Traffic solution or technical hype?

Representative population survey on delivery drones and air taxis in Germany

www.skylimits.info
Background of the Sky Limits project

Delivery drones and air taxis are no longer just science fiction. In the coming years it is intended that they will relieve the traffic situation on the ground and aid sustainability. Politicians, commerce and community organisations are currently engaged in hot debate on their potential use. Germany's Transport Minister Andreas Scheuer recently stated that the use of delivery drones will become a reality in the next three years. But what does the population feel about the use of delivery drones and air taxis in urban airspace?

The Sky Limits project ("The sky is the limit – the future use of urban airspace", www.skylimits.info ) being carried out by Wissenschaft in Dialog (WiD) and Technische Universität Berlin (TU Berlin) has obtained relevant findings on this question. This exploratory project aims to systematically identify the chances and challenges presented by unmanned aerial vehicles. It combines literature analysis, attitude research and the use of participatory formats with experts and members of the public. In this way the project aims to create a basis for discussion and also to develop recommendations for practical action on the part of politicians, planners and the commercial sector. Sky Limits is funded by the Federal Ministry of Education and Research (BMBF) as part of its Innovation and Technical Analysis (ITA) initiative.

The project’s attitude research was carried out in two stages. It focused primarily on examining the population’s attitudes towards delivery drones and air taxis and assessing the extent to which individuals would use these. First of all, in autumn 2019, WiD and TU Berlin commissioned the opinion research institute forsa to run five focus groups in Berlin, Stuttgart and Erfurt in order to gain an initial qualitative insight into the opinions of the population (see page 3). The project team then commissioned forsa to carry out a telephone survey of 1,000 people between 20 and 29 January 2020.

The survey reveals the attitudes and personal usage intentions of the respondents regarding delivery drones and air taxis. Furthermore, it provides information showing which factors exert a substantial influence on the attitudes of the respondents towards delivery drones and air taxis and which advantages and disadvantages are seen as being particularly relevant. It also offers insights relating to the sex and age of the respondents.

Taken together, the data presented here provide the most extensive view so far of population attitudes to transport drones. The research results as a whole show that the population is sceptical with regard to delivery drones and air taxis and that most people would rather not use them personally. The results also clearly show that aspects such as environmental friendliness and safety are particularly critical for most respondents. At the same time, major doubts are apparent in relation to potential job losses and the noise and stress caused by delivery drones and air taxis.
Voices from the preliminary focus groups...

...on the general attitude:

“I’d find it practical and innovative, it’s kind of exciting, I’d like to try it out” [Stuttgart I].

When I imagine looking out of here, and there’d be things buzzing about everywhere, that’s not really what I want” [Erfurt].

...on factors influencing the attitudes of the respondents:

“Not just that the cities are all full of rubbish, but that up there everywhere is full of rubbish too and then we live on a kind of rubbish planet” [Berlin II].

“I have to be honest, if I get a carpet delivered and the carpet falls down and lands on a child who gets injured [...] I’d be devastated” [Berlin I].

...on personal usage intentions:

“At the moment I’m not really in favour, but I know I’d use it all the same” [Berlin II].

“I think it’s astonishing that there are no pilots any more. I’m not sure if I’d be prepared to put myself at the mercy of the technology like that” [Berlin I].

...on possible advantages of the technologies:

“Especially at rush-hours and peak times here in the inner city and places like this, you can easily take half or three quarters of an hour to get from one corner to the other, and with one of those it would take five minutes” [Stuttgart II].

“Up to a certain size the ecological footprint is probably better than with classic parcel delivery lorries” [Stuttgart II].

These comments were made in German and have been translated into English.
Source: Sky Limits focus groups – WiD / TÜ Berlin / forsa
Basis: Five focus groups, each with eight participants and of 90 minutes' duration | Dates and places: 19.09.2019 (Berlin), 30.09.2019 (Stuttgart) and 02.10.2019 (Erfurt).
In Berlin and Stuttgart two focus groups with different age groups (18-44 years and 45-65 years) were conducted in each case.
How much would you agree with the following statements about parcel deliveries with drones and air taxis?

In future drones should be used to deliver consumer goods and products.

- Strongly agree: 13
- Somewhat agree: 12
- Neither agree nor disagree: 19
- Somewhat disagree: 21
- Strongly disagree: 34

Air taxis should be used for general passenger transportation and thus for individual mobility.

- Strongly agree: 11
- Somewhat agree: 10
- Neither agree nor disagree: 17
- Somewhat disagree: 22
- Strongly disagree: 40

Drones should only be used in emergencies, e.g. for fast delivery of medicines.

- Strongly agree: 41
- Somewhat agree: 22
- Neither agree nor disagree: 15
- Somewhat disagree: 11
- Strongly disagree: 11

Air taxis should only be used in medical emergencies, e.g. for fast transport to hospital.

- Strongly agree: 41
- Somewhat agree: 24
- Neither agree nor disagree: 10
- Somewhat disagree: 12
- Strongly disagree: 13

Most respondents were opposed to the use of delivery drones and air taxis. Only 25 per cent agreed that drones should be used to deliver consumer goods and products. Only 21 per cent agreed that air taxis should be used for general passenger transport.

In contrast to the generally adverse attitude to their general use, the great majority of respondents approved of their use in medical emergencies. Almost two thirds of respondents agreed with using them for such purposes as rapid delivery of medicines or transport to hospital.
How much would you agree with the following statements about parcel deliveries with drones and air taxis?

### Drones should not be put to use for parcel deliveries at all as a matter of principle.

<table>
<thead>
<tr>
<th></th>
<th>strongly agree</th>
<th>somewhat agree</th>
<th>neither agree nor disagree</th>
<th>somewhat disagree</th>
<th>strongly disagree</th>
<th>don’t know / no answer</th>
</tr>
</thead>
<tbody>
<tr>
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<td>17</td>
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<td>23</td>
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<td>female</td>
<td>27</td>
<td>9</td>
<td>19</td>
<td>23</td>
<td>22</td>
<td>1</td>
</tr>
</tbody>
</table>

### Air taxis should not be put to use at all as a matter of principle.

<table>
<thead>
<tr>
<th></th>
<th>strongly agree</th>
<th>somewhat agree</th>
<th>neither agree nor disagree</th>
<th>somewhat disagree</th>
<th>strongly disagree</th>
<th>don’t know / no answer</th>
</tr>
</thead>
<tbody>
<tr>
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<td>17</td>
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<td>15</td>
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<td>35</td>
<td>1</td>
</tr>
<tr>
<td>female</td>
<td>28</td>
<td>9</td>
<td>20</td>
<td>22</td>
<td>21</td>
<td>1</td>
</tr>
</tbody>
</table>

The basic sceptical attitude towards delivery drones and air taxis is also apparent in relation to whether drones should not be put to use at all as a matter of principle. It is generally known from research into acceptance that men normally rate technology more positively than women. This is also apparent in relation to delivery drones and air taxis. Female respondents agreed more often than male respondents with the statement that delivery drones and air taxis should not be put to use at all as a matter of principle. A similar difference is also apparent in relation to the question of whether delivery drones and air taxis should be used to deliver consumer goods and products or for general passenger transport. In addition, men would be more likely to use both these forms of technology than women.
To what extent would you agree with the following statements about your personal use?

Personally, I would generally use drones for the delivery of consumer goods.

- 13 strongly agree
- 8 somewhat agree
- 11 neither agree nor disagree
- 22 somewhat disagree
- 46 strongly disagree

Personally, I would generally use air taxis for my individual mobility.

- 11 strongly agree
- 7 somewhat agree
- 10 neither agree nor disagree
- 20 somewhat disagree
- 52 strongly disagree

Personally, I would use drones in emergencies only e.g. for the fast delivery of medicines.

- 38 strongly agree
- 22 somewhat agree
- 12 neither agree nor disagree
- 10 somewhat disagree
- 18 strongly disagree

Personally, I would use air taxis in emergencies only e.g. for fast transport to hospital.

- 34 strongly agree
- 23 somewhat agree
- 13 neither agree nor disagree
- 12 somewhat disagree
- 19 strongly disagree

The personal intention to use delivery drones and air taxis was fairly low in accordance with the generally negative attitude of the respondents towards them. A great majority of respondents rejected individual use. Only 21 per cent would use drones to deliver consumer goods and only 18 per cent would use air taxis for their individual mobility.

The individual intention to use these technologies was different where medical emergencies are concerned. In this case, more than one in two was in favour.
To what extent would you agree with the following statements with regard to your personal use?

**PERSONAL INTENTION TO USE BY AGE OF RESPONDENTS**

To what extent would you agree with the following statements with regard to your personal use?

| PERSONAL INTENTION TO USE BY AGE OF RESPONDENTS | 7 |

**To what extent would you agree with the following statements with regard to your personal use?**

- **Personally, I would generally use air taxis for my individual mobility.**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Strongly Agree</th>
<th>Somewhat Agree</th>
<th>Neither Agree nor Disagree</th>
<th>Somewhat DISagree</th>
<th>Strongly DISagree</th>
<th>Don't Know / No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 – 29 Jahre</td>
<td>15%</td>
<td>11%</td>
<td>15%</td>
<td>25%</td>
<td>34%</td>
<td></td>
</tr>
<tr>
<td>30 – 39 Jahre</td>
<td>20%</td>
<td>9%</td>
<td>15%</td>
<td>20%</td>
<td>37%</td>
<td></td>
</tr>
<tr>
<td>40 – 49 Jahre</td>
<td>12%</td>
<td>10%</td>
<td>9%</td>
<td>16%</td>
<td>52%</td>
<td></td>
</tr>
<tr>
<td>50 – 59 Jahre</td>
<td>10%</td>
<td>6%</td>
<td>9%</td>
<td>21%</td>
<td>53%</td>
<td></td>
</tr>
<tr>
<td>60 + Jahre</td>
<td>6%</td>
<td>3%</td>
<td>9%</td>
<td>21%</td>
<td>62%</td>
<td></td>
</tr>
</tbody>
</table>

The intention to use drones differs considerably according to the age of the respondents. From research into acceptance of technology, it is generally known that older people are normally more sceptical of new technologies than younger people. This was also apparent in relation to air taxis. The survey shows that respondents aged between 30 and 39 years were more than three times more likely to want to use air taxis for their personal mobility than respondents aged over 60 years. A similar response pattern was also found for personal use of delivery drones and with regard to general attitudes to delivery drones and air taxis.

It is interesting that older respondents tended to be more positive than younger respondents towards the use of delivery drones and air taxis in medical emergencies.
To what extent would you agree with the following statements?

Parcel deliveries with drones would have a positive effect on the quality of life in cities.

- **Strongly agree**: 12
- **Somewhat agree**: 15
- **Neither agree nor disagree**: 20
- **Somewhat disagree**: 23
- **Strongly disagree**: 29
- **Don’t know / No answer**: 2

Passenger transport with air taxis would have a positive effect on the quality of life in cities.

- **Strongly agree**: 10
- **Somewhat agree**: 12
- **Neither agree nor disagree**: 21
- **Somewhat disagree**: 24
- **Strongly disagree**: 31
- **Don’t know / No answer**: 2

Parcel deliveries with drones would make cities less pleasant to live in.

- **Strongly agree**: 23
- **Somewhat agree**: 17
- **Neither agree nor disagree**: 18
- **Somewhat disagree**: 23
- **Strongly disagree**: 18
- **Don’t know / No answer**: 2

Passenger transport with air taxis would make cities less pleasant to live in.

- **Strongly agree**: 27
- **Somewhat agree**: 16
- **Neither agree nor disagree**: 20
- **Somewhat disagree**: 20
- **Strongly disagree**: 16
- **Don’t know / No answer**: 2

The respondents gave ambivalent responses on how delivery drones and air taxis would affect quality of life in cities. 40 per cent agreed either somewhat or strongly that delivery drones would make cities less pleasant to live in. However, 27 per cent agreed either somewhat or strongly that delivery drones would have a positive effect on quality of life.

In comparison, the effects of air taxis were seen as slightly more negative. Altogether, 43 per cent were of the view that air taxis would make cities less pleasant to live in while 22 per cent said that air taxis would have positive effects on quality of life in cities.
SAFETY AND RISK OF ACCIDENTS

To what extent would you agree with the following statements?

I think parcel deliveries with drones would be safe.

- Strongly agree: 10
- Somewhat agree: 13
- Neither agree nor disagree: 23
- Somewhat disagree: 24
- Strongly disagree: 30
- Don’t know / no answer: 2

I think passenger transport with air taxis would be safe.

- Strongly agree: 8
- Somewhat agree: 16
- Neither agree nor disagree: 22
- Somewhat disagree: 25
- Strongly disagree: 28
- Don’t know / no answer: 1

Parcel deliveries with drones could result in accidents in which people are injured.

- Strongly agree: 44
- Somewhat agree: 31
- Neither agree nor disagree: 13
- Somewhat disagree: 8
- Strongly disagree: 3
- Don’t know / no answer: 1

Passenger transport with air taxis could result in accidents in which people are injured.

- Strongly agree: 53
- Somewhat agree: 28
- Neither agree nor disagree: 13
- Somewhat disagree: 3
- Strongly disagree: 2
- Don’t know / no answer: 1

Most respondents rated delivery drones and air taxis as not safe. Only less than a quarter imagined delivery drones and air taxis as being safe. Furthermore, the great majority of respondents expected that delivery drones and air taxis would lead to accidents in which people were injured.

When the two applications were compared it also became clear that the respondents felt the risk of accidents to be greater with air taxis than with delivery drones. While 75 per cent agreed either strongly or somewhat that delivery drones could lead to accidents in which people were injured, 81 per cent agreed with this statement with regard to air taxis.
To what extent would you agree with the following statements?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Somewhat Agree</th>
<th>Neither Agree Nor Disagree</th>
<th>Somewhat Disagree</th>
<th>Strongly Disagree</th>
<th>Don’t Know / No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parcel deliveries with drones would bring me advantages in everyday life.</td>
<td>12</td>
<td>11</td>
<td>16</td>
<td>24</td>
<td>37</td>
<td>1</td>
</tr>
<tr>
<td>Passenger transport with air taxis would bring me advantages in everyday life.</td>
<td>9</td>
<td>10</td>
<td>12</td>
<td>25</td>
<td>43</td>
<td>1</td>
</tr>
<tr>
<td>Parcel deliveries with drones would not have added value for me personally.</td>
<td>50</td>
<td>16</td>
<td>10</td>
<td>11</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>Passenger transport with air taxis would not have added value for me personally.</td>
<td>50</td>
<td>16</td>
<td>10</td>
<td>12</td>
<td>12</td>
<td>1</td>
</tr>
</tbody>
</table>

The great majority of respondents disagreed or mostly disagreed that delivery drones or air taxis would be advantageous to them in their everyday lives; less than one in five agreed with this statement.

At the same time it was apparent that two thirds of the respondents did not see any added value for themselves in the technology. This applies both for delivery drones and for air taxis: a majority doubted whether drone technology meant added value.
In order for you to have parcels delivered to yourself by drones, how important would it be for you personally...

- ... that parcel deliveries with drones were environment-friendly?
  - Very important: 55
  - Somewhat important: 24
  - Neither important nor unimportant: 8
  - Somewhat unimportant: 4
  - Not important at all: 8
  - Don’t know / no answer: 1

- ... that parcel deliveries with drones were reliable?
  - Very important: 53
  - Somewhat important: 20
  - Neither important nor unimportant: 7
  - Somewhat unimportant: 6
  - Not important at all: 13
  - Don’t know / no answer: 1

- ... that your parcels were delivered at a precise time of your own choice?
  - Very important: 20
  - Somewhat important: 26
  - Neither important nor unimportant: 13
  - Somewhat unimportant: 19
  - Not important at all: 21
  - Don’t know / no answer: 1

- ... that your parcels were delivered quickly?
  - Very important: 18
  - Somewhat important: 23
  - Neither important nor unimportant: 20
  - Somewhat unimportant: 21
  - Not important at all: 18
  - Don’t know / no answer: 1

- ... that, with drones, you could have your parcels delivered to a place of your choice, e.g. balcony or garden?
  - Very important: 14
  - Somewhat important: 17
  - Neither important nor unimportant: 11
  - Somewhat unimportant: 20
  - Not important at all: 37
  - Don’t know / no answer: 1

Environmental friendliness (79 per cent) and reliability (73 per cent) were particularly important to the respondents. On average, these two aspects were the most important advantages. Almost half of the respondents also indicated that it would be somewhat important or very important to them that parcels were delivered at a precise time of their choice and delivered quickly.

However, a majority of respondents felt it was not important to be able to have parcels delivered by drones to the place of their choice.
In order for you to use air taxis in your own everyday life, how important would it be for you personally...

- ... that air taxis were environment-friendly?
  - very important: 61%
  - somewhat important: 21%
  - neither important nor unimportant: 6%
  - somewhat unimportant: 3%
  - not important at all: 8%
  - don’t know / no answer: 1%

- ... that you would not have to wait in traffic jams with an air taxi?
  - very important: 39%
  - somewhat important: 24%
  - neither important nor unimportant: 9%
  - somewhat unimportant: 9%
  - not important at all: 18%
  - don’t know / no answer: 2%

- ... that the air taxi would take you exactly to a place of your choice?
  - very important: 36%
  - somewhat important: 25%
  - neither important nor unimportant: 9%
  - somewhat unimportant: 11%
  - not important at all: 20%
  - don’t know / no answer: 1%

- ... that you would save time with an air taxi?
  - very important: 25%
  - somewhat important: 29%
  - neither important nor unimportant: 12%
  - somewhat unimportant: 13%
  - not important at all: 21%
  - don’t know / no answer: 1%

- ... that the use of air taxis was inexpensive?
  - very important: 24%
  - somewhat important: 25%
  - neither important nor unimportant: 19%
  - somewhat unimportant: 11%
  - not important at all: 19%
  - don’t know / no answer: 1%

82 per cent of all respondents indicated that it was somewhat important or very important to them that air taxis were environmentally friendly. It was apparent overall that environmental friendliness was a particularly relevant aspect for the respondents regardless of the drone application involved.

Almost two out of three respondents also found it somewhat important or very important that they would no longer need to wait in traffic jams with an air taxi and that the air taxi would take them exactly to a place of their choice.

About one in two respondents indicated that it was somewhat important or very important to them that air taxis would save them time and that the use of air taxis was inexpensive.
Assuming a lot of people were to use drones for parcel deliveries in German towns, how bad would you find...

... the fact that delivery drivers would lose their jobs as a result of parcel deliveries with drones?

<table>
<thead>
<tr>
<th>Very Bad</th>
<th>Quite Bad</th>
<th>So-so</th>
<th>Less Bad</th>
<th>Not at All Bad</th>
<th>Don’t Know / No Answer</th>
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<tbody>
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<td>23</td>
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</table>

... the stress caused by drones flying around delivering parcels?

<table>
<thead>
<tr>
<th>Very Bad</th>
<th>Quite Bad</th>
<th>So-so</th>
<th>Less Bad</th>
<th>Not at All Bad</th>
<th>Don’t Know / No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>44</td>
<td>23</td>
<td>16</td>
<td>11</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>

... the noise caused by parcel deliveries with drones?

<table>
<thead>
<tr>
<th>Very Bad</th>
<th>Quite Bad</th>
<th>So-so</th>
<th>Less Bad</th>
<th>Not at All Bad</th>
<th>Don’t Know / No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>42</td>
<td>24</td>
<td>18</td>
<td>9</td>
<td>4</td>
<td>2</td>
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</tbody>
</table>

... the fact that parcel deliveries with drones would block your unobstructed view of the sky?

<table>
<thead>
<tr>
<th>Very Bad</th>
<th>Quite Bad</th>
<th>So-so</th>
<th>Less Bad</th>
<th>Not at All Bad</th>
<th>Don’t Know / No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>17</td>
<td>16</td>
<td>16</td>
<td>10</td>
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</table>

... the fact that parcel deliveries with drones would mean the personal contact between recipient and delivery driver would disappear?

<table>
<thead>
<tr>
<th>Very Bad</th>
<th>Quite Bad</th>
<th>So-so</th>
<th>Less Bad</th>
<th>Not at All Bad</th>
<th>Don’t Know / No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>14</td>
<td>17</td>
<td>26</td>
<td>25</td>
<td></td>
</tr>
</tbody>
</table>

Possible job losses, noise and the stress resulting from delivery drones were seen as being the greatest disadvantages. More than two out of three respondents found it quite bad or very bad that delivery drivers would lose their jobs as a result of parcel delivery with drones. Similarly, almost two thirds of respondents rated the stress and noise caused by the flying delivery drones as quite bad or very bad.

58 per cent felt it would be quite bad or very bad if drones were to block their unobstructed view of the sky.

One in two rated the possible loss of personal contact between recipients and delivery drivers as less bad or not bad.
Assuming a lot of people were to use air taxis in German towns, how bad would you find...

... the noise caused by air taxis?

- Very bad: 51
- Quite bad: 24
- So-so: 13
- Less bad: 8
- Not at all bad: 3
- Don’t know / no answer: 2

... the stress that air taxis could cause when flying around?

- Very bad: 48
- Quite bad: 25
- So-so: 13
- Less bad: 9
- Not at all bad: 5
- Don’t know / no answer: 1

... the fact that air taxis would block your unobstructed view of the sky?

- Very bad: 45
- Quite bad: 21
- So-so: 13
- Less bad: 14
- Not at all bad: 7
- Don’t know / no answer: 1

... the fact that taxi drivers would lose their jobs as a result of air taxis?

- Very bad: 41
- Quite bad: 25
- So-so: 17
- Less bad: 10
- Not at all bad: 6

... the fact that air taxis would mean the personal contact between client and taxi driver would disappear?

- Very bad: 22
- Quite bad: 15
- So-so: 16
- Less bad: 25
- Not at all bad: 22
- Don’t know / no answer: 1

The respondents rated the noise (75 per cent) and stress (73 per cent) caused by air taxis as quite bad or very bad particularly often. These disadvantages also received similar ratings in the case of delivery drones. A similar proportion of respondents rated as quite bad or very bad the fact that air taxis would block their uninterrupted view of the sky. This response was given by 66 per cent of respondents, a higher proportion than for delivery drones (58 per cent).

Two thirds of the respondents rated possible job losses as negative. This applies both for taxi drivers in relation to air taxis (66 per cent) and for delivery drivers in relation to delivery drones (68 per cent).

By comparison, the loss of personal contact between client and taxi driver or delivery driver were rated less badly in both application areas.
What rules would politicians have to establish so that drones could become part of inner city traffic in Germany?

In an open question respondents were asked to express all their thoughts about regulations by politicians to integrate both technology applications into city air space. The responses show a great need for clear regulation of the use of drone technology.

More than one third of respondents mentioned aspects of air space management (e.g. air corridors, air traffic regulation). Safety rules (e.g. against criminal activities, accidents, misuse) were at the focus in the statements of one fifth of respondents. 13.7% mentioned regulation in general (e.g. insurance and liability, drone authorisation). Respondents were less likely to want obligatory licensing of drone pilots or the clarification of technical aspects. It was also striking that, when answering the open question, around one tenth of respondents expressed their rejection of the technology and did not mention any rules for this reason.

<table>
<thead>
<tr>
<th>Rule</th>
<th>Proportion of respondents (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air traffic management</td>
<td>35.5</td>
</tr>
<tr>
<td>Clarification of safety aspects</td>
<td>20.7</td>
</tr>
<tr>
<td>General regulation</td>
<td>13.7</td>
</tr>
<tr>
<td>Nothing, I’m against drones</td>
<td>9.5</td>
</tr>
<tr>
<td>Data protection rules</td>
<td>8.0</td>
</tr>
<tr>
<td>Noise prevention rules</td>
<td>7.5</td>
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<tr>
<td>Protection of animals and the environment</td>
<td>7.3</td>
</tr>
<tr>
<td>Adjustments to infrastructure</td>
<td>7.1</td>
</tr>
<tr>
<td>Clarification of technical aspects</td>
<td>6.5</td>
</tr>
<tr>
<td>Driving license requirement</td>
<td>5.2</td>
</tr>
<tr>
<td>Authorisation of drones in exceptions only</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Proportion of respondents whose answers fell into each category. Multiple responses were possible.

Not included: "don’t know / no answer" (16.2%), “clarify financing” (1.7%), "nothing, drones are unimaginable" (1.6%), "nothing, politicians are too incompetent" (1.2%) and other categories used by less than 1.2% of respondents.

Source: Sky Limits – WiD / TU Berlin / forsa | Survey period: 20 – 29 January 2020 | Based on 1,000 respondents | Results in per cent, differences can occur due to rounding
# Data on the representative population survey

**Parent population**
German speaking population living in private households in the Federal Republic of Germany and aged 18 years or over

**Number of people interviewed**
1,000 people

**Type and dates of interviews**
The survey was carried out by telephone interview (dual-frame using mobile and landline telephony in the ratio 30:70) in the period between 20 and 29 January 2020. The interviews were carried out by the opinion research institute forsa.

**Sample selection**
The respondents in the landline sample were selected by means of multistage random sampling based on the ADM telephone sampling system. The respondents in the mobile phone sample were selected by means of multistage random sampling based on the sampling system for mobile telephony established in 2005 by the ADM working group on sampling (Arbeitsgemeinschaft ADM-Stichproben) and updated annually.

**Procedure**
The Sky Limits project took a mixed methods approach. First of all, five focus groups were held in Berlin, Stuttgart and Erfurt on 19 and 30 September 2019 and 2 October 2019. The questionnaire was designed on the basis of their findings. It was administered in a fully structured computer assisted telephone interview (CATI). The general working instructions, to which all forsa interviewers adhere, ensured that the interviews were carried out consistently.

**Weighting and representativity**
Deviations from the population structure were weighted using data from official statistics to correspond with the structure of the German-speaking general population of Germany aged 18 years and over. Weighting ensured that the composition of the sample used for evaluation corresponded with the structure of the parent population. The results of the study are thus representative and can be used within the limits of statistical error tolerance to make generalisations about the parent population. In this study the error tolerance was +/-3 percentage points.

**Documentation**
The original questionnaire text and all the results are accessible online at www.skylimits.info/ergebnisberichte-umfrage-englisch/
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