Airbus UTM:

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Urban Air Mobility Preliminary Community Perception Study Summary

Airbus is seeking to understand the societal perception factors of the deployment of Urban Air Mobility (UAM). This work is incredibly important as we develop technologies and services, and consider the impacts of introducing new technology into our communities. The benefits of UAM to our communities are compelling, but we must also consider the public's expectations and concerns.

For this study, we completed a literature review and expert interviews, then conducted a baseline survey to establish an understanding of the initial perception of UAM operational variables. These included variable altitudes, noise level, noise frequency, time of day, and location of flights, among other parameters. The questions provide insight into the 1540 respondents' overall views of UAM operations in their communities.

The purpose of this first study is to gather baseline data so we can dive more deeply into the details and track trends over time.

The key findings:

45% of all respondents' initial reactions to UAM is in support or strong support
41% of all respondents perceived UAM as either safe or very safe.

The 25-34 age range had the highest initial reactions, with 55% viewing UAM positively, while 15% of 75-84 year olds view UAM positively.

Location:

In Mexico City: 67% of respondents noted they are likely or very likely to use UAM; 16% are neutral.
In Los Angeles: 46% are likely or very likely to use UAM; 19% are neutral.
In Switzerland, 32% of respondents are likely or very likely to use UAM; 24% are neutral.
In New Zealand, 17% of respondents are likely or very likely to use UAM, with 25% neutral.

The concerns:

55.8% of respondents are concerned about the safety of the individuals on the ground
49.3%, type of noise generated.
48.8%, the volume of noise.
47.8%, time of day.
47.8%, the altitude at which the aircraft is flying.

The parameters that are least concerning to respondents are the duration of noise (45.7%), whether one could see the aircraft (45.1%), and the landing spot of the aircraft (41.2%).

Deployment:

This initial study of public perception reveals several insights that can help propel the industry forward in planning, policymaking, and engineering.

Given the concern for the safety of individuals on the ground, the public may initially be more supportive of operations flown over the least populated areas, such as waterways or open fields. Also, established aircraft manufacturers with excellent safety records may be preferred to new market entrants.

Original equipment manufacturers (OEMs) and industry leaders must continue to move toward noise-mitigation, as both the type of noise and its volume strongly affect perception of UAM, as exhibited by the high elasticities. Respondents demonstrated they would not want an irritating noise, and that their preferred volume is near the level of a bee-buzzing or car passing rather than a truck or helicopter. Designs of noise attenuation filters is thus an ongoing growth area.

In addition, given that the frequency of flight presently causes concern, it will be important in early controlled field trials that greater frequency does not lead to a reduction in safety or a palpable increase in noise annoyance. As noted before, these guidelines are based on relative statistically significant differences compared to other parameters, rather than absolute percentages.

The per-geography metrics show that respondents from Mexico City are open to UAM for both use and as a typical mode of transport. Los Angeles, while not as positive as Mexico City, also has positive initial reactions to UAM. These results seem reasonable given that Mexico City and Los Angeles are notorious for their traffic congestion. Both also have considerable urban helicopter operations today. Switzerland and New Zealand, however, view UAM less positively, with concerns about safety, perhaps due to their mountainous geographies and relative lack of congestion. For UAM deployment in these geographies, significant work needs to be done engaging with local communities.

In addition, it is clear that urban citizens are more interested in UAM than rural citizens, with suburban residents having mixed feelings. These data could be useful in determining flight trajectories and landing spots for UAM. For future mobility use, it is also important that those who use ridesharing and public transit view UAM most positively, which means that advertising to that urban base and developing infrastructure that complements existing ridesharing and mass transit may be beneficial. Short distance commuters and those taking trips that can be made walking or biking are not worth advertising to for UAM adoption.

Operational design factors that were originally thought to be paramount, including the landing spot and time of day being flown, are still important, but are not as significant. It confirms that flights during the day, both in the morning and afternoon, are met with greater positivity, which is important for UAM as a commuting strategy. By showing the value of UAM for commutes, greater trust, and thus, usage, will occur, which will subsequently drive costs down and propel the industry.

We also find that the there is a fairly notable positive perception among higher income and younger individuals. This is important to note in future transportation planning and policy, as young, wealthy urbanites may be the initial target consumers for UAM, and thus their travel patterns may dictate vertiport locations.

This project generated a wealth of detailed data regarding public perception of UAM, and indeed not all of it has been explored in-depth. Several next steps lie ahead, including continuing to find patterns and regularities within these data, while also informing regulators, aircraft designers, local communities, and academics about the findings. These collaborations could help spur future research, strategy, and policy to make UAM a reality across the world. Further demonstrations and tests with communities, city officials, regulators, and other stakeholders are necessary to best design UAM operations.

See the full UAM Preliminary Community Perception Study at www.AirbusUTM.com.