

**KANTAR**



Department  
for Transport

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

## **Wave 5 summary report**

February 2020

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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 5 of the survey conducted in December 2019, prior to the COVID-19 pandemic. 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.

Wave 6 of the research will not take place in June 2020, due to the suspension of face-to-face fieldwork caused by the outbreak of COVID-19.

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, many of which were also included in Waves 2, 3, 4 and/or 5. New questions on drones, autonomous vehicles and app-based minicab services were asked in December 2019 (Wave 5). [Appendix B](#) includes an overview of which questions have been asked at each wave of the survey to date. The questionnaire for December 2019 (Wave 5) 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. While there are some differences regarding changes in knowledge, attitudes and behaviour wave on wave, in some cases it is necessary to review results over further waves of the survey to assess whether these represent longer-term trends. Throughout the report we compare data across a number of waves of the survey. Given this is the fifth wave of the survey, for practical reasons it is not always possible to make comparisons across all waves at each question. With that in mind, depending on the context of the question for some questions the number of waves used for comparison purposes varies.

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 BAME groups, and thus analysis focuses on comparisons of people from white backgrounds against BAME groups as a collective), and car ownership.

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.

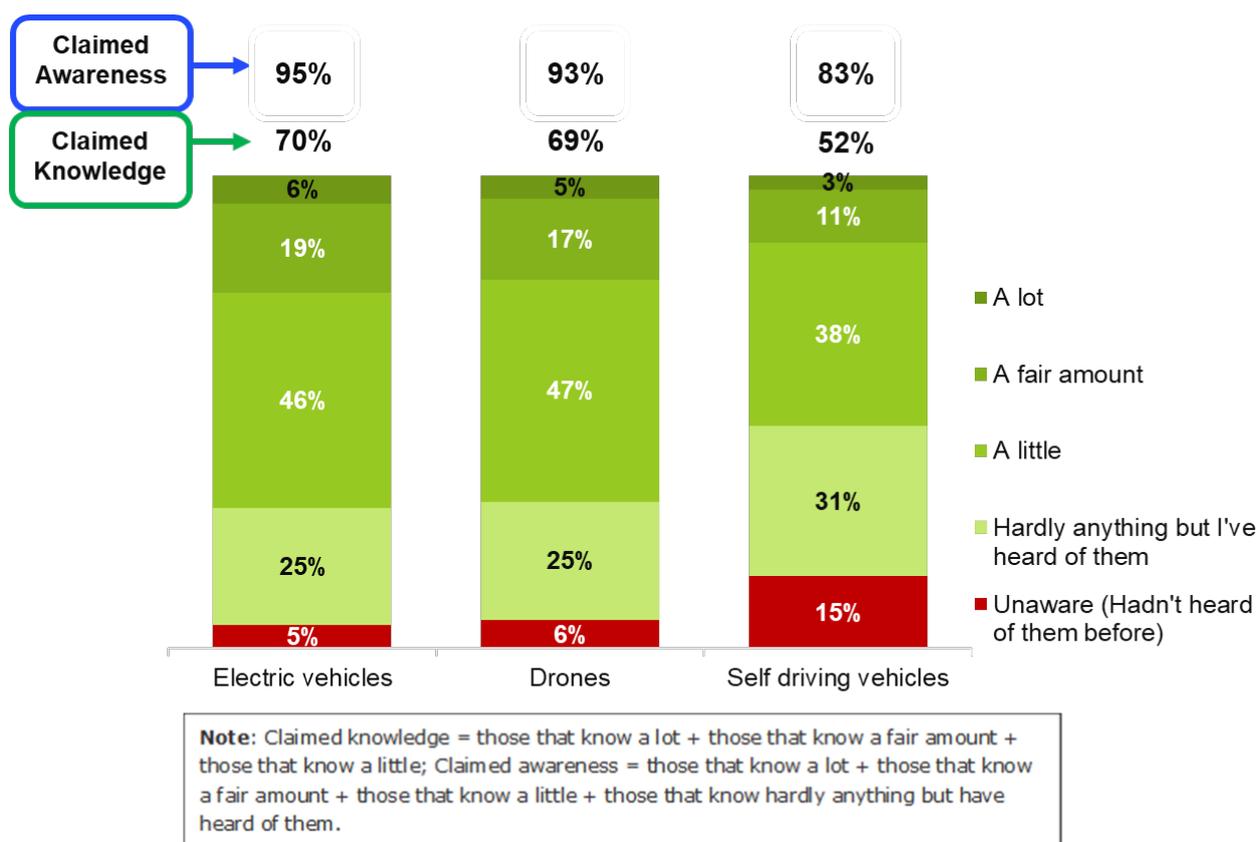
## 2. Awareness and use of new technologies

### 2.1 Awareness and knowledge of new technologies: overview

Figure 2.1 depicts levels of claimed awareness and claimed knowledge for electric vehicles (EVs), autonomous vehicles (AVs) (also referred to as self-driving vehicles), and drones as reported in December 2019. Awareness of EVs stood at 95%, awareness of autonomous vehicles (AVs) at 83% and awareness of drones at 93%. Levels of claimed knowledge were 70% for EVs, 52% for AVs and 69% for drones, although only a minority claimed to know ‘a lot’ or ‘a fair amount’ about each technology.

Awareness and knowledge of each technology are discussed in more detail in the following sections of this chapter.

**Fig 2.1 Awareness and knowledge of new technologies, December 2019**



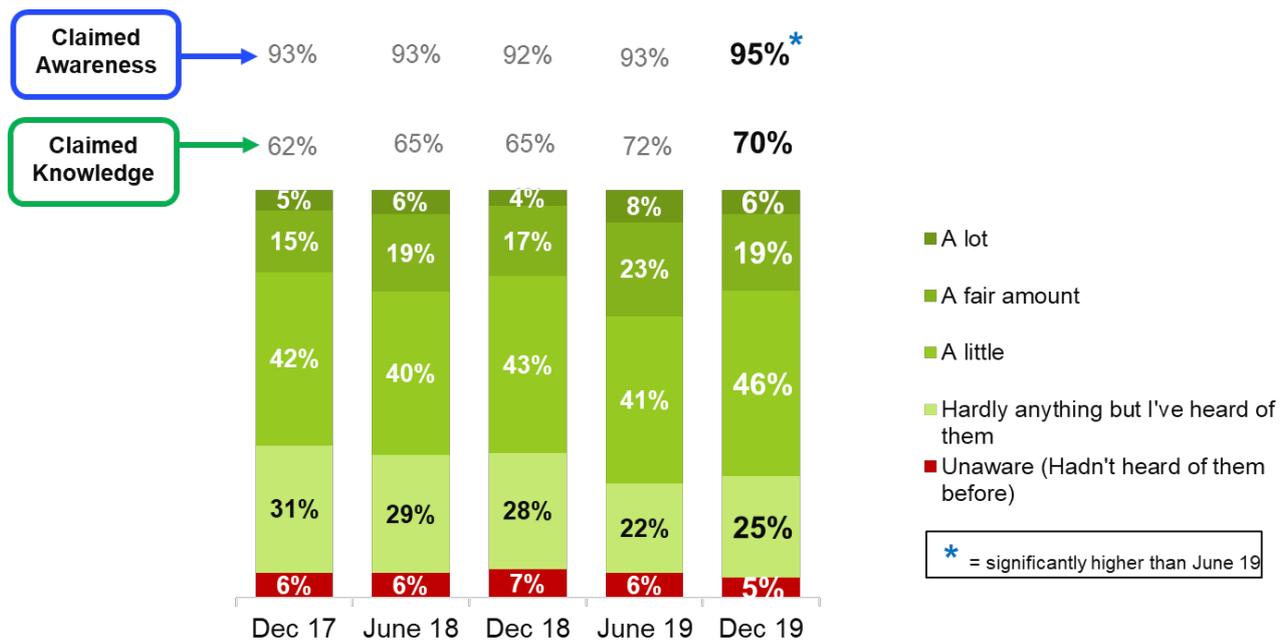
Source: Q25. How much, if anything, would you say you know about electric vehicles?/ Q34. How much, if anything, would you say you know about drones?/ Q28. Fully driverless or self-driving vehicles are not yet available for everyday use. How much, if anything, would you say you know about these types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

Base: All respondents (3,498)

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

Looking at levels of claimed awareness and knowledge of EVs in more detail, Figure 2.2 shows the findings over the five waves of the tracker survey. Over nine in ten people (95%) claimed to be aware of EVs in December 2019, and this proportion was slightly higher than those observed in previous tracker waves. Claimed knowledge (defined as knowing at least 'a little'), stood at 70% which was on a par with that seen in June 2019 (72%). The proportion of people claiming a deeper level of knowledge (i.e. that they knew 'a lot' or 'a fair amount' about EVs) was 25%, which was significantly lower than the level recorded in June 2019 (31%). However, in contrast, the proportion of people claiming a deeper level of knowledge is significantly higher than in December 2018 (21%) and December 2017 (20%), whilst it remains in line with June 2018 (25%).

**Fig 2.2 Awareness and knowledge of electric vehicles, Wave 1 – 5**



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

Base: All respondents (Dec 19: 3,498; June 19: 3,578; Dec 18: 3,532; June 18: 3,538; Dec 17: 3,499)

As seen in previous waves of the survey, in December 2019 claimed knowledge of EVs was higher among men (80% versus women 60%) and social grades ABC1 (79% versus C2DE 62%), and significantly lower among those aged 75+ (48% versus 67% or more in other age groups). In terms of regional variations, levels of claimed knowledge were a little lower in the North East (54%) and North West (58%) compared with other regions, except Yorkshire and the Humber (62%)

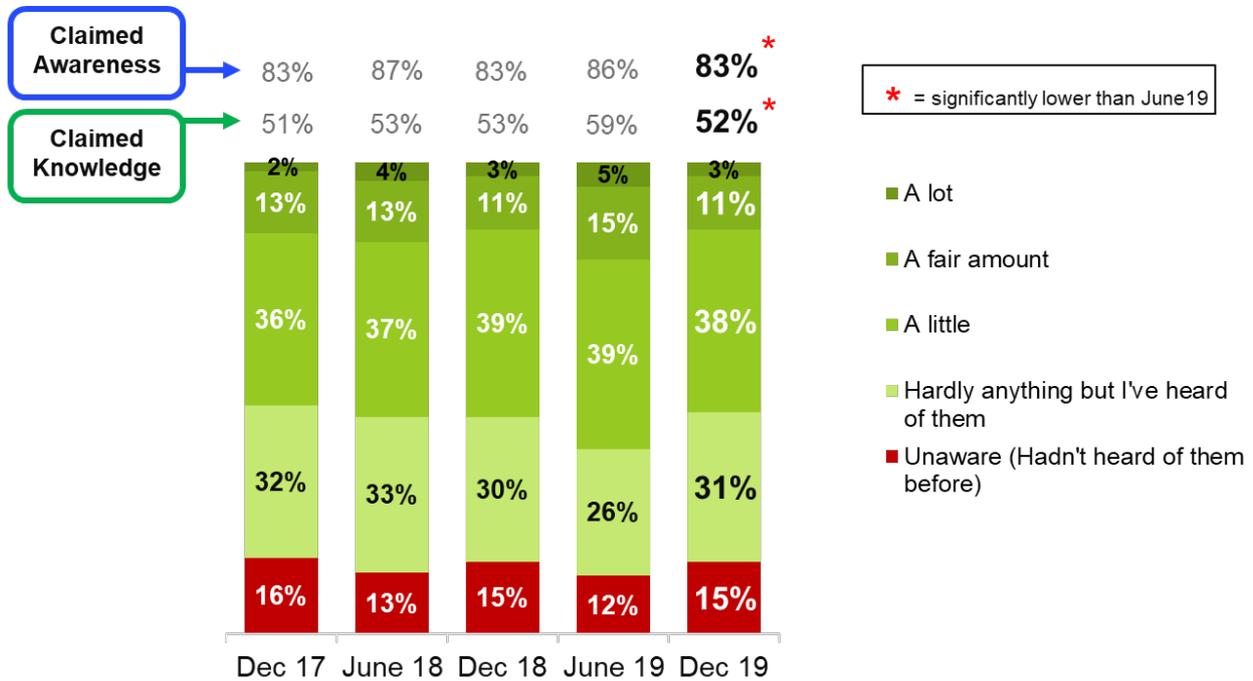
Findings on the perceived advantages and disadvantages of EVs are included in [Chapter 3](#).

### 2.1.2 Awareness of autonomous vehicles (AVs)

Figure 2.3 shows that levels of claimed awareness and knowledge of AVs have seen some fluctuation across the five tracker waves. Claimed awareness of AVs was 83% in December 2019, and while this was significantly lower than June 2019 (86%), it was in line with the level recorded in December 2018 (83%).

Claimed knowledge dropped to 52% in December 2019, taking it back to the level last observed in December 2018.

**Fig 2.3 Awareness and knowledge of autonomous vehicles, Wave 1 – 5**



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 (Dec 29: 3,498; June 19: 3,578; Dec 18: 3,532; June 18: 3,538; Dec 17: 3,499)

The groups more likely to claim knowledge about AVs in December 2019 included men (63% versus women 41%) and those in social grades ABC1 (60% versus C2DE 44%). People in the oldest age bracket (75+) were much less likely than other age groups to claim knowledge (36% versus 49% or more in other age groups).

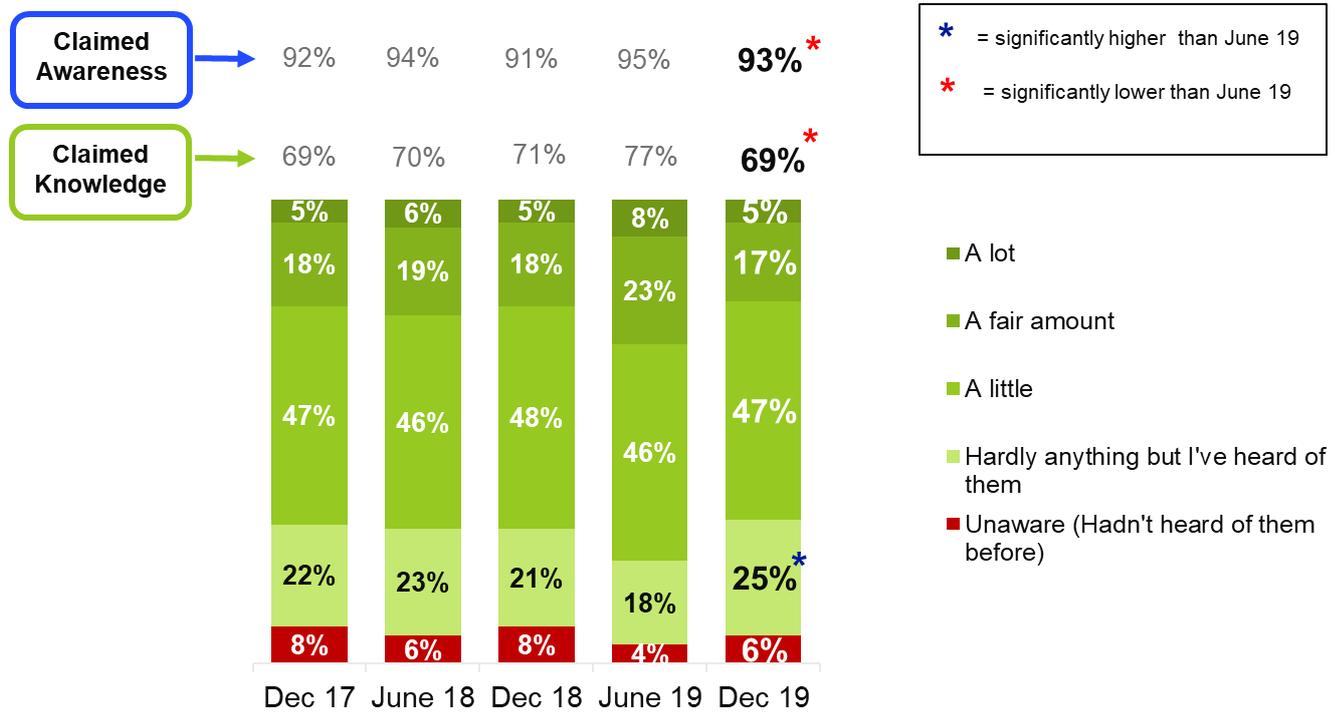
At a regional level, those living in the South East had slightly higher levels of knowledge than those living in other English regions (63% versus 54% or less), with the exception of the East Midlands (61%). Levels of awareness had dropped across most regions since June 2019.

Further results in relation to autonomous vehicles are included in [Chapter 4](#).

### 2.1.3 Awareness and knowledge of drones

Figure 2.4 shows levels of claimed awareness and knowledge of drones across waves 1 to 5. Claimed awareness of drones stood at 93% in December 2019. This was significantly lower than June 2019 (95%), however it is in line with the trend of claimed awareness over all 5 waves of the tracker. Claimed knowledge dropped to 69% in December 2019, taking it back down to a level not observed since December 2017.

**Fig 2.4 Awareness and knowledge of drones, Wave 1 – 5**



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

Base: All respondents (Dec 19: 3,498; June 19: 3,578; Dec 18: 3,532; June 18: 3,538; Dec 17: 3,499)

The groups more likely to claim knowledge about drones in December 2019 included men (75% versus women 63%) and those in social grades ABC1 (75% versus C2DE 63%). People in the oldest age bracket (75+) were much less likely than other age groups to claim knowledge (50% versus 65% or more in other age groups).

Regionally, those living in the East Midlands had the highest levels of claimed knowledge about drones (80%), compared with those living in the North East which had the lowest levels (54%).

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

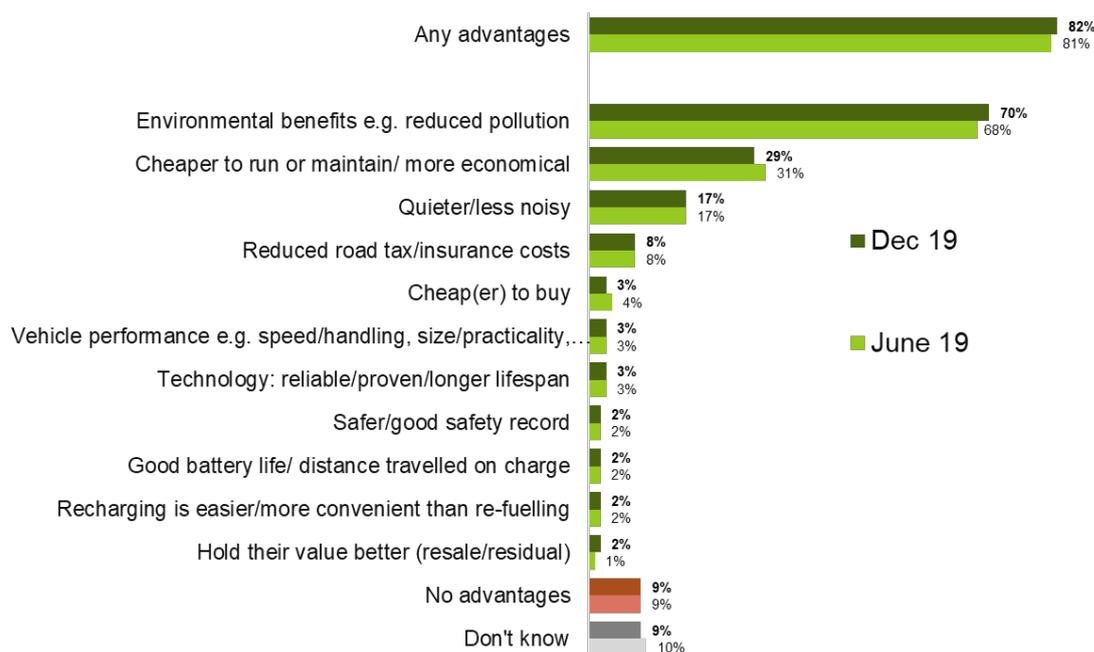
## 3.1 Perceived advantages of electric vehicles (EVs)

Figure 3.1 shows the perceived advantages of EVs in December 2019. The categories represent unprompted, 'top of mind' responses where 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 (70%), followed by lower running costs associated with EVs (29%) and being quieter/less noisy (17%). Nine per cent perceived there to be no advantages to EVs.

People in social grades ABC1 were more likely to mention environmental benefits of EVs (78% versus C2DE 62%).

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

**Fig 3.1 Perceived advantages of electric vehicles, December 2019**



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

Base: All respondents (Dec 19: 3,498; June 19: 3,578).

## 3.2 Perceived disadvantages of electric vehicles

Figure 3.2 summarises the perceived disadvantages of EVs over petrol or diesel vehicles in December 2019. Issues relating to battery life and recharging were the most common themes: four in ten mentioned battery

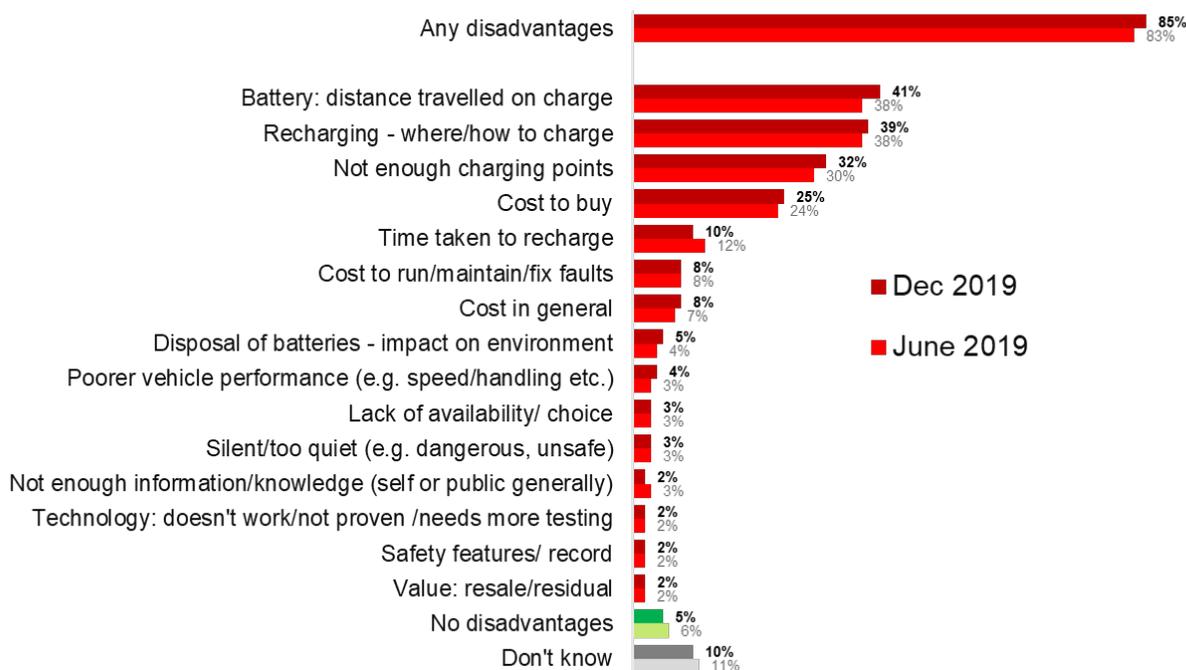
life/distance travelled (41%) and recharging (where/how to charge) (39%), while three in ten (32%) mentioned a scarcity of charging points. When responses were grouped together, 55% mentioned recharging concerns (this included 'Recharging – where/how to charge'; 'Not enough charging points'; and 'Time taken to recharge'); 44% 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 34% 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 (5%) could think of no disadvantages of EVs.

Men were more likely than women to mention battery concerns (50% versus 38%). Those in social grades ABC1 were more likely than those in grades C2DE to mention recharging concerns (61% versus 50%), battery concerns (51% versus 37%) and cost concerns (37% versus 30%).

In some earlier waves of the tracker, people living in rural areas tended to be more concerned than those living in urban areas about battery life, and this was also the case in December 2019: any mentions of battery concerns were made by 52% of those in rural areas versus 43% in urban areas.

While the general pattern of response was very similar to that seen in June 2019, a slightly higher proportion of people had concerns about battery life in December 2019 (44% versus 40% in June 2019).

**Fig 3.2 Perceived disadvantages of electric vehicles, December 2019**



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

Base: All respondents (Dec 2019: 3,498; June 2019: 3,578)

### 3.3 Considerations for next vehicle purchase

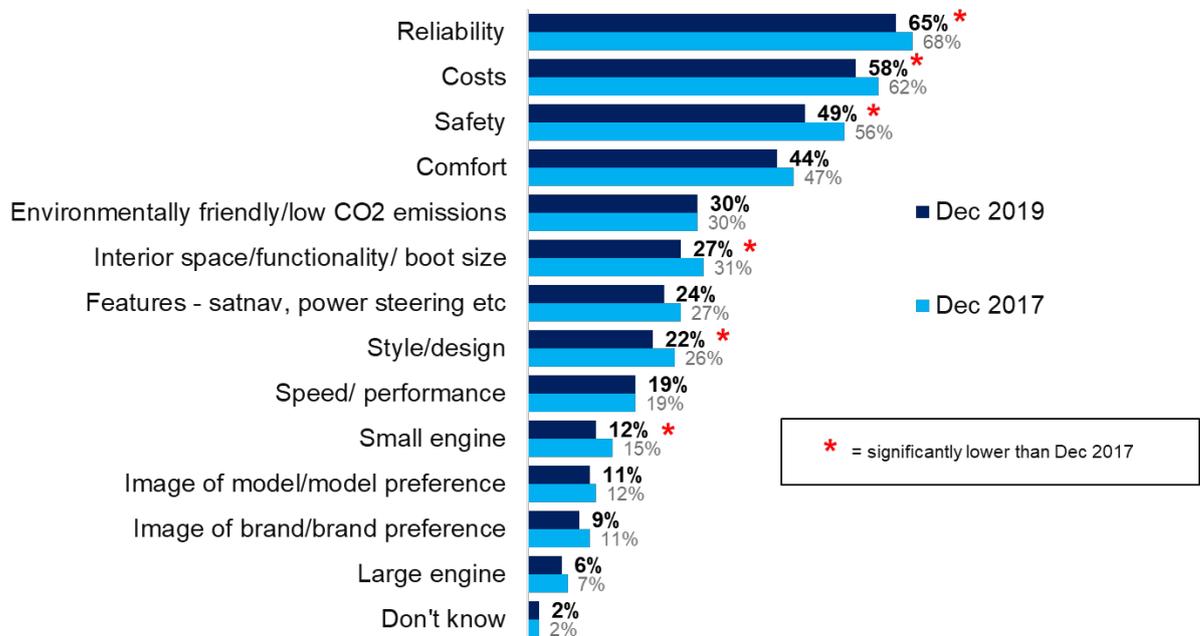
#### 3.3.1 Important factors when buying/replacing a car or van

In December 2019, respondents who owned or had continuous use of a car or van were asked about the most important considerations when buying a vehicle. Figure 3.3 shows that in December 2019 reliability and cost were the most commonly mentioned factors (mentioned by 65% and 58% respectively), followed by

safety (49%) and comfort (44%). Thirty per cent of people mentioned a vehicle being environmentally friendly or low on CO2 emissions, while smaller proportions mentioned other features.

The overall pattern of response in December 2019 was very similar to that observed in December 2017. Notably, the proportion mentioning environmental friendliness/ low on CO2 emissions as being important was the same as in December 2017.

**Fig 3.3 Important factors when buying/replacing a car or van**



Source: Q15 Which of these things are important to you when buying a car or van.

Base: All who personally own/continuously use car/van. (December 2019: 2,046, December 2017: 2,162)

### 3.3.2 Timescale for buying/replacing vehicle

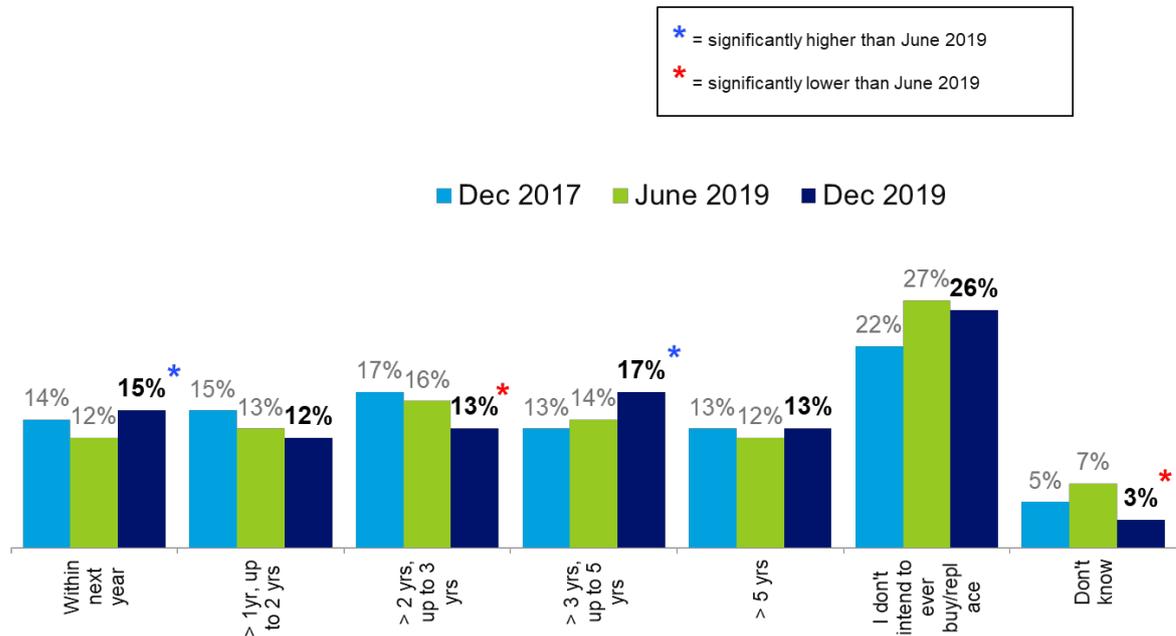
All those with a valid UK driving licence were asked when they planned to buy (or replace) their next vehicle, either new or second hand. Figure 3.4 shows the findings for December 2019. The largest proportion (26%, amounting to a quarter of people asked the question) did not plan to ever buy or replace their vehicle. Of those with a valid driving licence:

- One in seven (15%) planned to buy/ replace within the next year
- 12% in over 1 year but within 2 years
- 13% in over 2 years but within 3 years
- 17% in more than 3 years but within 5 years
- 13% planned to buy/replace their vehicle in more than 5 years' time

Looking at the pattern of response over the survey history, the proportion of people who did not plan to ever buy/replace their vehicle in December 2019 (26%) was stable compared with June 2019 (when 27% gave this answer, although this was a significant increase on the 22% giving this answer in December 2017). In the other categories, there were varying levels of responses wave on wave, with some apparent trends developing in the 2 to 5 year categories: the proportion planning to buy in over 2 years but within 3 years has

fallen wave on wave, while the proportion planning to buy in over 3 years but within 5 years has increased wave on wave.

**Fig 3.4 Timescale of buying/replacing vehicle**



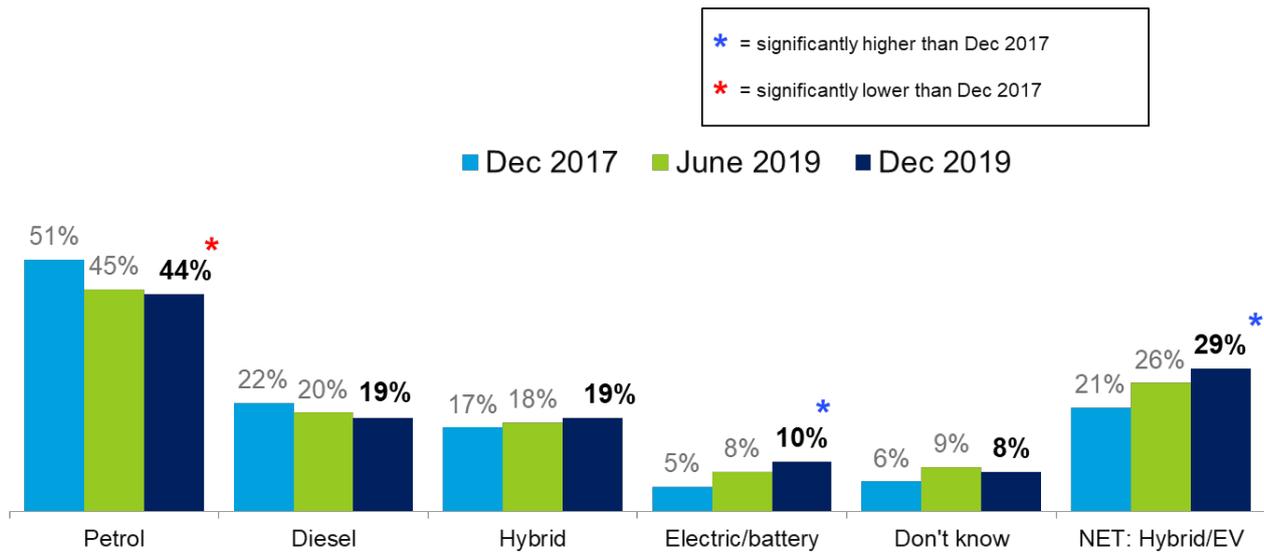
Source: Q16 When, if at all, do you think you will next buy or replace a car or van, either new or second-hand?

Base: All with a valid UK driving licence (Dec 2019: 2,406; June 2019: 2,527; Dec 2017: 2,490)

### 3.3.3 Type of vehicle planning to buy/ replace next time

In terms of the type of vehicle that people planned to purchase, Figure 3.5 shows the findings for those who planned to buy or replace a car or van at each of the survey waves when this question was asked. In December 2019, 44% planned to buy a petrol vehicle, 19% diesel, 19% hybrid, and 10% fully electric. Looking back to when the question was first asked in December 2017, some clear trends have developed. For example, increasing proportions of people now plan to buy a fully electric vehicle (10% compared with 5% in December 2017), while a significantly smaller proportion plan to buy a petrol vehicle (44% versus 51% in December 2017).

**Fig 3.5 Future purchasing intentions of electric vehicles, December 2019, 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 (Dec 2019: 1,605; June 2019: 1,561; Dec 2017: 1,718)

# 4. Public attitudes to autonomous vehicles

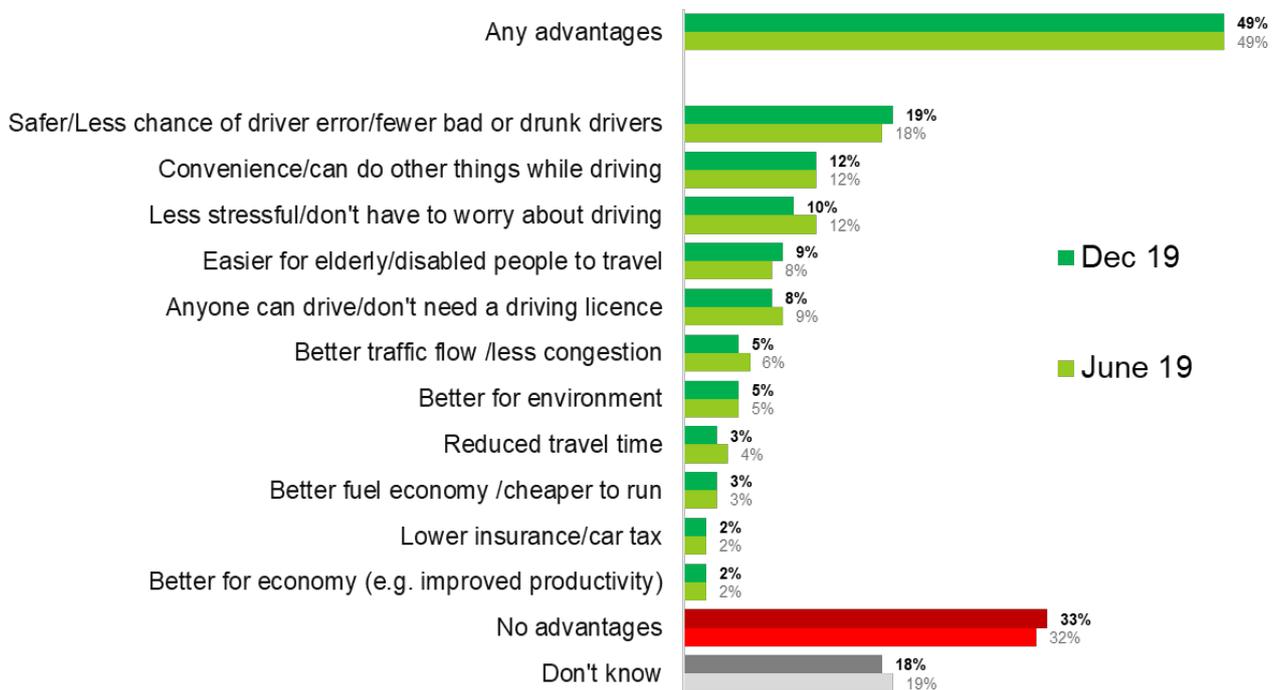
## 4.1 Perceived advantages of autonomous vehicles (AVs)

Figure 4.1 shows the perceived advantages of AVs in December 2019. The categories represent unprompted, 'top of mind' responses where respondents were asked if they could think of any advantages of AVs. In December 2019, half (49%) mentioned at least one advantage of AVs, while eight in ten (81%) mentioned at least one disadvantage (Figure 4.2).

The most commonly cited advantage related to safety (19%), followed by convenience (12%) and being less stressful/not having to worry about driving (10%). Those who knew at least 'a little' about AVs were more likely than those who did not know anything to give at least one advantage of AVs. A perception that AVs offered no advantages increased with age, from 16% of those aged 16-24 rising to 50% of those aged 65+.

Wave on wave, the proportion of people citing at least one advantage was stable (49% also mentioned at least one advantage in June 2019), and the pattern of response within the category was also similar to that observed in June 2019.

**Fig 4.1 Perceived advantages of autonomous vehicles, December 2019**



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

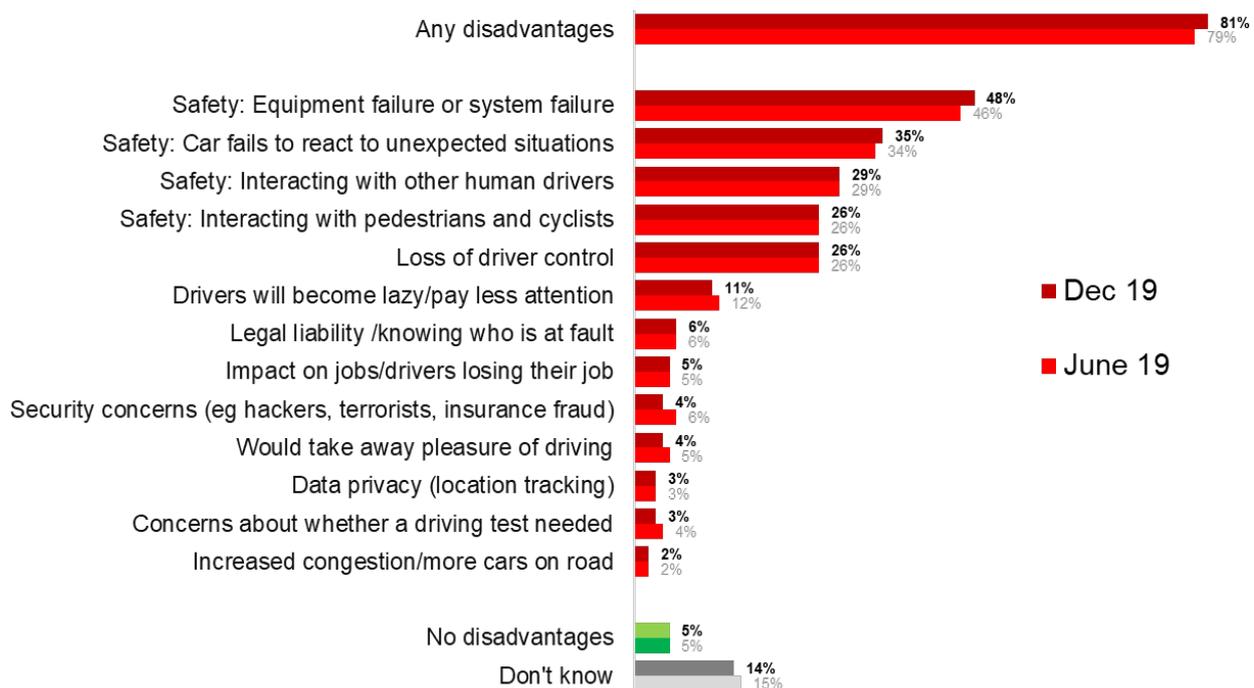
Base: All respondents (Dec 19: 3,498; June 2019: 3,578).

## 4.2 Perceived disadvantages of autonomous vehicles

Figure 4.2 summarises people's perceived disadvantages of AVs. In December 2019, eight in ten people (81%) mentioned at least one disadvantage and this proportion was similar to that recorded in June 2019 (79%). Safety of equipment/systems was the most commonly cited disadvantage (48%), while 35% mentioned safety in unexpected situations. Overall, 61% 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. As you might expect, those who were unaware of AVs were more likely than those who were aware to say 'don't know' (43% versus 8% of those with some awareness).

The findings relating to safety were largely stable wave on wave (the proportion mentioning at least one safety related concern was 60% in June 2019, 58% in December 2018 and 62% in June 2018).

**Fig 4.2 Perceived disadvantages of autonomous vehicles, December 2019**



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

Base: All respondents (Dec 2019: 3,498; June 2019: 3,578)

## 4.3 Driver assistance features: availability and usage

The survey has historically included questions on awareness of and use of driver-assistance features. In December 2019, the survey was altered – rather than exploring awareness of driver assistance features among the general population, the *availability* of such features was explored among those with a valid UK driving licences and the ownership and/or use of a vehicle. Those who had a driver assistance feature in their vehicle were also asked whether they used this.

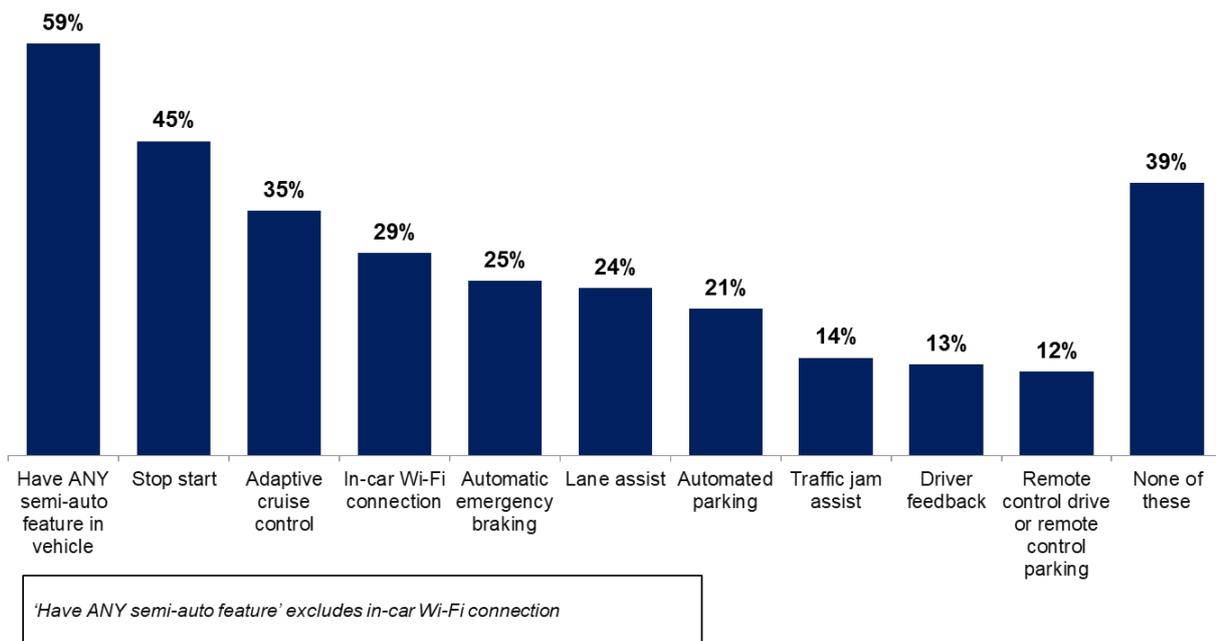
The reported proportion of people who had at least one driver assistance feature in their vehicle, or had used at least one of these features, excludes those who only had/used an in-car Wi-Fi connection. The presence or use of in-car Wi-Fi connection is excluded as this is not classified as a driver assistance feature. However, Figures 4.3 and 4.4 do show the proportions of people who mentioned an in-car Wi-Fi connection as this was a response option in the question.

Figure 4.3 summarises the new baseline findings for the availability of driver assistance features in December 2019. Overall six in ten (59%) had at least one driver assistance feature in their vehicle (excluding in-car Wi-Fi).

The most common features mentioned were stop start (45%), adaptive cruise control (35%), in-car Wi-Fi (29%), automatic emergency braking (25%) and lane assist (24%). Features less commonly cited include traffic jam assist (14%), driver feedback (13%) and remote-control drive/parking (12%).

Four in ten (39%) people reported not having any driver assistance features available (including in-car Wi-Fi connection) in their vehicle, with women being more likely than men to state this (42% versus men 35%).

**Fig 4.3: Availability of driver-assistance features, December 2019**



Source: Q85. 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, if any of these, are available in your vehicle(s)?

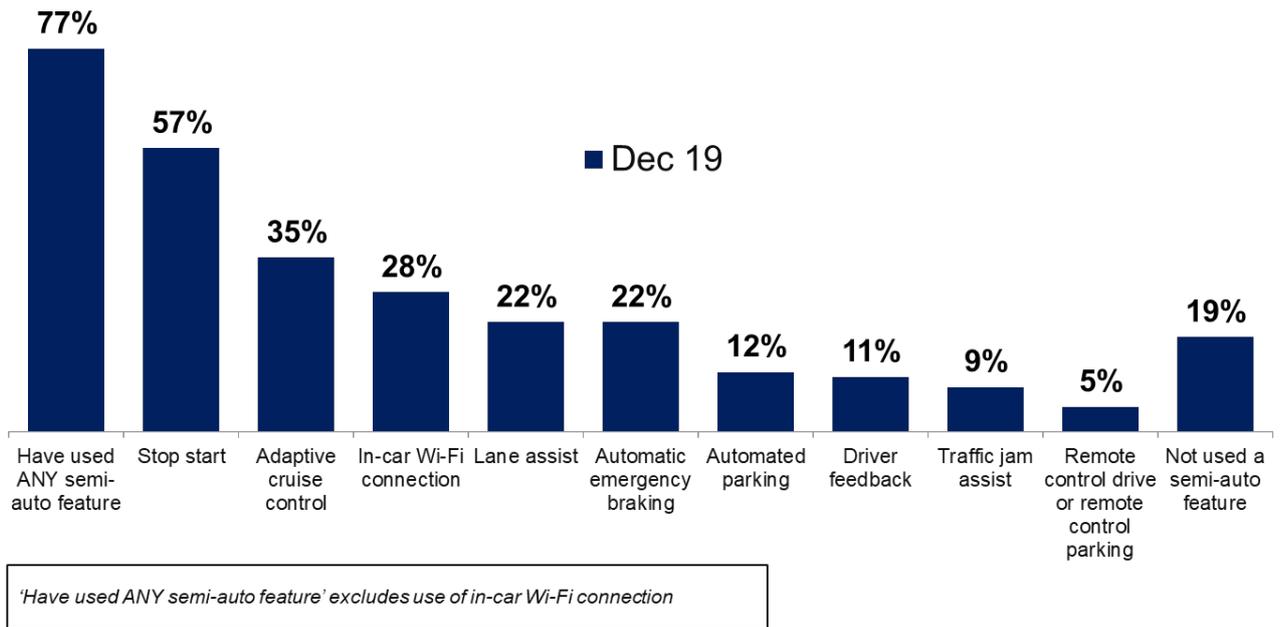
Base: All who personally own/use a vehicle and have a valid UK driving licence (Dec 19: 1,998); Subgroups: Men (1,102); Women (896)

All those with at least one driver assistance feature available in their vehicle were asked which, if any, of these features they had used whilst driving their vehicle. Figure 4.4 shows that in December 2019, eight in ten (77%) drivers had used at least one of the features available in their vehicle (excluding in-car Wi-Fi).

Stop start had the highest level of reported usage (57%), followed by adaptive cruise control (35%), in-car Wi-Fi connection (28%), lane assist (22%) and automatic emergency braking (22%). Only 12% mentioned using automated parking, driver feedback (11%), traffic jam assist (9%) or remote-control drive/parking (5%).

Men were more likely to report using at least one driver assistance feature in their vehicle as a driver (80% versus women 73%).

**Fig 4.4: Use of semi-autonomous features, December 2019**



Source: Q86 Still thinking about your vehicle(s), which if any of these have you used as a driver in your vehicle(s)?

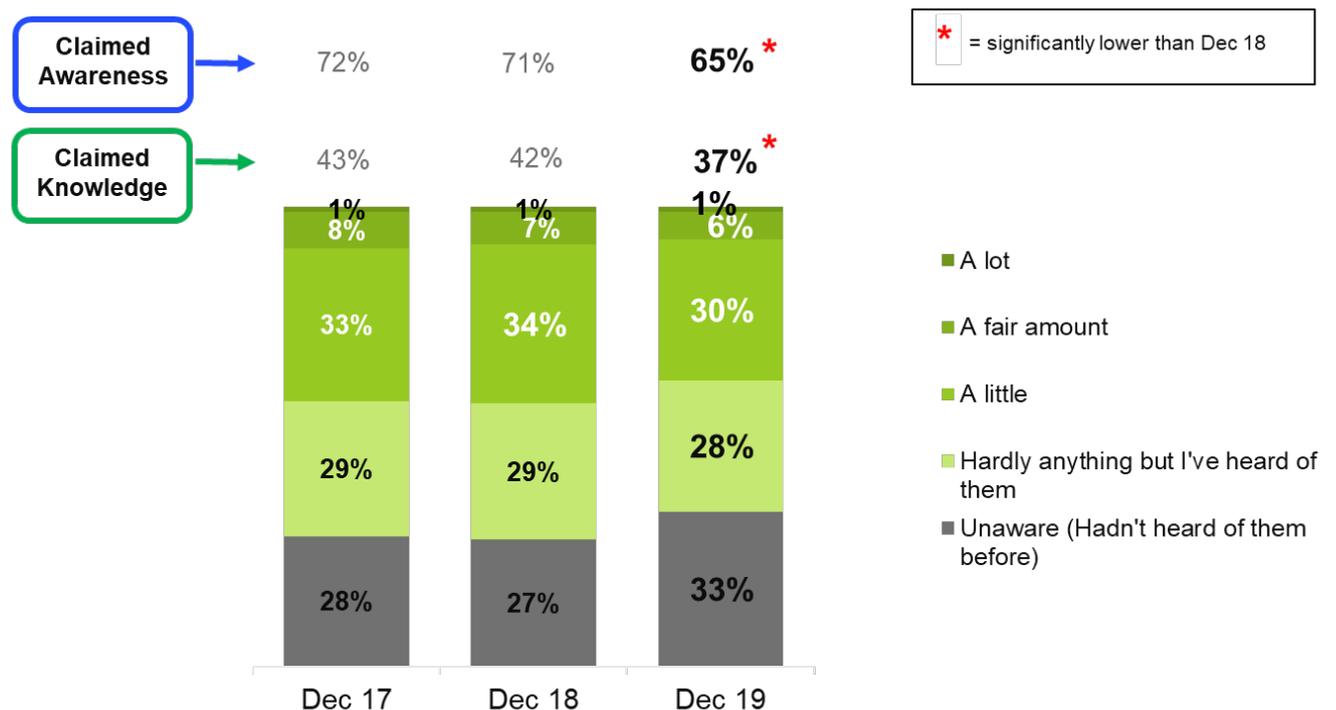
Base: All who have at least one semi-autonomous feature in vehicle(s) (Dec 19: 1,153)

# 5. Public attitudes to future services

## 5.1 Awareness and knowledge about space tourism

Awareness and knowledge of space tourism are at the lowest levels seen since the start of the tracker. Figure 5.1 shows the findings in waves 1, 3 and 5. A significantly lower proportion (65%) of people claimed to be aware of space tourism in December 2019 than in December 2018 (71%), when this question was last asked. Claimed knowledge was also significantly lower (37%) in December 2019 than when last asked in December 2018 (42%).

**Fig 5.1 Awareness and knowledge of space tourism, Wave 1, 3 & 5**



Source: Q41. How much, if anything, would you say you know about space tourism?

Base: All respondents (Dec 19: 3,498; Dec 18: 3,532; Dec 17: 3,499)

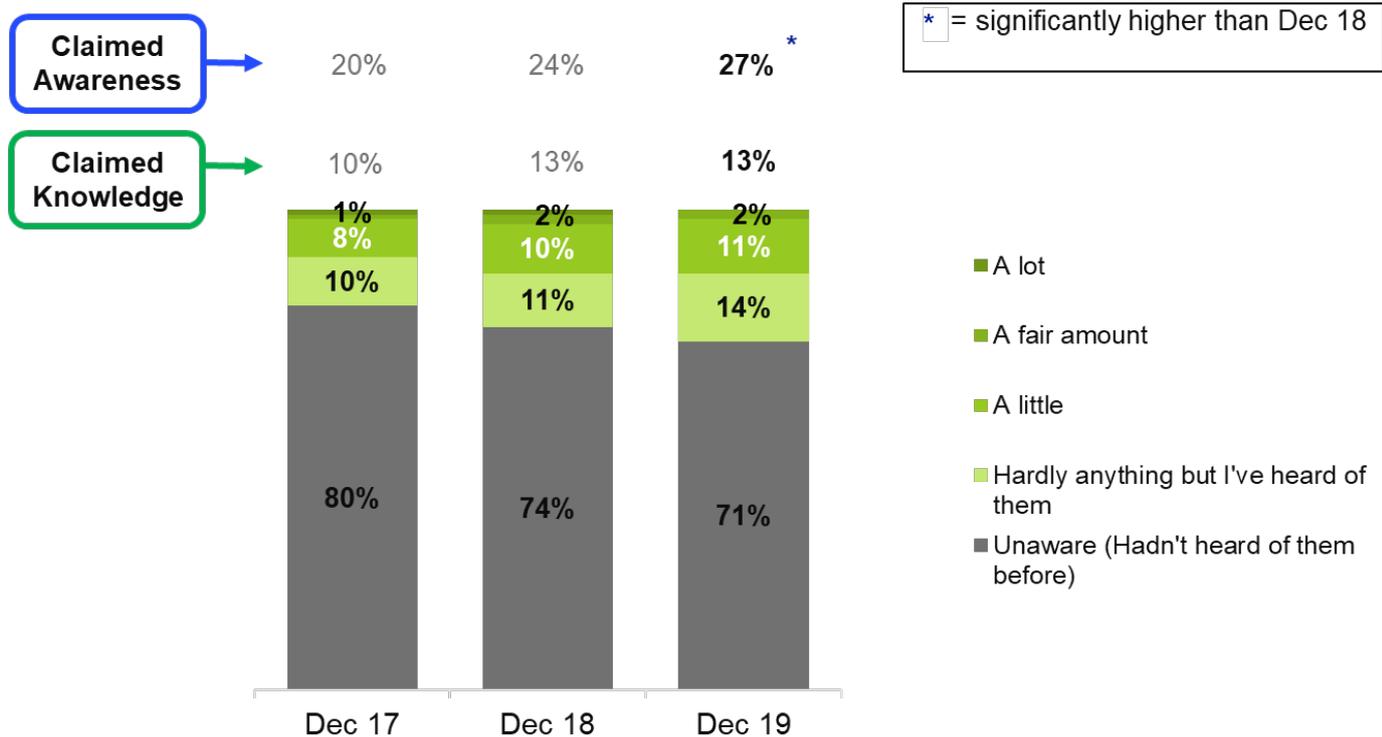
In December 2019 claimed knowledge of space tourism was significantly higher among men (46% versus 28% of women), whilst social grades ABC1 were also significantly more likely to claim knowledge (45% versus C2DE 29%). Younger respondents, aged 16-24 were significantly less likely to claim knowledge of space tourism, compared to all other age categories (51% of those aged 16-24 versus between 59% and 72% of all other age brackets).

Regionally, those living in the West Midlands had the lowest level of claimed knowledge (26%). This was significantly lower than other regions (26% in West Midlands, versus between 37% and 42% in all other regions), with the exception of the North East (33%) and London (34%)

## 5.2 Awareness and knowledge about flying taxis

Awareness of flying taxis are at the highest levels seen since the start of the tracker, whilst knowledge is relatively stable compared with December 2018. Figure 5.2 shows the findings in waves 1, 3 and 5 of the tracker survey. A significantly higher proportion (27%) of people claimed to be aware of flying taxis in December 2019 than in December 2018 (24%), when this question was last asked.

**Fig 5.2 Awareness and knowledge of flying taxis, Wave 1, 3 & 5**



Source: Q43. How much, if anything, would you say you know about flying taxis?

Base: All respondents (Dec 19: 3,498; Dec 18: 3,532; Dec 17: 3,499)

Claimed knowledge of flying taxis was significantly higher among men (19% versus 7% of women). Knowledge of flying taxis among those aged 35-44 (15%), 45-54 (14%) and 55-64 (16%), was significantly higher than among 16-24 year olds and those aged 75 or over (both 8%).

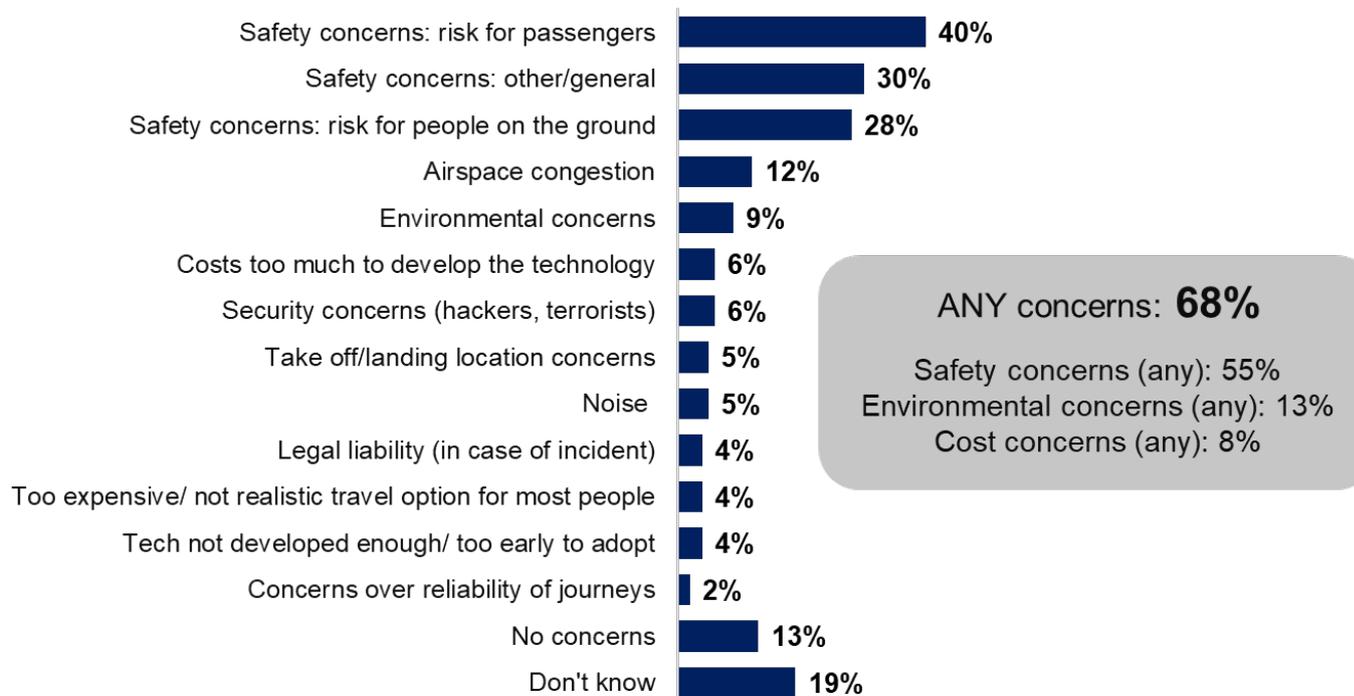
Regionally, people living in the North East had a significantly lower level of claimed knowledge than any other region (4% versus between 9% and 17% in all other regions). London had the highest regional level of claimed knowledge, at 17%.

## 5.3 Concerns about flying taxis

Figure 5.3 shows the perceived concerns over the use of flying taxis in December 2019. The categories represent unprompted, 'top of mind' responses where respondents were asked if they could think of any concerns they had over the use of flying taxis. Seven in ten (68%) people cited at least one concern over the use of flying taxis. The most common concern related to safety (55%) (Safety concerns included: 'Safety concerns: Risk for passengers'; 'Safety concerns: other/general'; and 'Safety concerns: Risk for people on the ground'). Fewer people mentioned concerns around the environment (13%) (Environmental concerns included: 'Environmental concerns'; 'Noise concerns'; and 'Unattractive/eyesore'), or cost (8%) (Cost concerns included: 'Costs too much to develop the technology'; and 'Will be too expensive to use/ not a realistic travel option for most people'). Men were more likely to say that they did not have any concerns over the use of flying taxis (15% vs 11% of Women).

People aged 55-64 were more likely to have safety concerns (61%) than those aged 25-34 (51%), 35-44 (51%), 65-74 (54%) and 75+ (55%). Car owners were more likely to mention safety concerns (57%) than non-car owners (51%).

**Fig 5.3: concerns over the use of flying taxis, December 2019**



Source: Q84.What concerns, if any, do you have over the use of flying taxis?

Base: All respondents (Dec 19: 3,498)

# 6. Mobility services

## 6.1 Travel services: awareness and use

Respondents were asked their awareness of a range of travel services:

- App based minicab services such as Uber
- Car rental services
- Public bike share schemes
- Car club
- Internet-arranged or app-based ride sharing

In December 2019, the majority of people (89%) were aware of at least one of these travel services. Since June 2019 awareness of each of these five travel services has remained stable, with no significant shifts. As shown in figure 6.1, awareness remains highest for 'App-based minicab services such as Uber' (80%), and 'Car rental services' (76%).

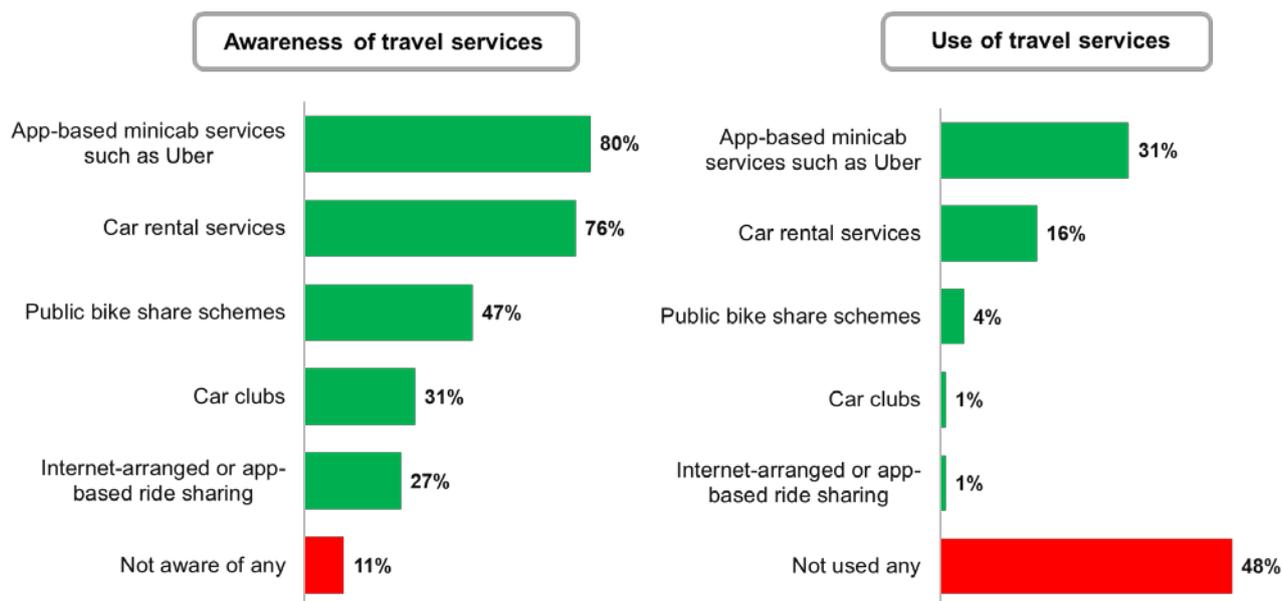
Awareness of public bike share schemes stood at 47% in December 2019, whereas roughly three in ten were aware of car clubs and internet-arranged or app-based ride sharing (31% and 27% respectively).

Women were more likely than men to be unaware of any of these services (13% versus 9% of men). Those aged 65 or over were also more likely to be unaware of any of these services, when compared to younger age groups (21% versus 12% or less in younger groups). Those in social grade C2DE were more likely, than those in ABC1, to be unaware of any of these travel services (17% versus 5% of those in ABC1).

Although awareness was high, only four in ten (41%) had used at least one of these travel services. This remains in line with findings from June 2019 (39%) and December 2018 (40%). However, this is significantly lower than the proportion that had used at least one of these travel services in December 2017 (44%).

The most commonly used travel services were app-based minicab services such as Uber (31% - significantly higher than the 28% of people who reported having used in June 2019), and car rental services (16% - in line with June 2019 where 15% of people had used car rental services).

**Fig 6.1 Awareness and use of travel services, December 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 (3,498). Q24 asked to all aware of service but re-based on all respondents (3,498)

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

- Men (44% vs 39% of women)
- Younger people (e.g. 55% of 16-24s versus 22% of those aged 65 or over)
- Those living in urban areas (44% versus 29% of those living in rural areas)
- Those from black and minority ethnic (BAME) backgrounds (57% versus 38% of those from white backgrounds)
- Those from social grade ABC1 (52% versus 30% of those from C2DE social grade)
- Those from London (66% versus 49% or less for those from other regions)

## 6.2 App-based minicab services

Looking specifically at awareness and use of app-based minicab services such as Uber, results varied significantly by age and gender. Men were more likely than women to be aware of app-based minicab services (82% versus 78%). However, unlike in June 2019, men were not significantly more likely to use app-based minicab services than women (33% versus 30%). Levels of awareness remain relatively stable amongst age groups between 16-24 and 55-64, however, it drops off significantly for those aged 65-74 and 75+ (70% and 52% respectively, versus 80% or higher in other age groups). Usage is more common amongst people age 34 or under (at least 51% versus a highest of 37% in older age groups).

Usage of app-based minicab services is significantly higher in London (59% versus a highest of 40% in all other regions).

In terms of the **number of apps** used, most app-based minicab users made use of one app only (68% - in line with findings in June 2018, also 68%). Of those that only used one app, the vast majority used Uber

(94%). Respondents aged 16-44 were significantly more likely to use more than one app, compared with those aged 55-64 (lowest of 26% amongst age groups between 16-44 versus 12% of those aged 55-64).

### 6.3 Ride-sharing

As shown in Fig 6.1, when prompted with a list of travel services, 27% of people were aware of internet-arranged or app-based ride-sharing. However very few had used such services (1%). A more detailed look at awareness of internet-arranged or app-based ride sharing shows that results vary significantly by both gender and age. Men were significantly more likely to be aware of internet-arranged or app-based ride sharing (32% versus 23% amongst women). Further to this, younger people were significantly more likely to be aware of internet-arranged or app-based ride sharing than those aged 65 or over (lowest of 30% amongst age groups below 44 versus 17% of those aged 65+).

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”. These questions were asked unprompted.

As shown in figure 6.2, a reduction in cost was the main perceived advantage of ride-sharing, with 67% saying ride-sharing would be cheaper than travelling alone (slightly higher than June 2019 (65%), but in line with December 2018, also 67%). A reduction in cost was more commonly cited among social grades ABC1 (69% versus C2DE 61%).

Other commonly mentioned advantages of ride sharing were:

- It’s environmentally friendly (25%, in line with 24% in June 2019)
- The potential for less congestion (14% in both December and June 2019)
- More social (10%, versus 11% in June 2019)
- Safer than travelling alone (5% - significantly lower than June 2019 – 7%).

The proportion of people saying that there were no advantages to ride sharing has fallen significantly since June 2019 (9% versus 11% in June 2019). Older respondents were significantly more likely to say there were no advantages to ride-sharing (incremental increases from 4% for 16 to 24 year olds to 17% of those aged 65 or over), as were those in social grade C2DE (11% versus 7% of ABC1 social grade), and those that are unaware of internet-arranged or app-based ride sharing (17% versus 7% of those aware).

In terms of the disadvantages of ride-sharing, the most commonly cited was concerns for safety due to travelling with strangers, mentioned by 45% of people. Women were more likely than men to cite this disadvantage (49% versus 41%).

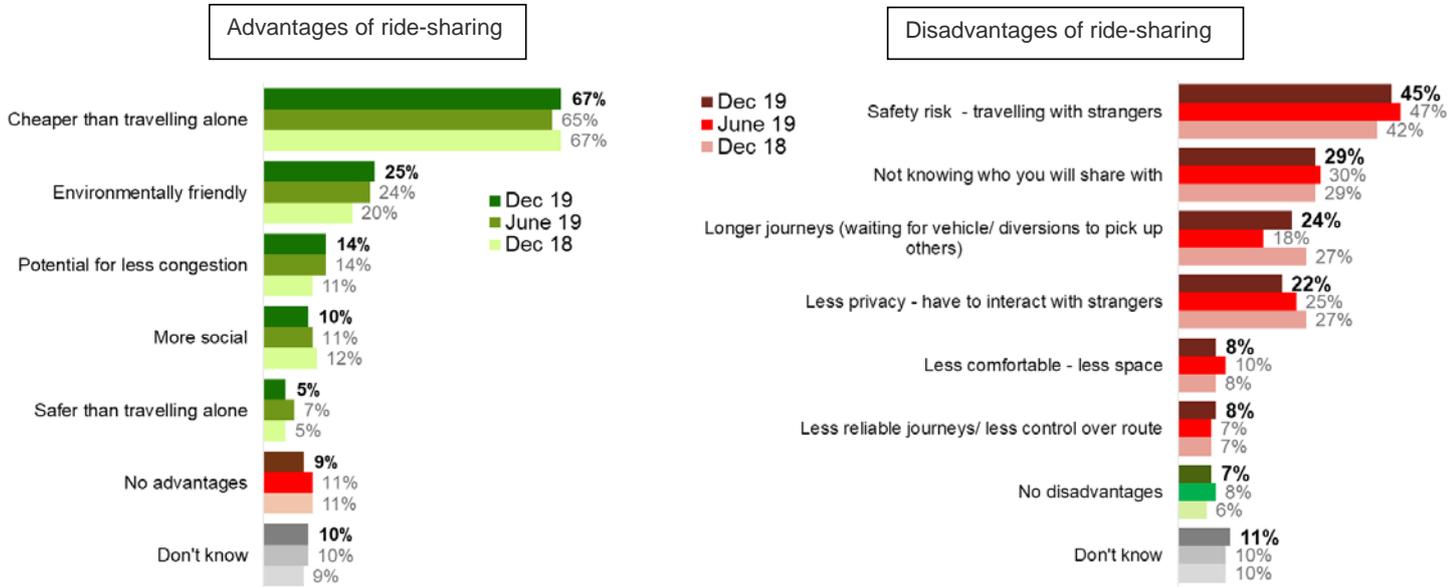
Other disadvantages mentioned were not knowing who you would share with (29%, in line with June 2019, 30%), longer journeys (24%, up from 18% in June 2019), and less privacy (22%, down from 25% in June 2019).

People who were already aware of app-based minicab services were more likely than those with no awareness to mention the longer journey times (26% versus 17%).

Grouping the disadvantages into themes, 68% of people mentioned at least one **stranger-related concern** (similar to June 2019, 70%) (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 28% mentioned a **journey related concern** (significantly higher than June 2019 when 20% 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 6.2 Advantages and disadvantages of ride-sharing, December 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 (December 18: 3,498; June 19: 3,578; December 18: 3,532)

# 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 5 fieldwork took place between 27<sup>th</sup> November – 8<sup>th</sup> December.

## 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 5 to help to develop new questions relevant to flying taxis, app-based minicab services and autonomous vehicles.

## Achieved sample profile and weighting

A total sample of 3,498 interviews were collected at Wave 5. 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 5 is outlined in the following tables.

**Fig A.1. Wave 5 sample profile**

Gender

Sub-category	Achieved sample	Unweighted %	Weighted %	Difference
Male	1,688	48.3	49.0	-0.7
Female	1,810	51.7	51.0	+0.7

Age

Sub-category	Achieved sample	Unweighted %	Weighted %	Difference
16-24	435	12.4	13.3	-0.9
25-34	638	18.2	16.8	+1.4
35-44	502	14.4	15.7	-1.3
45-54	469	13.4	17.1	-3.7
55-64	472	13.5	14.6	-1.1
65-74	528	15.1	13.6	+1.5
75+	454	13.0	8.9	+4.1

Region (GOR)

Sub-category	Achieved sample	Unweighted %	Weighted %	Difference
North East	183	5.2	4.8	+0.4
North West	460	13.2	13.0	+0.2
Yorkshire and the Humber	373	10.7	9.8	+0.9
East Midlands	277	7.9	8.6	-0.7
West Midlands	377	10.8	10.5	+0.3
East of England	420	12.0	11.1	+0.9
London	481	13.8	15.6	-1.8
South East	573	16.4	16.3	+0.1
South West	354	10.1	10.2	-0.1

Urbanity (ONS classification)

Sub-category	Achieved sample	Unweighted %	Weighted %	Difference
Urban	2,960	84.6	81.8	+2.8
Rural	458	13.1	17.5	-4.4

### Working Status

Sub-category	Achieved sample	Unweighted %	Weighted %	Difference
Full time	1,133	32.4	45.4	-13.0
Part time	457	13.1	14.8	-1.7
Retired	1,054	30.1	21.1	+9.0
In education	228	6.5	4.4	+1.9
Not working	626	17.9	14.3	+3.6

### Ethnicity

Sub-category	Achieved sample	Unweighted %	Weighted %	Difference
White	2,906	83.1	85.4	-2.4
Minority ethnic	549	15.7	13.6	+2.1

### Number of cars/vans in household

Sub-category	Achieved sample	Unweighted %	Weighted %	Difference
0	1,033	29.5	18.7	+10.8
1	1,535	43.9	37.0	+6.9
2	726	20.8	32.0	-11.2
3+	204	5.8	12.4	-6.6

### Whether individual has a driving licence

Sub-category	Achieved sample	Unweighted %	Weighted %	Difference
No licence	1,073	30.7	18.7	+12.0
Provisional licence	154	4.4	7.5	-3.1
Full licence	2,248	64.3	73.0	-8.7

# Appendix B: Overview of questions asked at each wave

Question number (used in data)	Questionnaire name	Description	W1	W2	W3	W4	W5
Q1	Internet	How often use internet	Yes	No	No	Yes	Yes
Q2	Smartphone	Whether personally use a smartphone	Yes	No	Yes	No	No
Q3	SmartTrans	Whether use smartphone for range of purposes	Yes	No	Yes	No	No
Q4	Licence	Whether hold UK driving licence	Yes	Yes	Yes	Yes	Yes
Q5	Numcar	Number of cars in household	Yes	Yes	Yes	Yes	Yes
Q6	Fuel	Fuel type(s) of cars in household	Yes	No	No	Yes	No
Q7	CarOwn	Whether personally own/use car	Yes	Yes	Yes	Yes	Yes
Q8	B19	Miles driven per year	Yes	No	No	No	No
Q9	PTFreq	Frequency of travel by public transport	Yes	No	Yes	Yes	No
Q10	BikeFreq	Frequency of bike travel	Yes	No	No	Yes	No
Q11	CarFreq	Frequency of car travel	Yes	No	Yes	Yes	No
Q12	B50	Number of short haul flights in last 12 months	Yes	No	No	No	No
Q13	B51	Number of long haul flights in last 12 months	Yes	No	No	No	No
Q14	B42_31	Agreement with attitude statements re. cycling (x3)	Yes	No	No	No	No

Question number (used in data)	Questionnaire name	Description	W1	W2	W3	W4	W5
Q15	B17	Important factors when buying car	Yes	No	No	No	Yes
Q16	CarWhen	When expect to replace car	Yes	No	No	Yes	Yes
Q17	CarNext	Type of car expect to purchase next	Yes	No	No	Yes	Yes
Q18	Attid1	Agreement with attitude statements (x3)	Yes	No	No	Yes	No
Q19	CarPlan	Methods used to route plan for car journeys	Yes	No	No	No	No
Q20	PTPlan	Methods used to route plan for public transport	Yes	No	No	No	No
Q21	BikePlan	Methods used to route plan for bike journeys	Yes	No	No	No	No
Q22	Jplansat	Ease of planning different journeys (x5)	Yes	No	Yes	No	No
Q23	Mobheard	Travel services heard of	Yes	No	Yes	Yes	Yes
Q24	Mobuse	Travel services used	Yes	No	Yes	Yes	Yes
Q25	Evknow	Knowledge about electric vehicles	Yes	Yes	Yes	Yes	Yes
Q26	EVEnc	Advantages of electric vehicles	Yes	No	Yes	Yes	Yes
Q27	EVProb	Disadvantages of electric vehicles	Yes	No	Yes	Yes	Yes
Q28	AVKnow	Knowledge about autonomous vehicles	Yes	Yes	Yes	Yes	Yes
Q29	AVBen	Advantages of autonomous vehicles	Yes	Yes	Yes	Yes	Yes

Question number (used in data)	Questionnaire name	Description	W1	W2	W3	W4	W5
Q30	AVConcern	Disadvantages of autonomous vehicles	Yes	Yes	Yes	Yes	Yes
Q31	AVFeat	Awareness of self-driving features	Yes	Yes	Yes	Yes	No
Q32	AVUsed	Use of self-driving features	Yes	Yes	Yes	Yes	No
Q33	HGVKnow	Knowledge about HGV platoons	Yes	No	Yes	No	No
Q34	Droneknow	Knowledge about drones	Yes	Yes	Yes	Yes	Yes
Q35	DroneOwn	Whether owned a drone	Yes	Yes	No	Yes	No
Q36	DroneAwar	Awareness of uses of drones	Yes	Yes	No	Yes	No
Q37	DroneSup	Support for different uses of drones	Yes	Yes	No	Yes	No
Q38	Droneconc	Concerns over use of drones	Yes	Yes	No	Yes	No
Q39	AQWorry	Concern about air quality in local area	Yes	No	No	No	No
Q40	CCWorry	Concern about climate change	Yes	No	No	No	No
Q41	Space1	Knowledge about space tourism	Yes	No	Yes	No	Yes
Q42	Hyper1	Knowledge about hyperloops	Yes	No	Yes	No	No
Q43	FlyTaxi1	Knowledge about flying taxis	Yes	No	Yes	No	Yes
Q44	B46a	Safest form of travel	Yes	No	No	No	No
Q45	B46b	Second safest form of travel	Yes	No	No	No	No
Q46	B46c	Third safest form of travel	Yes	No	No	No	No
Q47	A1	How long lived at current home	Yes	No	No	No	No
Q48	CN76	How often use home delivery	Yes	No	No	No	No

Question number (used in data)	Questionnaire name	Description	W1	W2	W3	W4	W5
Q49	F12	Highest qualification	Yes	Yes	Yes	Yes	Yes
Q50	B2	Whether have disability or long-standing health problem	Yes	No	Yes	Yes	Yes
Q51	B39b	Whether disability of health problem makes it difficult to ride bike	Yes	No	No	Yes	Yes
Q52	F15_Hincome	How managing financially	Yes	No	No	No	No
Q53	NS1	Whether work as employer or self-employed	Yes	Yes	Yes	Yes	No
Q54	NS2	Number of people who work at employer/who you employ	Yes	Yes	Yes	Yes	No
Q55	NS3	Whether supervise other employees	Yes	Yes	Yes	Yes	No
Q56	NS4	Job description	Yes	Yes	Yes	Yes	No
Q57	HHIncome	Household income	Yes	Yes	Yes	Yes	No
Q60	MaaS1	Likelihood to use new MaaS travel service	No	No	Yes	No	No
Q61	MaaS2	Likelihood to reduce car use if new service available	No	No	Yes	No	No
Q62	MaaS3	Likelihood to give up ownership of car if service available	No	No	Yes	No	No
Q63	MaaSAdv	Advantages of new service	No	No	Yes	No	No
Q64	MaaSDisAdv	Disadvantages of new service	No	No	Yes	No	No
Q65	UberUse	Whether used Uber in last 3 months	No	No	Yes	No	No
Q66	UberPool	Whether used Uber Pool for last Uber journey	No	No	Yes	No	No
Q67	UberPurp	Purpose of last Uber journey	No	V	Yes	No	No
Q68	UberLength	Length of last Uber journey	No	No	Yes	No	No

Question number (used in data)	Questionnaire name	Description	W1	W2	W3	W4	W5
Q69	UberAlt	How would have travelled if not used Uber	No	No	Yes	No	No
Q70	UberPNot	Why didn't use Uber Pool	No	No	Yes	No	No
Q71	UberPCost	How much cheaper Uber Pool would need to be to use	No	No	Yes	No	No
Q71	RsAdv	Advantages of ride-sharing	No	No	Yes	Yes	Yes
Q72	RSDisAdv	Disadvantages of ride-sharing	No	No	Yes	Yes	Yes
Q73	RSCost	How much cheaper than regular taxi ride-sharing would need to be to use	No	No	Yes	No	No
Q74	KnowledgeElectricBikes	Knowledge about electric bikes	No	No	No	Yes	No
Q75	PersonalUseElectricBikes	Usage of electric bikes	No	No	No	Yes	No
Q76	KnowledgeElectricScooter	Knowledge of electric scooters	No	No	No	Yes	No
Q77	PersonalUseElectricScooters	Usage of electric scooters	No	No	No	Yes	No
Q78	AppMinicab	Number of apps used for app-based minicab services	No	No	No	Yes	Yes
Q84	FlyTaxi2	Concerns about flying taxis	No	No	No	No	Yes
Q85	AVUsedVehicle	AV features present in vehicle	No	No	No	No	Yes
Q86	AVUsedDriver	AV features used	No	No	No	No	Yes
Q87	AppUsed	App-based minicab service used	No	No	No	No	Yes

# Appendix C: Wave 5 questionnaire

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

### **SHOW SCREEN – READ OUT**

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**

### **SHOW SCREEN**

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

SCRIPTERS: DO NOT INVERT

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**

### **SHOW SCREEN**

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**

### **SHOW SCREEN**

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.

SCRIPTERS: DO NOT INVERT

1. 1
2. 2
3. 3 or more
4. None

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

### **SHOW SCREEN**

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

**F4: All who personally own\continuously use car\van (Q7\1)**

SHOW SCREEN – MULTI CHOICE

Q.15 (B17). Looking at this list, which of these things are important to you when buying a car or van?

SCRIPTERS: RANDOMISE LIST ORDER

SCRIPTERS: MAKE CODES 3 AND 4 MUTUALLY EXCLUSIVE

1. Comfort
  2. Costs – purchase\running\resale value\tax\insurance
  3. Small engine
  4. Large engine
  5. Environmentally friendly\low CO2 emissions
  6. Image of brand\brand preference
  7. Image of model\model preference
  8. Interior space\functionality\boot size
  9. Reliability
  10. Safety
  11. Speed\performance
  12. Style\design
  13. Features – Satnav; CD player; music system; power steering, etc.
  14. Something else – PEN WRITE IN
- Don't know

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

SHOW SCREEN

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?

SCRIPTERS: DO NOT INVERT

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)**

SHOW SCREEN

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

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

SHOW SCREEN – MULTI CHOICE

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

SCRIPTERS: DO NOT INVERT

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)**

SHOW SCREEN – MULTI CHOICE

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

SCRIPTERS ALL OF THIS APPEARS ON ONE SCREEN

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

SCRIPTERS: DO NOT INVERT

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 for travel in the UK?

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

**F46: If used 1 app (Q78 = 1)**

Q.87 (AppUsed). You said that you only use one app-based minicab service. What app do you use?

SHOW SCREEN. SELECT ONE ONLY.

1. Uber
2. Bolt
3. Kapten
4. Addison Lee (only select if booked taxis through the app)

5. ViaVan
6. Gett
7. FREE NOW (formerly mytaxi)
8. Ola Cabs
9. Other (specify)
10. Don't know

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

SHOW SCREEN

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

SCRIPTERS: DO NOT INVERT

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**

DO NOT SHOW SCREEN UNTIL TOLD TO DO SO

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

DO NOT SHOW SCREEN – MULTI CHOICE

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**

DO NOT SHOW SCREEN – MULTI CHOICE

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**

SHOW SCREEN

Q.28 (AVKnow). 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?

SCRIPTERS: DO NOT INVERT

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**

DO NOT SHOW SCREEN UNTIL TOLD TO DO SO

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

DO NOT SHOW SCREEN – MULTI CHOICE

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**

DO NOT SHOW SCREEN – MULTI CHOICE

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

**F44: F4: All who personally own\continuously use car\van (Q7\1) AND have a valid UK driving licence (Q4\1, 2, 3)**

SHOW SCREEN – MULTI CHOICE

Q.85 (AVUsedVehicle). 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, if any of these, are available in your vehicle(s)?

SCRIPTERS: DO NOT INVERT

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

**F45: All who have at least one self-driving feature in vehicle (Q85\1-9)**

SHOW SCREEN – MULTI CHOICE

Q.86 (AVUsedDriver). Still thinking about your vehicle(s), which if any of these have you used as a driver in your vehicle(s)?

**SCRIPTING: ONLY SHOW RESPONSES CODED AT Q85**

SCRIPTERS: DO NOT INVERT

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**

SHOW SCREEN

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

SCRIPTERS: DO NOT INVERT

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**

**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 (RSAdv). 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**

(Intro 5): Developments in science and technology mean that there are some new and innovative ways of travelling that are being developed.

I'll ask you about two of these over the next few questions.

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

**SHOW SCREEN**

Q.41 (Space1): **Space tourism** will allow members of the public to buy tickets to travel to space and back.

How much, if anything, would you say you know about space tourism?

SCRIPTERS: DO NOT INVERT

1. Hadn't heard about this before now
2. Hardly anything but I've heard of this

3. A little
  4. A fair amount
  5. A lot
- Don't know

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

SHOW SCREEN

Q.43 (FlyTaxi1): **Flying taxis** are drones that can fly passengers on short journeys within cities, without the need for a pilot.

How much, if anything, would you say you know about flying taxis?

SCRIPTERS: DO NOT INVERT

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

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

SHOW SCREEN

Q.84 (FlyTaxi2) Flying taxis would provide an air taxi service for the public which currently is not available in the UK.

What concerns, if any, do you have over the use of flying taxis?

DO NOT PROMPT

1. Safety concerns: Risk for passengers
2. Safety concerns: Risk for people on the ground
3. Safety concerns: other/general
4. Legal liability (in case of incident)
5. Security concerns (hackers, terrorists)
6. Environmental concerns
7. Airspace congestion
8. Noise concerns
9. Technology not developed enough/Too early to adopt such technology
10. Costs too much to develop the technology
11. Take off/Landing location concerns
12. Concerns over reliability of journeys (e.g. getting to destination on time)
13. Ethical/moral concerns regarding driverless vehicles
14. Unattractive/eyesore
15. Will be too expensive to use/ not a realistic travel option for most people
16. Reduced investment in public transport
17. Other – Please specify
18. No concerns [SINGLE CODE]
19. Don't know [SINGLE CODE]

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

SHOW SCREEN

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.

SCRIPTERS: DO NOT INVERT

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**

SHOW SCREEN-MULTI CHOICE

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 APLPLY

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**

SHOW SCREEN

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?

SCRIPTERS: DO NOT INVERT

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