

# **Transport and Technology: Public Attitudes Tracker**

## **Wave 4 summary report**

September 2019

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# 1. Introduction

## 1.1 Background to the survey

In 2017, the Department for Transport (DfT) commissioned Kantar's Public Division to conduct six waves of research to track public attitudes and behaviours relevant to transport in England. This report focuses on the results from Wave 4 of the survey conducted in June 2019. Where questions have also been asked at previous waves, we include comparisons to these results and note any changes.

The survey aims to fill gaps in knowledge on key areas and emerging topics such as public attitudes to autonomous vehicles and future modes of travel. It is conducted biannually and comprises a face-to-face omnibus survey.

Survey fieldwork is conducted on the Kantar UK face-to-face omnibus, a weekly omnibus survey. The omnibus survey is conducted through random location sampling, a high-quality form of quota sampling in which sample points are allocated through a random selection.

Prior to Wave 1, DfT and Kantar jointly developed the questionnaire content. This process included a review of relevant questions asked on other surveys and four focus groups to assist the development of new questions. All questions were tested through two rounds of cognitive testing. Further cognitive testing was conducted before Wave 4 to help develop new questions relevant to e-bikes and e-scooters.

Around 3,500 adults in England are interviewed at each wave of the survey. The sample is representative of individuals aged 16 or over living in England. Data has been weighted to the profile of adults in England.

More information on the sample and survey methodology is included in [Appendix A](#).

## 1.2 Notes on findings

The Wave 1 questionnaire included a large number of questions, with a sub-set of these questions followed up at Waves 2, 3 and/or 4. New questions on e-bikes and e-scooters were asked for the first time in June 2019. [Appendix B](#) includes an overview of which questions have been asked at each wave of the survey to date. The questionnaire for June 2019 (Wave 4) is included in [Appendix C](#).

The results for questions asked at multiple waves show a high degree of consistency over time, which is helpful in validating those findings. After four waves of the survey, we are now starting to see some trends regarding changes in knowledge, attitudes and behaviour over time. However, in some cases it is necessary to review results over further waves of the survey to assess whether these represent longer-term trends.

Significant differences at the sub-group level and between survey waves are noted in this report. Strictly speaking, significance tests can only be applied to probability samples and are not applicable to the random location design adopted for this survey. However, it can be assumed that the variance of a random location sample is similar to that of an equally specified probability sample. It has therefore been decided to flag any differences – based on a 95% confidence interval – in this report, to help users interpret the results.

However, users are encouraged to treat changes flagged as significant with caution. Differences are noted for the key demographic sub-groups of gender, age, social grade (social grade is a classification system based on occupation; in this report, differences between the upper social grades (ABC1) and lower grades (C2DE) are considered) and urbanity. Other sub-group comparisons are also included where relevant, including based on region, ethnicity (due to limited sample sizes, it is not possible to compare results

between different BME groups, and thus analysis focuses on comparisons of people from white backgrounds against BME groups as a collective), car ownership and household composition.

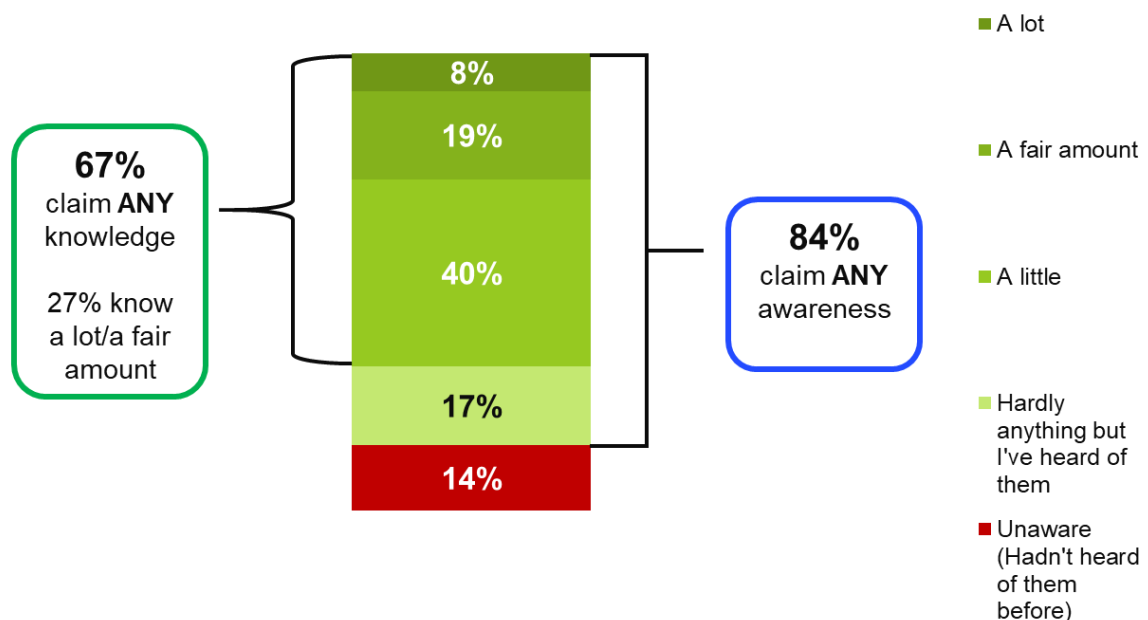
While some regional comparisons are included in the report, it should be noted that the sample sizes in some regions are fairly low. This is particularly the case in the North East, where around 200 interviews are achieved per wave, which reflects this being the least populated region in England. As such, any differences between regions based on a single wave, or differences within regions across waves, should be treated with caution.

## 2. Awareness and use of e-bikes and e-scooters

### 2.1 Awareness and knowledge of e-bikes

Awareness of e-bikes was high in June 2019, with over eight in ten (84%) claiming awareness, although a majority (57%) said that they only knew 'a little' or 'hardly anything' about the technology (Fig 2.1).

**Figure 2.1 Awareness and knowledge of e-bikes**



**Note:** Claimed knowledge = those that know a lot + those that know a fair amount + those that know a little; claimed awareness = those that know a lot + those that know a fair amount + those that know a little + those that know hardly anything but have heard of e-bikes

Source: Q74. An electric bike or bicycle is one that is assisted by an electric motor when you pedal. How much, if anything, would you say you know about electric bikes?

Base: All respondents (June 19: 3,578)

Claimed knowledge of e-bikes (i.e. the proportion of people who said they knew at least a little about them) stood at 67%, and claimed knowledge was higher among men (74% versus women 61%) and social grades ABC1 (71% versus C2DE 64%), and significantly lower among people aged 75+ (52% versus 61% or more in other age groups). Claimed knowledge was also a little lower in the North East (56%) compared with other regions of England.

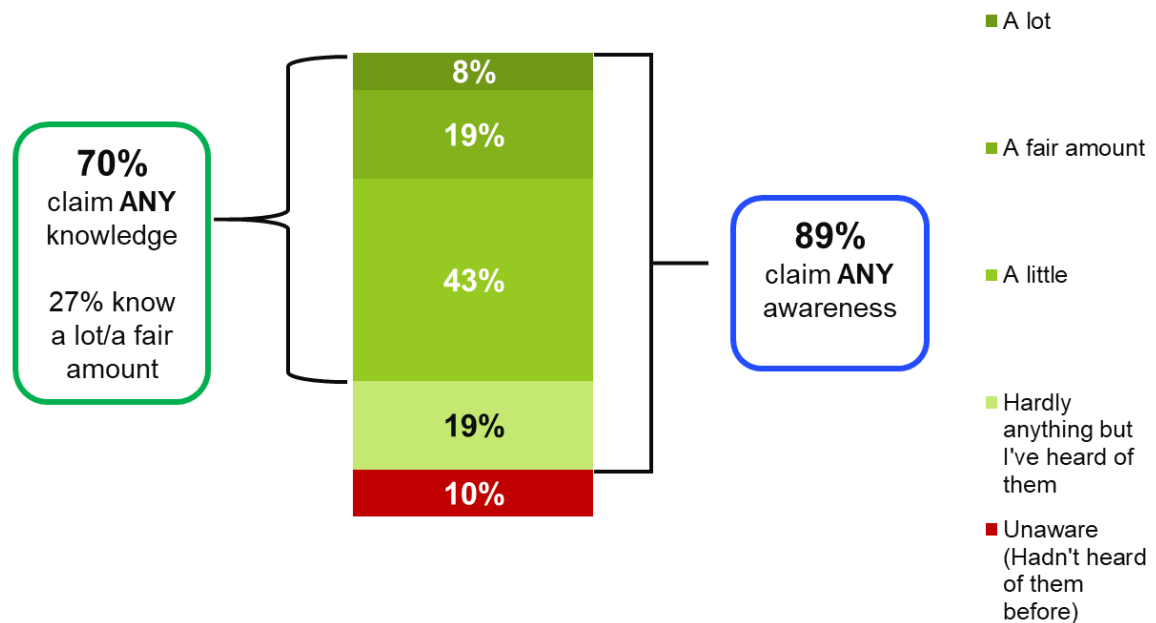
### 2.1.1 Use of e-bikes

In June 2019, five per cent of people had used an e-bike, with most use being described as occasional (4%) as opposed to regular (1%). Use was more common among men than women (7% versus 3% respectively).

## 2.2 Awareness and knowledge of e-scooters

Awareness of e-scooters was also high at 89%. However, as with e-bikes, most (62%) said that they only knew 'a little' or 'hardly anything' about e-scooters (Fig 2.2).

**Figure 2.2 Awareness and knowledge of e-scooters**



Source: Q76. An electric or motorized scooter is a stand-up scooter with a small engine or electric motor. How much, if anything, would you say you know about electric scooters?

Base: All respondents (June 19: 3,578)

Seven in ten people (70%) claimed at least some knowledge of e-scooters, and claimed knowledge was higher among men (75% versus women 65%), those living in urban areas (73% versus rural 59%), social grades ABC1 (74% versus C2DE 66%), and those living in households with children aged under 16 (77% versus 68% of other households).

Claimed knowledge was significantly lower among people aged 75+ (47% versus 60% or more in other age groups) and among those living in the North East (52%, compared with at least 61% in other regions of England).

### 2.2.1 Use of e-scooters

Five per cent of people had used an e-scooter and, as with e-bikes, use tended to be occasional as opposed to regular (fewer than 0.5% used e-scooters regularly). Use was more common among men (6% versus women 3%) and those aged 16-24 (12% versus 7% or less in other age groups).

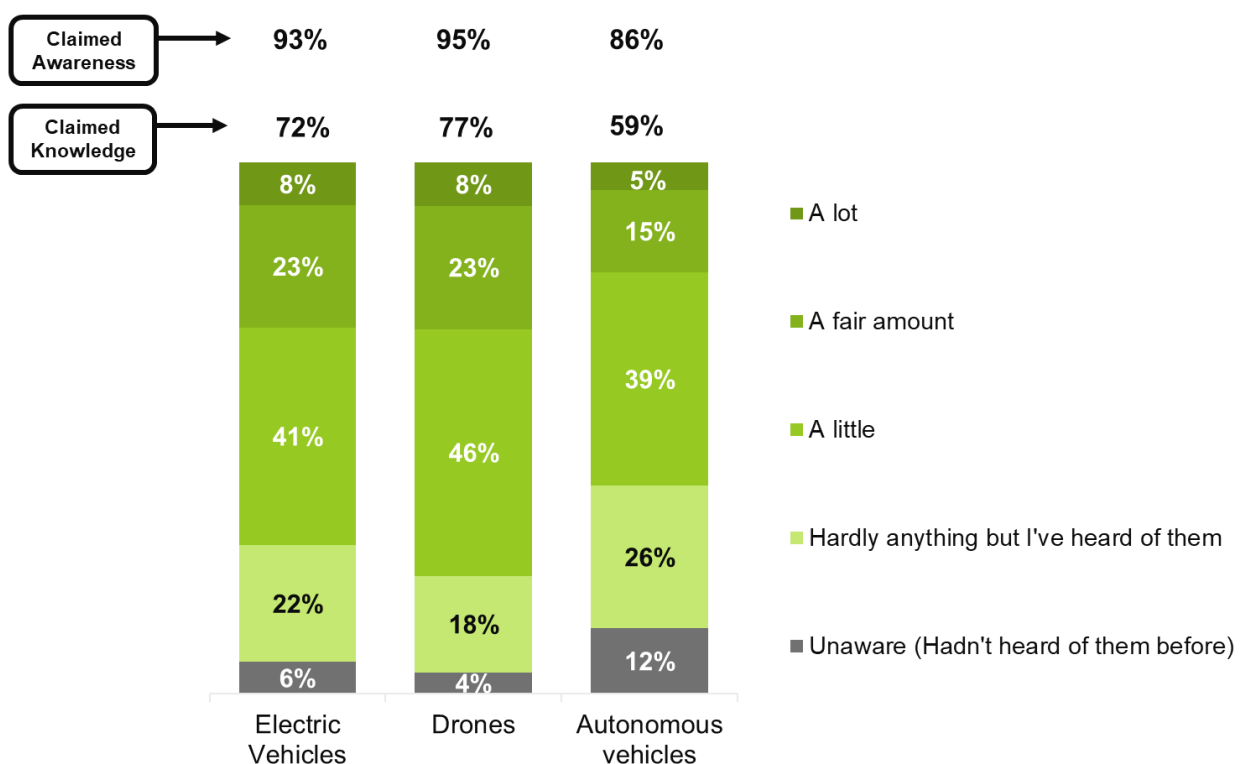
### 3. Awareness and use of electric vehicles, drones and autonomous vehicles

#### 3.1 Awareness of electric vehicles, drones and autonomous vehicles

Awareness of drones and electric vehicles (EVs) was highest, with 95% and 93% of people saying they were aware of these respectively, while 86% were aware of autonomous vehicles (AVs). Awareness levels for EVs were stable wave on wave, while the proportion of people who were aware of drones was the highest recorded across all tracker waves. Awareness of AVs had risen compared to six months previously (December 2018), but it was on a par with the level recorded in June 2018 (87%).

While overall levels of awareness were high, a large majority of those aware of each technology said that they only knew 'a little' or 'hardly anything' about it (Fig 3.1).

**Fig 3.1 Awareness and knowledge of new and current technologies, June 2019**



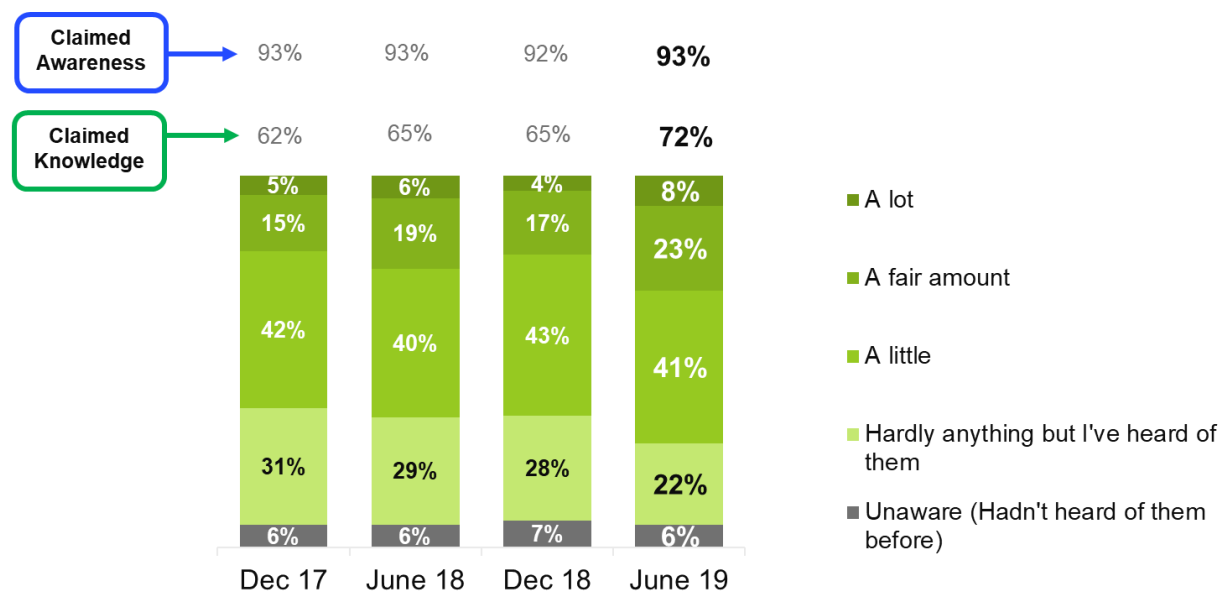
Source: Q25. How much, if anything, would you say you know about electric vehicles?/ Q28. Fully driverless or self-driving vehicles are not yet available for everyday use. How much, if anything, would you say you know about these types of vehicles?/ Q34. How much, if anything, would you say you know about drones?

Base: All respondents (3,578)

### 3.1.1 Awareness and knowledge of electric vehicles (EVs)

Over nine in ten (93%) claimed to be aware of EVs in June 2019, and this proportion is in line with previous tracker waves (Fig 3.2). Claimed knowledge (defined as knowing at least 'a little'), however, has risen from 65% in December 2018 to 72% and this is the highest level recorded across all waves of the survey to date. Similarly, the proportion of people claiming a deeper level of knowledge (i.e. that they knew 'a lot' or 'a fair amount' about EVs) stood at 31% (also the highest level recorded across all tracker waves).

**Fig 3.2 Awareness and knowledge of electric vehicles, Wave 1 - 4**



Source: Q25. How much, if anything, would you say you know about electric vehicles?

Base: All respondents (June 19: 3,578; Dec 18: 3,532; June 18: 3,538; Dec 17: 3,499)

As seen in previous waves of the survey, claimed knowledge was higher among men (81% versus women 63%) and social grades ABC1 (78% versus C2DE 65%), and significantly lower among those aged 75+ (50% versus 70% or more in other age groups). In June 2019, claimed knowledge was also higher among urban dwellers (73% versus rural dwellers 65%). In terms of regional variations, knowledge was a little lower in the North East (52%) compared with all other regions.

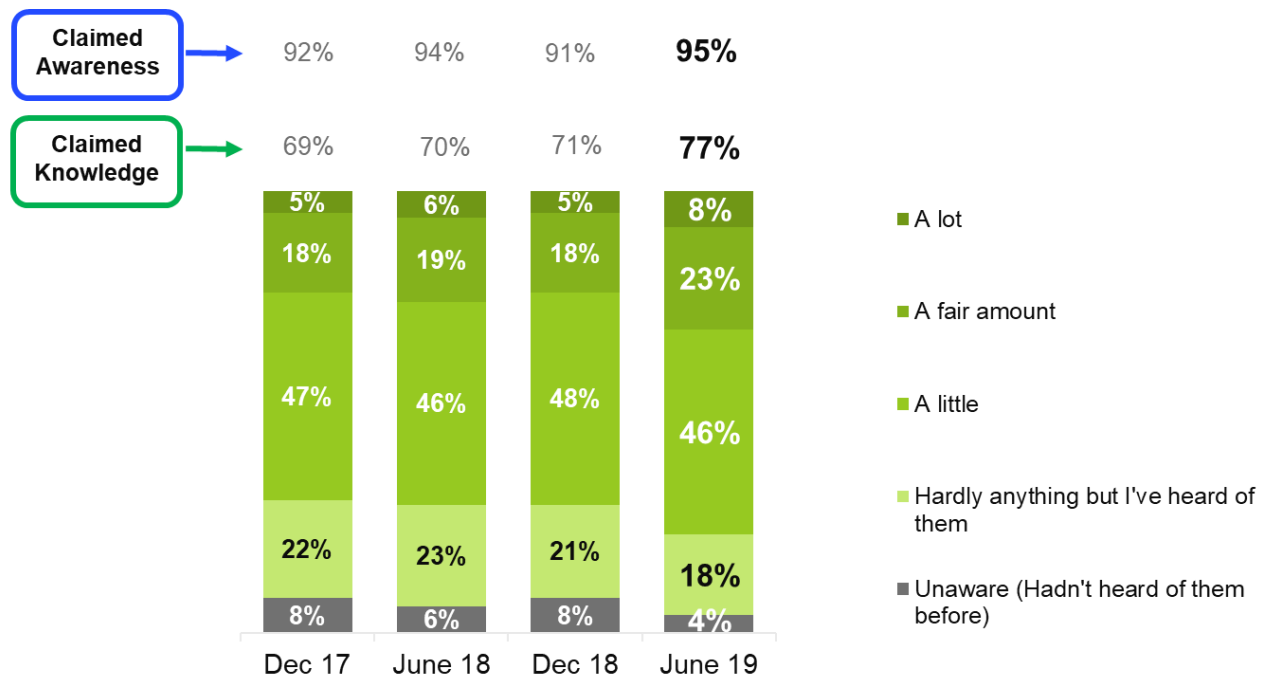
Findings on perceived advantages and disadvantages of EVs are included in [Chapter 5](#).

### 3.1.2 Awareness and knowledge and use of drones

The June 2019 survey was the first time the tracker had run since the widely reported disruption of Gatwick airport by drones in December 2018. Awareness of drones was very high at 95%. This is a little higher than the level of awareness in December 2018 (91%) but similar to the figure recorded in June 2018 (94%) (Fig 3.3). Claimed knowledge, however, stood at 77%, which is the highest level recorded across the four tracker waves by some margin (in previous waves this was between 69% and 71%). A third of people (31%) claimed that they knew a 'fair amount' or 'a lot' about drones.



**Fig 3.3 Awareness and knowledge of drones, Wave 1 - 4**



Source: Q34. How much, if anything, would you say you know about drones?

Base: All respondents (June 19: 3,578; Dec 18: 3,532; June 18: 3,538; Dec 17: 3,499)

Groups more likely to claim knowledge about drones included men (83% versus women 72%), those living in urban areas (79% versus rural areas 70%), and those in social grades ABC1 (82% versus C2DE 73%). At least 73% in all age groups up to and including 74 claimed some knowledge, compared with 62% of those aged 75+ (the latter group was significantly less likely than all other age groups to claim knowledge).

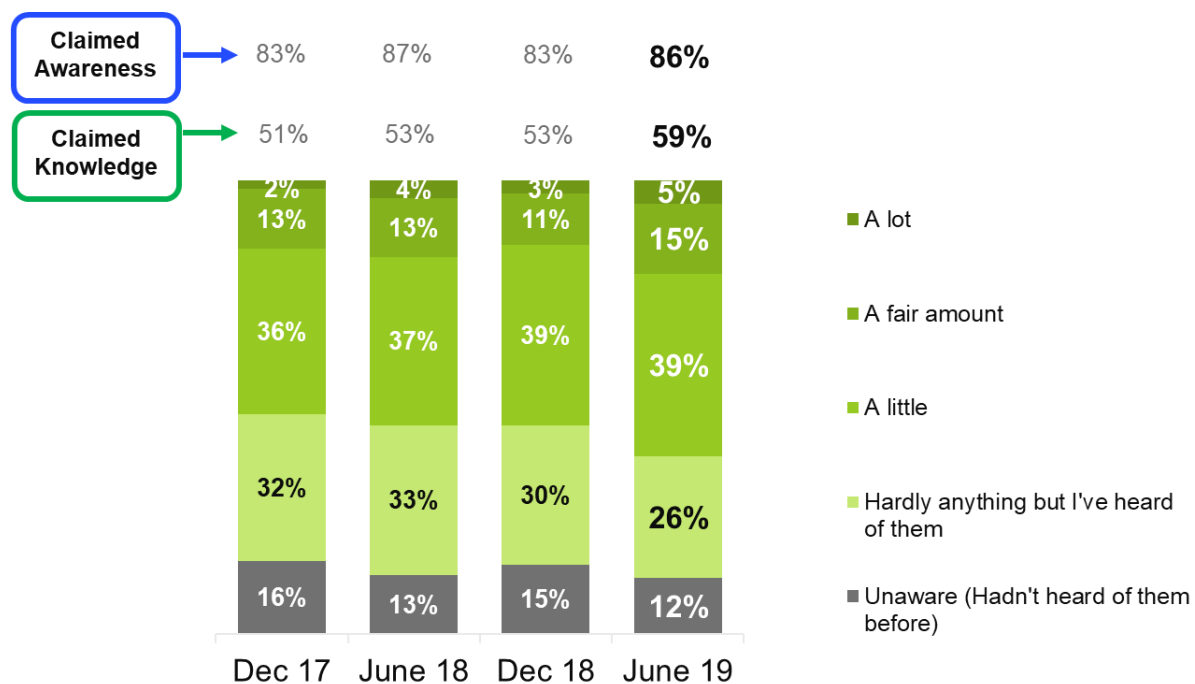
Analysis by region showed that those living in the North East were a little less likely than those living in other English regions to claim any knowledge of drones (63% versus 72% or more in other regions).

A minority of people continue to have used a drone: 11% claimed to have done so in June 2019 and this is in line with the proportions recorded in December 2017 and June 2018 (11% at each wave). Those more likely to have used a drone were men (17% versus women 6%) and those with children aged under 16 living in the household (15% versus other households 10%).

### 3.1.3 Awareness of autonomous vehicles (AVs)

Awareness of AVs remained high in June 2019 at 86%. While this is significantly higher than December 2018 (83%), it is in line with the level recorded in June 2018 (87%). Claimed knowledge rose to 59%, which is the highest level observed to date (up from 53% in December 2018) (Fig 3.4).

**Fig 3.4 Awareness and knowledge of autonomous vehicles, Wave 1 - 4**



Source: Q28. Fully driverless or self-driving vehicles are not yet available for everyday use. How much, if anything, would you say you know about these types of vehicles?

Base: All respondents (June 19: 3,578; Dec 18: 3,532; June 18: 3,538; Dec 17: 3,499)

Groups more likely to claim knowledge about AVs included men (71% versus women 49%), those living in urban areas (61% versus rural areas 53%) and those in social grades ABC1 (68% versus C2DE 51%). People in the oldest age bracket (75+) were much less likely than other age groups to claim knowledge (40% versus 56% or more in other age groups).

At a regional level, those living in the North East had slightly lower levels of knowledge than those living in all other English regions (40% versus 54% or more). This is in line with what was seen at all previous tracker waves.

Further results in relation to autonomous vehicles are included in [Chapter 6](#).

### 3.2 Driver assistance features: awareness and usage

The survey includes questions on awareness and use of driver-assistance features. Two new features were added to the survey in June 2019: stop start and driver feedback. When we report on the proportion of people who are aware of, or who have used, any driver-assistance features below, this excludes stop start and driver feedback. This allows us to make a like-for-like comparison with previous waves. We also exclude those who were only aware of in-car Wi-Fi connection, which is not classified as driver assistance.

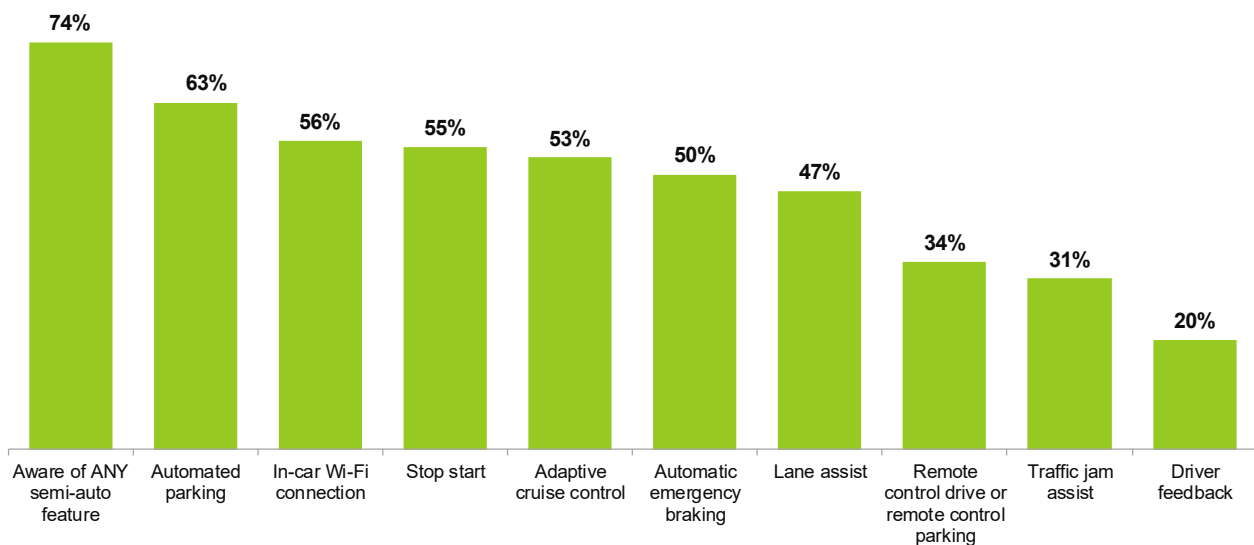
Three-quarters of people (74%) said they were aware of at least one driver-assistance feature (Fig 3.5), which is a similar proportion to December 2018 and December 2017 (both 76%). Two in ten (22%) were not aware of any of the features, and this was most likely among women (27% versus men 16%) and those aged 75+ (45% versus 22% or less in other age groups). Car owners were also more likely to have heard of driver-assistance features; 83% of car owners said that they were aware of at least one driver-assistance feature, compared to 54% of those who don't own a car (Fig 3.5).

In June 2019, the features with the greatest level of awareness continued to be automated parking at 63% (although this marked a slight decrease from 66% in December 2018), followed by in-car Wi-Fi (56%), Stop start (55%), adaptive cruise control (53%) and automatic emergency braking (50%).

Looking at the individual features, since December 2018, there have been significant increases in the proportions of people aware of:

- Adaptive cruise control (53%, up from 49%)
- Automatic emergency braking (50%, up from 47%)
- Remote control drive or remote-control parking (34%, up from 30%)
- Traffic jam assist (31%, up from 28%)

**Fig 3.5: Awareness of driver-assistance features, June 2019**



Source: Q31. Although fully driverless or self-driving vehicles are not yet available for everyday use, some cars available today have self-driving features. Which of these have you heard of?

Base: All respondents (3,578)

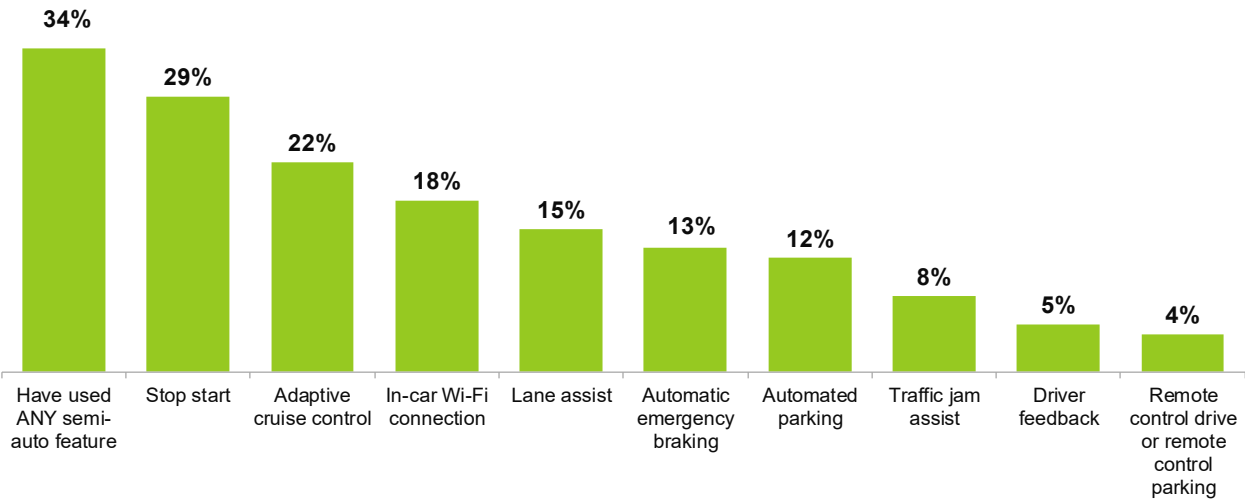
Among those with a valid UK driving licence, just over three in ten (34%) had used any of the key features, which remains unchanged since December 2018 (Fig 3.6). Reported usage was highest among men (39% versus women 28%), and lowest among those aged 16-24 and 75+ (25% and 18% respectively versus 30% or more in other age groups).

In June 2019, the most commonly used features were Stop start (29%) and adaptive cruise control (22%).

Compared with the finding in December 2018, there have been increases in **use** of:

- Adaptive cruise control (22%, up from 19%); and
- Traffic jam assist (8%, up from 6%).

**Fig 3.6: Use of semi-autonomous features, June 2019**



Source: Q32. And which, if any of these, have you used yourself?

Base: All with a valid UK driving licence (rebased: 2,367)

## 4. Public attitudes to car ownership and connectivity

### 4.1 Agreement with attitude statements

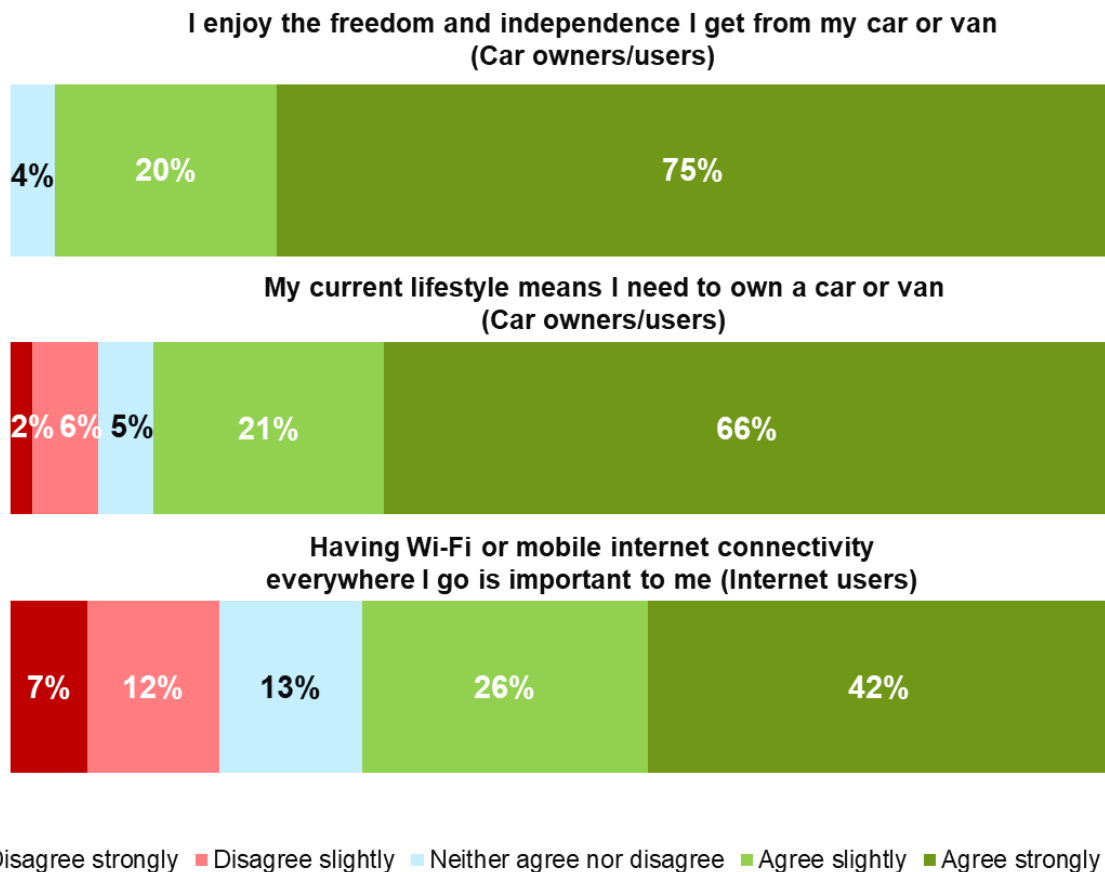
Respondents were presented with three statements and asked to what extent they agreed or disagreed with each statement (Fig 4.1):

- Having Wi-fi or mobile internet connectivity everywhere I go is important to me (asked of those who said that they access the internet at least once every six months. Base: 3,057)
- My current lifestyle means that I need to own a car or van (asked of those who said that they personally own or continuously use a car or van. Base: 2,209)
- I enjoy the freedom and independence that I get from my car or van (asked of those who said that they personally own or continuously use a car or van. Base: 2,209).

Over two thirds (68%) agreed that having internet connectivity everywhere they go is important to them. This shows no change from when the question was last asked in December 2017. Agreement with the statement was highest among younger age groups and levels of agreement declined sequentially across age categories (81% of 16-24 year olds agreed, compared with 31% of 75+).

The proportion of car owners that agreed with the statements relating to car ownership/use was even higher, with 87% agreeing that their current lifestyle means that they need to own a car or van and 95% agreeing that they enjoy the freedom and independence that they get from their vehicle (Fig 4.1). While these are similar to the proportions who agreed with the statements in December 2017, strength of agreement with the statements has declined. In June 2019, 66% of car owners felt strongly that they need a car or van due to their lifestyle, compared to 71% in December 2017. Similarly, those who strongly agreed that they enjoy the freedom and independence that they get from their car or van has declined from 80% in December 2017 to 75% in June 2019.

**Fig 4.1 Agreement with attitude statements, June 2019**



Source: Q18. How much do you agree or disagree with the following statement(s)

Base: For 'internet connectivity statement - all who access the internet at least twice a year (June 2019: 3,057)

For car/van statements – All who personally own/ continuously use a car/van (June 19: 2,209)

## 5. Public attitudes to electric vehicles and future purchasing intentions

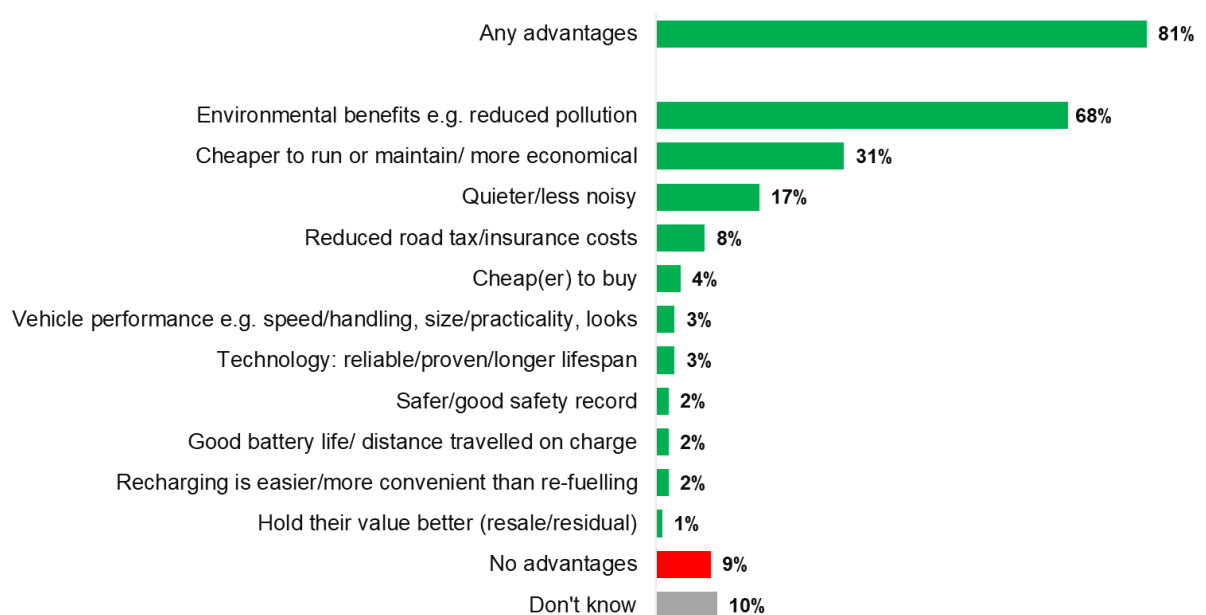
### 5.1 Perceived advantages of electric vehicles (EVs)

The categories in Fig 5.1 represent unprompted, 'top of mind' responses when respondents were asked if they could think of any advantages of EVs over petrol or diesel vehicles. The environmental benefit of EVs was by far the most commonly cited advantage (68%), followed by lower running costs associated with EVs (31%) and being quieter/less noisy (17%). Nine per cent perceived there to be no advantages to EVs, while 10% answered 'don't know'.

Those more likely to mention environmental benefits of EVs were men (70% versus women 65%) and people in social grades ABC1 (76% versus C2DE 59%).

Responses to this question in June 2019 were very similar to those recorded in December 2018 (when the question was last asked).

**Fig 5.1 Perceived advantages of electric vehicles, June 2019**



Source: Q26. What do you think are the advantages, if any, of electric over petrol or diesel vehicles?

Base: All respondents (3,578)

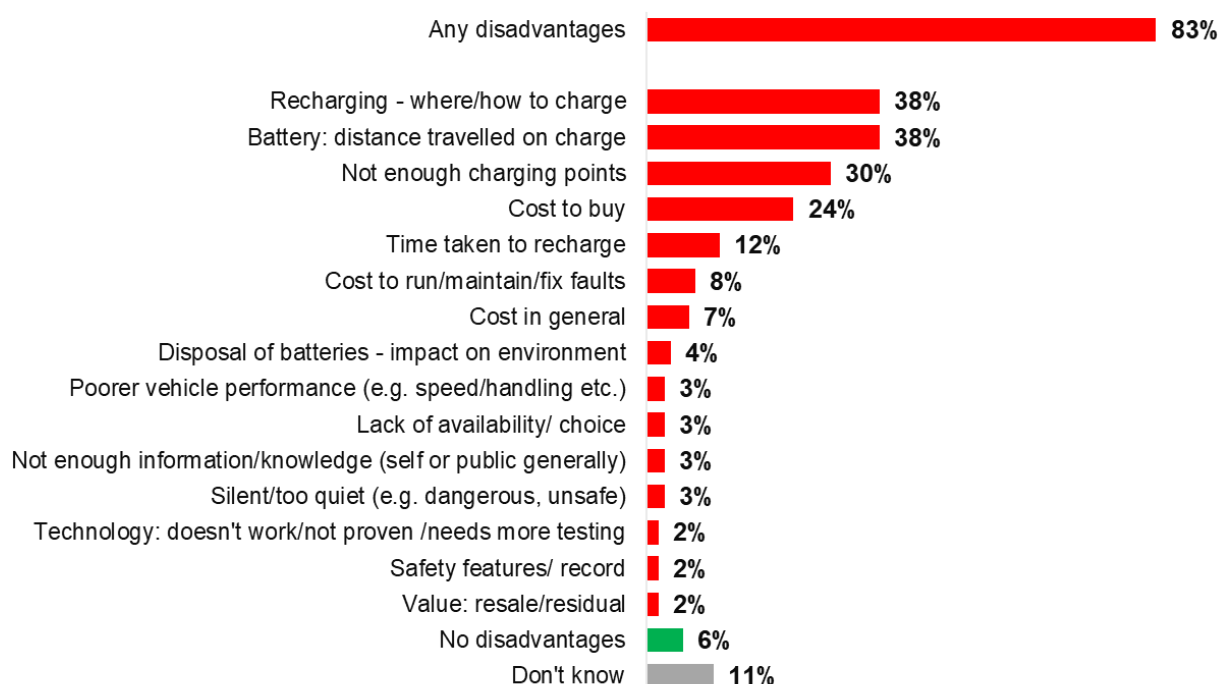
## 5.2 Perceived disadvantages of electric vehicles

In terms of the perceived disadvantages of electric over petrol or diesel vehicles (Fig 5.2), issues relating to recharging and battery life were common themes: four in ten mentioned recharging (where/how) (38%) and battery life/distance travelled (38%), while three in ten (30%) mentioned a scarcity of charging points. When responses were grouped together, 54% mentioned recharging concerns (this included 'Recharging – where/how to charge'; 'Not enough charging points'; and 'Time taken to recharge'); 40% mentioned battery concerns (this included: 'Battery: distance travelled on charge'; 'Disposal of batteries – impact on environment'; and 'All other negative references to batteries' (not charted)) ;and 32% mentioned a concern related to cost (this included: 'Cost to run/maintain/fix faults'; 'Cost to buy'; 'Cost in general'; and 'Value: resale/residual' (not charted)). A small minority (6%) could think of no disadvantages of EVs, while 11% answered 'don't know'.

Men were more likely than women to mention cost concerns (36% versus 28% respectively) and battery concerns (47% versus 33%). Those in social grades ABC1 were more likely than those in grades C2DE to mention any concerns (89% versus 77% respectively), and, in particular were more likely to mention recharging concerns (59% versus 49%) and battery concerns (46% versus 34%).

While the general pattern of response was very similar to that seen in December 2018, a slightly higher proportion of people had cost concerns in June 2019 (32% versus 29% in December 2018). In previous waves of the tracker, people living in rural areas tended to be more concerned than those living in urban areas about recharging and battery life, but this pattern was not seen in the June 2019 survey data.

**Fig 5.2 Perceived disadvantages of electric vehicles, June 2019**



Source: Q27. What do you think are the disadvantages, if any, of electric over petrol or diesel cars?

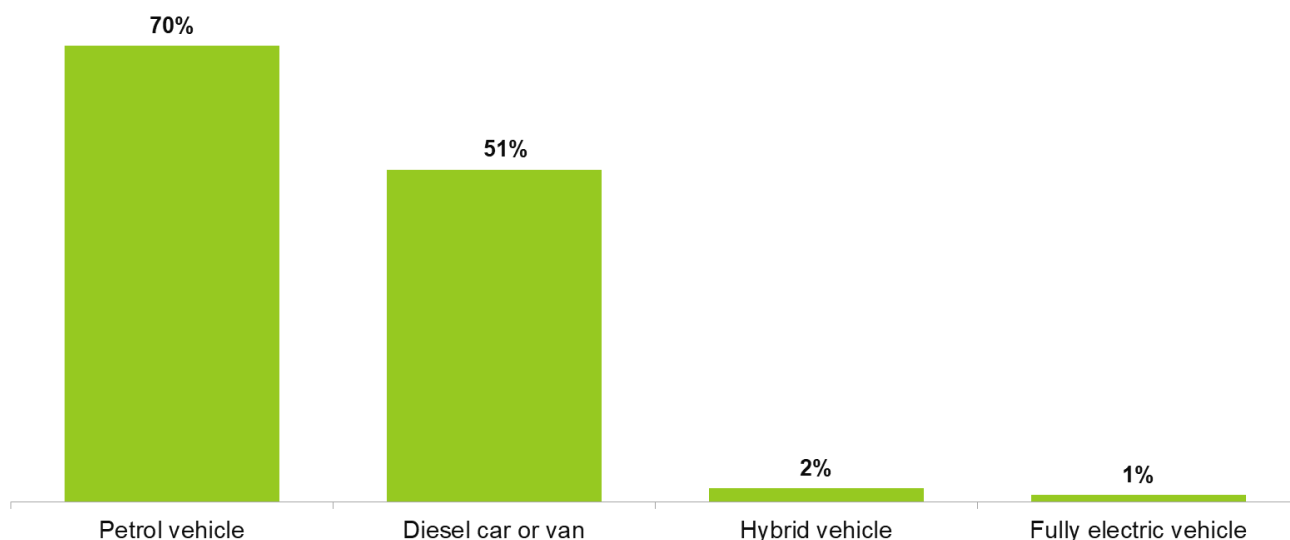
Base: All respondents (3,578)



### 5.3 Ownership of electric vehicles and future purchasing intentions

In June 2019, two per cent of respondents who had a car or van in their household (or continuous use of a car or van) said they owned a hybrid vehicle and one per cent owned a fully electric vehicle (Fig 5.3). This compared with 70% who owned a petrol vehicle and 51% who owned a diesel car or van (note that 44% of households reported that they had two or more cars or vans in their household; this group was able to select more than one type of fuel at Q6). Ownership patterns have shifted very slightly compared to December 2017 (when this question was last asked); at that point, 73% owned a petrol vehicle, 48% a diesel vehicle and two per cent a hybrid but less than 0.5% owned a fully electric vehicle.

**Fig 5.3 Ownership of electric vehicles, June 2019**

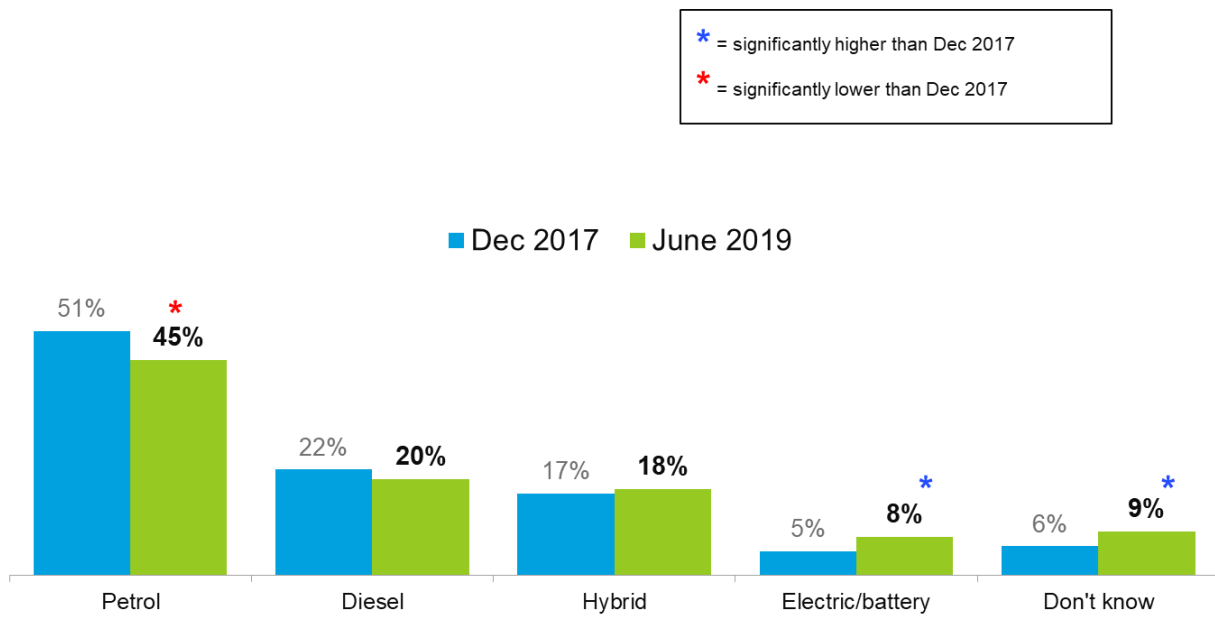


Source: Q6 What type of fuel does this car or van use? Thinking of all cars and vans in your household, what types of fuel do they use?

Base: All with cars/vans in household or have continuous use of (2,587)

Future purchasing intentions were more favourable towards hybrid vehicles and EVs (Fig 5.4). While 45% of those who intended to buy or lease a new car or van said they were most likely to buy a petrol vehicle next time (down from 51% in December 2017) and 20% intended to purchase a diesel vehicle (compared with 22% in December 2017), 18% said they were most likely to buy a hybrid next time (compared with 17% in December 2017), while eight per cent intended to buy/lease a fully electric vehicle (up from 5% in December 2017).

**Fig 5.4 Future purchasing intentions of electric vehicles, June 2019 and December 2017**



Source: Q17 What type of car or van do you think you will most likely purchase or lease next time?

Base: All who will buy/replace their current car or van (June 2019: 1,561; Dec 2017: 1,718)

## 6. Public attitudes to autonomous vehicles

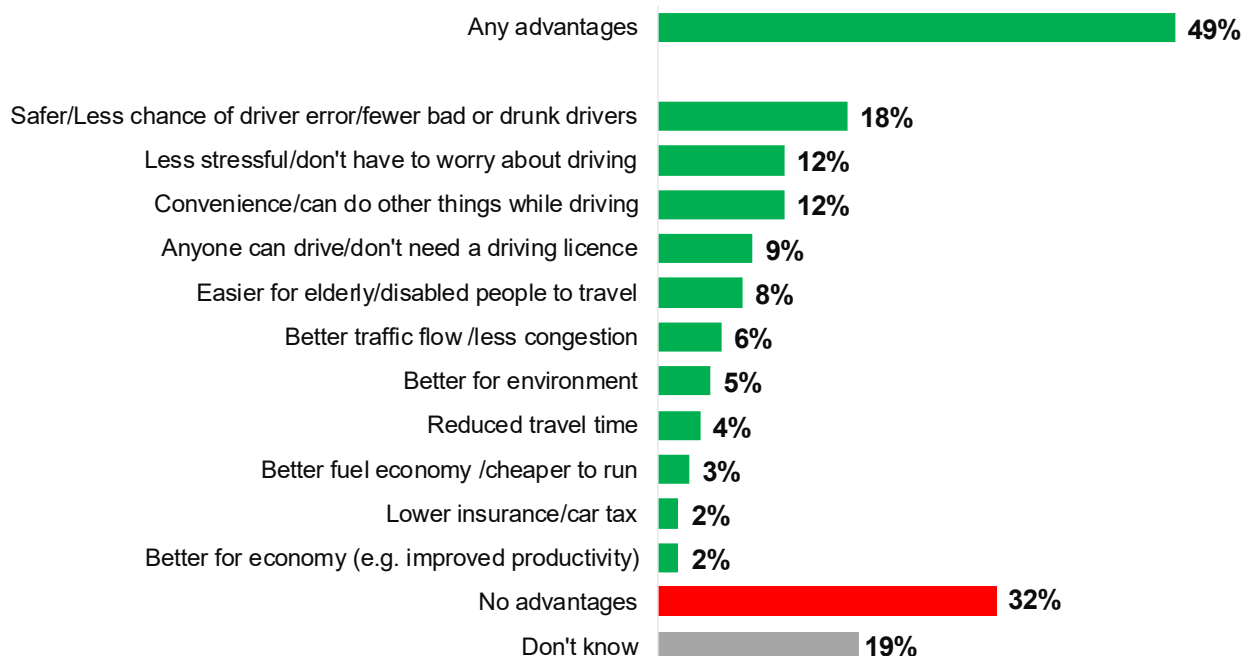
### 6.1 Perceived advantages of autonomous vehicles (AVs)

When asked for a top of mind response, half of people (49%) could mention at least one advantage of AVs (Fig 6.1), compared with eight in ten (79%) who could think of at least one disadvantage (Fig 6.2). Three in ten (32%) said there were no advantages, and 19% answered 'don't know'.

The most commonly mentioned advantage was safety (18%), followed by being less stressful/not having to worry about driving (12%) and convenience (12%). Those who knew at least 'a little' about AVs were more likely to mention any advantages here compared with those who did not know anything about EVs (53% versus 37%). A perception that AVs offered no advantages increased with age, from 19% of those aged 16-24 rising to 44% of those aged 65+.

Wave on wave, the proportion of people citing at least one advantage has decreased slightly (49% down from 52% in December 2018; levels are now back in line with those seen in December 2017 (49%)). The pattern of response within category, however, was similar to that in December 2018.

**Fig 6.1 Perceived advantages of autonomous vehicles, June 2019**



Source: Q29. What do you think are the advantages, if any, of fully driverless or self-driving vehicles?

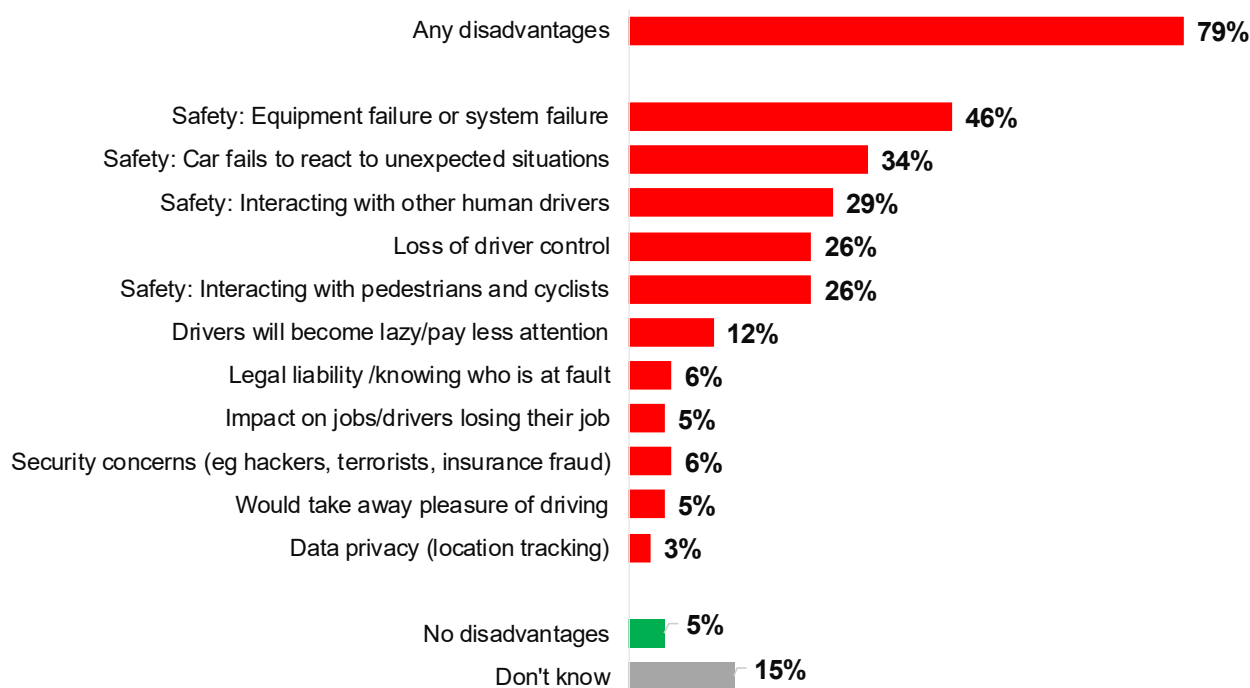
Base: All respondents (3,578)

## 6.2 Perceived disadvantages of autonomous vehicles

When asked about perceived disadvantages of AVs (Fig 6.2), eight in ten people (79%) mentioned at least one disadvantage and this proportion is unchanged compared to December 2018 (also 79%). Safety of equipment/systems was the most commonly cited disadvantage in June 2019 (46%), while 34% mentioned safety in unexpected situations. Overall, 60% of people mentioned at least one safety-related disadvantage (safety concerns included: 'Equipment failure/system failure'; 'Car fails to react to unexpected situations'; 'Interacting with other human drivers'; and 'Interacting with pedestrians and cyclists'). Five per cent could think of no disadvantages and 15% answered 'don't know'. Those unaware of AVs were more likely to answer 'don't know' (42% versus 10% of those with some awareness).

The findings relating to safety are largely stable wave on wave (the proportion mentioning at least one safety related concern was 58% in December 2018 and 62% in June 2018).

**Fig 6.2 Perceived disadvantages of autonomous vehicles, June 2019**



Source: Q30. What do you think are the disadvantages, if any, of fully driverless or self-driving vehicles?

Base: All respondents (3,578)

# 7. Public attitudes to drones

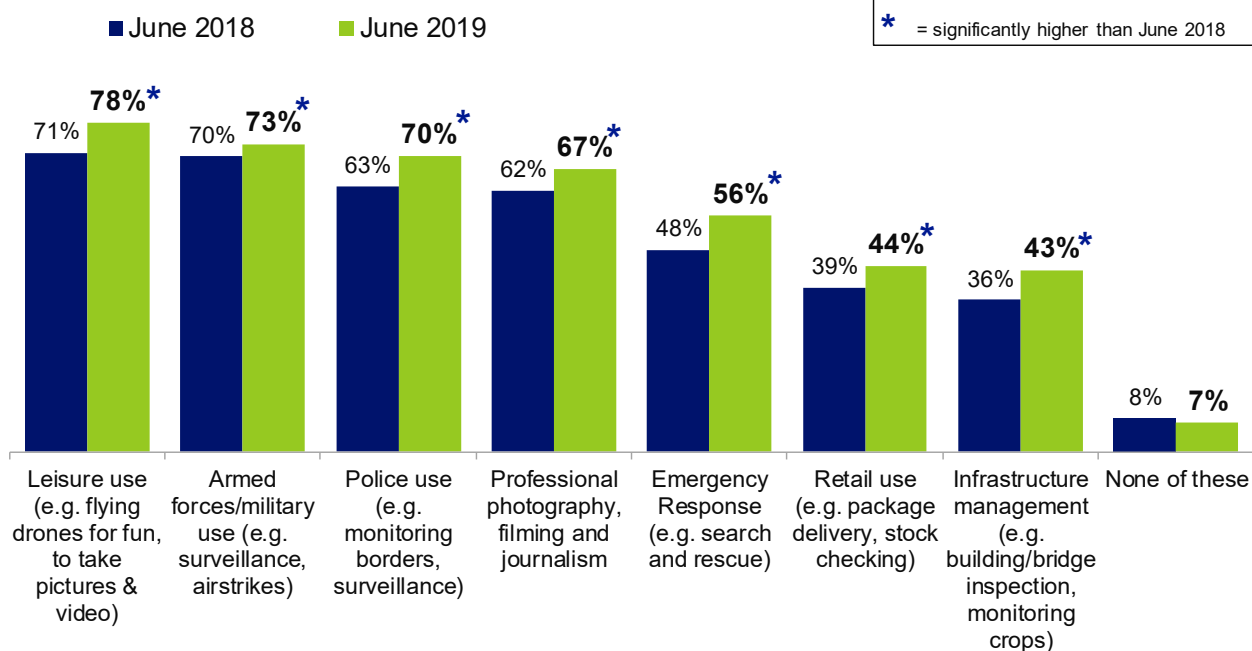
## 7.1 Awareness of uses of drones

Respondents were presented with a pre-defined list of potential uses for drones:

1. Armed forces\military use (e.g. surveillance, airstrikes)
2. Police use (e.g. monitoring borders, surveillance)
3. Emergency Response (e.g. search and rescue)
4. Infrastructure management (e.g. building\bridge inspection, monitoring crops)
5. Retail use (e.g. package delivery, stock checking)
6. Professional photography, filming and journalism
7. Leisure use (e.g. flying drones for fun, to take pictures & video)

Awareness of drones for leisure use was highest at 78%, followed by military use (73%), police use (70%), professional photography use (67%) and emergency response (56%). Smaller proportions of people were aware of drones being used for retail use (44%) and infrastructure management (43%). These levels of awareness were all significantly higher than those registered in June 2018 (when the question was last asked on the tracker) (Fig 7.1).

**Figure 7.1 Awareness of uses of drones**



Source: Q36. Which of these uses of drones have you heard of?

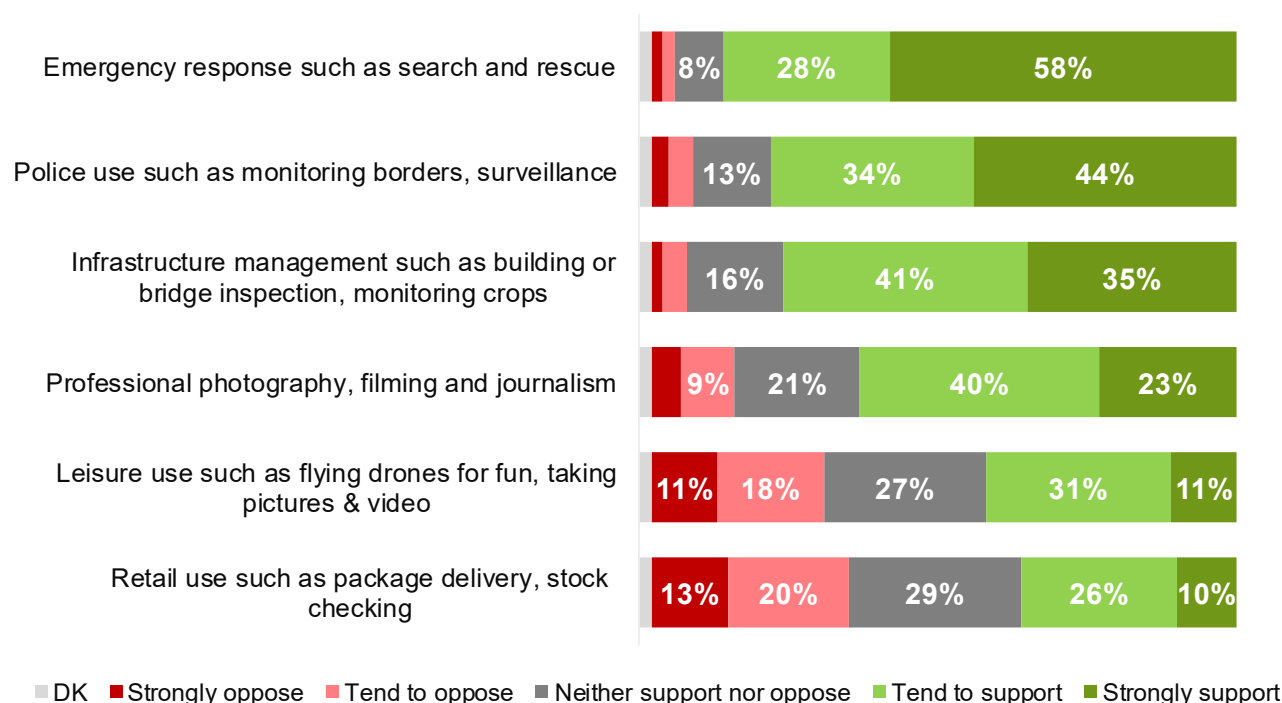
Base: All respondents (June 19: 3,578; June 18: 3,538)

## 7.2 Support for uses of drones

The questionnaire explored public support for six of the drone uses (Fig 7.2). People were not asked whether they supported or opposed the use of drones for armed forces/military use. This was because initial cognitive testing at wave 1 showed that peoples understanding of the military's use of drones varies widely (for example, including both surveillance and air strikes) and, as a result, it would be too challenging for them to give an overall view on whether they support or oppose this use of drones.

Emergency response received the highest level of support (86%), followed by police use (78%), infrastructure management (76%) and professional photography use (63%). Four in ten (42%) supported drone use for leisure purpose and 36% for retail. Comparing these findings with those from a year ago, support for the use of drones in emergency response situations and professional photography have increased (from 84% and 58% respectively in June 2018). For all other uses, there was no significant change in support since December 2018.

**Fig 7.2 Support for different uses of drones, June 2019**



Source: Q37. To what extent do you support or oppose drones being used in this situation?

Base: All respondents (3,578)

A fifth (21%) supported all six named uses of drones and this was consistent with the findings from June 2018. Support for all drone uses was significantly more likely among men (26% versus women 16%) and those aged 64 or younger (18% or more compared with 12% of those aged 65-74 and 10% of those aged 75+).

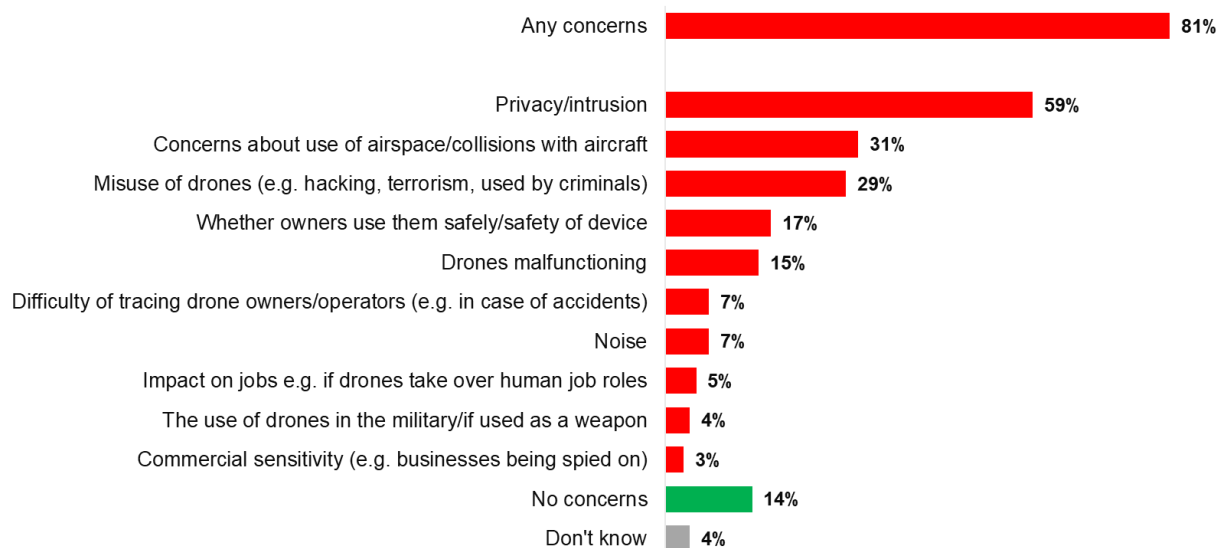
### 7.3 Concerns surrounding drones

Respondents were asked if they had any concerns about drones. This was asked as an unprompted question, so they were not shown any response options. Eight in ten people (81%) had at least one concern regarding the use of drones (Fig 7.3), while 14% could not think of any concerns (this was more common among people who had never heard of them before or knew 'hardly anything', 20%). Older people were also significantly more likely than younger people to have any concerns, rising from 72% of 16 to 24 year olds to 86% of those aged 65+. Overall, levels of concern were largely consistent with earlier waves.

Privacy issues remained the biggest concern, mentioned by six in ten (59%). Three in ten (31%) mentioned concerns around the use of airspace/collision with aircraft and 29% mentioned the misuse of drones for criminal activity.

Concerns around drone use interfering with airspace and aircraft has increased since December 2018, when 25% mentioned this issue. This is likely to reflect the June 2019 wave being the first wave conducted since the widely reported disruption at Gatwick airport in December 2018. As in earlier waves, this particular concern was more likely to be mentioned by those living in rural areas (38% versus urban dwellers 29%).

**Fig 7.3 Concerns surrounding the use of drones, June 2019**



Source: Q38. What concerns, if any, do you have about the use of drones?

Base: All respondents (3,578)

# 8. Mobility as a Service

## 8.1 Travel services: awareness and use

In the context of this survey, travel services refer to a range of alternative modes of travel, such as car clubs, app-based minicab services etc. In June 2019, the vast majority of people (89%) were aware of at least one of five travel services (Fig 8.1), with the highest levels of awareness recorded for app-based minicab services such as Uber (81% - significantly higher than the 77% recorded in December 2018) and car rental services (76%, which compares to 73% in December 2018 and 78% in December 2017).

Awareness of public bike share schemes stands at 46% (in line with the 45% recorded in December 2018), and there have been significant increases in people's awareness of car clubs (32%, up from 27% in December 2018) and internet-arranged or app-based car sharing (28%, up from 24% in December 2018)

Of those *unaware* of any of these services, this was most likely to be the case among:

- Women (14% versus men 8%);
- Older people 75+ (28% versus 19% or less in younger groups);
- Those in social grades C2DE (16% versus ABC1 6%); and
- Those living in the North East (20% versus 12% or less elsewhere, excluding the South West)

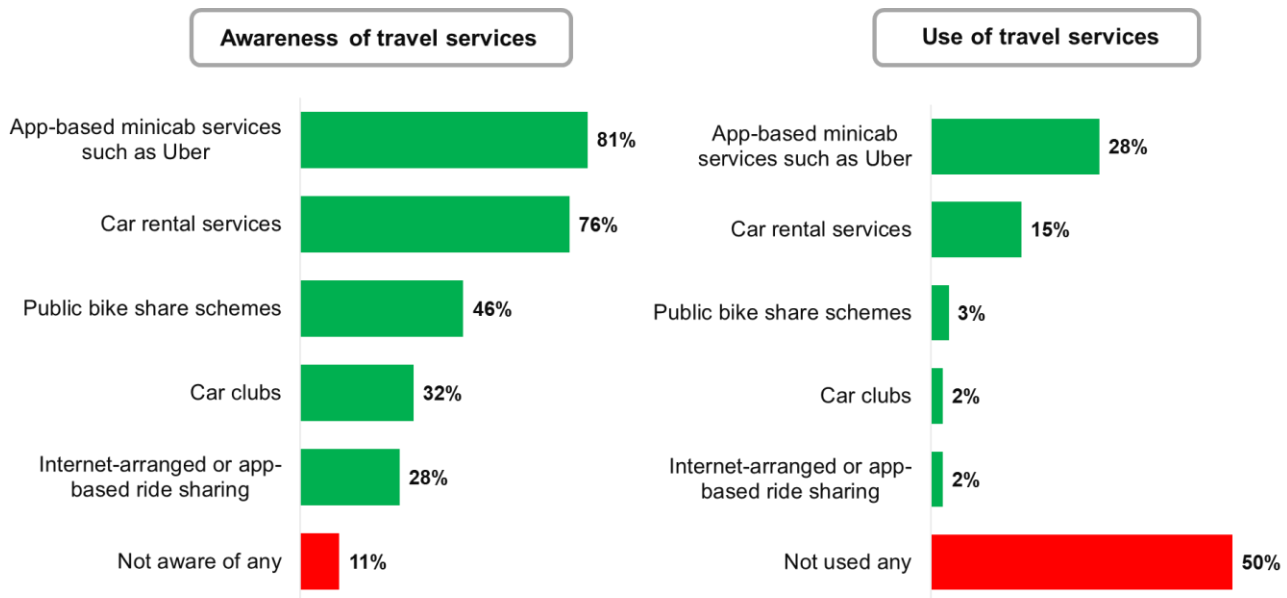
Based on all respondents, four in ten people (39%) used at least one of these travel services, and this is in line with the proportion in December 2018 (40%) (Fig 8.1). The most commonly used services were app-based minicab services (28%, in line with the findings for December 2018, also 28%) and car rental services (15%, down from 17% in December 2018 and 23% in December 2017). There has been no change in the use of public bike share schemes over three points of measurement (a steady 3%), but there have been small increases in the use of car clubs and internet-arranged or app-based ride-sharing (both 2%, up from 1% in December 2018 and December 2017).

People most likely to have used at least one travel service include:

- Men (41% versus women 36%);
- Younger people (16-24s 51% versus 75+ 15%);
- Those living in urban areas (40% versus rural 31%)
- People from black and minority ethnic (BME) backgrounds (54% versus white 36%); and
- ABC1 (47% versus C2DE 29%).



**Fig 8.1 Awareness and use of travel services, June 2019**



Source: Q23. Which of the following types of travel services have you heard of?/ Q.24. Do you personally use any of these travel services nowadays?

Base: Q23 all respondents (3,578). Q24 asked to all aware of service but re-based on all respondents (3,578)

## 8.2 App-based minicab services

Focussing on app-based minicab services, awareness and use vary significantly by age and gender. Men are more likely than women to be aware of this service (85% versus 77% respectively) and to have used the service (31% versus 26%). Levels of awareness are fairly steady across the age groups but drop off significantly for those aged 75+ (54% versus 77% or more in other age groups). Usage is more common among people aged 45 and under (at least 38% versus 27% aged 45-54, 17% aged 55-64 and 10% of those aged 65+).

While there were no significant differences in levels of awareness by English region, usage of app-based minicab services is significantly higher in London (52% versus 35% or less in other regions).

In terms of the **number of apps** used, most app-based minicab users made use of one app only (68%). Those using more than one app were more likely to be men (24% versus women 16%) and belong to social grades ABC1 (23% versus C2DE 16%).

## 8.3 Ride-sharing

As already shown in Fig 8.1, when prompted with a list of travel services, 28% of people were aware of internet-arranged or app-based ride-sharing, and two per cent had used such services.

The advantages and disadvantages of ride-sharing were also explored with ride-sharing defined as “a taxi that you would share with people you don’t know at a lower cost compared with a conventional taxi. The trip is likely to be a bit longer in order to pick up and drop off other people. Uber Pool is an example of ride-sharing”.

A lower cost was seen as the main advantage of ride-sharing, with 65% saying ride-sharing would be cheaper than travelling alone (compared with 67% in December 2018) (the question about ride-sharing was unprompted) (Fig 8.2). This was more likely to be the case among social grades ABC1 (69% versus C2DE 61%).

Other commonly mentioned advantages of ride-sharing were: that it is environmentally friendly (24%, up from 20% in December 2018), generating less congestion (14%, up from 11%), being more social (11%, similar to the December 2018 findings, 12%) and that it would be safer than travelling alone (7%, up from 5% in December 2018). The proportion who could not think of any advantages remained at the same level as December 2018 (11%). This was more likely to be the case among older people (16% of 65+ versus 8% of 16-24s) and those unaware of app-based minicab services (19% versus those aware 9%).

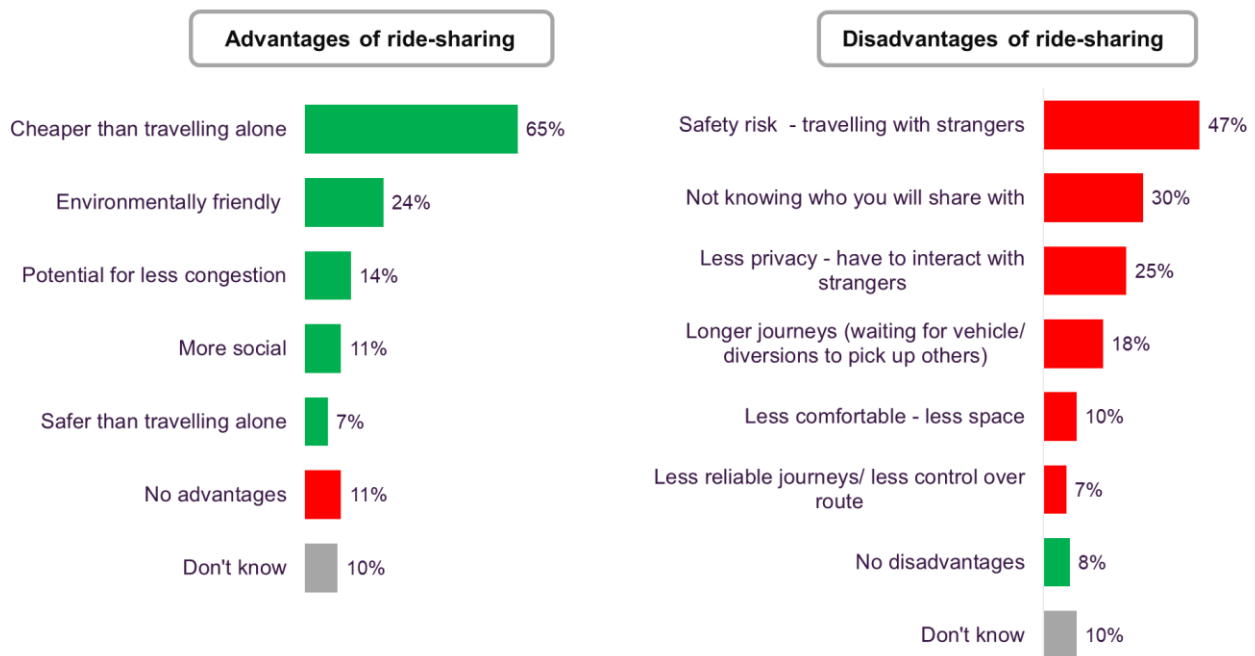
In terms of the disadvantages of ride-sharing, the most commonly cited was concerns for safety due to travelling with strangers, mentioned by 47% (up from 42% in December 2018) (the question was unprompted). Women were more likely than men to cite this issue (53% versus men 41%), while those living in the East of England and the South West were *less likely* than those in other regions to cite this particular concern (36% in both regions).

Other disadvantages mentioned were not knowing who you would share with (30%), less privacy due to having to interact with strangers (25%), and longer journey times (18%, down from 27% in December 2018).

People who were already aware of app-based minicab services were more likely than those with no awareness to mention the safety risk of travelling with strangers (48% versus 43% respectively), not knowing who you will share with (31% versus 26%) and longer journey times (19% versus 13%).

When the different types of disadvantages are grouped into themes, 70% of people mentioned at least one stranger-related concern (similar to December 2018, 69%) (stranger-related concerns included: 'Safety risk – travelling with strangers'; 'Less privacy- having to interact with strangers'; and 'Not knowing who you will share with') and 20% mentioned a journey related concern (significantly lower than December 2018 when 30% cited a journey concern) (journey-related concerns included: 'Longer journeys (waiting for vehicles to arrive/ diversions to pick up others); and 'Less reliable journeys/ less control over choice of route (unable to accommodate complex trip chains/ changing needs during journeys).

**Fig 8.2 Advantages and disadvantages of ride-sharing, June 2019**



Source: Q71b. What do you think are the advantages, if any, of ride-sharing compared with travelling alone or with people you know in a taxi?/ Q72. What do you think are the disadvantages, if any, of ride-sharing compared with travelling alone or with people you know in a taxi?

Base: All respondents (3,578)

# Appendix A: Sample and survey methodology

## Overview of survey methodology

Survey fieldwork was conducted on the Kantar UK face-to-face omnibus, a weekly omnibus survey. The omnibus survey is conducted through random location sampling, a high-quality form of quota sampling in which sampling points are allocated through a random selection. Respondents in each interviewer assignment are drawn from a small set of homogenous streets, thus giving interviewers very little choice in the selection of respondents. Quotas are set on characteristics which are known to have a bearing on individuals' probabilities of being at home and so available for interview. This minimises any selection bias introduced because of interviewers focusing on groups that are more likely to be at home. Rules are also in place which govern the spacing between addresses and the timing of interviews.

Census small area statistics and the Postcode Address File (PAF) are used to define sampling points. Sampling points are areas of similar population sizes formed by the combination of wards, with the constraint that each point must be contained within a single Government Office Region (GOR).

The addresses are issued to achieve an adult sample of between 13 and 18 interviews in provincial areas and 12 and 15 in London. Assignments are conducted over two days of fieldwork and carried out on weekdays between 2pm and 8pm and at the weekend. Interviews are conducted by computer assisted personal interviewing (CAPI). Approximately 2,000 UK interviews are conducted with adults aged 16+ on the omnibus each week. To achieve the required sample size in England, fieldwork for this research was conducted during two weeks of the omnibus survey for each wave. Wave 4 fieldwork took place between 12 June 2019 and 23 June 2019.

## Overview of Questionnaire Development

Prior to Wave 1, DfT and Kantar Public jointly designed the questionnaire. This process involved multiple stages including:

- an initial qualitative research phase to test broad understanding of concepts to be covered in the questionnaire.
- a formal desk review of proposed questions using Kantar's Questionnaire Appraisal Framework (QAF), to review questions asked on other surveys for relevance and applicability to this research and to inform the development of new questions.
- Cognitive testing of the draft questionnaire, which provided an in-depth test of the survey questions prior to main stage fieldwork.

Further cognitive testing was conducted before Wave 4 to help to develop new questions relevant to e-bikes and e-scooters.

## Achieved sample profile and weighting

A total sample of 3,578 interviews were collected at Wave 4. The achieved sample at each wave is representative of individuals aged 16 or over living in England. Data was also weighted to match the profile

of the population in terms of age, gender, region, ONS rural/urban classification, working status, ethnicity, number of cars/vans in household, whether the individual has a driving licence, housing tenure and highest qualification (for those aged 18-69).

The achieved sample profile at wave 4 is outlined in the following tables.

**Fig A.1. Wave 4 sample profile**

Category	Sub-category	Achieved sample	Unweighted %	Weighted %	Difference
<b>Gender</b>	Male	1,701	47.5	49.0	-1.5
	Female	1,877	52.5	51.0	+1.5
<b>Age</b>	16-24	453	12.7	13.3	-0.6
	25-34	539	15.1	16.8	-1.7
	35-44	509	14.2	15.7	-1.5
	45-54	479	13.4	17.1	-3.7
	55-64	486	13.6	14.6	-1.0
	65-74	585	16.3	13.1	+3.2
	75+	527	14.7	9.4	+5.3
<b>Region (GOR)</b>	North East	221	6.2	4.8	+1.4
	North West	470	13.1	13.0	+0.1
	Yorkshire and the Humber	375	10.5	9.8	+0.7
	East Midlands	313	8.7	8.6	+0.1
	West Midlands	359	10.0	10.5	-0.5
	East of England	403	11.3	11.1	+0.2
	London	507	14.2	15.6	-1.4
	South East	594	16.6	16.3	+0.3
	South West	336	9.4	10.2	-0.8
<b>Urbanity (ONS classification)</b>	Urban	3,016	84.3	81.8	+2.5
	Rural	551	15.4	17.9	-2.5
<b>Working status</b>	Full time	1,143	31.9	45.1	-13.2
	Part time	455	12.7	15.2	-2.5
	Retired	1,180	33.0	21.1	+11.9
	In education	233	6.5	4.6	+1.9
	Not working	567	15.8	14.0	+1.8
<b>Ethnicity</b>	White	3,006	84.0	85.0	-1.0
	Minority ethnic	522	14.6	13.6	+1.0
<b>Number of cars/vans in household</b>	0	991	27.7	18.7	+9.0
	1	1,527	42.7	37.0	+5.7
	2	830	23.2	32.0	-8.8

	3+	230	6.4	12.4	-6.0
<b>Whether individual has a driving licence</b>	No licence	1,010	28.2	18.3	+9.9
	Provisional licence	150	4.2	7.5	-3.3
	Full licence	2,367	66.2	72.7	-6.5

# Appendix B: Overview of questions asked at each wave

Question number (used in data)	Questionnaire name	Description	W1	W2	W3	W4
Q1	Internet	How often use internet	Yes			Yes
Q2	Smartphone	Whether personally use a smartphone	Yes		Yes	
Q3	SmartTrans	Whether use smartphone for range of purposes	Yes		Yes	
Q4	Licence	Whether hold UK driving licence	Yes	Yes	Yes	Yes
Q5	Numcar	Number of cars in household	Yes	Yes	Yes	Yes
Q6	Fuel	Fuel type(s) of cars in household	Yes			Yes
Q7	CarOwn	Whether personally own/use car	Yes	Yes	Yes	Yes
Q8	B19	Miles driven per year	Yes			
Q9	PTFreq	Frequency of travel by public transport	Yes		Yes	Yes
Q10	BikeFreq	Frequency of bike travel	Yes			Yes
Q11	CarFreq	Frequency of car travel	Yes		Yes	Yes
Q12	B50	Number of short haul flights in last 12 months	Yes			
Q13	B51	Number of long haul flights in last 12 months	Yes			
Q14	B42_31	Agreement with attitude statements re. cycling (x3)	Yes			

Question number (used in data)	Questionnaire name	Description	W1	W2	W3	W4
Q15	B17	Important factors when buying car	Yes			
Q16	CarWhen	When expect to replace car	Yes			Yes
Q17	CarNext	Type of car expect to purchase next	Yes			Yes
Q18	Attid1	Agreement with attitude statements (x3)	Yes			Yes
Q19	CarPlan	Methods used to route plan for car journeys	Yes			
Q20	PTPlan	Methods used to route plan for public transport	Yes			
Q21	BikePlan	Methods used to route plan for bike journeys	Yes			
Q22	Jplansat	Ease of planning different journeys (x5)	Yes		Yes	
Q23	Mobheard	Travel services heard of	Yes		Yes	Yes
Q24	Mobuse	Travel services used	Yes		Yes	Yes
Q25	Evknow	Knowledge about electric vehicles	Yes	Yes	Yes	Yes
Q26	EVEnc	Advantages of electric vehicles	Yes		Yes	Yes
Q27	EVProb	Disadvantages of electric vehicles	Yes		Yes	Yes
Q28	AVKnow	Knowledge about autonomous vehicles	Yes	Yes	Yes	Yes
Q29	AVBen	Advantages of autonomous vehicles	Yes	Yes	Yes	Yes
Q30	AVConcern	Disadvantages of autonomous vehicles	Yes	Yes	Yes	Yes

Question number (used in data)	Questionnaire name	Description	W1	W2	W3	W4
Q31	AVFeat	Awareness of self-driving features	Yes	Yes	Yes	Yes
Q32	AVUsed	Use of self-driving features	Yes	Yes	Yes	Yes
Q33	HGVKnow	Knowledge about HGV platoons	Yes		Yes	
Q34	Droneknow	Knowledge about drones	Yes	Yes	Yes	Yes
Q35	DroneOwn	Whether owned a drone	Yes	Yes		Yes
Q36	DroneAwar	Awareness of uses of drones	Yes	Yes		Yes
Q37	DroneSup	Support for different uses of drones	Yes	Yes		Yes
Q38	Droneconc	Concerns over use of drones	Yes	Yes		Yes
Q39	AQWorry	Concern about air quality in local area	Yes			
Q40	CCWorry	Concern about climate change	Yes			
Q41	Space1	Knowledge about space tourism	Yes		Yes	
Q42	Hyper1	Knowledge about hyperloops	Yes		Yes	
Q43	FlyTaxi1	Knowledge about flying taxis	Yes		Yes	
Q44	B46a	Safest form of travel	Yes			
Q45	B46b	Second safest form of travel	Yes			
Q46	B46c	Third safest form of travel	Yes			
Q47	A1	How long lived at current home	Yes			
Q48	CN76	How often use home delivery	Yes			
Q49	F12	Highest qualification	Yes	Yes	Yes	Yes
Q50	B2	Whether have disability or long- standing health problem	Yes		Yes	Yes
Q51	B39b	Whether disability of health problem makes it difficult to ride bike	Yes			Yes



Question number (used in data)	Questionnaire name	Description	W1	W2	W3	W4
Q52	F15_Hincome	How managing financially	Yes			
Q53	NS1	Whether work as employer or self-employed	Yes	Yes	Yes	Yes
Q54	NS2	Number of people who work at employer/who you employ	Yes	Yes	Yes	Yes
Q55	NS3	Whether supervise other employees	Yes	Yes	Yes	Yes
Q56	NS4	Job description	Yes	Yes	Yes	Yes
Q57	HHIncome	Household income	Yes	Yes	Yes	Yes
Q60	MaaS1	Likelihood to use new MaaS travel service			Yes	
Q61	MaaS2	Likelihood to reduce car use if new service available			Yes	
Q62	MaaS3	Likelihood to give up ownership of car if service available			Yes	
Q63	MaaSAdv	Advantages of new service			Yes	
Q64	MaaSDisAdv	Disadvantages of new service			Yes	
Q65	UberUse	Whether used Uber in last 3 months			Yes	
Q66	UberPool	Whether used Uber Pool for last Uber journey			Yes	
Q67	UberPurp	Purpose of last Uber journey			Yes	
Q68	UberLength	Length of last Uber journey			Yes	
Q69	UberAlt	How would have travelled if not used Uber			Yes	
Q70	UberPNot	Why didn't use Uber Pool			Yes	
Q71	UberPCost	How much cheaper Uber Pool would need to be to use			Yes	
Q71	RsAdv	Advantages of ride-sharing			Yes	Yes
Q72	RSDisAdv	Disadvantages of ride-sharing			Yes	Yes

Question number (used in data)	Questionnaire name	Description	W1	W2	W3	W4
Q73	RSCost	How much cheaper than regular taxi ride-sharing would need to be to use			Yes	
Q74	KnowledgeElectricBikes	Knowledge about electric bikes				Yes
Q75	PersonalUseElectricBikes	Usage of electric bikes				Yes
Q76	KnowledgeElectricScooter	Knowledge of electric scooters				Yes
Q77	PersonalUseElectricScooters	Usage of electric scooters				Yes
Q78	AppMinicab	Number of apps used for app-based minicab services				Yes

# Appendix C: Wave 4 questionnaire

## **F1: All adults 16+ in England**

Now we are going to ask you some questions to understand your general transport behaviours and attitudes. The questions are being asked on behalf of the Department for Transport, but please remember that none of your answers will be personally identifiable to you.

## **F1: All adults 16+ in England**

Q.1 (Internet). How often do you access the internet? Please include internet access from any device including smartphones.

1. More than once a day
  2. Once a day
  3. 4-6 times per week
  4. 2-3 times per week
  5. About once a week
  6. About once a fortnight
  7. About once a month
  8. About once every 2-3 months
  9. About once every six months
  10. Less often\Never
- Don't know

## **F20: All adults 17+ in England**

Q.4 (Licence). Do you hold a valid UK driving licence?

ADD IF NECESSARY: Include international permits or other foreign licences valid in the UK.  
PROBE TO CODES IF NECESSARY

1. Yes, full licence for car
  2. Yes, provisional licence for car
  3. Currently disqualified
  4. No
- Don't know

## **F1: All adults 16+ in England**

Q.5 (Numcar). How many cars or vans does your household own or have continuous use of at present?

INTERVIEWER NOTE: INCLUDE COMPANY CARS, IF AVAILABLE FOR PRIVATE USE. INCLUDE ANY BROKEN DOWN VEHICLES WHICH MAY BE IN USE WITHIN THE NEXT MONTH.

- 4: None
- 1: 1
- 2: 2
- 3: 3 or more

## **F3: All with cars\vans in household or have use of them (Q5\1,2,3)**

Q.6 (Fuel). [IF Q5 = 1: What type of fuel does this car or van use \ IF Q5 = 2 or 3: Thinking of all cars and vans in your household, what types of fuel do they use?]

1. Petrol
2. Diesel
3. Electric\battery only
4. Hybrid (petrol\electric)
5. Other – PEN WRITE IN
- Don't know – MUTUALLY EXCLUSIVE

**F3: All with cars\ vans in household or have use of them (Q5\1,2,3)**

Q.7 (CarOwn). Just to check, do you personally own or have continuous use of a car or van?

INTERVIEWER NOTE: INCLUDE COMPANY CARS, IF AVAILABLE FOR PRIVATE USE. INCLUDE ANY BROKEN DOWN VEHICLES WHICH MAY BE IN USE WITHIN THE NEXT MONTH

1. Yes
2. No

**F1: All adults 16+ in England**

Q.9 (PTFreq). About how frequently do you travel by public transport in the UK, including buses, trains, trams, underground, metro and light rail?

1. Every day (7 days a week)
2. Most days (4-6 days a week)
3. 1-3 days a week
4. 1-3 times a month
5. 3-4 times a year
6. Once or twice a year
7. Less often\not at all
- Don't know

**F1: All adults 16+ in England**

Q.10 (BikeFreq). About how frequently do you use a bicycle?

INTERVIEWER: EXCLUDE EXERCISE BIKES

1. Every day (7 days a week)
2. Most days (4-6 times a week)
3. 1-3 days a week
4. 1-3 times a month
5. 3-4 times a year
6. Once or twice a year
7. Less often\not at all
- Don't know

**F1: All adults 16+ in England**

Q.11 (CarFreq). Excluding taxi journeys, about how frequently do you travel by car or van, whether as a driver or passenger?

1. Every day (7 days a week)
2. Most days (4-6 times a week)
3. 1-3 days a week
4. 1-3 times a month
5. 3-4 times a year
6. Once or twice a year

7. Less often/not at all
- Don't know

**F5: All with a valid UK driving licence (Q4\1, 2, 3)**

Q.16 (CarWhen). When, if at all, do you think you will next buy or replace a car or van, either new or second-hand?

1. Within the next year
2. In more than 1 year, but up to 2 years
3. In more than 2 years, but up to 3 years
4. In more than 3 years, but up to 5 years
5. More than 5 years
6. I don't intend to ever buy or replace a car/van
- Don't know

**F6: All who will buy/replace car or van (Q16\ 1, 2, 3, 4, 5)**

Q.17 (CarNext). What type of car or van do you think you will most likely purchase or lease next time?

IF WOULD BUY MORE THAN ONE TYPE, ASK WHICH THEY WOULD USE FOR THEIR MAIN VEHICLE

1. Petrol
2. Diesel
3. Electric/battery only
4. Hybrid (petrol/electric)
5. Other – PEN WRITE IN
- Don't know

**F7: All who access the internet at least twice a year or personally own/continuously use car/van (Q1\1-9 or Q7\1)**

Q.18 (Attit1). How much do you agree or disagree with the following statement(s)?

Having Wi-fi or mobile internet connectivity everywhere I go is important to me - **IF F18 (Q1\1-9)**

My current lifestyle means I need to own a car or van - **IF F4 (Q7\1)**

I enjoy the freedom and independence I get from my car or van - **IF F4 (Q7\1)**

1. Agree strongly
2. Agree slightly
3. Neither agree nor disagree
4. Disagree slightly
5. Disagree strongly
- Don't know

**F1: All adults 16+ in England**

Q.23 (Mobheard). Which of the following types of travel services have you heard of?

1. App-based minicab services such as Uber
2. Car rental services
3. Car club, which you can become a member of, and which allows access to locally parked cars that can be used on demand. Examples include ZipCar, Co-wheels, Drivenow
4. Internet-arranged or app-based ride sharing, where you can arrange lift shares with people you don't know, for example liftshare.com, blablacar.com
5. Public bike share schemes. This is where you can pick up a locally parked bike, usually parked on the street or other public place, and use it for short periods, returning to the same or a different location.

None of these – MUTUALLY EXCLUSIVE

**F12: All who have heard of specified travel services (Q23\1-5)**

Q.24 (Mobuse). You mentioned you have heard of:

App-based minicab services such as Uber (show if Q23\1 mentioned)

Car rental services (show if Q23\2 mentioned)

Car club (show if Q23\3 mentioned)

Internet-arranged or app-based ride sharing (show if Q23\4 mentioned)

Public bike share schemes (show if Q23\5 mentioned)

Do you personally use any of these travel services nowadays?

CODE ALL THAT APPLY

1. App-based minicab services such as Uber (show if Q23\1 mentioned)
2. Car rental services (show if Q23\2 mentioned)
3. Car club, which you can become a member of, and which allows access to locally parked cars that can be used on demand. Examples include ZipCar, Co-wheels, Drivenow (show if Q23\3 mentioned)
4. Internet-arranged or app-based ride sharing, where you can arrange lift shares with people you don't know, for example liftshare.com, blablacar.com (show if Q23\4 mentioned)
5. Public bike share schemes. This is where you can pick up a locally parked bike, usually parked on the street or other public place, and use it for short periods, returning to the same or a different location. (show if Q23\5 mentioned)

None of these – MUTUALLY EXCLUSIVE

**F25: Those who use app-based minicab services such as Uber (Q.24\1)**

Q78. (CabApUse) You mentioned that you use app-based minicab services such as Uber. How many of these apps do you use personally?

1. 1
2. 2
3. 3
4. 4
5. 5+
6. None
7. Don't know

**F1: All adults 16+ in England**

Q.25 (EVknow). How much, if anything, would you say you know about electric vehicles?

1. Hadn't heard about them before now
2. Hardly anything but I've heard of them
3. A little
4. A fair amount
5. A lot
- Don't know

**F1: All adults 16+ in England**

Q.26 (EVEnc). What do you think are the advantages, if any, of electric over petrol or diesel vehicles?

DO NOT PROMPT. PROBE FOR ANY OTHER ADVANTAGES. CODE ALL THAT APPLY.

1. Cheaper to run or maintain\ more economical
2. Cheap(er) to buy
3. Environmental benefits e.g. reduced pollution
4. Reduced road tax\insurance costs
5. Quieter\less noisy
6. Good battery life\ distance travelled on charge
7. Recharging is easier\more convenient than re-fuelling (eg location of charging points, ease\time taken to recharge)
8. Hold their value better (resale\residual)
9. Safer\good safety record
10. Vehicle performance e.g. speed\handling, size\practicality, looks
11. Technology: reliable\proven\longer lifespan
12. Other – PEN WRITE IN

No advantages – SINGLE CODE

Don't know – MUTUALLY EXCLUSIVE

**F1: All adults 16+ in England**

Q.27 (EVProb). What do you think are the disadvantages, if any, of electric vehicles over petrol or diesel cars?

DO NOT PROMPT. PROBE FOR ANY OTHER DISADVANTAGES. CODE ALL THAT APPLY.

1. Cost to run\maintain\fix faults
2. Cost to buy
3. Cost in general
4. Battery: distance travelled on charge
5. Recharging - where\how to charge (eg at home, elsewhere)
6. Not enough charging points
7. Time taken to recharge
8. Value: resale\residual
9. Safety features\record
10. Poorer vehicle performance (e.g. speed\handling, size\practicality, style\looks)
11. Technology: doesn't work\not proven \needs more testing
12. Lack of availability\ choice
13. Disposal of batteries – impact on environment
14. Not enough information\knowledge (self or public generally)
15. Other – PEN WRITE IN

No disadvantages – MUTUALLY EXCLUSIVE

Don't know – MUTUALLY EXCLUSIVE

**F1: All adults 16+ in England**

(Intro1). Now a few questions about autonomous vehicles, commonly referred to as driverless or self-driving vehicles. By this we refer to vehicles that can drive themselves on roads with little or no input from a human driver.

**F1: All adults 16+ in England**

Q.28 (AVKknow). Fully driverless or self-driving vehicles are not yet available for everyday use. How much, if anything, would you say you know about these types of vehicle?

1. Hadn't heard about them before now
2. Hardly anything but I've heard of them
3. A little
4. A fair amount

- 5. A lot
- Don't know

**F1: All adults 16+ in England**

Q.29 (AVBen). What do you think are the advantages, if any, of fully driverless or self-driving vehicles?

DO NOT PROMPT. PROBE FOR ANY OTHER ADVANTAGES. CODE ALL THAT APPLY.

- 1. Safer\Less chance of driver error\fewer bad or drunk drivers
- 2. Convenience\can do other things while driving
- 3. Less stressful\don't have to worry about driving
- 4. Better traffic flow \less congestion
- 5. Reduced travel time
- 6. Better for environment
- 7. Better fuel economy \cheaper to run
- 8. Lower insurance\car tax
- 9. Easier for elderly\disabled people to travel
- 10. Better for economy e.g. improved productivity
- 11. Anyone can drive\don't need a driving licence
- 12. Other – PEN WRITE IN

No advantages - MUTUALLY EXCLUSIVE

Don't know - MUTUALLY EXCLUSIVE

**F1: All adults 16+ in England**

Q.30 (AVConcern). And what do you think are the disadvantages, if any, of fully driverless or self-driving vehicles?

DO NOT PROMPT. PROBE FOR ANY OTHER DISADVANTAGES. CODE ALL THAT APPLY.

- 1. Safety: Equipment failure or system failure
- 2. Safety: Car fails to react to unexpected situations
- 3. Safety: Interacting with other human drivers
- 4. Safety: Interacting with pedestrians and cyclists
- 5. Drivers will become lazy\pay less attention
- 6. Loss of driver control
- 7. Concerns about whether a driving test would apply
- 8. Legal liability \knowing who is at fault
- 9. Security concerns (eg hackers, terrorists, insurance fraudsters)
- 10. Data privacy (location tracking)
- 11. Increased congestion\more cars on the road
- 12. I enjoy driving\would take away pleasure of driving.
- 13. Impact on jobs\drivers losing their job
- 14. Reduced investment in public transport
- 15. Other – PEN WRITE IN

No concerns - MUTUALLY EXCLUSIVE

Don't know - MUTUALLY EXCLUSIVE

**F1: All adults 16+ in England**

Q.31 (AVFeat). Although fully driverless or self-driving vehicles are not yet available for everyday use, some cars available today have new technology, including self-driving features. Which of these have you heard of?

- 1. Lane assist, detects if the driver unintentionally leaves their lane and adjusts the steering accordingly
- 2. Automated parking, where the car parks itself without driver involvement



3. Automatic Emergency braking that detects if impact is imminent and applies brakes automatically
  4. Adaptive cruise control where the car automatically adjusts the speed based on the traffic ahead
  5. In-car Wi-Fi connection
  6. Remote control drive or remote control parking. This is when driving is controlled remotely using a mobile device outside the car
  7. Traffic Jam assistant for use in slow-moving traffic. The vehicle automatically drives within its lane, keeping safe distance from the vehicle in front.
  8. Stop start, a system that cuts a car's engine when it stops, and restarts when the driver is ready to move again. It can help to reduce pollution and save fuel.
  9. Driver feedback. This is feedback provided to drivers, either during or after a drive, that can help to improve road safety and their fuel economy.
- None of these – MUTUALLY EXCLUSIVE

**F13: All who have heard of self driving, or similar, features and hold a valid UK driving licence (Q31\1-9 AND Q4\1-3)**

Q.32 (AVUsed). And which, if any of these, have you used yourself?

1. Lane assist, detects if the driver unintentionally leaves their lane and adjusts the steering accordingly
  2. Automated parking, where the car parks itself without driver involvement
  3. Automatic Emergency braking that detects if impact is imminent and applies brakes automatically
  4. Adaptive cruise control where the car automatically adjusts the speed based on the traffic ahead
  5. In-car Wi-Fi connection
  6. Remote control drive or remote control parking. This when driving is controlled remotely using a mobile device outside the car
  7. Traffic Jam assistant for use in slow-moving traffic. The vehicle automatically drives within its lane, keeping safe distance from the vehicle in front.
  8. Stop start, a system that cuts a car's engine when it stops, and restarts when the driver is ready to move again. It can help to reduce pollution and save fuel.
  9. Driver feedback. This is feedback provided to drivers, either during or after a drive, that can help to improve road safety and their fuel economy.
- None of these– MUTUALLY EXCLUSIVE

**F1: All adults 16+ in England**

(Intro3): The next question is about **drones**. A drone is an unmanned aerial vehicle guided by remote control or on-board computers.

**F1: All adults 16+ in England**

Q.34 (Droneknow). How much, if anything, would you say you know about drones?

1. Hadn't heard about them before now
  2. Hardly anything but I've heard of them
  3. A little
  4. A fair amount
  5. A lot
- Don't know

**F14: All who know something about drones (Q34\2-5)**

Q.35 (DroneOwn). Have you ever personally used a drone?

INTERVIEWER PROMPT AS NECESSARY: Is that for personal use or for commercial or work-related use?

SELECT ALL THAT APPLY

1. Yes, used one personally
  2. Yes, used one for commercial or work-related reasons
  3. No – MUTUALLY EXCLUSIVE
- Don't know

**F1: All adults 16+ in England**

Q.36 (DroneAwar). Which of these uses of drones have you heard of?

1. Armed forces\military use (e.g. surveillance, airstrikes)
2. Police use (e.g. monitoring borders, surveillance)
3. Emergency Response (e.g. search and rescue)
4. Infrastructure management (e.g. building\bridge inspection, monitoring crops)
5. Retail use (e.g. package delivery, stock checking)
6. Professional photography, filming and journalism
7. Leisure use (e.g. flying drones for fun, to take pictures & video)

None of these – MUTUALLY EXCLUSIVE

**F1: All adults 16+ in England**

Q.37 (DroneSup). I am going to read out some situations and I would like you to tell me whether you support or oppose drones being used in each one.

To what extent do you support or oppose drones being used in this situation?

Police use such as monitoring borders, surveillance

Emergency response such as search and rescue

Infrastructure management such as building or bridge inspection, monitoring crops

Retail use such as package delivery, stock checking

Professional photography, filming and journalism

Leisure use such as flying drones for fun, taking pictures & video

1. Strongly support
2. Tend to support
3. Neither support nor oppose
4. Tend to oppose
5. Strongly oppose

Don't know

**F1: All adults 16+ in England**

Q.38 (Droneconc). What concerns, if any, do you have about the use of drones?

DO NOT PROMPT. PROBE FULLY. CODE ALL THAT APPLY.

1. Privacy\intrusion
2. Drones malfunctioning
3. Whether owners use them safely\safety of device
4. Concerns about use of airspace\collisions with aircraft
5. Misuse of drones (e.g. hacking, terrorism, used by criminals)
6. Noise
7. Difficulty of tracing drone owners\operators (e.g. in case of accidents)
8. Impact on jobs e.g. if drones take over human job roles
9. Commercial sensitivity (e.g. businesses being spied on)
10. The use of drones in the military\if used as a weapon
11. Other – PEN WRITE IN

No concerns – MUTUALLY EXCLUSIVE

Don't know– MUTUALLY EXCLUSIVE

**F1: All adults 16+ in England**

**RSIntro.**

I'm now going to ask you about 'ride-sharing' by taxi. By this, I mean a taxi that you would share with people you don't know at a lower cost compared with a conventional taxi. The trip is likely to be a bit longer in order to pick up and drop off other people. Uber Pool is an example of ride-sharing.

**F1: All adults 16+ in England**

Q.71 (RSAAdv). What do you think are the advantages, if any, of ride-sharing compared with travelling alone or with people you know in a taxi?

DO NOT PROMPT.

1. Cheaper than travelling alone
2. More social
3. Potential for less congestion (if everyone shares)
4. Environmentally friendly
5. Safer than travelling alone
6. Other (specify)
7. No advantages
8. Don't know (SPONTANEOUS)

**F1: All adults 16+ in England**

Q.72 (RSDisAdv.) What do you think are the disadvantages, if any, of ride-sharing compared with travelling alone or with people you know in a taxi?

DO NOT PROMPT.

1. Safety risk – travelling with strangers
2. Less privacy – having to interact with strangers
3. Not knowing who you will share with
4. Less comfortable – less physical space inside vehicle
5. Longer journeys (waiting for vehicles to arrive / diversions to pick up others)
6. Less reliable journeys/less control over choice of route (unable to accommodate complex trip chains / changing needs during journeys)
7. Other (specify)
8. No disadvantages
9. Don't know (SPONTANEOUS)

**F1: All adults 16+ in England**

Q.74 (EBikKnow). An electric bike or bicycle is one that is assisted by an electric motor when you pedal. How much, if anything, would you say you know about electric bikes?

[IMAGE OF E-BIKE DISPLAYED]

1. Hadn't heard about them before now
2. Hardly anything but I've heard of them
3. A little
4. A fair amount
5. A lot
6. Don't know

**F42: Those who have heard of e-bikes (Q74\2-5)**

Q.75 (EBikUse). Do you personally use an electric bike?

1. Yes, regularly
2. Yes, occasionally
3. No, never
4. Don't know

**F1: All adults 16+ in England**

Q76. EScoKnow. An electric or motorized scooter is a stand-up scooter with a small engine or electric motor. How much, if anything, would you say you know about electric scooters?

[IMAGE OF E-SCOOTER DISPLAYED]

1. Hadn't heard about them before now
2. Hardly anything but I've heard of them
3. A little
4. A fair amount
5. A lot
6. Don't know

**F43: Those who have heard of e-scooters (Q76\2-5)**

Q77. EScoUse. Do you personally use an electric scooter?

1. Yes, regularly
2. Yes, occasionally
3. No, never
4. Don't Know

**F1: All adults 16+ in England**

Q.49 (F12): Please look at this screen and tell me whether you have any of the educational or school qualifications listed. Start at the top of the list and tell me the first one you come to that you have.

1. University Higher Degree (e.g. MSc; PhD)
  2. First degree level qualification (e.g. BA; BSc) including foundation degrees; PGCE
  3. Diploma in higher education; HNC; HND; Nursing or Teaching qualification (excluding PGCE)
  4. A level; AS level; NVQ level 3; GNVQ Advanced; or equivalent 5
  5. GCSE grade A\* -C; O level; CSE grade 1; NVQ level 2; GNVQ intermediate; or equivalent
  6. GCSE grade D -G; CSE below grade 1; NVQ level 1; GNVQ Foundation level; or equivalent
  7. None of these
- Refused

**F1: All adults 16+ in England**

Q.50 (B2): Do you have any disability or other long standing health problem that makes it difficult for you to do any of the following...

READ OUT AND SELECT ALL THAT APPLY

1. Go out on foot
  2. Use local buses
  3. Get in or out of a car
- None of these – MUTUALLY EXCLUSIVE

**F1: All adults 16+ in England**

Q.51 (B39b): Do you have any disability or other long standing health problem that makes it, or would make it, difficult or impossible for you to ride a bicycle?

1. Yes – impossible
2. Yes – difficult
3. No
4. Don't know

**F1: All adults 16+ in England**

(IntroNS): Now some questions about your job. If you are currently working, please answer about your current job. If you are not working, please answer about your most recent job.

**F1: All adults 16+ in England**

Q.53 (NS1). Do (did) you work as an employee or are (were) you self-employed?

1. Employee
2. Self-employed with employees
3. Self-employed\freelance without employees
4. Never worked

**F16: All who are employees or self-employed with employees (Q53\1,2)**

Q.54 (NS2). **IF F17 (Q53\1):** How many people work (worked) for your employer at the place where you work (worked)?]

**IF F19 (Q53\2):** How many people do (did) you employ?]

1. 1-24
2. 25 or more

**F17: All who are an employee (Q53\1)**

Q.55(NS3). Do (did) you supervise any other employees?

IF NECESSARY: A supervisor or foreman is responsible for overseeing the work of other employees on a day-to-day basis.

1. Yes
2. No

**F21: All who work\worked (Q53\1-3)**

Q.56 (NS4). Which of these best describes the sort of work you do (did)?

1. Modern professional occupations such as: teacher, nurse, physiotherapist, social worker, welfare officer. Artist, musician, police officer (sergeant or above), software designer
2. Clerical and intermediate occupations such as: secretary, personal assistant, clerical worker, office clerk, call centre agent, nursing auxiliary, nursery nurse
3. Senior managers or administrators (usually responsible for planning, organising and co-ordinating work, and for finance) such as: finance manager, chief executive
4. Technical and craft occupations such as: motor mechanic, fitter, inspector, plumber, printer, tool maker, electrician, gardener, train driver
5. Semi-routine manual and service occupations such as: postal worker, machine operative, security guard, caretaker, farm worker, catering assistance, receptionist, sales assistant
6. Routine manual and service occupations such as: HGV driver, van driver, cleaner, porter, packer, sewing machinist, messenger, labourer, waiter\waitress bar staff
7. Middle or junior managers such as: office manager, retail manager, bank manager, restaurant manager, warehouse manager, publican
8. Traditional professional occupations such as: accountant, solicitor, medical practitioner, scientist, civil\mechanical engineer

**F1: All adults 16+ in England**

Q.57 (HHIncome). Please could you look at this screen and tell me which of these represents your **household's total income**, before tax and any other deductions. This includes earnings from employment or self-employment, income from benefits and pensions, and income from other sources such as interest from savings.

Please just tell me the letter that applies to your household.

<b>Annual</b>	<b>Weekly</b>	<b>Monthly</b>
E) Under £2,500	Under £50	Under £200
J) 2,500 - £4,999	£50 - £99	£200 - £399
C) £5,000 - £9,999	£100 - £199	£400 - £829

G) 10,000 - £15,999	£200 - £309	£830 - £1329
K) 16,000 - £19,999	£310 - £389	£1,330 - £1,649
A) £20,000 - £24,999	£390 - £489	£1,650 - £2,099
D) 25,000 - £29,999	£490 - £579	£2,100 - £2,499
M) 30,000 - £34,999	£580 - £679	£2,500 - £2,899
B) £35,000 - £39,999	£680 - £769	£2,900 - £3,349
H) 40,000 - £44,999	£770 - £869	£3,350 - £3,749
L) 45,000 - £49,999	£870 - £969	£3,750 - £4,149
F) £50,000 or more	£970 or more	£4,150 or more
Don't know		
Refused		