenger trip. This falls to 3 in the morning peak, and then to around 1.8 throughout the rest of the day.

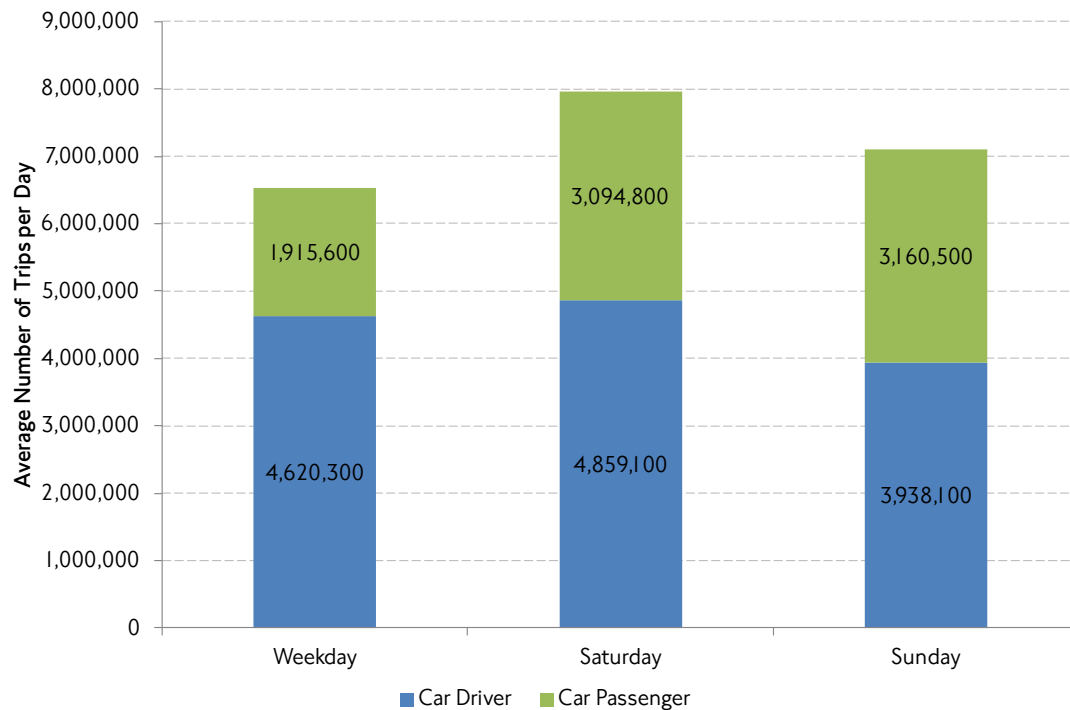
In total, more trips are made by car on an average Saturday and Sunday than an average weekday. Car occupancy is higher at the weekend, and so there is a particular increase in car passenger journeys and, on Sundays, fewer car driver trips than during the week. Figure 5 shows the number of trips by car driver and passenger by day of the week.

Figure 4 Car trips per hour, by time of day, London residents.



Source: LTDS 2011/12.

Figure 5 Car trips by day of the week, London residents.

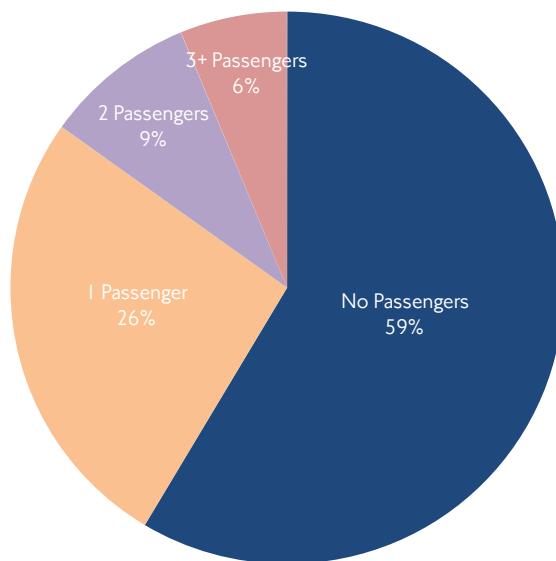


Source: LTDS 2011/12.

**Car driver trips by car occupancy**

Six out of ten car driver trips are made alone, without any passengers, as shown in Figure 6. Just under a quarter (23 per cent) had one passenger aged 5 or older, with an additional 3 per cent having one passenger under 5 (26 per cent in total). Car trips with two passengers aged at least 5 made up 5 per cent of the total, with an additional 3 per cent of trips where at least one passenger was under 5 (9 per cent in total). The share of trips with three passengers or more was 3 per cent for those with passenger aged 5 and over and another 3 per cent for those including passengers under 5, 6 per cent in total.

Figure 6 Car driver trips by car occupancy, London residents.



Source: LTDS 2011/12.

## Car use by demographic characteristics

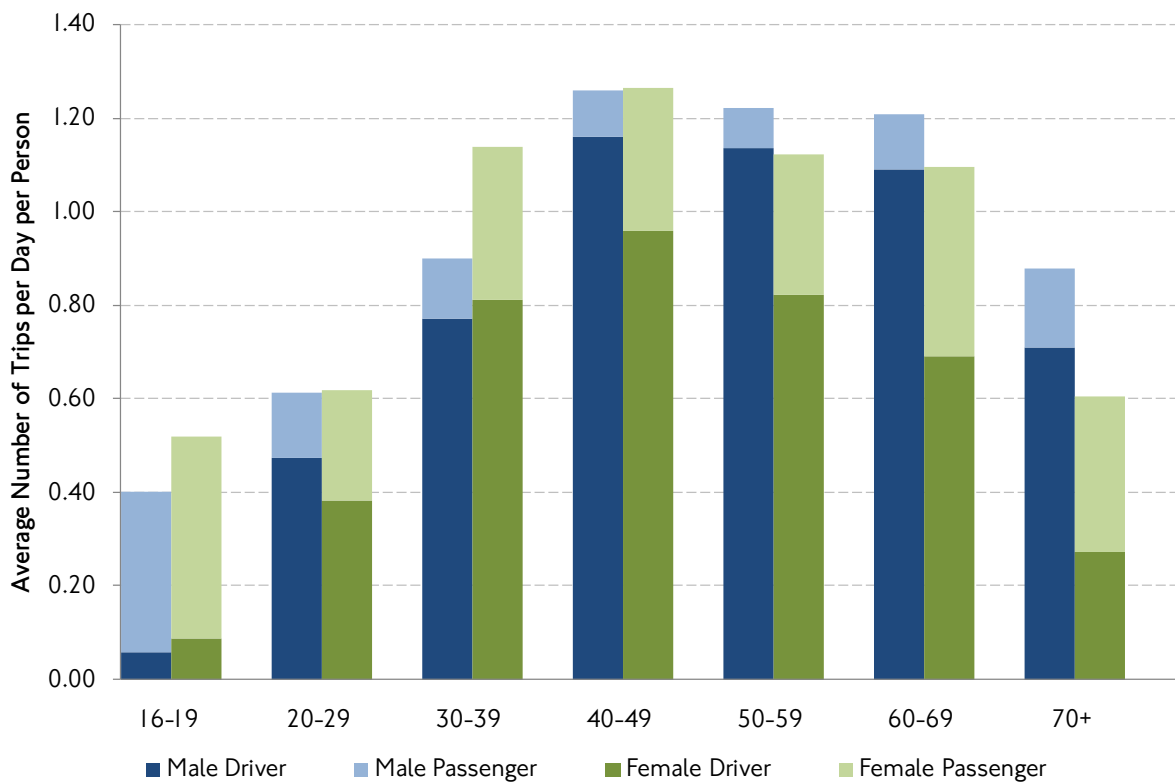
The following section presents analysis of car use by personal characteristics, including age, gender and employment, using the London Travel Demand Survey 2011/12.

### Car use by age and gender

At an individual level, car use varies by age and gender, as shown in Figure 7. Men make more car driver trips than women, with men making 0.83 driving trips per day compared to 0.65 for women.

Amongst younger Londoners, the average number of car driver trips made per person per day is similar for men and women. After the age of 40, however, women consistently make fewer car driver trips than men, with the gap increasing with age. In total, taking car driver and passenger trips into account, women under the age of 50 are slightly more likely than men to travel by car, and over 50 are less likely to travel by car.

Figure 7 Car use by age and gender, London residents.

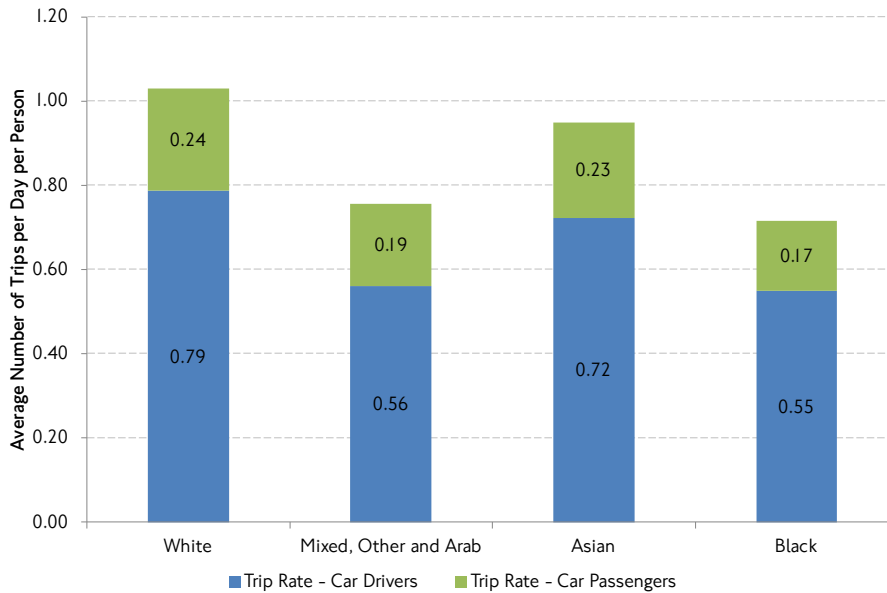


Source: LTDS 2011/12.

### Car use by ethnicity

White and Asian Londoners make more car trips, particularly as a driver, than other ethnic groups, as shown in Figure 8.

Figure 8 Car use by ethnicity, London residents.

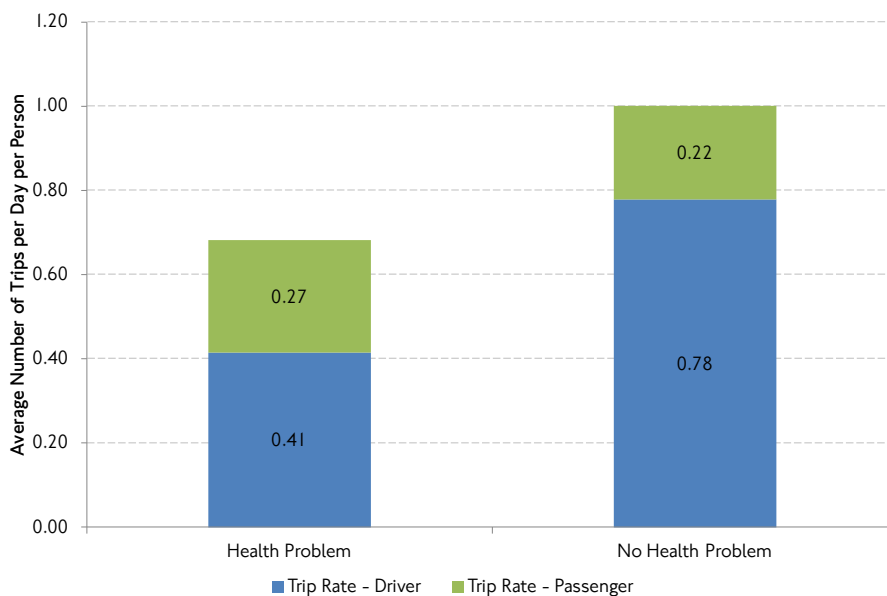


Source: LTDS 2011/12.

### Car use by disability

London residents with a disability are much less likely to travel by car, particularly as a driver, as shown in Figure 9.

Figure 9 Car use by disability or long term health problem, London residents.



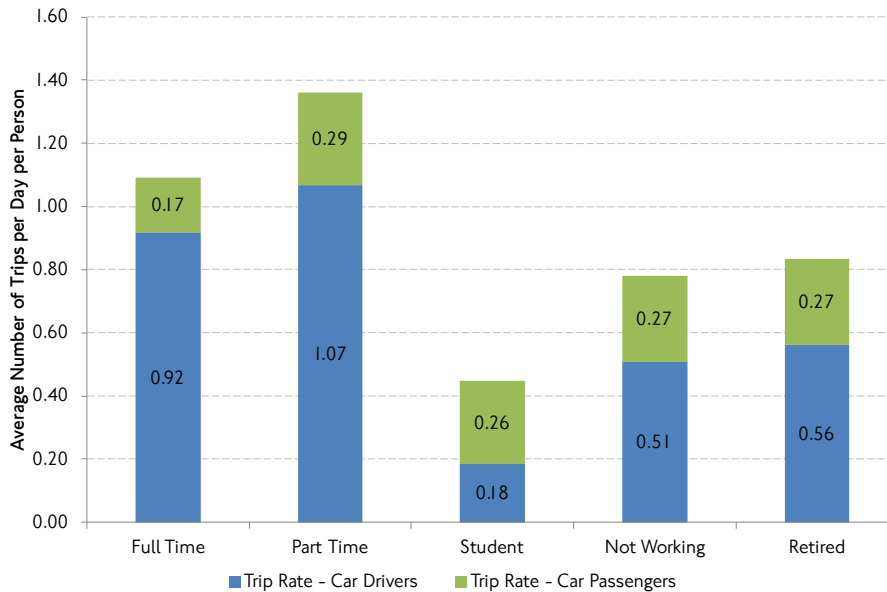
Source: LTDS 2011/12.



### Car use by working status and occupation type

Part time workers make the highest number of car trips per person per day, as driver or passenger, of any group. Workers travel more by car than non-workers, with students making the fewest car trips per person per day of any group and are the only group that make more car passenger trips on an average day than car driver trips.

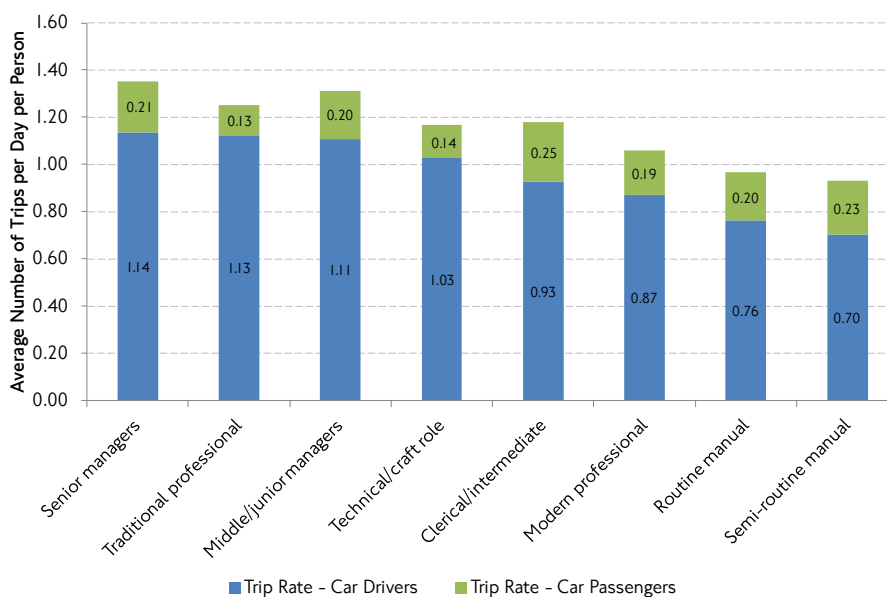
Figure 10 Car use by Working Status, London residents.



Source: LTDS 2011/12.

Car trip rates are higher for workers in more skilled and senior occupations, and fall as occupations become more manual and routine, as shown in Figure 11.

Figure 11 Car use by main occupation type, London residents.



Source: LTDS 2011/12.

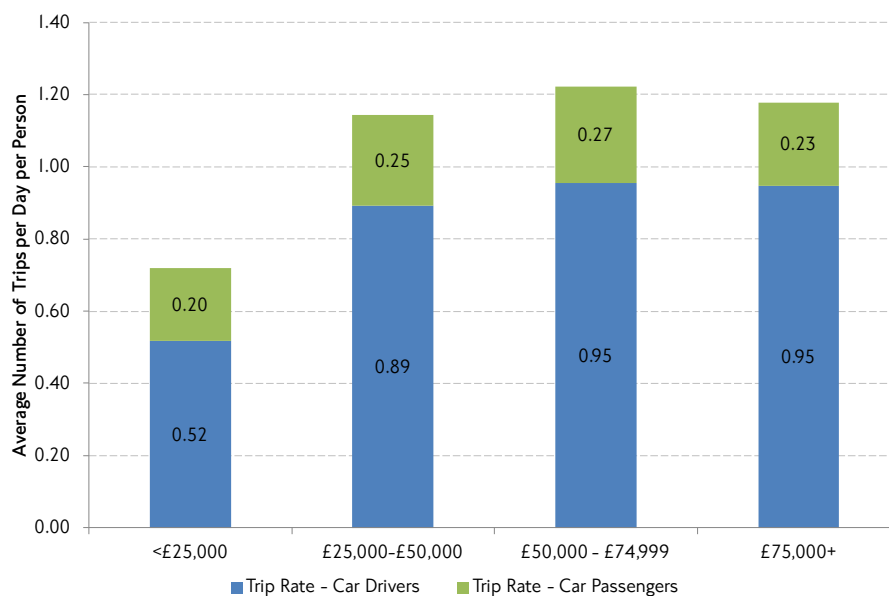
## Car use by household characteristics

The following section describes analysis of car use by household characteristics, including household income, public transport accessibility level of the local area (PTAL) and whether there are children in the household, using the London Travel Demand Survey 2011/12.

### Car use by income

Car use is particularly low for residents of households with an income below £25k a year. Car driver trips continue to rise with income to incomes of around £75k per year, whilst car passenger journeys are relatively similar for all income groups above £25k per year.

Figure 12 Car use by gross household income, London residents.



Source: LTDS 2011/12.

### Car use by income and other demographic characteristics

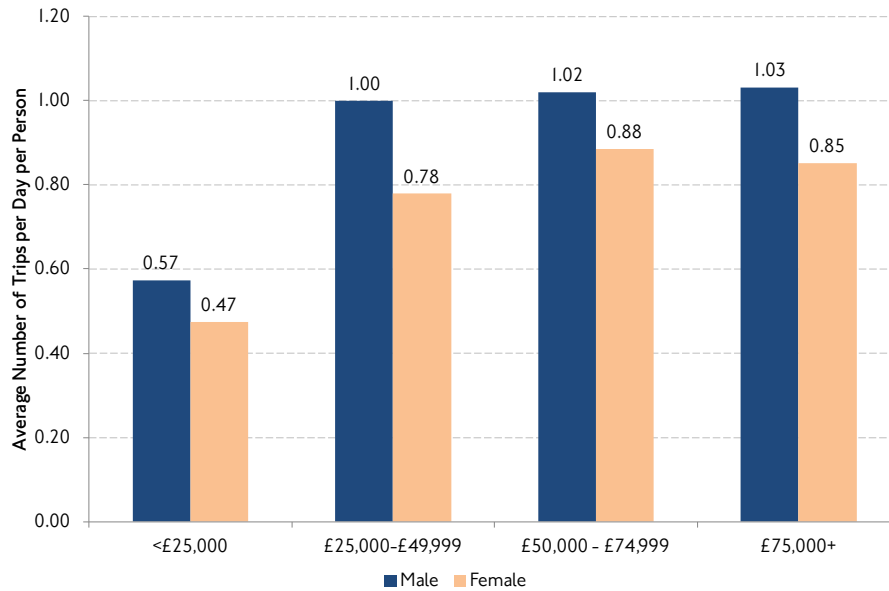
On average, women's car driver use is around 80 per cent that of men's and women make fewer car driver trips per person per day than men at all levels of household income (see Figure 13).

There is also an interesting interaction between age, income and car driving (see Figure 14). Irrespective of income band, car driver trip rates are substantially lower for those under 30 than older people. Car driving rises with income for those aged 16-30, whereas for older people, car use peaks amongst those with household incomes between £50k and £75k, but is fairly similar at all income levels above £25k per year.

Some of the difference in car driver trip rates between different ethnic groups can be accounted for by differences in average household income; nevertheless, differences between ethnic groups at the same income level remain, shown in Figure 15. Interestingly, whilst car driver trip rates amongst Asian people is between 90 to 95 per cent that of White people at all income levels, amongst Black people car driver trip rates rise as a proportion of White people's trip rates with income, from 68 per cent at incomes under £25k per year to 90 per cent at

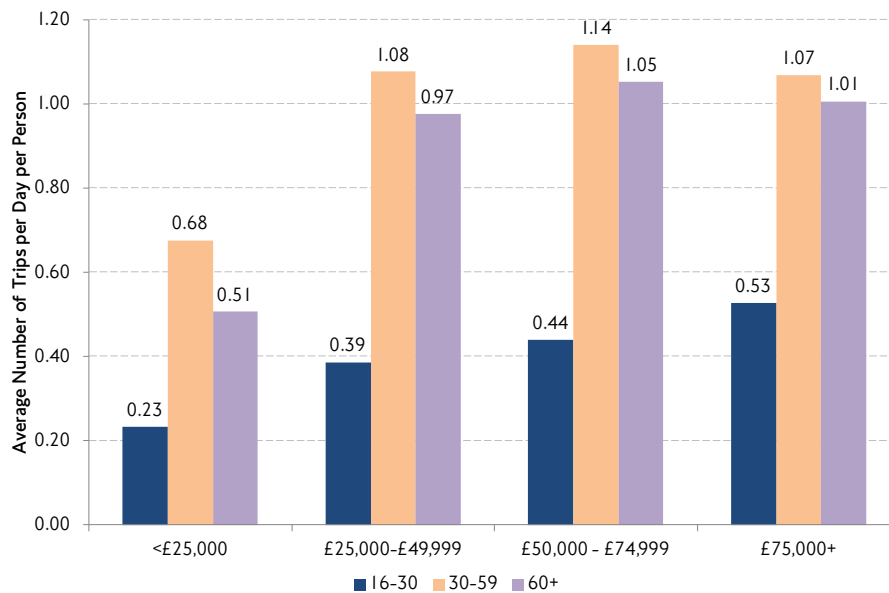
incomes over £50k per year. It is possible that this may reflect patterns of residence, with White Londoners more likely to live in outer London, where public transport is less readily available and car driver trip rates are higher on average.

Figure 13 Car driver use by income and gender, London residents.



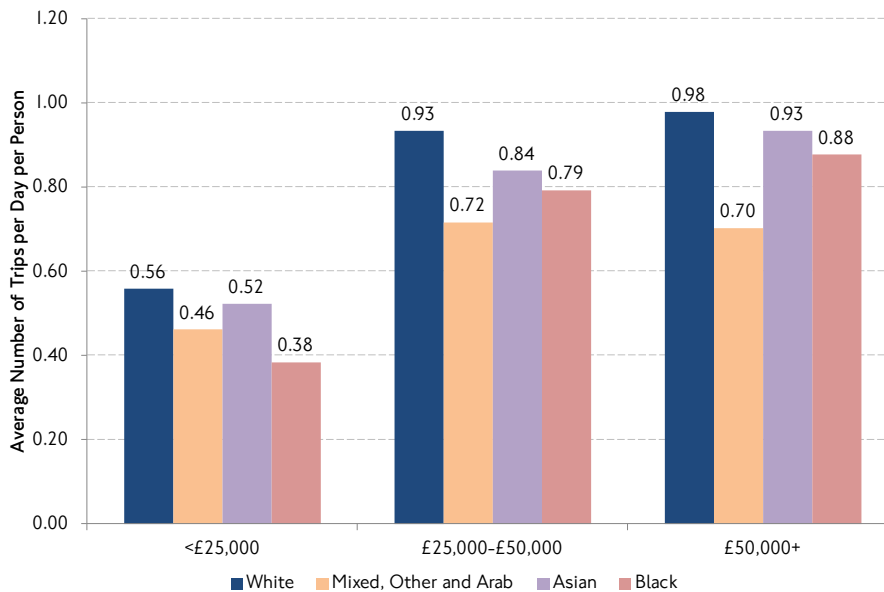
Source: LTDS 2011/12.

Figure 14 Car use by income and age, London residents.



Source: LTDS 2011/12.

Figure 15 Car use by ethnicity and income, London residents.



Source: LTDS 2011/12.

### **Car use by income and other household characteristics**

Car trip rates are consistently around 50 per cent higher amongst residents of households with at least one child than those living in childless households across all income bands. Averaged across all income bands, adults in households with children make 0.93 car driver trips a day on average, compared to 0.58 car driver trips per person in households without children.

Broadly speaking, car driver trip rates rise with income amongst those living in households at each life stage, with a particular increase evident once incomes rise above £25k per year.

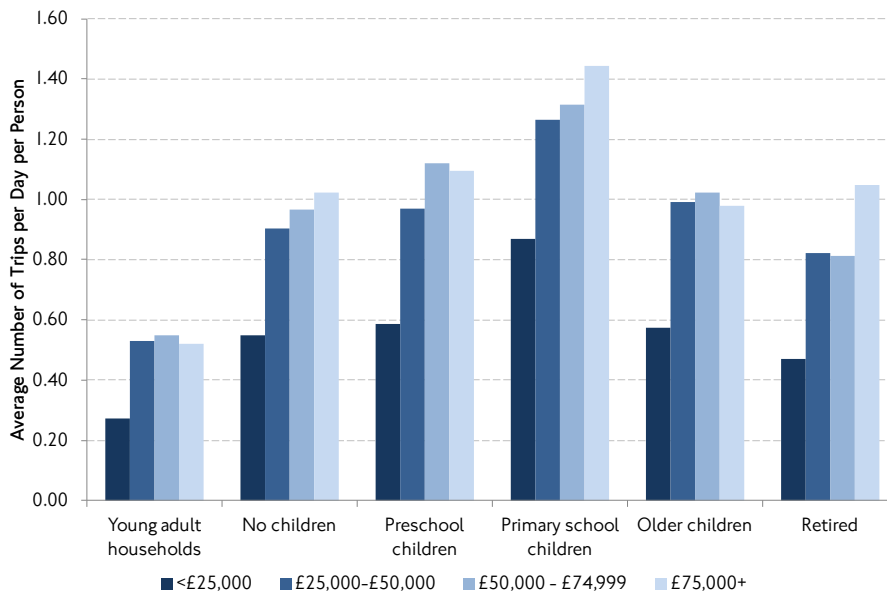
Parents of pre-school and primary school aged children have the highest car driver trip rates, and young adult households by far the lowest car driver trip rates.

Figure 16 Car use by whether or not there are children in the household, London residents.



Source: LTDS 2005/11.  
Note: household income before tax.

Figure 17 Car use by life stage and income, London residents.



Source: LTDS 2005/11.  
Note: household income before tax.

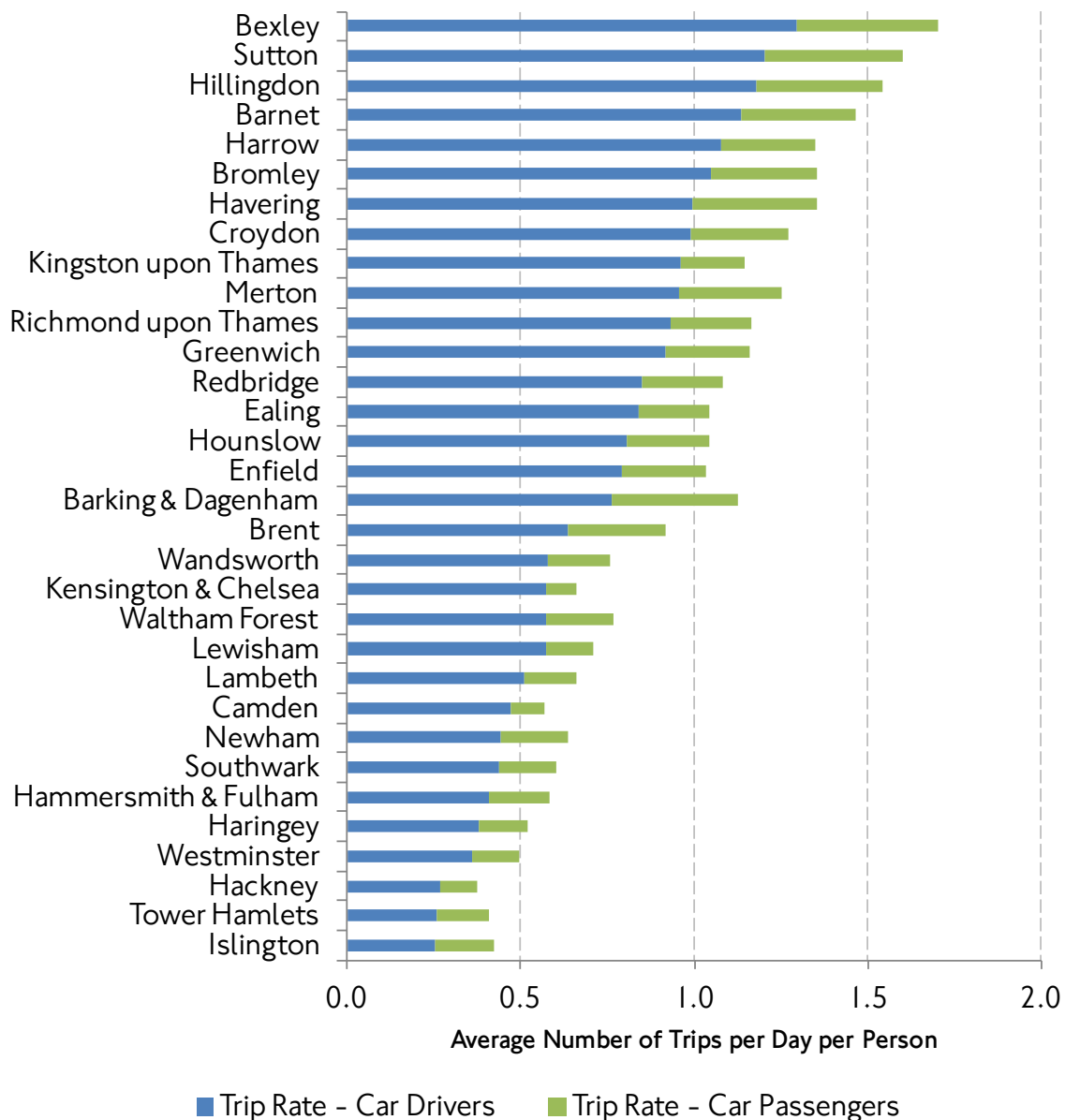
## Car use by geography

### Car use by region and borough

Of all London boroughs, residents of Bexley have the highest car driver trip rate at 1.3 car driver trips per person per day on average, while residents of Islington have the lowest, at 0.26 car driver trips per person per day. Residents of outer London boroughs have higher car driver trip rates on average than residents of inner London boroughs.

Car passenger trip rates follow a broadly similar pattern but with some exceptions, most notably Barking & Dagenham's high passenger trip rate and Kensington & Chelsea's low passenger rate compared to their respective car driver trip rates.

Figure 18 Car use by borough, London residents.



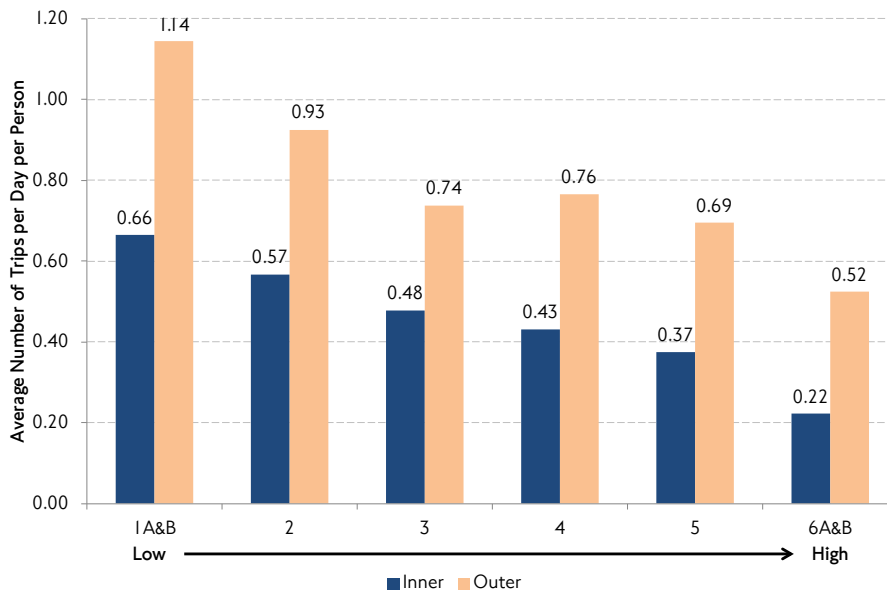
Source: LTDS 2011/12.

### Car use by access to public transport

There is a strong relationship between car use and access to public transport; with car use rising as public transport accessibility falls (as measured by the Public Transport Accessibility Level (PTAL)).

Car (as driver) trip rates are higher on average in outer than inner London at each PTAL level, but notably car driver trip rates are lower amongst residents of those parts of outer London with the best public transport access than residents of parts of inner London with the least good access to public transport – 0.52 car driver trips per person per day in parts of outer London with a PTAL score of 6 compared to 0.66 car driver trips per person per day in parts of inner London with a PTAL score of 1.

Figure 19 Car use by access to public transport accessibility and region, London residents.



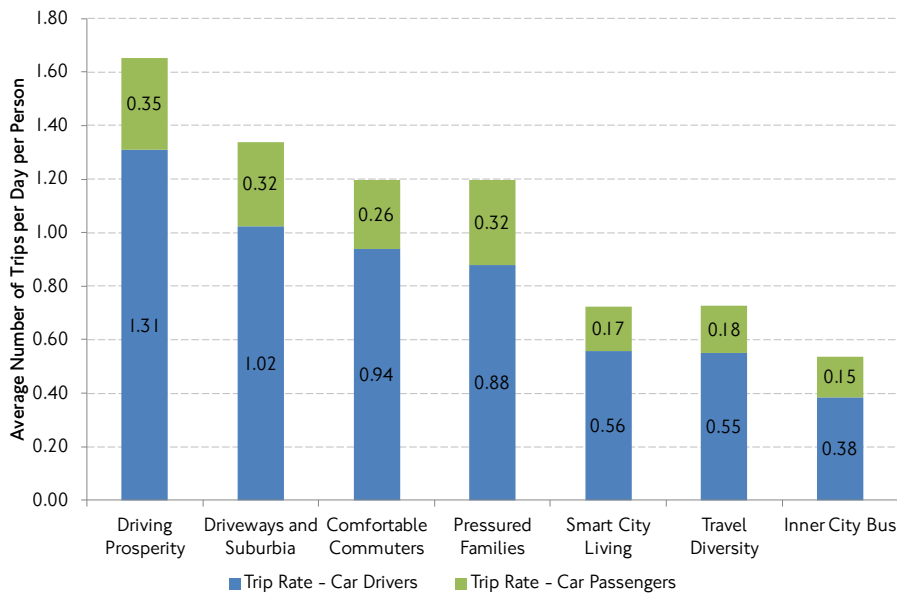
Source: LTDS 2011/12.

Note: PTAL is scored from low to high, with level 1A being the lowest level of access to public transport and level 6B being the highest level of access to public transport. Level 6B is typically found in central London and in town centres across the city.

### Car use by driver segmentation

Residents of 'Driving Prosperity' households have the highest car driver and passenger trip rates, making 1.36 car trips (by driver and passenger) per person per day, compared to just 0.53 car trips per person per day amongst those living in 'Inner City Bus' households. The car driver segments reflect current travel patterns, lifestyle and attitudes. The groups with low car trip rates include both those on low incomes whose choices may be constrained (in particular, within the 'Inner City Bus' category) and those living in inner London who may not feel the need to have a car or to use their car extensively (particularly within the 'Smart City Living' category).

Figure 20 Car use by driver segmentation



Source: LTDS 2011/12.

The following section describes the characteristics of car trips using the London Travel Demand Survey 2011/12, such as journey purpose, trip length, and time of day.

### References

TfL (2011-2012) London Travel Demand Survey: TfL