



Department  
for Transport

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

## **Waves 1 and 2 summary report**

October 2018

# Contents

<b>1.</b>	<b>Introduction</b>	<b>1</b>
<b>2.</b>	<b>Summary of findings</b>	<b>2</b>
<b>3.</b>	<b>Awareness of new technologies</b>	<b>4</b>
<b>4.</b>	<b>Public attitudes to car ownership and connectivity</b>	<b>5</b>
<b>5.</b>	<b>Electric vehicles</b>	<b>6</b>
<b>6.</b>	<b>Automated vehicles and car ownership</b>	<b>8</b>
<b>7.</b>	<b>Drones</b>	<b>10</b>
<b>8.</b>	<b>Future modes of travel</b>	<b>13</b>

# 1. Introduction

## 1.1 Background to the survey

In 2017, the Department for Transport (DfT) commissioned Kantar Public to conduct six waves of research to track public attitudes and behaviours relevant to transport in England. This report presents findings from waves 1 and 2 of the survey.

The survey aims to fill gaps in knowledge on key areas and emerging topics such as public attitudes to automated vehicles and future modes of travel. It is conducted biannually and comprises a face-to-face omnibus survey. Waves 1 and 2 were undertaken in December 2017 and June 2018, respectively.

Survey fieldwork is conducted on the Kantar TNS 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 Public 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.

Around 3,500 adults in England were interviewed at each wave of the survey. The sample is representative of individuals aged 16 or over living in England. Data were also 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 contained a larger number of questions than the Wave 2 questionnaire. The Wave 2 questionnaire contained a sub-set of the key awareness and attitudes questions asked at Wave 1.

The full Waves 1 and 2 questionnaires are included in Appendix B together with a summary of questions that were included in both waves.

For questions asked on both waves of the survey, the Wave 2 (June 2018) results will be reported while changes from Wave 1 (December 2017) will also be noted. For questions not asked at Wave 2, the results reported will be from Wave 1. The results for questions asked at both waves show a high degree of consistency between Waves 1 and 2, which is helpful in validating those findings. A small number of changes in attitudes do seem to have occurred between waves. This might be indicative of a wider change in public attitudes, but further waves of survey data will be needed before determining whether changes represent real trends.

Significant differences at the sub-group level 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. Users are however encouraged to treat changes flagged as significant with caution. Differences are noted for the key demographic sub-groups of gender, age, social grade and urbanity.

Appendix C provides a glossary of terms used in the report.

## 2. Summary of findings

### 2.1 Overall awareness of current, emerging and future technologies

- Public awareness of current and emerging technologies was high. In June 2018, approximately nine in ten said they were aware of drones (94%), electric vehicles (93%) and automated vehicles (87%).
- Awareness of future modes of travel was higher for some modes than others in December 2017. Seven in ten were aware (72%) of space tourism, while around one in four (27%) were aware of hyperloops and one in five (20%) were aware of flying taxis.
- One third (36%) of respondents claimed to be aware of HGV platoons.

### 2.2 Public attitudes to car ownership and connectivity

- In December 2017, car owners were very likely to agree with the statements “I enjoy the freedom and independence I get from my car or van” (94%) and “My current lifestyle means I need to own a car or van” (87%).

### 2.3 Electric vehicles (EVs)

- The environmental benefits of EVs were the most widely mentioned advantage in December 2017, with two thirds (65%) mentioning this spontaneously. Fewer than one in ten (7%) did not spontaneously mention any advantages. When asked to think of disadvantages of EVs over petrol or diesel cars, issues around recharging and battery life were most commonly mentioned by 56% and 41% respectively.
- In December 2017, two per cent of respondents who had a car in their household owned a hybrid or fully EV. Three quarters (73%) owned a petrol vehicle and half (48%) owned a diesel vehicle (this adds up to more than 100% because people can have multiple vehicles in their household).
- Interest and future purchasing intentions were reasonably favourable towards hybrid and EVs, with two in ten (21%) saying that the next car or van they bought would likely be a hybrid or EV.

### 2.4 Automated vehicles (AVs)

- Overall, respondents were more likely to name disadvantages than advantages in relation to AVs. One third (35%) said there were no advantages to AVs in June 2018, and a further 14% stated that they “don’t know”.
- Safety through reduced driver error was the most commonly cited benefit of AVs, mentioned by two in ten (20%) respondents. Disadvantages included potential equipment failure (50%) and vehicles’ inability to react to unexpected situations (35%).
- Awareness of driver assistance features was high, with three quarters (73%) having heard of at least one feature. The most commonly used were in-car Wi-Fi and adaptive cruise control.

### 2.5 Drones

- In June 2018, one in ten (11%) adults in England had used a drone.
- Over half of respondents mentioned spontaneously the impact of drones on privacy as a concern (59%).
- Drones used for leisure purposes (71%), and in a military context (70%), were the best known applied uses. While half (48%) were aware of drones used for emergency responses purposes such as search and rescue, this was also the category which earned the highest support, with over eight in ten (84%) saying they supported the use of drones in this context.

- Two in ten (20%) adults stated their support for all named uses of drones in the survey. Full support was mostly likely among those with the highest levels of awareness.

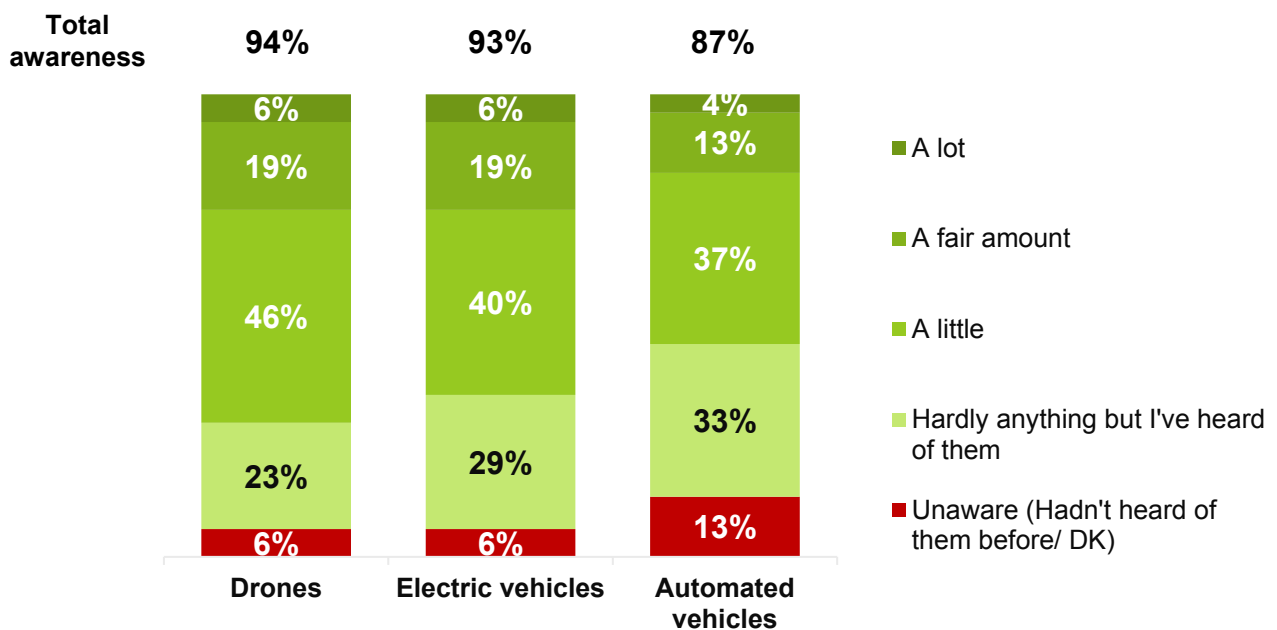
# 3. Awareness of new technologies

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

Awareness of new technologies was high in June 2018, with roughly nine in ten claiming awareness of each of the three technologies: drones, electric vehicles and automated vehicles. Awareness of drones and EVs was highest, with 94% and 93% saying they were aware of these respectively. Awareness of AVs was slightly lower, with almost nine in ten (87%) saying they were aware.

While overall awareness was high, depth of knowledge was limited. The large majority of those aware said that they only knew 'a little' or 'hardly anything' about the technology in question (Fig 3.1).

**Fig 3.1: Awareness of new technologies, June 2018**



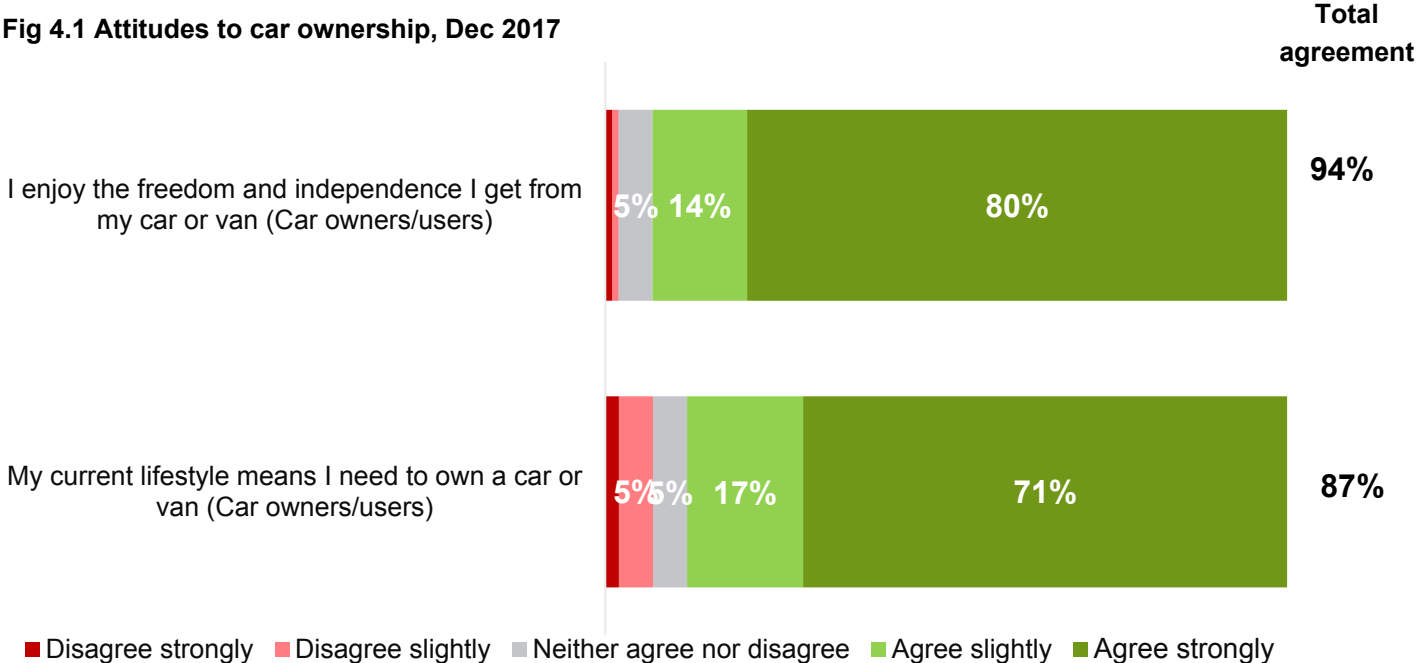
Source: Q25. How much, if anything, would you say you know about electric vehicles? / Q28. How much, if anything, would you say you know about driverless or self-driving vehicles? / Q34. How much, if anything, would you say you know about drones?

Base: All respondents – June 2018 (3,538); Dec 2017 (3,499)

# 4. Public attitudes to car ownership

Car users were very likely to agree strongly with two statements regarding the importance of car ownership.

**Fig 4.1 Attitudes to car ownership, Dec 2017**



Source: Q18. How much do you agree or disagree with the following statements...?  
 Base: All who personally own/ continuously use a car/van – Dec 2017 (2,162)

# 5. Electric vehicles (EVs)

## 5.1 Awareness of electric vehicles

Over nine in ten (93%) claimed to be aware of EVs in June 2018. While awareness levels were consistent between December 2017 and June 2018, depth of knowledge – those who said they knew ‘a fair amount’ or ‘a lot’ –increased significantly from one in five (20%) to one in four (25%). This depth of knowledge varied regionally, proving to be significantly higher than average in the East of England (38%), South East (33%), and East Midlands (31%). Future waves will be needed to validate whether the strengthening depth of knowledge and the regional differences observed in June 2018 are true trends.

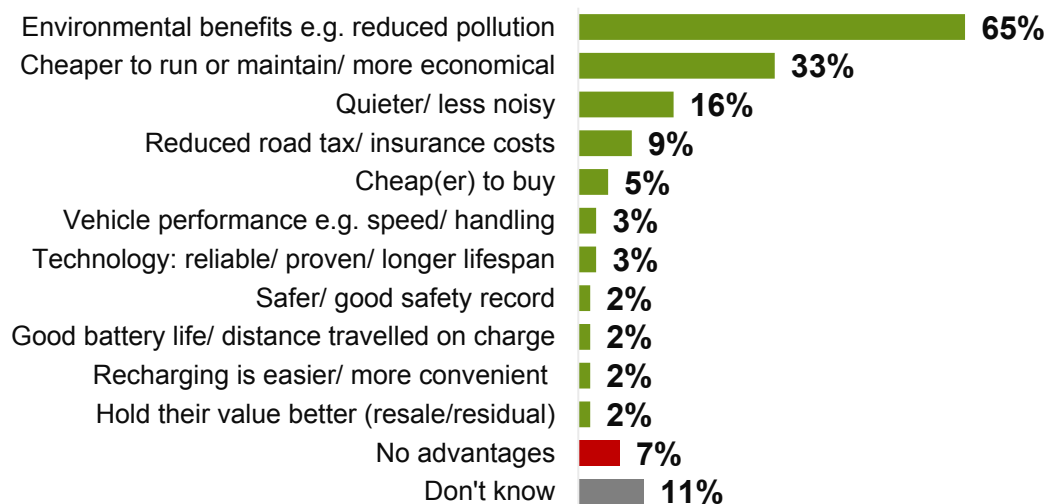
## 5.2 Perceived benefits and concerns surrounding electric vehicles

The categories shown in Fig 5.2.1 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, mentioned by two thirds (65%) of respondents. The next most mentioned was the lower running costs associated with EVs (33%).

The prioritisation of these two key features was also apparent when car owners and users were asked what was important to them when buying a new car. A third of people (30%) said that ‘environmentally friendliness’ or ‘low CO2 emissions’ were important to them when buying a new car. Moreover, almost two thirds (62%) said that cost (including purchase, running, resale value, tax and insurance) was an important purchasing decision factor.<sup>1</sup>

Seven per cent perceived there to be no advantages to EVs, while 11% said they didn’t know of any (11%).

**Fig 5.2.1 Perceived advantages of electric vehicles, Dec 2017**



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

Base: All respondents – Dec 2017 (3,499)

Respondents mentioned a broader range of disadvantages in relation to EVs (Fig 5.2.2). Battery life and charging were common themes: four in ten mentioned recharging (42%) and battery life/distance travelled (41%) as disadvantages, while three in ten (30%) mentioned a scarcity of charging points. Distance travelled

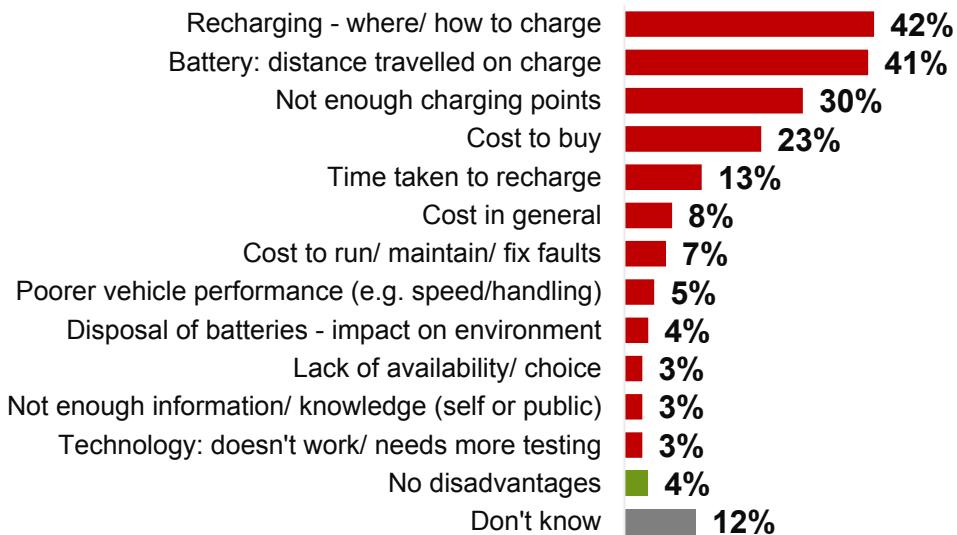
<sup>1</sup> Base: Q15. All who personal own/ continuously use a car/van – Dec 2017 (2,162)



and battery life were of particular concern for people living in rural areas, who were significantly more likely (56%) to state this as a disadvantage than urban dwellers (37%).

While the long term running costs of EVs were perceived as an advantage, the upfront cost of buying a vehicle was considered a disadvantage by one quarter (23%) of people.

**Fig 5.2.2 Perceived disadvantages of electric vehicles, Dec 2017**



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

Base: All respondents – Dec 2017 (3,499)

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

In December 2017, two per cent of respondents who had a car or van in their household said they owned a hybrid or fully electric vehicle. By comparison, three quarters (73%) owned a petrol vehicle and half (48%) owned a diesel vehicle. Over two fifths (43%) of households reported that they have more than one car or van in their household; those with more than one car or van in the household were able to select more than one type of fuel.

Despite low ownership levels, interest and future purchasing intentions were reasonably favourable towards hybrid and EVs.<sup>2</sup> A fifth (21%) of those who intended to replace their car or van (with either a new or second-hand vehicle) said they were most likely to buy a hybrid or EV next time and around a fifth (18%) of those who planned to purchase a car *in the next 12 months* said they would be most likely to choose a hybrid or EV. Likelihood to next purchase a hybrid or EV was higher for those who expected their next purchase to be less imminent. A quarter (23%) of those expecting to purchase their next car in two or more years' time said this was most likely to be a hybrid or EV.

<sup>2</sup> Source: Q17. What type of car or van do you think you will most likely purchase or lease next time?/ Q16. When, if at all, do you think you will next buy or replace a car or van, either new or second-hand?

Base: Q17. All who will buy/replace their current car or van (1,718); Q15. All with a valid UK driving licence – Dec 2017 (2,490)

# 6. Automated vehicles (AVs) and car ownership

## 6.1 Awareness of automated vehicles

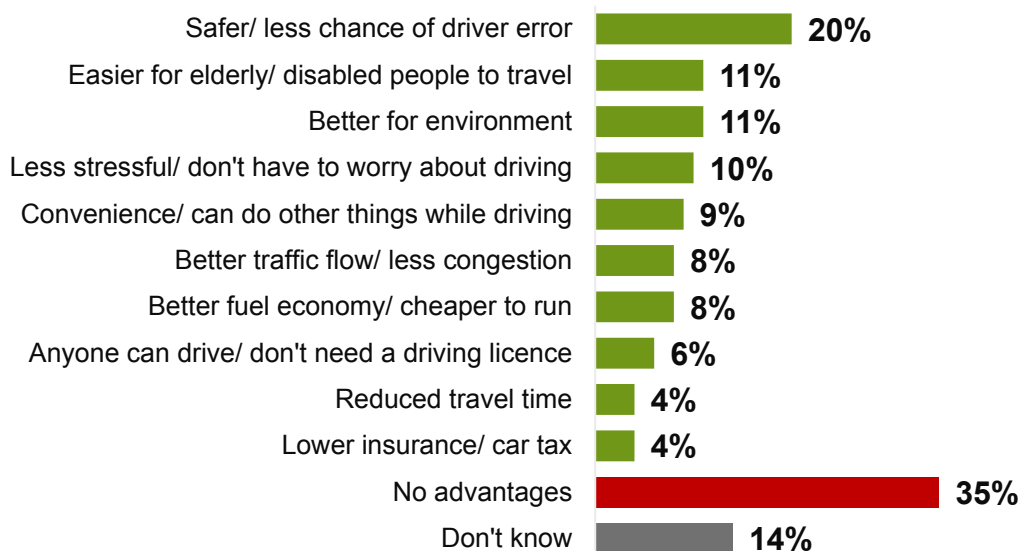
Almost nine in ten respondents (87%) said they had at least heard of AVs in June 2018. This has significantly increased since December 2017 (83%), although data from future waves will be required to validate whether this is a true trend. Depth of knowledge on the topic was lower, with a third (33%) saying they knew ‘hardly anything but had heard of’ AVs. In total, 13% had not heard of them at all.

## 6.2 Perceived benefits and concerns surrounding automated vehicles

When asked for a top of mind response, half (51%) could mention at least one advantage of AVs, compared with eight in ten (82%) who could think of at least one disadvantage (Fig 6.2.1, Fig 6.2.2). One third (35%) said there were no advantages, while a further 14% responded that they “don’t know” (therefore 49% could not name any advantages). Spontaneous mentions of any disadvantages of AVs were more likely than average to come from those aware of AVs (86%) compared with those unaware (59%).

There was some conflict between the perceived advantages and disadvantages of AVs. For example, a fifth (20%) described increased safety as an advantage. However, six in ten (62%) described safety issues as a disadvantage, including system failure, the vehicles’ interactions with other human drivers, and vehicles unable to react to unexpected situations. In addition, while one in ten (10%) described not having to worry about driving as an advantage of AVs, 13% stated their concerns around drivers paying less attention on the road.

**Fig 6.2.1 Perceived advantages of automated vehicles, June 2018**



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

Base: All respondents – June 2018 (3,538)

**Fig 6.2.2 Perceived disadvantages of automated vehicles, June 2018**



Source: Q30. What do you think are the disadvantages, if any, of fully driverless or self-driving vehicles?  
 Base: All respondents – June 2018 (3,538)

**6.3 Driver assistance features: awareness and usage**

Respondents were presented with a range of driver assistance features:<sup>3</sup>

- Automated parking
- Adaptive cruise control
- Automatic emergency braking
- Lane assist
- Remote control drive or remote-control parking
- Traffic jam assist
- In-car Wi-Fi connection (not classified as “driver assistance”)

In June 2018, just over seven in ten (73%) said they were aware of at least one of the above and three in ten (30%) had used one or more of these features, with in-car Wi-Fi (18%) and adaptive cruise control (17%) the most commonly mentioned. Reported usage was highest among men (37%) and those aged between 35 and 44 (38%).

<sup>3</sup> 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? / Q32. And which, if any of these, have you used yourself?  
 Base: Q31. All respondents – June 2018 (3,538) / Q32. All with a valid UK driving licence (rebased) – June 2018 (2,300)

# 7. Drones

## 7.1 Awareness of drones

In June 2018, 94% of people said that they had at least heard of drones. This was fairly consistent with awareness levels in December 2017 (92%). Depth of knowledge was also high, with almost three quarters (70%) saying they knew at least 'a little'. A quarter (25%) of respondents said they knew a 'fair amount' or 'a lot' about drones.

Men were more likely than average to state that they knew at least 'a little' (77%), along with people aged 16 to 44 (75%) and those occupying the ABC1 socio-economic group (76%). People living in the South and Midlands were also more likely to have a higher than average knowledge of drones. In particular, eight in ten living in the South East (82%) and East Midlands (79%) said they knew at least 'a little', compared with just five in ten in the North East (53%).

## 7.2 Drone usage

One in ten (11%) people have ever used a drone.<sup>4</sup> Those aged between 16 and 34 were significantly more likely (17%) to have used a drone than average, along with men (15%) and households with any children present (14%).

## 7.3 Perceived concerns surrounding drones

Eight in ten (79%) had at least one concern regarding the use of drones (Fig 7.3.1). Although one in six (15%) could not think of any concerns, this was more common among people with the lowest awareness (those who had never heard of them before or knew 'hardly anything', 19%). Older people were also significantly more likely to have any concerns, rising from 75% of 16 to 34 year olds to 84% of 65 to 74 year olds. Overall, levels of concern remained consistent from December 2017 to June 2018.

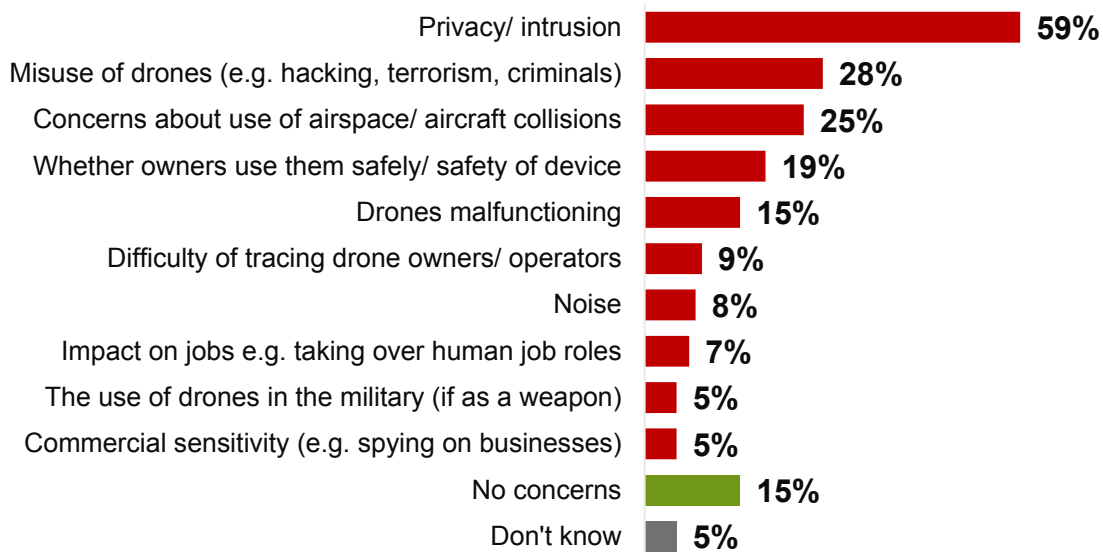
Privacy issues stood out as the biggest concern; six in ten (59%) mentioned this unprompted. Around three in ten also mentioned the potential misuse of drones for criminal activity (28%) and a quarter mentioned airspace or aircraft collisions (25%). Concern for this latter issue was significantly higher in rural (31%) than urban (23%) areas.

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<sup>4</sup> Source: Q35. Have you ever personally used a drone?

Base: Question asked to all who know something about drones – June 2018 (3,272) but re-based on all respondents (3,538)

**Fig 7.3.1 Concerns surrounding the use of drones, June 2018**



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

Base: All respondents – Dec 2017 (3,499); June 2018 – (3,538)

## 7.4 Applied used of drones

### 7.4.1 Awareness of uses

Respondents were presented with a pre-defined list of potential uses for drones:<sup>5</sup>

- Leisure use (e.g. flying drones for fun, taking pictures/videos)
- Armed forces/military use (e.g. surveillance, airstrikes)
- Police use (e.g. monitoring borders, surveillance)
- Professional photography, filming and journalism
- Emergency response (e.g. search and rescue)
- Retail use (e.g. package delivery, stock checking)
- Infrastructure management (e.g. building/bridge inspection, monitoring crops)

Awareness of drones for leisure and military use was highest, with seven in ten saying that they know about this (71% and 70%, respectively). Six in ten were aware of drones in a policing (63%) or professional photography (62%) context. Around half (48%) said they know about drone use for emergency response. The least known uses were retail (39%) and infrastructure management (36%).

Only eight per cent said they had not heard of any of the above potential uses of drones. This correlated with the general awareness levels of drones outlined in section 7.1.

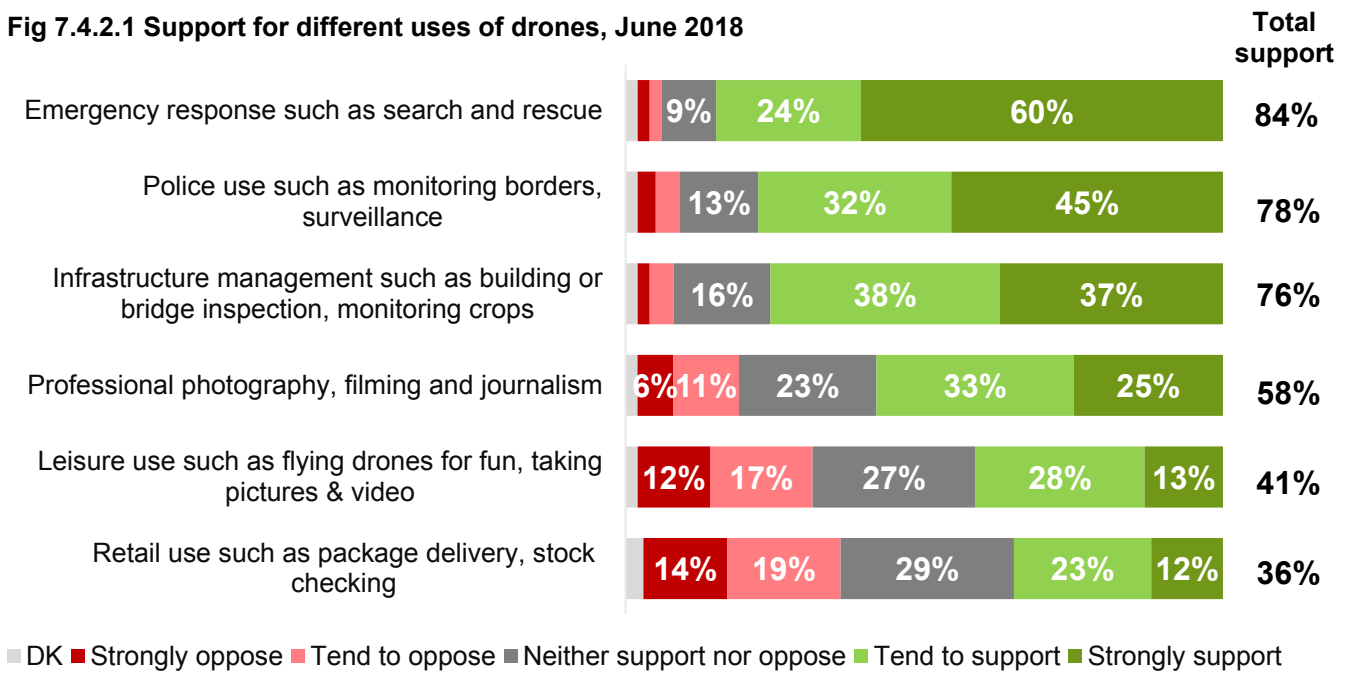
### 7.4.2 Support for uses of drones

From the listed uses of drones, emergency response received the highest reported support. This was closely followed by police use and infrastructure management, the latter of which scored highly despite only a third (36%) having heard of it before. For the drone uses least actively supported, a significant proportion said they 'neither supported nor opposed' the use.

<sup>5</sup> Source: Q36. Which of these uses of drones have you heard of?

Base: All respondents – Dec 2017 (3,499); June 2018 (3,538)

**Fig 7.4.2.1 Support for different uses of drones, June 2018**



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

Base: All respondents – June 2018 (3,538)

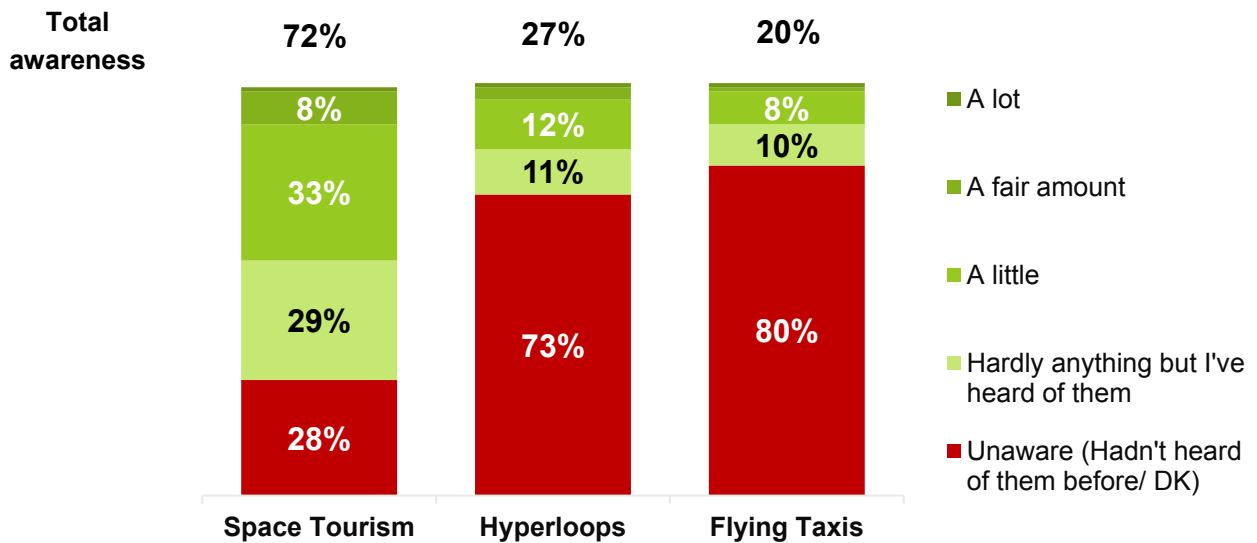
A fifth (20%) supported all six named uses of drones. This was significantly more likely to be the case amongst those with the highest knowledge of drones. Seven in ten (70%) of those who claimed to know ‘a lot’ about drones supported all six uses, compared with only one in ten (12%) of those who had heard ‘hardly anything’ about them, and six per cent of those who had never heard of them before. However, an absence of support does not mean active opposition – a significant proportion of these respondents said either they neither supported nor opposed the uses, or didn’t know.

# 8. Future modes of travel

## 8.1 Awareness of future modes of travel: space tourism, hyperloops, flying taxis

Awareness of a range of future modes of travel varied greatly. While almost three quarters knew of space tourism (72%), only one quarter knew about hyperloops (27%), and even fewer knew about flying taxis (20%). Depth of knowledge was also limited, with the majority of those who were aware saying they only knew 'a little' or 'hardly anything'.

**Fig 8.1.1 Awareness of space tourism, hyperloops and flying taxis, December 2017**



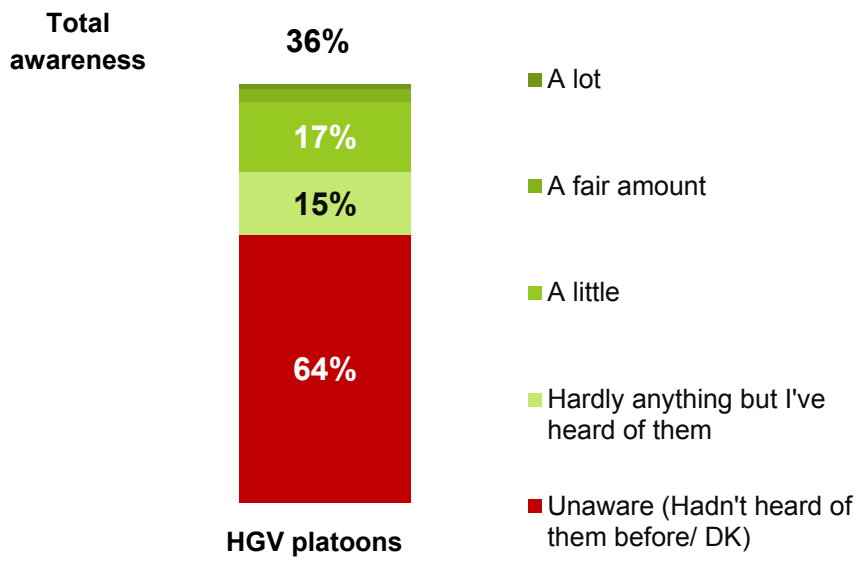
Source: Q41. How much, if anything, would you say you know about space tourism? / Q42. How much, if anything, would you say you know about hyperloops? / Q43. How much, if anything, would you say you know about flying taxis?

Base: All respondents – Dec 2017 (3,499)

## 8.2 Awareness of HGV platoons

Around a third (36%) claimed to be aware of HGV platoons in December 2017. Awareness levels were correlated with age, with older people claiming to know more about this technology than younger people. Men were also significantly more likely to claim awareness (46%) than women (26%).

**Fig 8.2.1 Awareness of HGV platoons, December 2017**



Source: Q33. How much, if anything, would you say you know about HGV platoons?

Base: All respondents – Dec 2017 (3,499)