

FlyingCab acceptance study: When taxis conquer the skies

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Credit: Fraunhofer-Institut für Arbeitswirtschaft und Organisation IAO

Fraunhofer IAO and Volocopter GmbH have joined forces in the FlyingCab acceptance study to analyze user opinion regarding flying taxis, which, among other things, will make transportation more individual and flexible. But just how enthusiastic are future users about the new mobility solution and the idea of navigating cities by air?

Shorter travel times, relief for existing infrastructure systems and more flexible, individual transportation are just some of the benefits of the promising future concept of urban air mobility. Flying taxis and their integration into urban mobility systems are currently considered to be one of the most innovative and promising technological developments as

a solution to urban traffic problems. But in addition to technological and legal issues, social acceptance above all else will play a decisive role in its success. Yet very little is known about it: how do users feel about the idea of conquering urban airspace? While real-life product experiences can help assess innovative concepts, these are difficult to study empirically, particularly when it comes to radically novel products in the early stages of development. The research team at the Fraunhofer Institute for Industrial Engineering IAO thus used a functional prototype for the survey, working with the mobility pioneer Volocopter GmbH. Over a period of three days in May 2019, 320 actual travelers were surveyed at Berlin's main train station. The key findings are now available in the "FlyingCab: Analyzing the user acceptance of Urban Air Mobility," which reveals generally positive expectations and an openness to innovation among study participants.

A context of real-life application for objective feedback

The prototype on exhibit provided curious passersby with a real impression of how flying taxis work and what they look and feel like, while monitors showed real test flights and simulated development scenarios. Study participants also had the opportunity to chat with mobility experts on-site. As a result, the assessments are not only based on emotional but also visual and tactile impressions, which the participants recorded in a questionnaire. "Traditional surveys often fail due to a lack of familiarity with the technology as well as varying ideas among users, which tend to limit comparison," explains Sebastian Stegmüller of Fraunhofer IAO.

Survey provides insight into mobility requirements and feelings toward safety

A total of 40% of the participants who took a seat inside the flying-taxi prototype reported feeling "somewhat safe" to "safe." Nonetheless, the Fraunhofer IAO team of researchers identified a high demand for technical safety measures: Of those surveyed, 72% rated the emergency landing function as "very important," followed by the emergency call function with 65%. Participants did not agree when it came to controlling the flying taxi: 35% would prefer to have a pilot control the flying taxi, while 35% would not care one way or the other and 26% would be willing to place their trust in the technology for autonomous control. But for most of them, it is important that a human pilot is onboard at least during the initial phase.

A majority of the participants think it would make sense to use flying taxis for business travel. Most would like to take a flying taxi as an alternative to driving or public transportation for their commute. The benefits for survey participants are clearly the comparably shorter travel times, the high degree of flexibility, direct flights without the need to change trains and the unique travel experience.

The participants identified train stations, airports and park-and-ride locations as the ideal takeoff and landing sites to simplify connection to flying taxis and transport as many users as possible. Potential taxi-sharing offers met with a positive response among those surveyed. More than 90% of participants could imagine sharing a flying taxi with other passengers. "In particular, we view the symbiotic connection from flying taxis to existing mobility hubs such as large train stations as an important aspect of sensible urban air mobility," says Franziska Braun, mobility researcher at Fraunhofer IAO.

Study reveals need for further research: passenger capacity, accompanying luggage and interior design

The [survey results](#) lay the foundation for additional research projects centered around the mobility concept of flying taxis. One relevant topic is the option to bring luggage: What sizes and weights are possible? And how will that affect the interior design, price calculation, safety and range of the taxi? Passengers do not feel entirely safe when it comes to autonomous machine operation, which requires further research: what can be done to reduce user hesitancy?

More information: FlyingCab: Analyzing the user acceptance of Urban Air Mobility: publica.fraunhofer.de/dokumente/N-605970.html

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