



Urban air mobility

What will it take to elevate
consumer perception?

By 2050, about 70 percent of the world population is expected to live in urban areas¹, and mobility within these cities will likely require new solutions. That's where urban air mobility (UAM) can make a significant impact. UAM—air taxis hovering in and around cities—could transform how people travel.

It seems like a natural evolution to leverage airspace for urban mobility, yet challenges abound—infrastructure and regulatory constraints, as well as technological. But the biggest challenge might be to prepare consumers for this new reality.

Deloitte's 2019 global automotive consumer survey shows that consumer perception towards UAM, particularly concerning safety, continues to lean toward concerns. This is despite the substantial progress made in terms of vehicle design and technology, including advances in electric vertical takeoff and landing (eVTOL) aircraft. The survey data also shows that regional and generational differences play a critical role in the perceived UAM safety.

While surveyed consumers agree that air taxis could be possible solutions to solve roadway congestion, concerns about these vehicles' safety have slightly increased (figure 1). This comes despite increased awareness by consumers about the utility and safety of UAM. Forty-eight percent of survey respondents were unconvinced about the safety of air taxis in 2019, compared with only 46 percent in 2018. This seeming contradiction of consumers perceiving increased utility, but decreased safety, could be attributable to their notion of utility "in future" versus safety "now."

Regional differences also emerged clearly among respondents. Consumers in the two largest geographical markets surveyed—the United States and China—had a different view about the safety of air taxis (figure 2). Forty-nine percent of respondents in the United States were unconvinced about the safety, while only 39 percent are skeptical about safety in China.

Interestingly, while younger consumers surveyed (Gen Y and Gen Z) agree that UAM provides for an efficient alternative mode of urban transportation, they are more apprehensive about its safety (figure 3). Forty-eight percent of Gen Y and Gen Z consumer respondents said these vehicles would not be safe in the 2019 survey, up from 44 percent in 2018. This has significant implications for the UAM industry, as Gen Y and Gen Z are the consumer groups that are most likely to use air taxis in the next decade, when UAM is expected to be deployed extensively for commercial use.

1. United Nations, 2018 Revision of World Urbanization Prospects

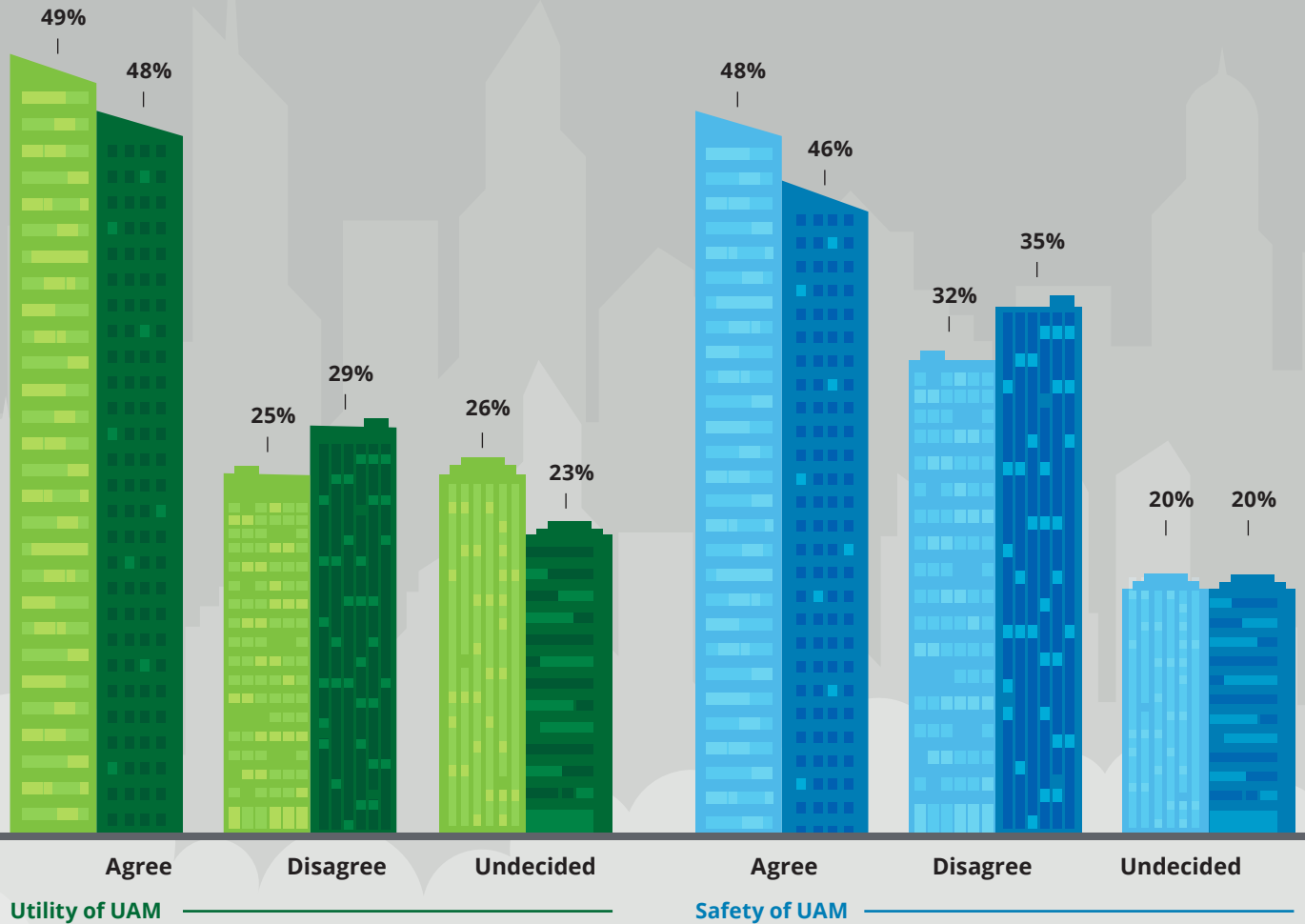
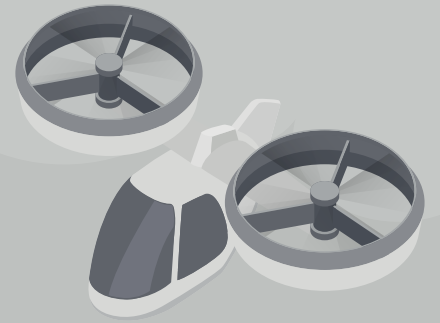


Figure 1. Consumer perception of utility and safety of air taxis worldwide

Respondents *agreeing* "Passenger drones/air taxis would be a *viable* solution to roadway congestion"

2019 2018

Respondents *agreeing* "Passenger drones/air taxis will *not* be safe"

2019 2018

Source: Deloitte Global Automotive Consumer Survey, October 2019

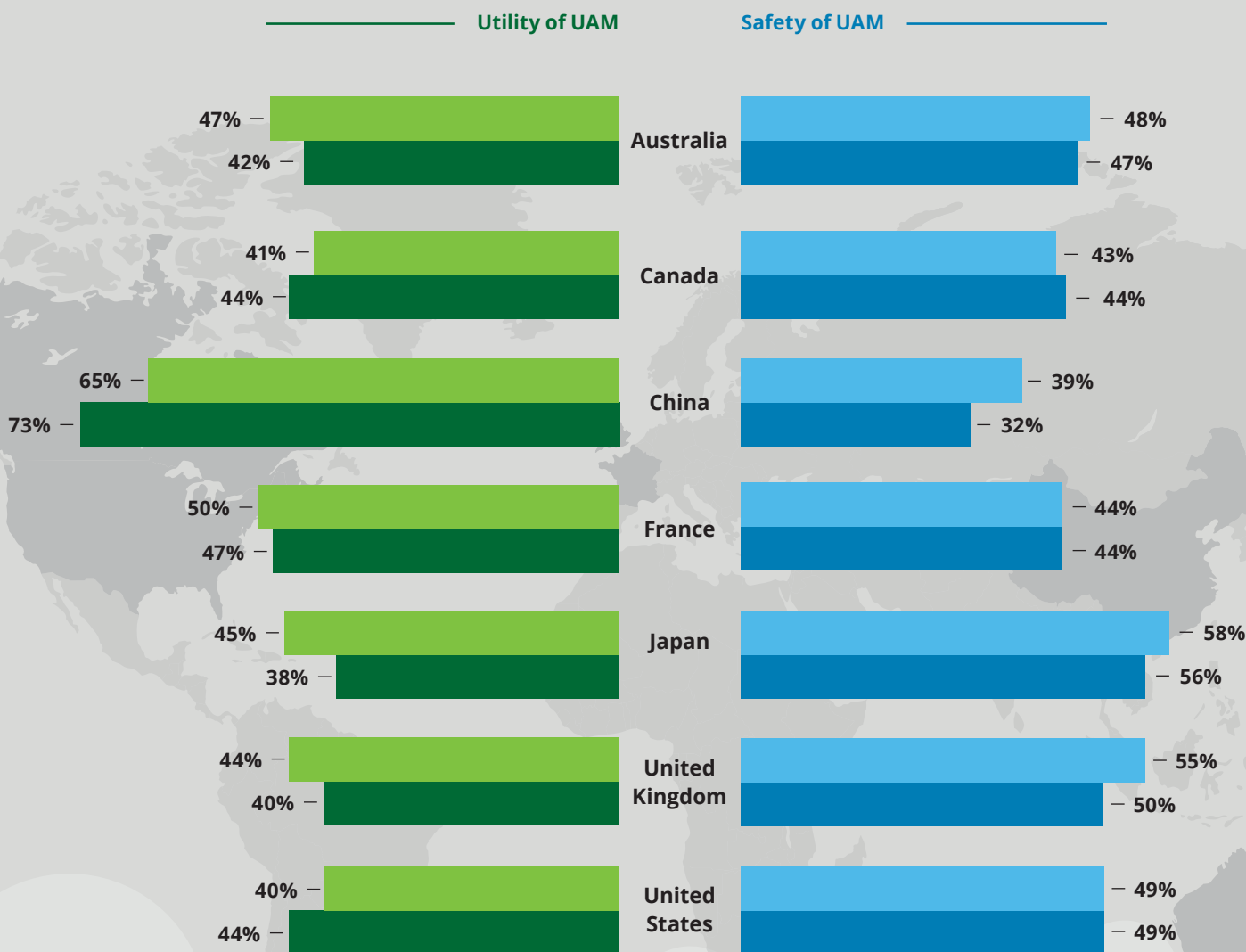


Figure 2. Consumer perception of utility and safety of air taxis by region

Respondents *agreeing* "Passenger drones/air taxis would be a *viable* solution to roadway congestion"

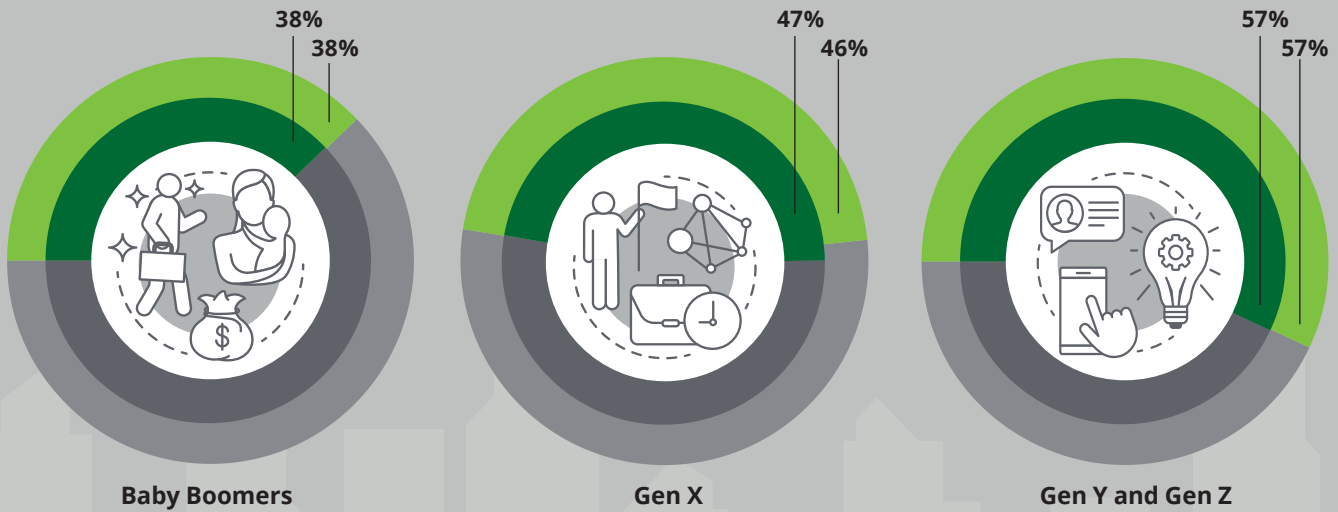
2019 2018

Respondents *agreeing* "Passenger drones/air taxis *will not be safe*"

2019 2018

Source: Deloitte Global Automotive Consumer Survey, October 2019

Utility of UAM



Safety of UAM

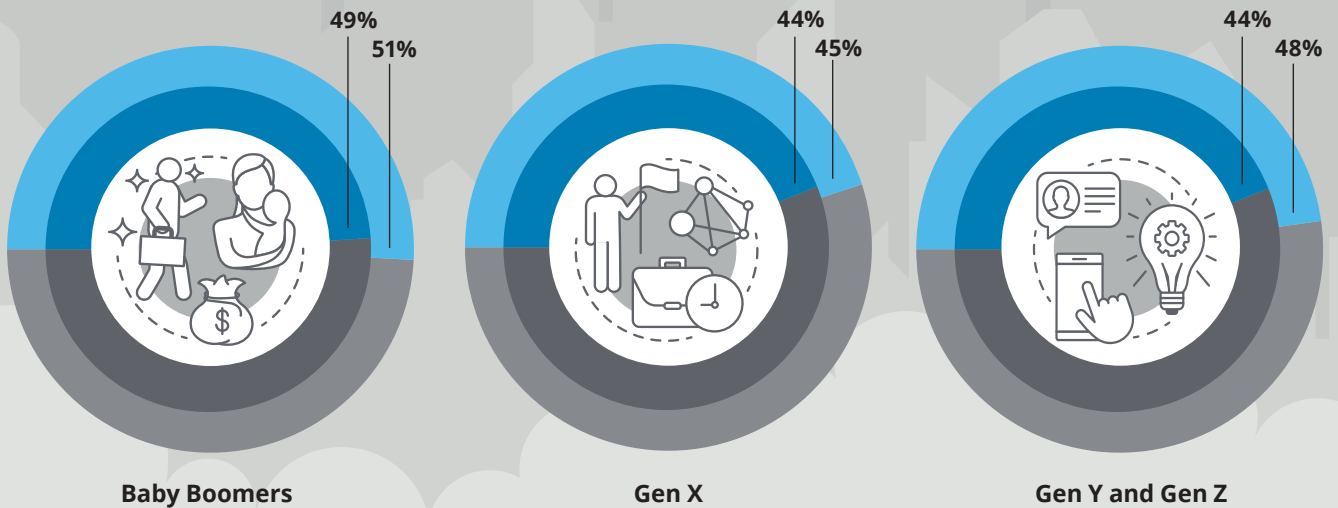


Figure 3. Consumer perception of utility and safety of air taxis by generation

Respondents *agreeing* "Passenger drones/air taxis would be a *viable* solution to roadway congestion"

2019 2018

Respondents *agreeing* "Passenger drones/air taxis *will not be safe*"

2019 2018

Source: Deloitte Global Automotive Consumer Survey, October 2019

Gaining consumer confidence could require a coordinated and cooperative effort across the UAM ecosystem

Widespread adoption of UAM may be one of the most complex tasks ever undertaken by any industry. Yet there are clear benefits to UAM, and manufacturers and operators have an opportunity to make significant advances in the future of mobility. Increasing consumer confidence and gaining higher public acceptance could require the UAM manufacturers and operators to do the following:

- 5 Collaborate across the value chain** to overcome regulatory challenges, meet stringent safety requirements, and get certifications that these vehicles are viable and safe for passengers
- 4 Work closely with regulators and government agencies** to bring favorable changes to UAM policies and standards, which generally play an important role in validating the safety
- 3 Help design an airspace architecture** that can accommodate air taxis while also integrating the traditional aircraft that are widely used today
- 2 Organize public demonstrations of prototypes** operating between ground and 5,000 feet, highlighting seamless integration with the existing airspace
- 1 Conduct test flights with a mix of onboard and remotely monitored vehicles**, which can gradually progress toward autonomous operations

Overcoming psychological hurdles and integrating UAM into cities safely is expected to remain one of the critical challenges for the UAM community, as this is a paradigm shift from our current transportation system. Besides technological advancements, greater intervention from government agencies to focus attention on UAM adoption could bring a positive change in consumer perception. Therefore, every stakeholder involved will likely have to work together in an integrated ecosystem to make this shift as seamless as possible.



Study methodology

From September through October 2019, Deloitte surveyed more than 35,000 consumers in 20 countries to explore opinions regarding a variety of critical issues affecting the automotive sector, including the development of advanced technologies. The survey was fielded using an online panel methodology, where consumers of driving age are invited to complete the questionnaire (translated into local languages) via email. The survey was designed to be nationally representative of the overall population in each market.

Authors

Robin Lineberger

Principal
Global and US Aerospace & Defense Leader
Deloitte Touche Tohmatsu Limited
rlineberger@deloitte.com
+1 571 882 7100

Aijaz Hussain

Senior Manager
US Manufacturing Research Leader
Deloitte Services LLP
aihussain@deloitte.com
+1 469 395 3759

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