

The Third Annual

New Mobility Study

How Consumer Preference will Reshape the Automotive Industry



Presented by Vision Mobility, CuriosityCX, and L.E.K. Consulting

December 4th, 2018 & December 6th 2018

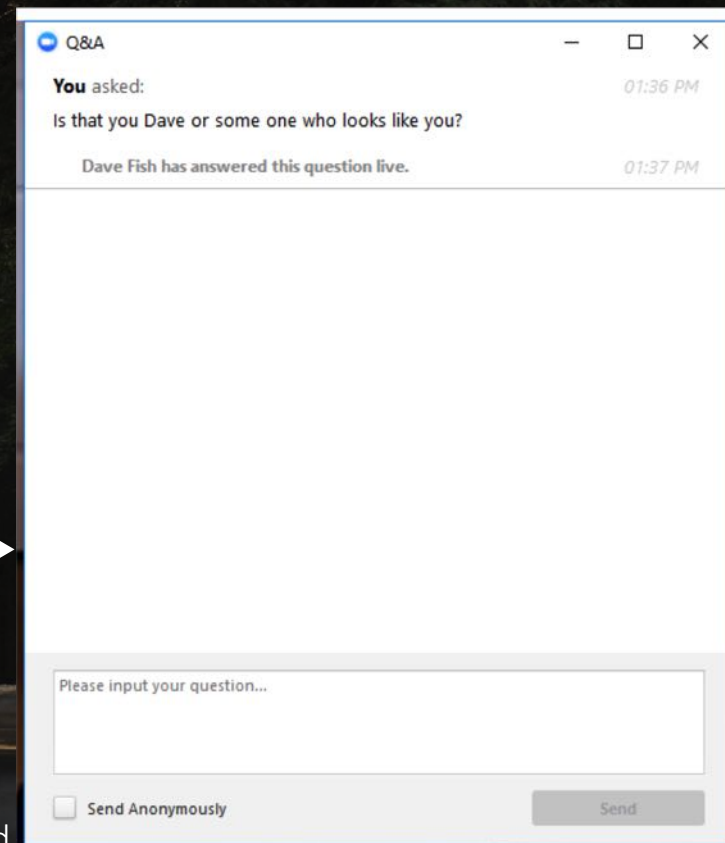
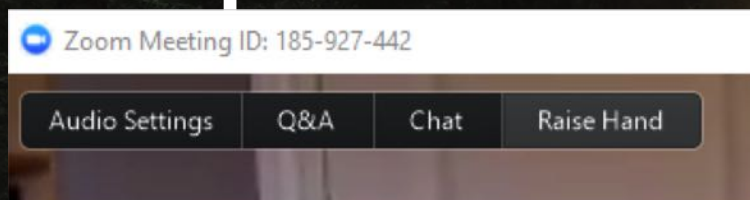
Webinar Details



Yes we are recording

Webinar Details

Have a question?



Presented by Vision Mobility and

November 22nd , 2016

Today's Presenters

4



Dave Fish, Ph.D.
CEO, CuriosityCX



James Carter
Founder, Vision Mobility



Simon Barrett
Partner, L.E.K. Consulting



Ashish Khanna
Partner, L.E.K. Consulting

Dave is the founder of New Mobility Study, a consumer experience and consulting firm. For the last 20 years he has been focused on understanding human emotions, attitudes, and behavior in decision making

James is the founder of Vision Mobility, a consulting service that specializes in providing automotive and "New Mobility" insights to OEMs, Dealers, Tier 1 suppliers and Startups.

Simon leads L.E.K.'s Australian Travel and Transport Practice and a leader in L.E.K.'s New Mobility Practice area. He has over 25 years of consulting experience in the Transport sector

Ashish is the Global Co-Lead of L.E.K.'s New Mobility Practice area, advising market participants and investors on the opportunities and challenges from the intersection of technology and transportation

Today's Presenters (Continued)

5



Katie Murdoch
MSU Graduate Student

Katie is a student at Michigan State University and is pursuing her Masters of Science in Marketing Research. Currently, Katie works for IHS Markit as a Regional SME Specialist for Ford Motor Company.



Junbo Zhu
MSU Graduate Student
Founder, Analytic Edge

Junbo is a student at MSU and the founder of Analytic Edge, a consulting firm that specializes in consumer insight efficiency improvement. He has 20 years of research experience on Chinese automotive market.



Our Goals

- Understand peoples' attitudes about mobility
- Discover peoples' needs and wants in mobility
- Better understand openness to new types of mobility options
- Identify the barriers to adoption
- Uncover new possibilities relevant to a new mobility future
- Provide a sampling of our capabilities to assist you in the future



Our Method



Primary Research



Secondary Research



Thinking



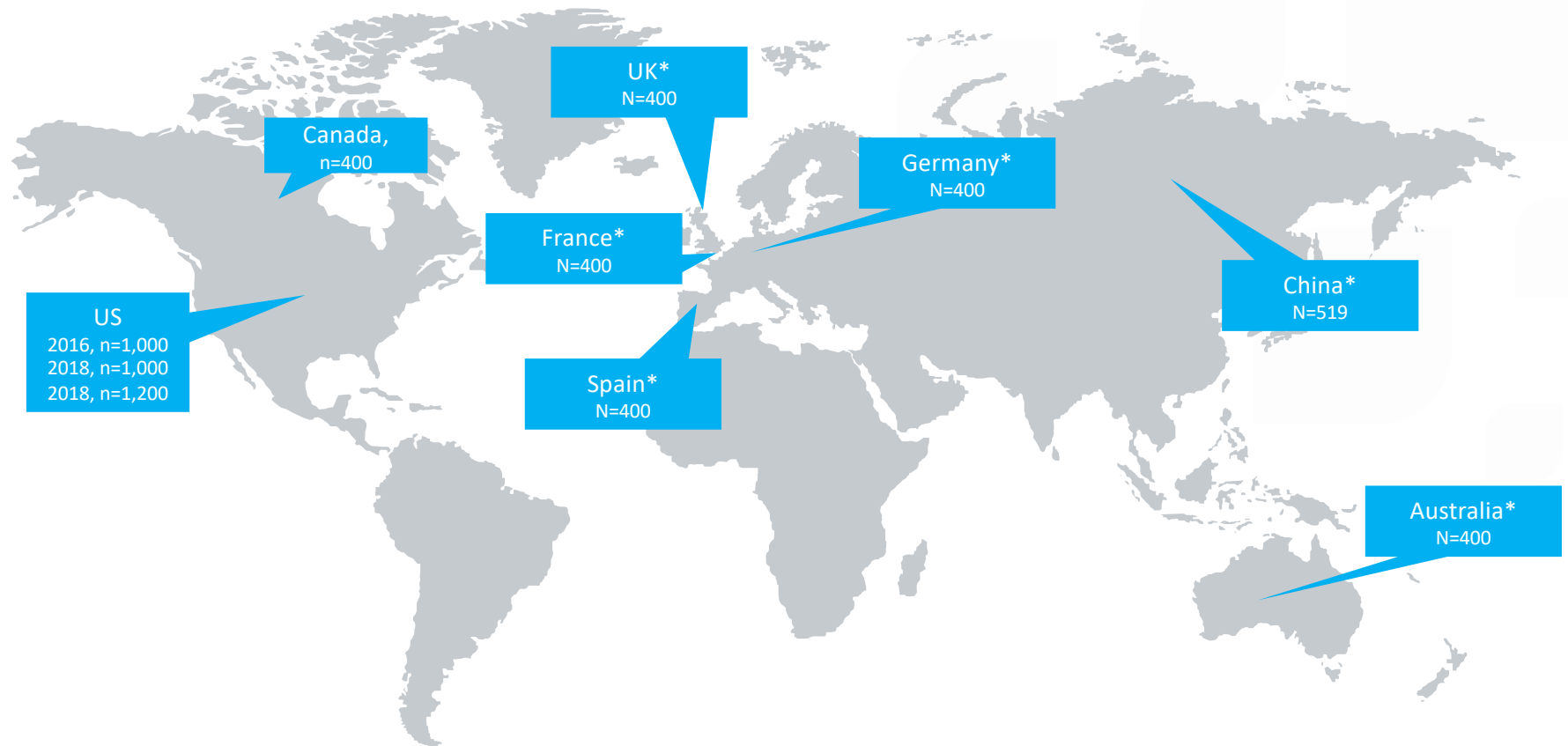
Who we talked to...and when

Methodology

- Short 10 minute mobile friendly survey via high quality panel provider
- US Fielding:
 - Wave 1: Sept 29 – Oct 1, 2016 (US only)
 - Wave 2: Oct 15 – Oct 17, 2018 (US only)
 - Wave 3: Nov 3- Nov 15, 2018 (Global)
- Sample Frame:
- 18 to 65+ adults randomly selected within country
 - US, Canada total market
 - France, Spain, Germany, UK, China, Australia restricted to non-rural locations
- Fielded in native language
- Weighted by age and gender to country Census (and income for select markets)



Our Sample



Today's Agenda

Key mobility insights *shaping our industry*



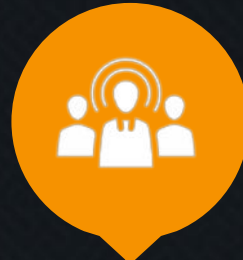
01

New Mobility
Landscape



02

Mobility Knowledge
and Adoption



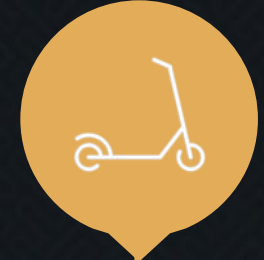
03

Consumer
Sentiment



04

New Mobility
Interest



05

Micro Mobility

Today's Agenda















Key mobility insights [shaping our industry](#)



01

New Mobility
Landscape

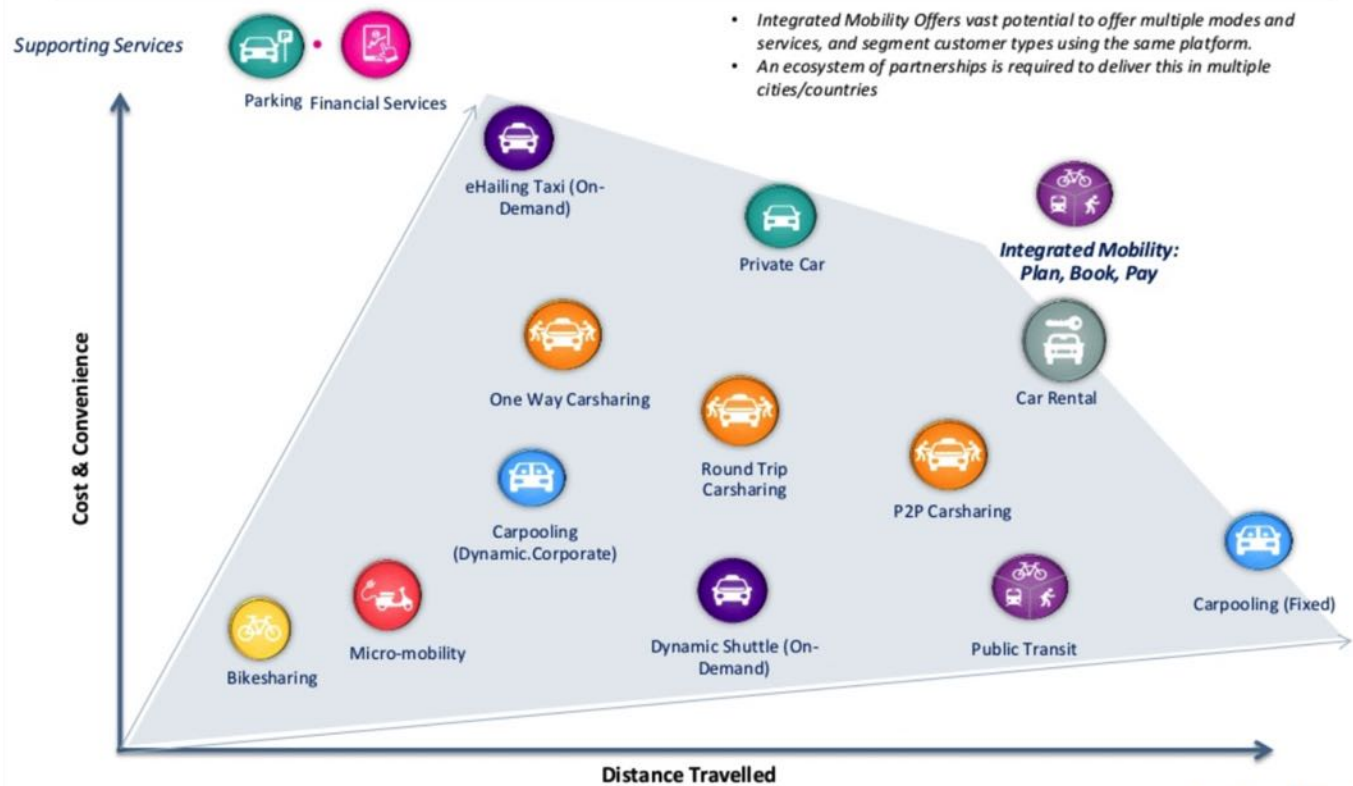
New Mobility Definitions

Carsharing 1.0 Station Based	  	Early model of carsharing where vehicles are picked up and returned to the same location; typically through an hourly rental
Carsharing 2.0 One-to-Many	  	Second generation of carsharing where vehicles can be picked up and dropped off in different locations (possibly by zone vs. designated parking spots); typically charged by minute
Carsharing 3.0 P2P	 	Peer-to-peer sharing where individuals can rent out their personal vehicles to others when not in use
Ride-hailing	 	Platform where individuals can hail and pay for a ride from a professional or part-time driver through an app
Shared Ride-hailing	 uberPOOL 	Extension of ride-hailing where individuals can be matched in real-time to share rides with others going on a similar route
Microtransit	 	App and technology-enabled shuttle services, typically in a van-size vehicle; some with dynamic routing, others with semi-fixed routes

Source: Clewlow, R.R., and Mishra, G.S. (2018). Disruptive Transportation: The Adoption, Utilization and Impacts of Ride Hailing in the United States. UC Davis Institution of Transportation Studies.

The Emerging Urban Mobility Landscape

Many innovations and mobility services are blurring the lines between public transport and private car ownership, creating several opportunities for new shared mobility services



- Integrated Mobility Offers vast potential to offer multiple modes and services, and segment customer types using the same platform.
- An ecosystem of partnerships is required to deliver this in multiple cities/countries

Source: Frost & Sullivan

CASE and Platforms

TECHNOLOGIES

Connected

Autonomous

Shared

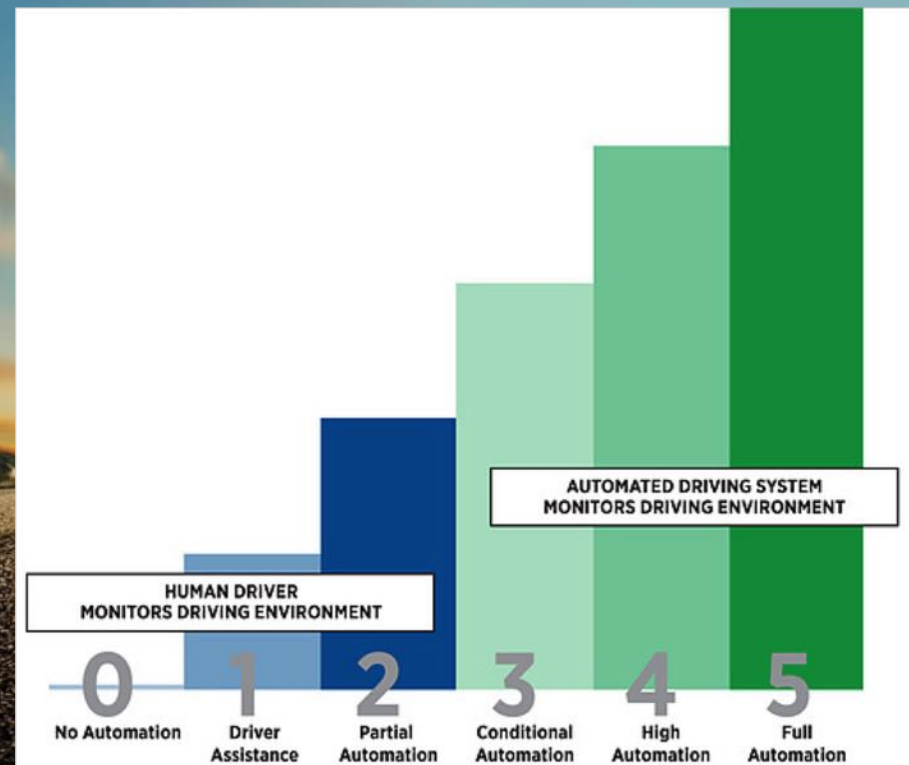
Electric

PLATFORMS

MaaS

e-Commerce

Autonomous Vehicles at Our Doorstep



Autonomous is Real



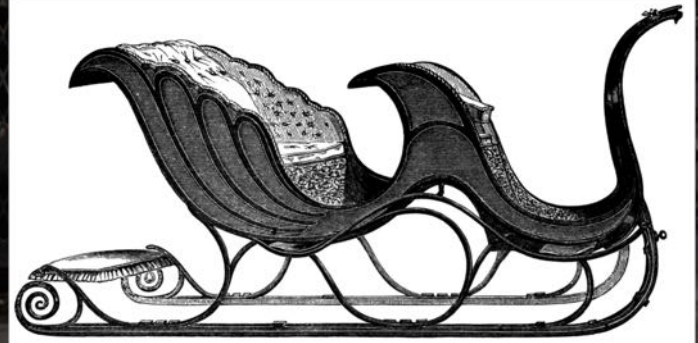
Electric is Real



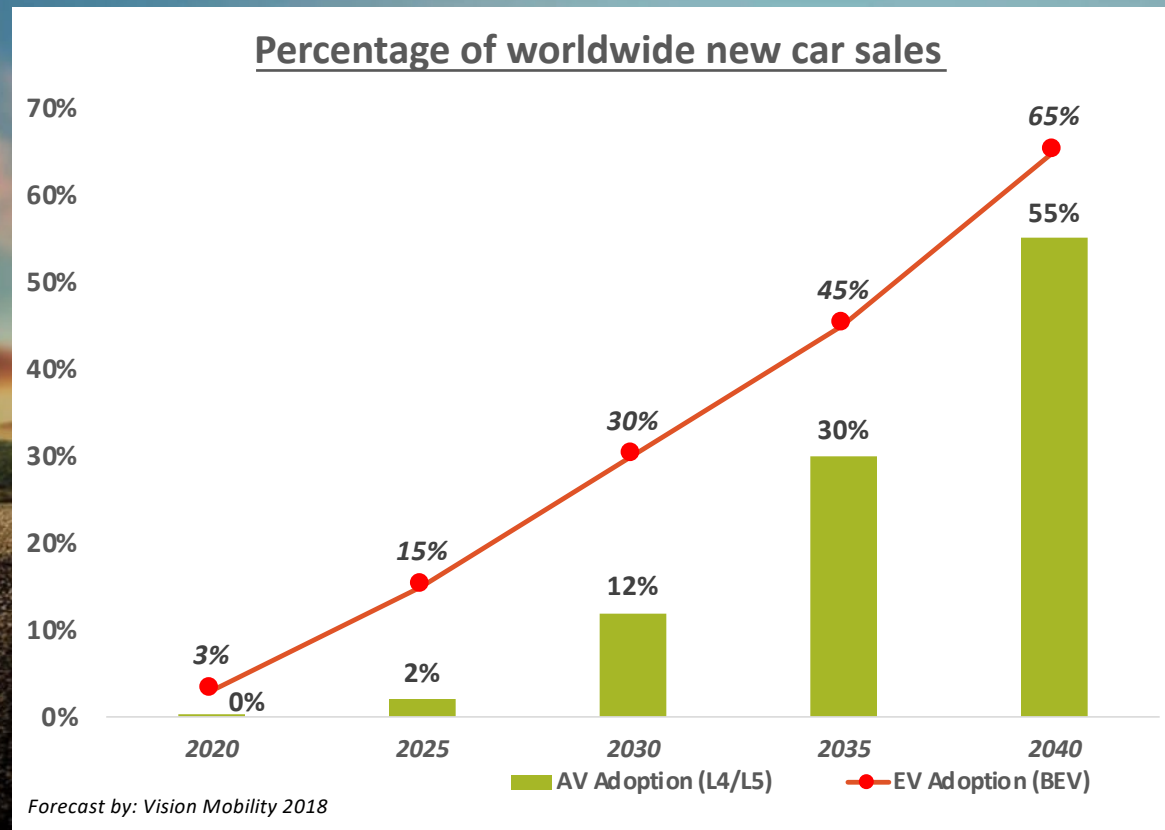
Santa Claus is not real



BAD MOBILITY IDEA

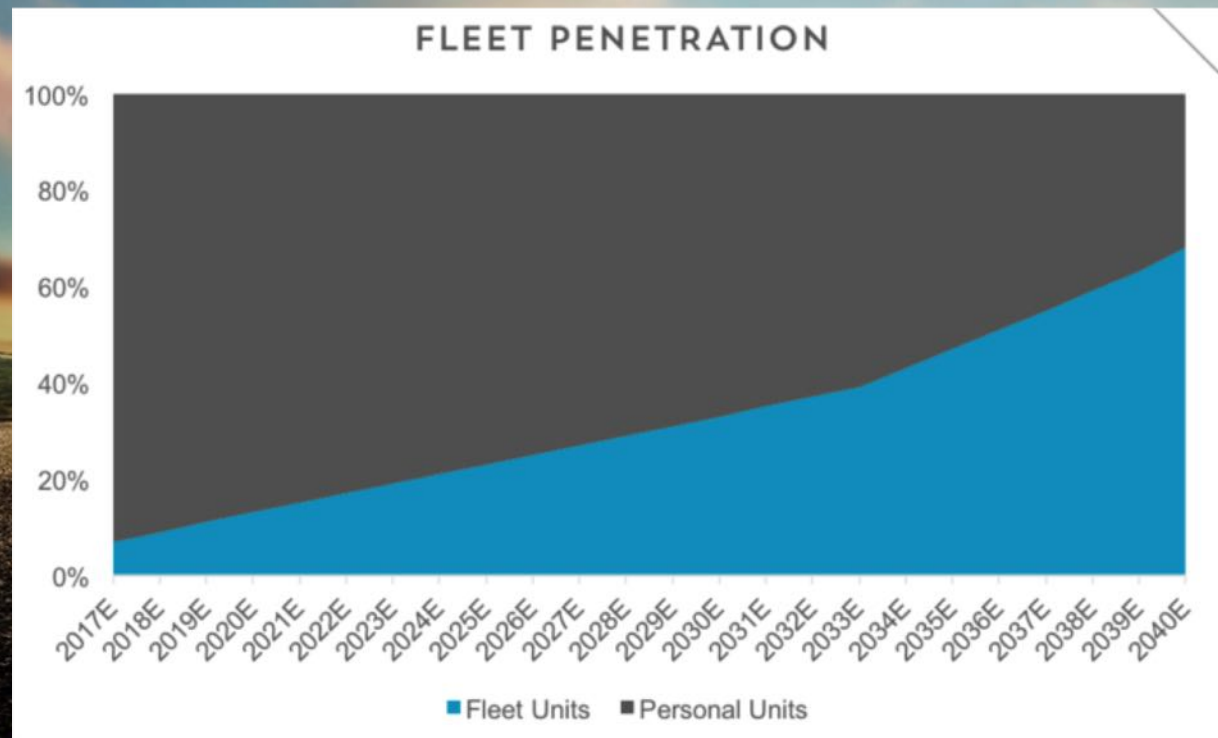


Electric and Autonomous Vehicle Ramp Up



Car Sharing Growth

By 2040 68% of all vehicle in personal use will dedicated to fleet service



Source: 2018 Loup Ventures Report

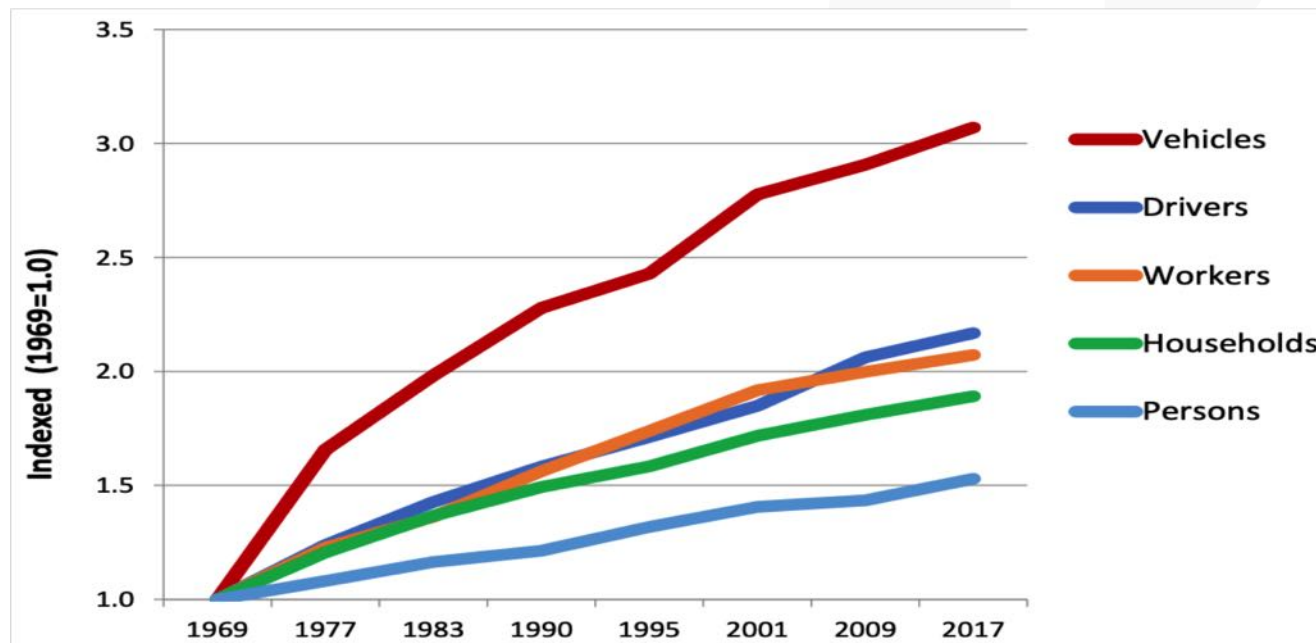
World View on Autonomous

Uber and Lyft are placing a significant downward force on Taxi services



Will MaaS Bust the Vehicle Bubble?

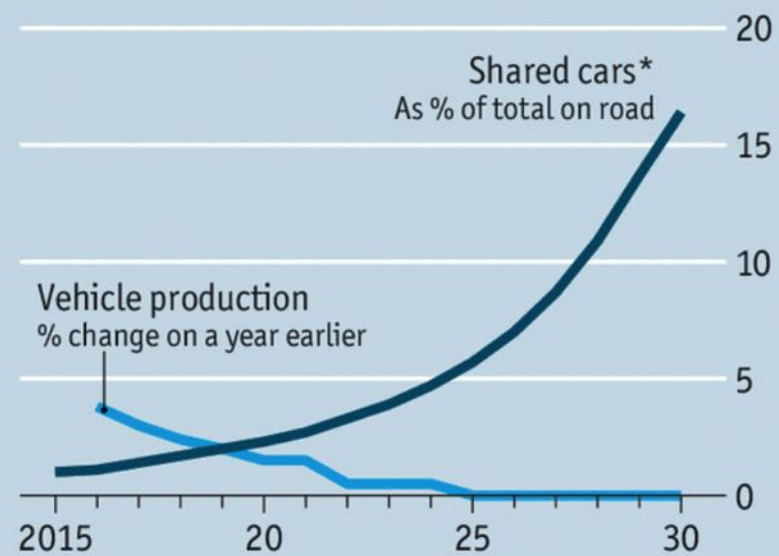
The growth in the number of vehicles in United States has outpaced driver, worker, and household growth



Source: 2017 NHTS National Travel Survey, US Department of Transportation

Sharing, not growing

Worldwide forecast



Source: Morgan Stanley

*Including taxis, excluding car rental

Today's Agenda

Key mobility insights [shaping our industry](#)



01

New Mobility
Landscape



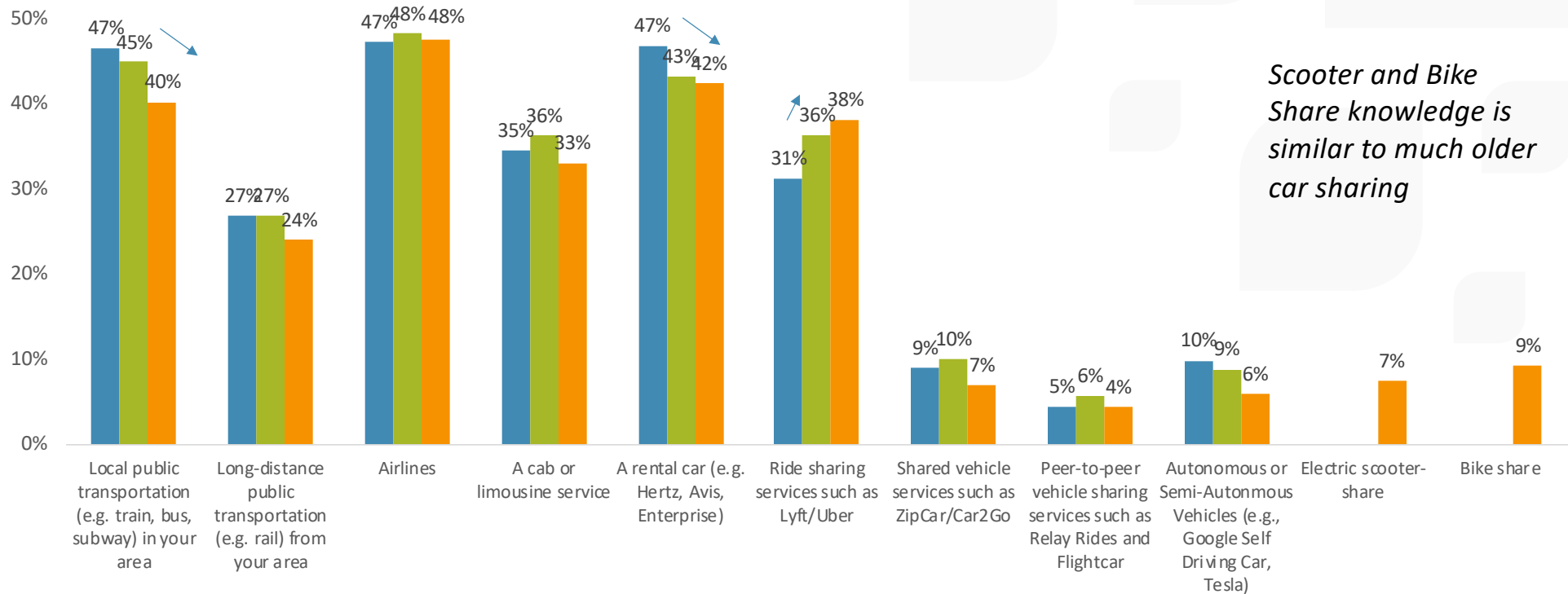
02

Mobility Knowledge
and Adoption

Mobility Knowledge Trend

Knowledge among the public in the United States about mobility options

Which services would you feel comfortable explaining how they work to a friend or family member?



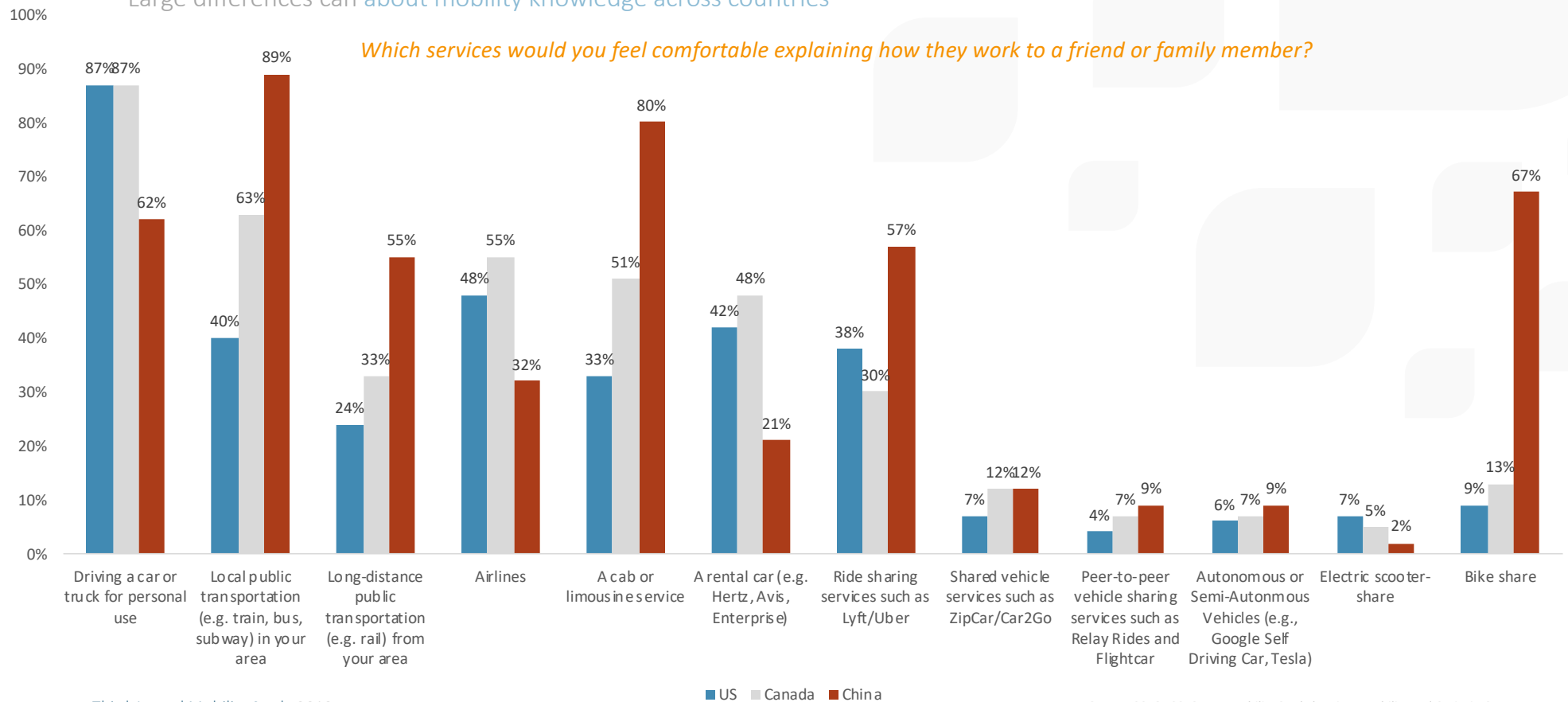
Source: 2016 - 2018 New Mobility Study by Vison Mobility and CuriosityCX

Third Annual Mobility Study 2018

■ 2016 ■ 2017 ■ 2018

Mobility Knowledge Country Comparison

Large differences can [about mobility knowledge across countries](#)



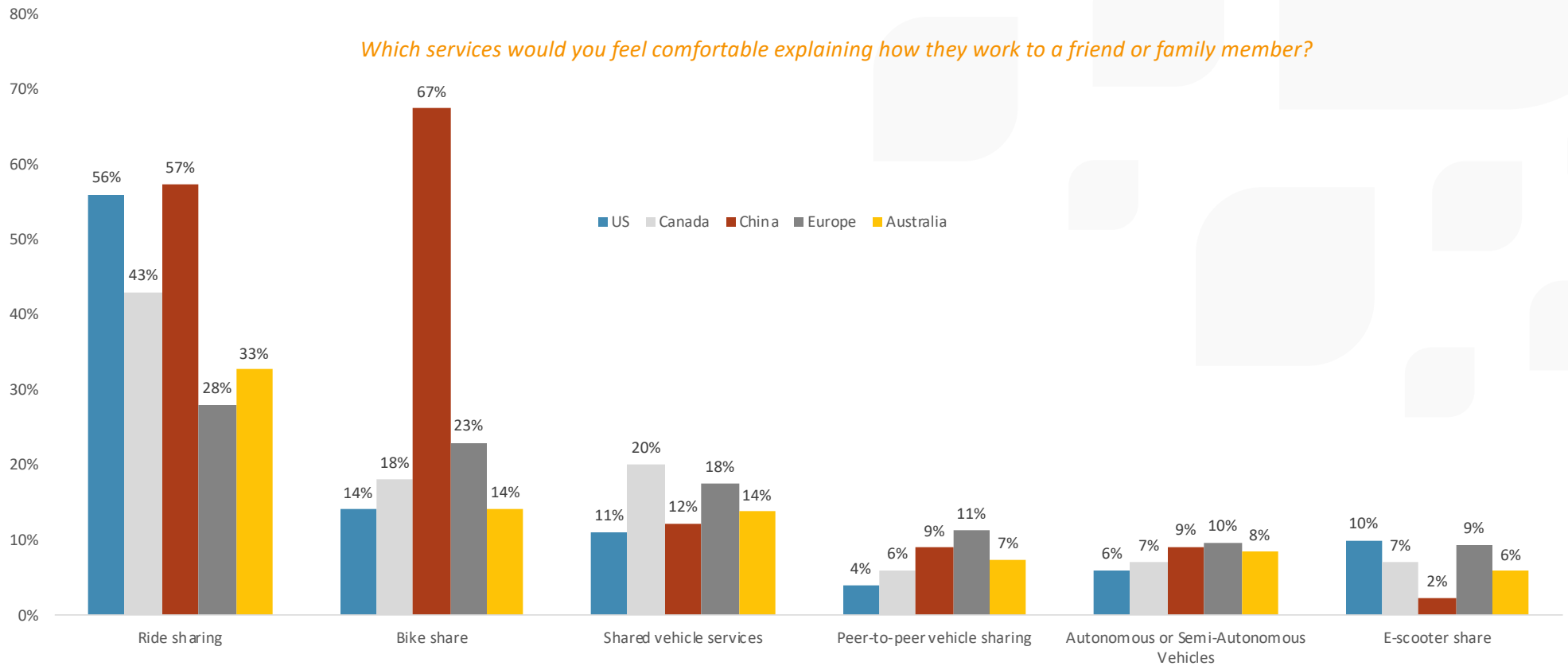
Third Annual Mobility Study 2018

Source: 2016 - 2018 New Mobility Study by Vison Mobility and CuriosityCX

Country Comparison of Urban Areas

In Urban Areas Ride sharing is most well understood of new and emerging services

Which services would you feel comfortable explaining how they work to a friend or family member?



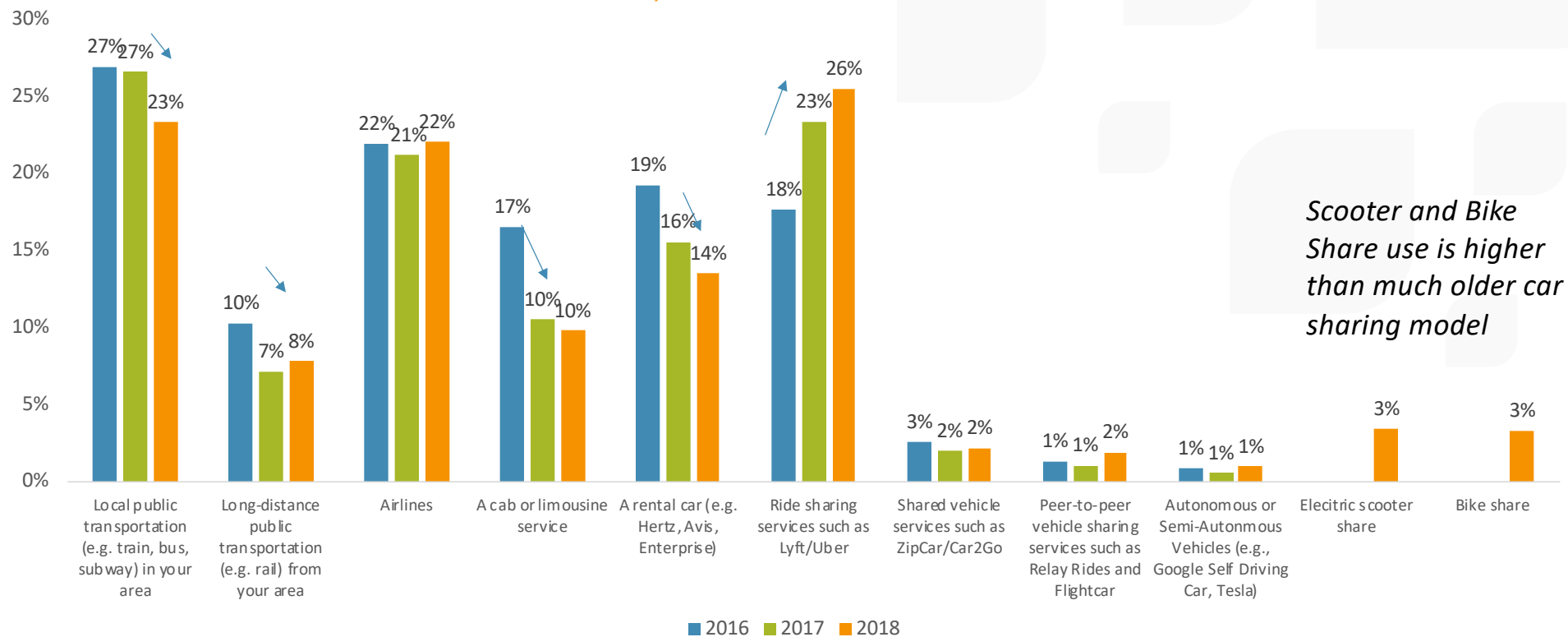
Third Annual Mobility Study 2018

Note: Canada and US samples presented exclude rural respondents
Source: 2018 New Mobility Study by Vison Mobility, CuriosityCX, and L.E.K. Consulting

Mobility Use Trend

Use among the public in the United States of different mobility options

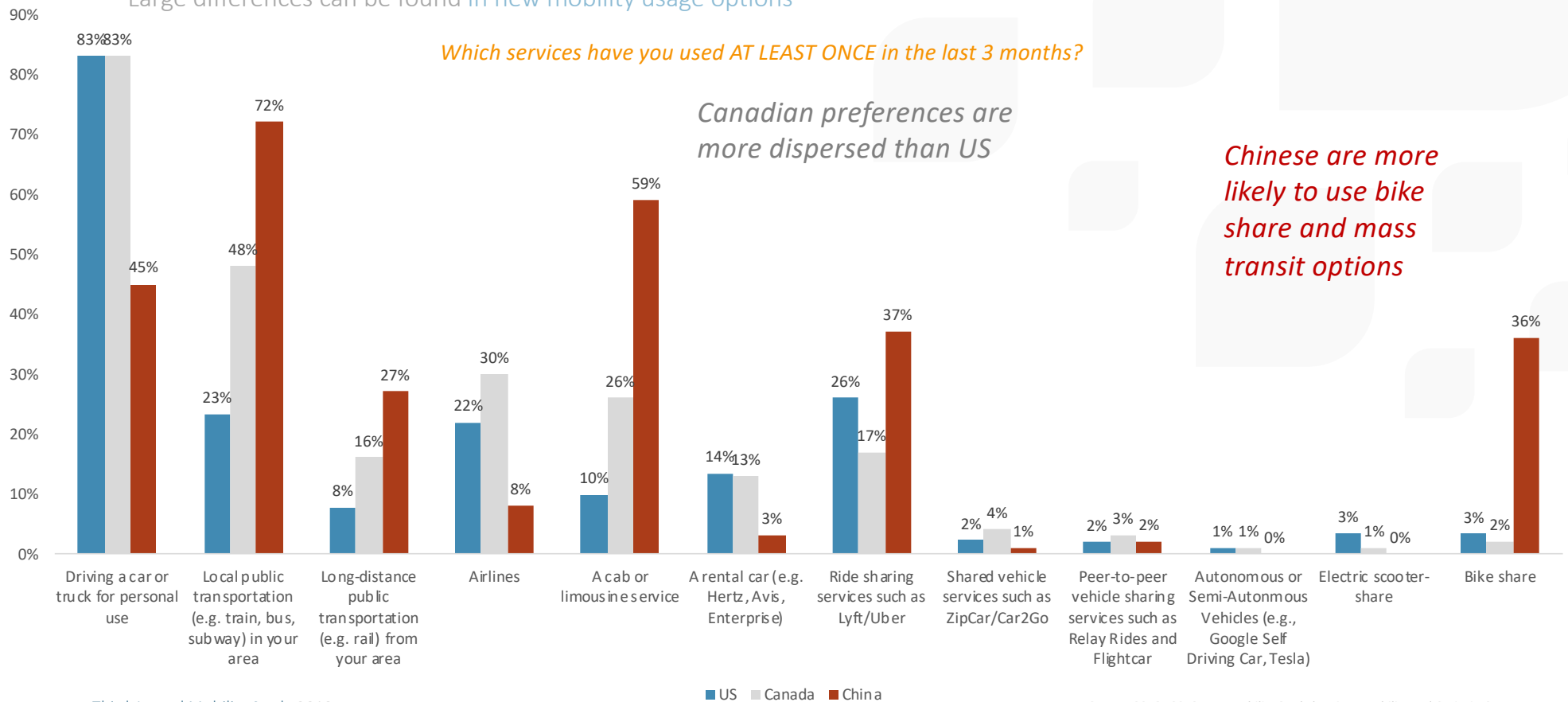
Which services have you used AT LEAST ONCE in the last 3 months?



Scooter and Bike Share use is higher than much older car sharing model

Mobility Use Country Comparison

Large differences can be found in new mobility usage options

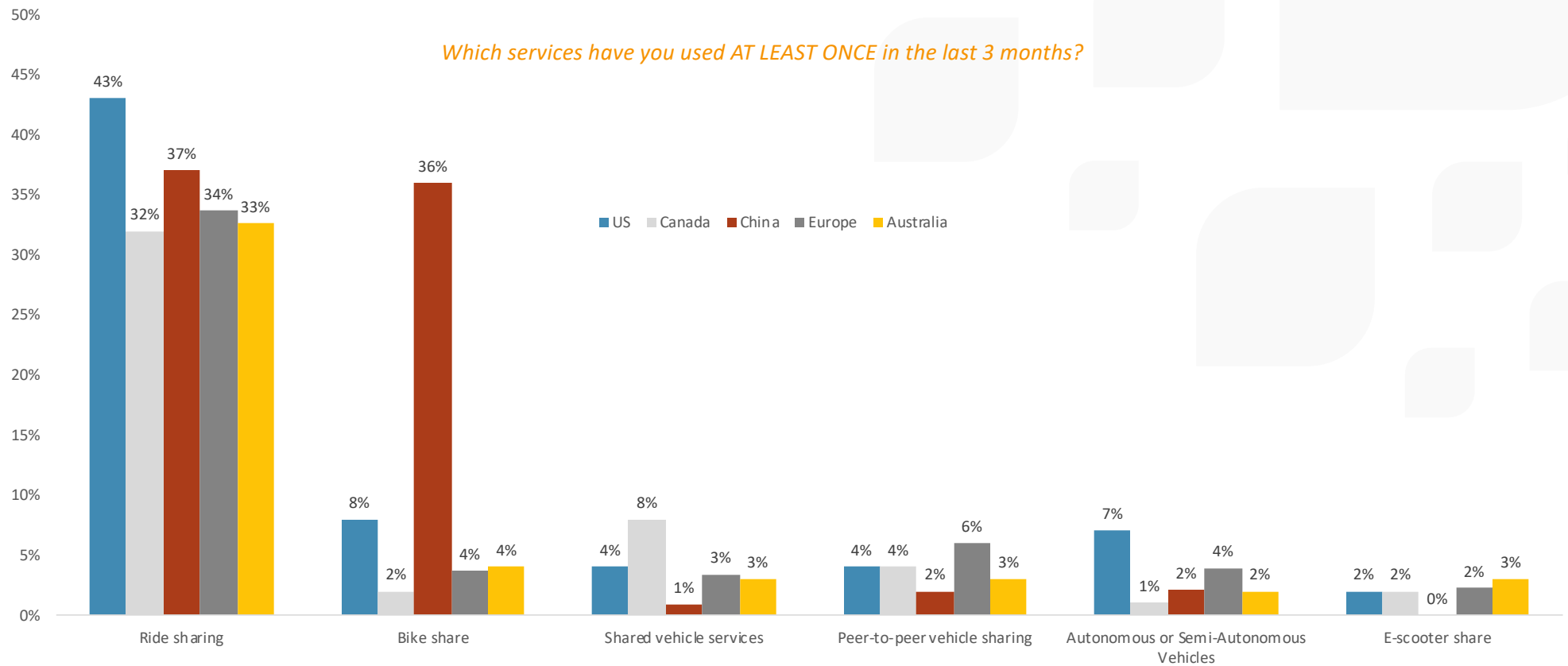


Third Annual Mobility Study 2018

Source: 2016 - 2018 New Mobility Study by Vison Mobility and CuriosityCX

Country Comparison of Urban Areas

In Urban Areas Ride sharing is most often used of new and emerging services

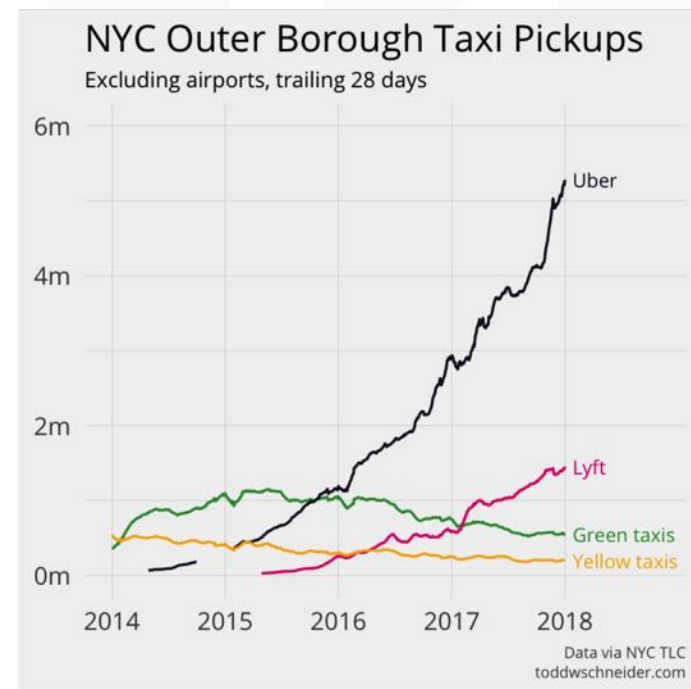
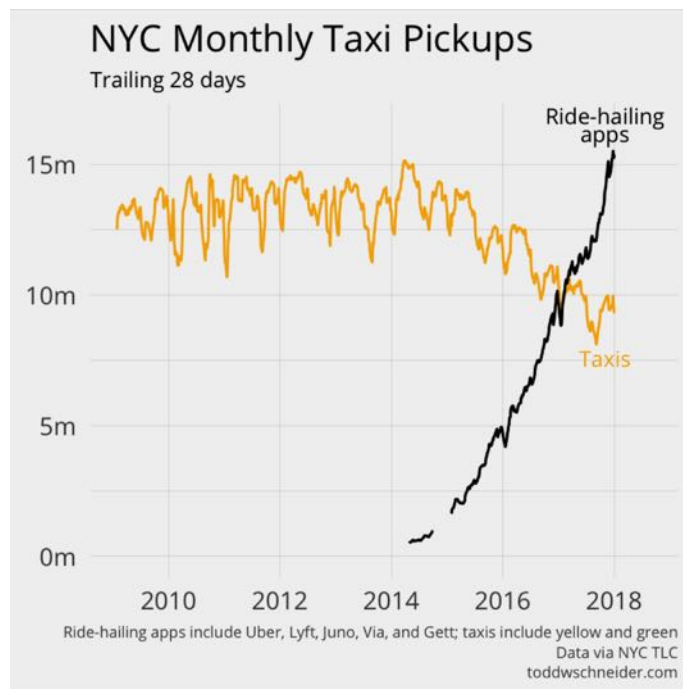


Third Annual Mobility Study 2018

Note: Canada and US samples presented exclude rural respondents
Source: 2018 New Mobility Study by Vison Mobility, CuriosityCX, and L.E.K. Consulting

The Impact of Ride-Hailing

Uber and Lyft are placing a significant downward force on Taxi services



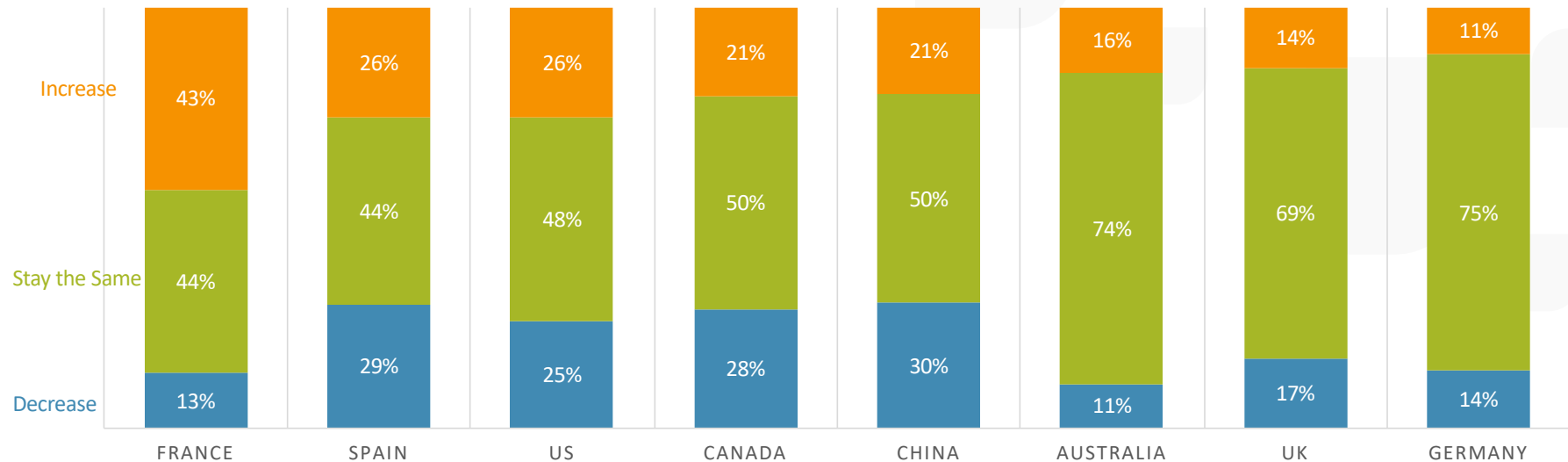
Source: toddschneider.com

Ride Sharing Trends

Ride sharing is expected to expand in Europe

*How do you expect your usage of ride sharing to change in the coming year?
(% of respondents by change in usage)*

Mobility knowledge and adoption – “continued but slowing movement to ride hailing, away from rentals and taxis”



Note: “Use more often” includes “slightly more often” and “far more often”, “use less often” includes “slightly less often” and “far more less”



Today's Agenda

Key mobility insights [shaping our industry](#)



01

New Mobility
Landscape



02

Mobility Knowledge
and Adoption



03

Consumer
Sentiment

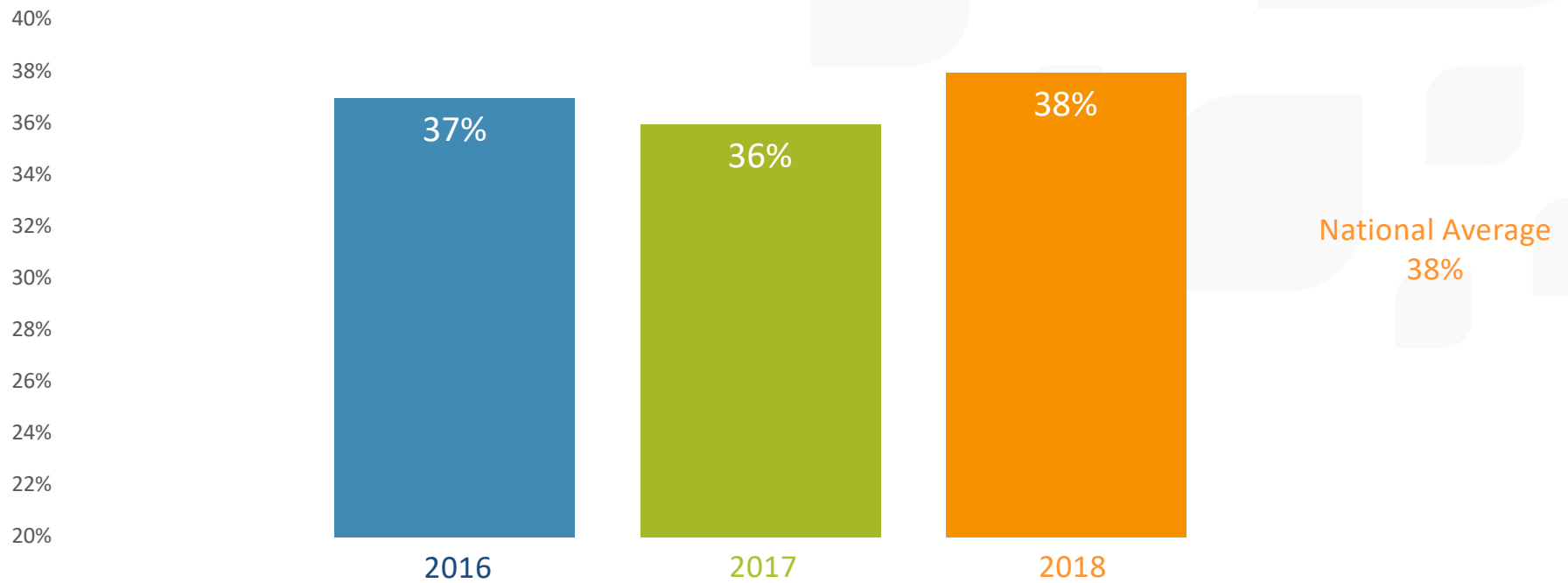
1 in 3

Number of Americans who agreed with the statement
“If I didn’t have to own a car, I wouldn’t”

Source: 2016 - 2018 New Mobility Study by Vison Mobility and Curiosity

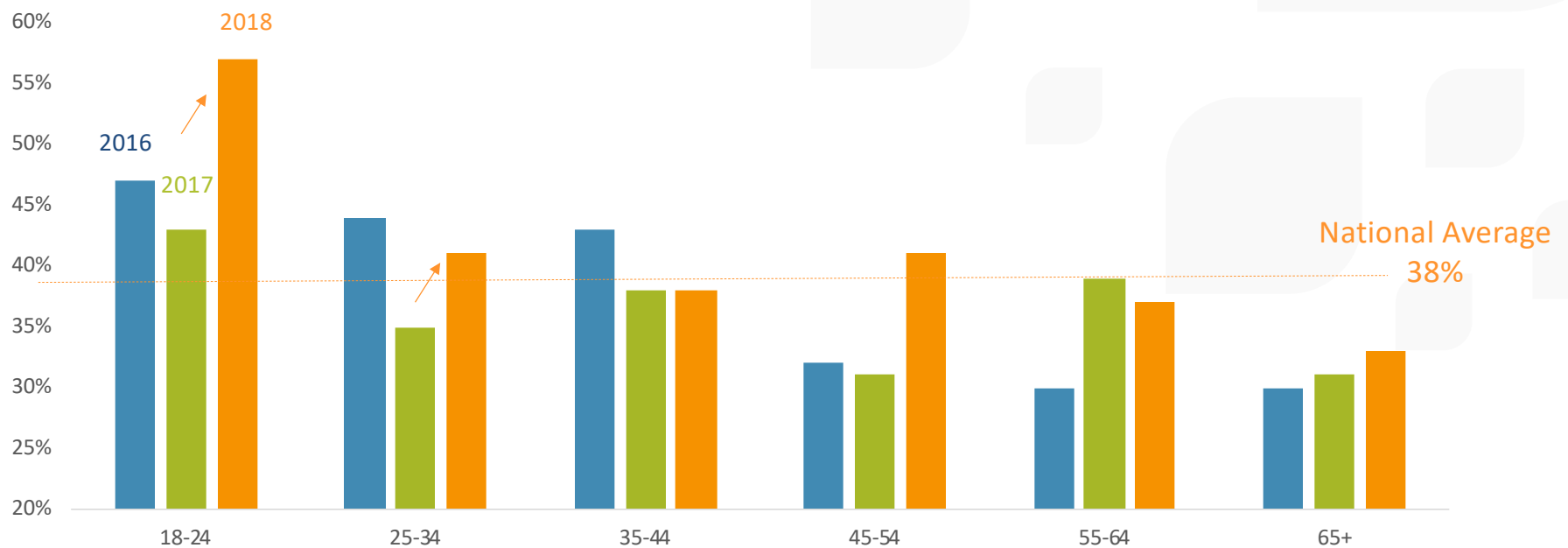
Car Ownership is Less Aspirational

"If I didn't have to own a car, I wouldn't" (% Somewhat Agree/Completely Agree)



Car Ownership is Less Aspirational

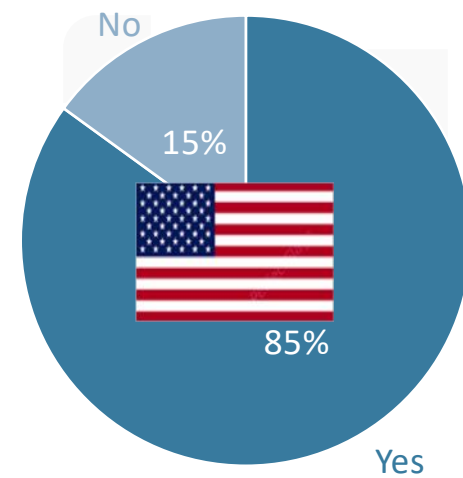
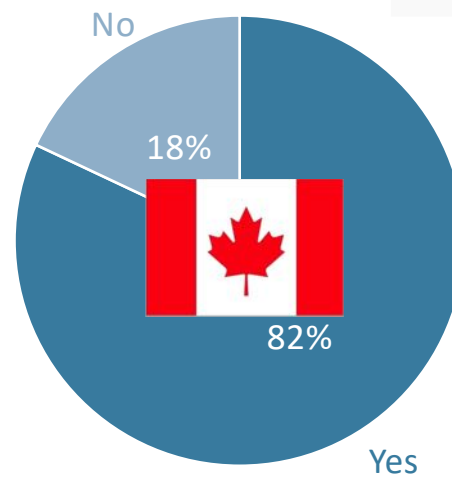
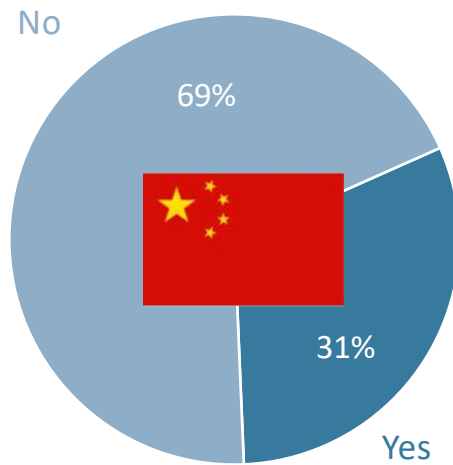
"If I didn't have to own a car, I wouldn't" (% Somewhat Agree/Completely Agree)



Ownership by Country

Car Ownership is very American

Do you personally own or lease a vehicle ?



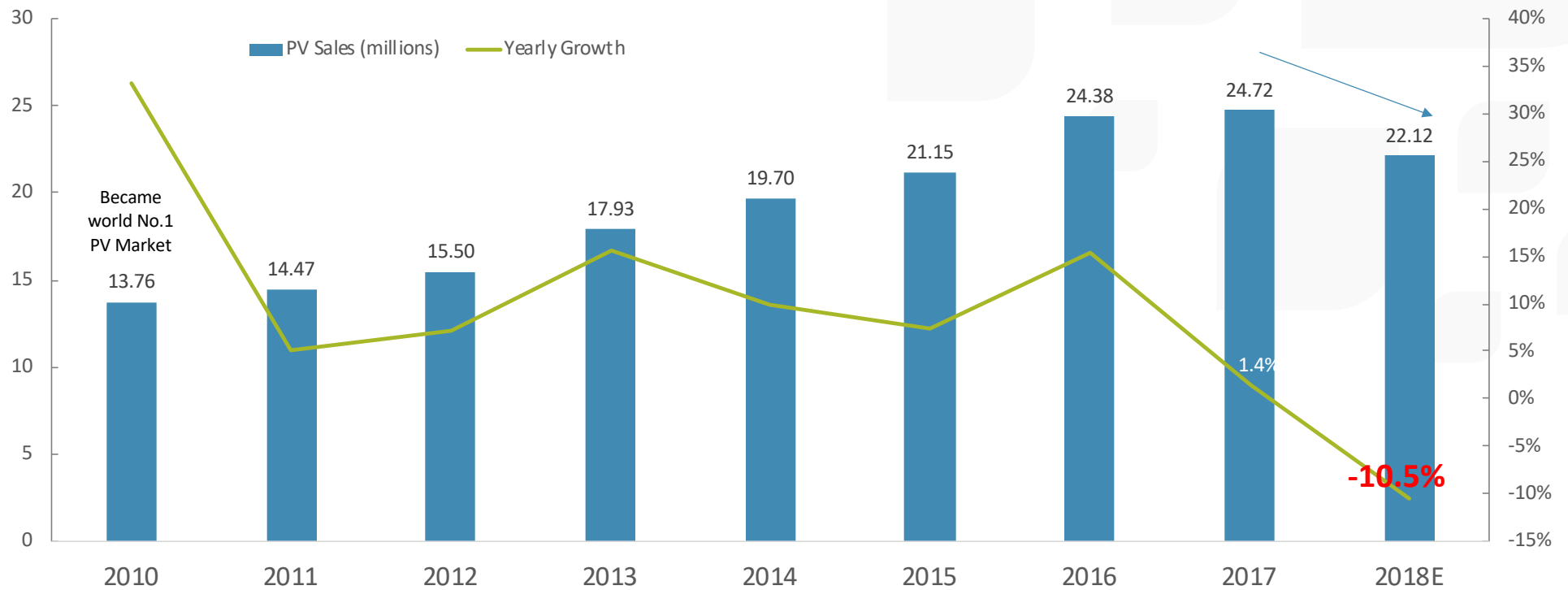
Note: China sample Urban Areas, 14% Nationwide car ownership





China PV Sales Trend 2010-2018

For the first time ever, China PV Sales will recode a **negative growth** in 2018



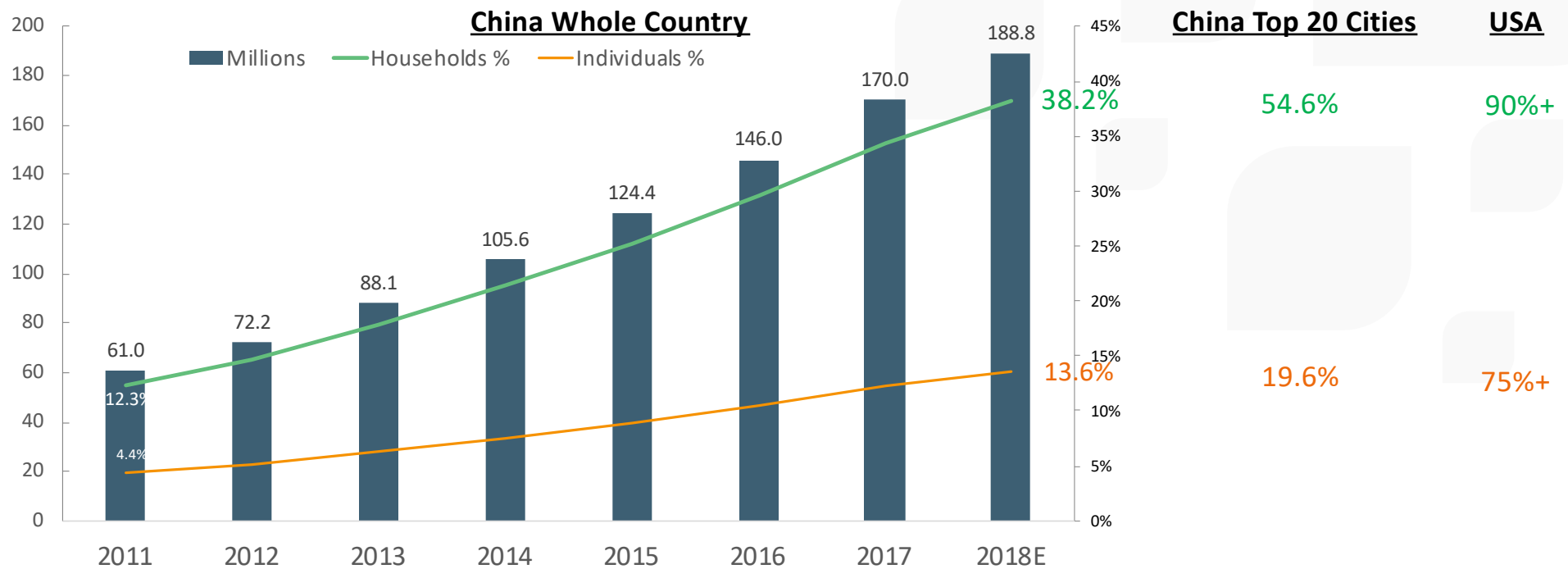
Source: Chinese government public data





Private Vehicle Ownership

China still has large potential for further growth



Source: Public data and the analyzer's estimates.



84%

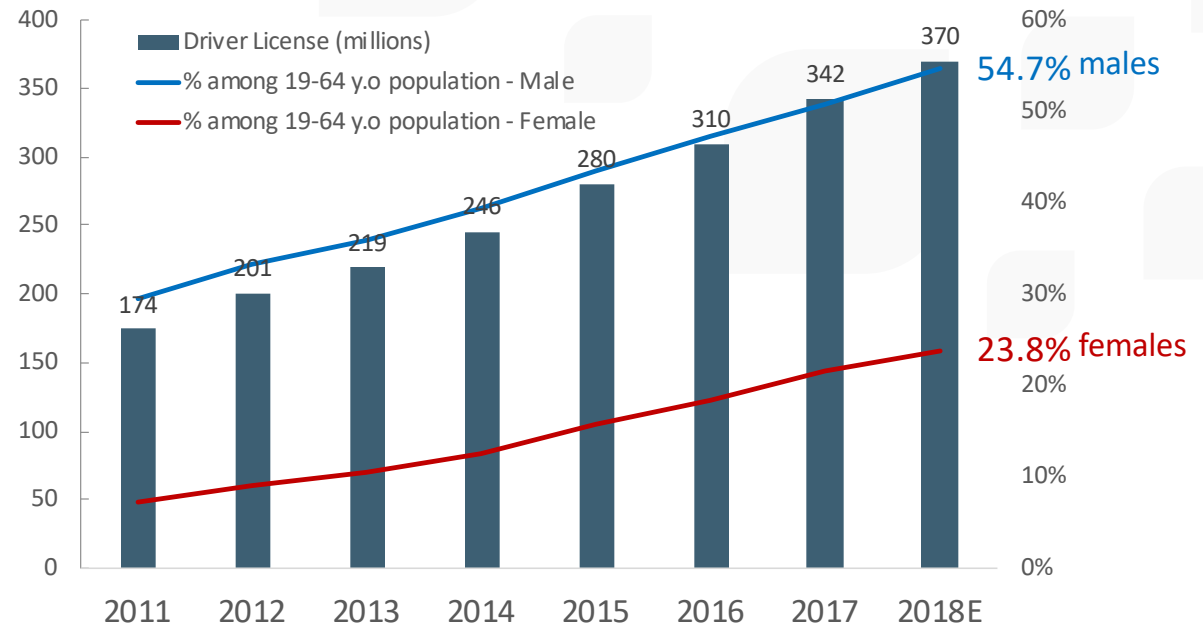
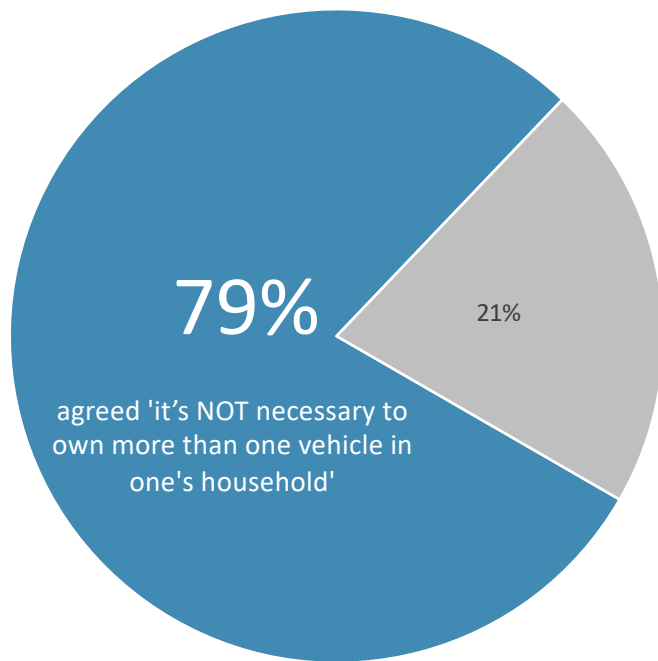
Percentage of Chinese who believe “owning a vehicle is necessary”

Source: 2018 New Mobility Study by Vison Mobility and CuriosityCX



Driving Licenses Trend

However, China will never achieve the same level individual ownership rate as the U.S, most likely one household will own one vehicle only



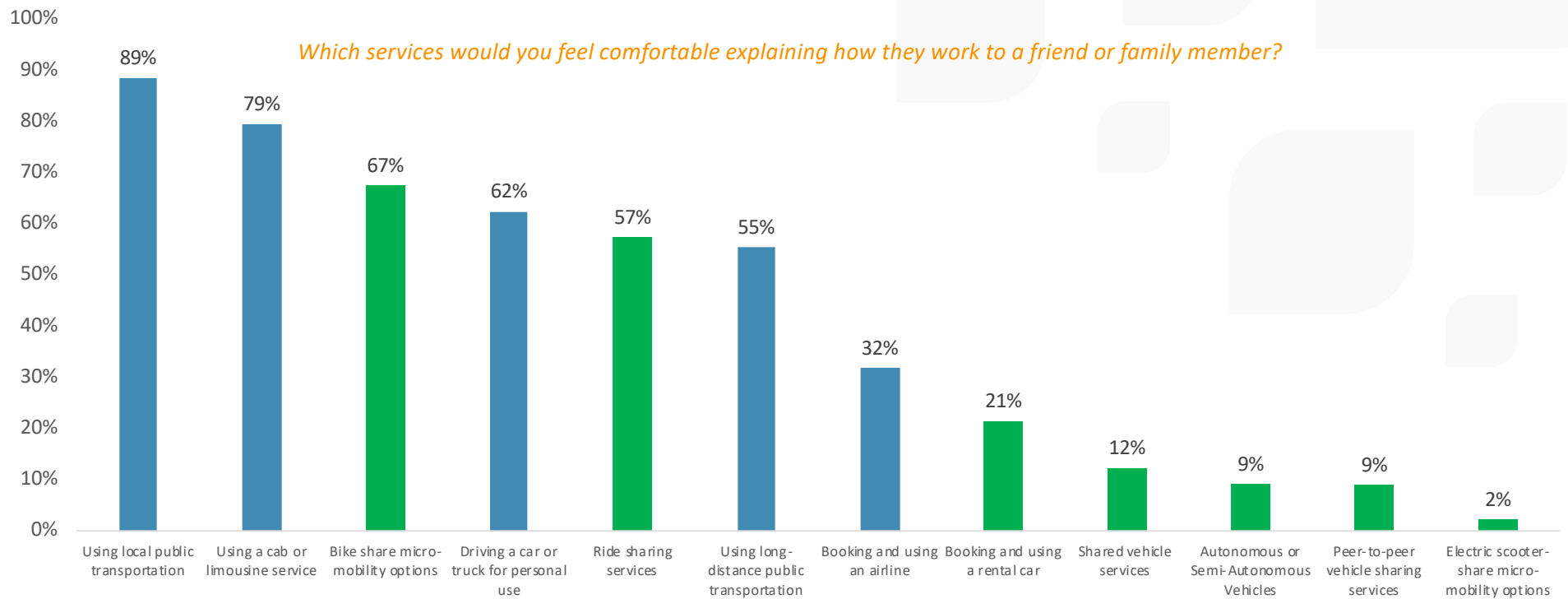
Source: Public data and the analyzer's estimates.

Source: 2018 New Mobility Study by Vison Mobility and CuriosityCX



Mobility Knowledge

China is adapting to new mobility options, very quickly

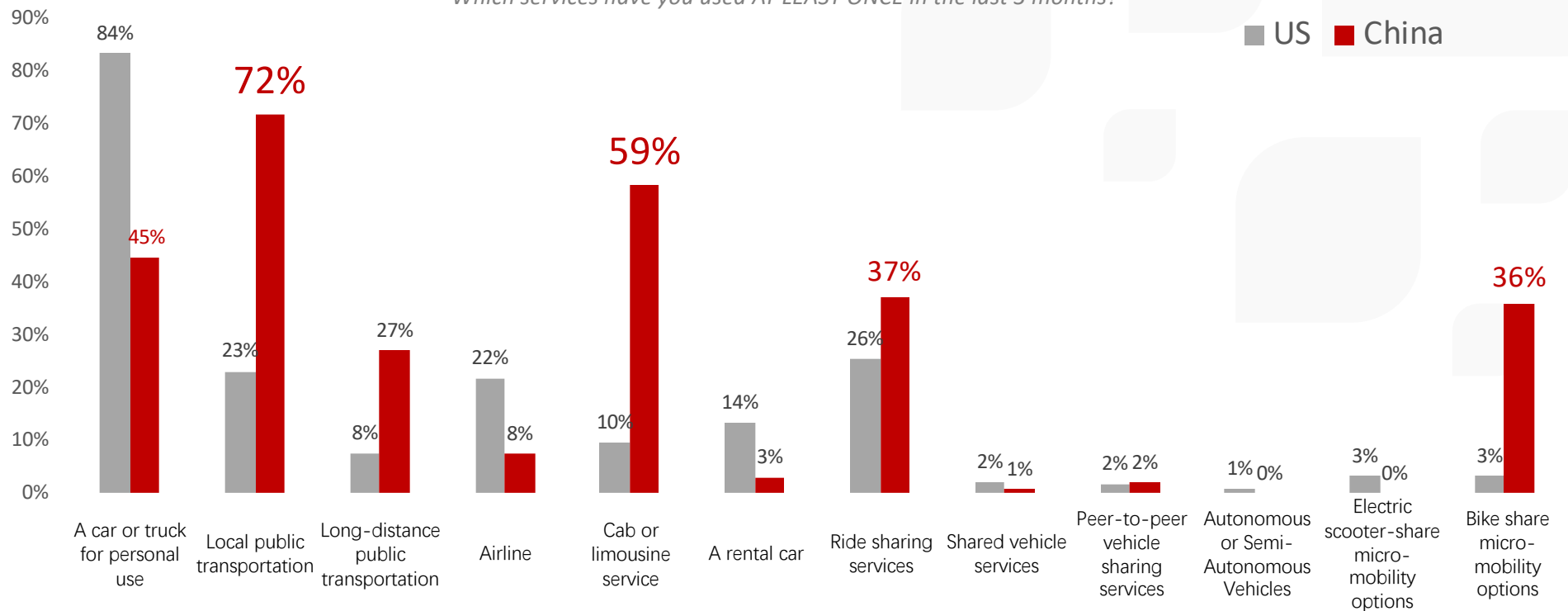




Mobility Use

Use of different mobility options is and will be very much diversified

Which services have you used AT LEAST ONCE in the last 3 months?

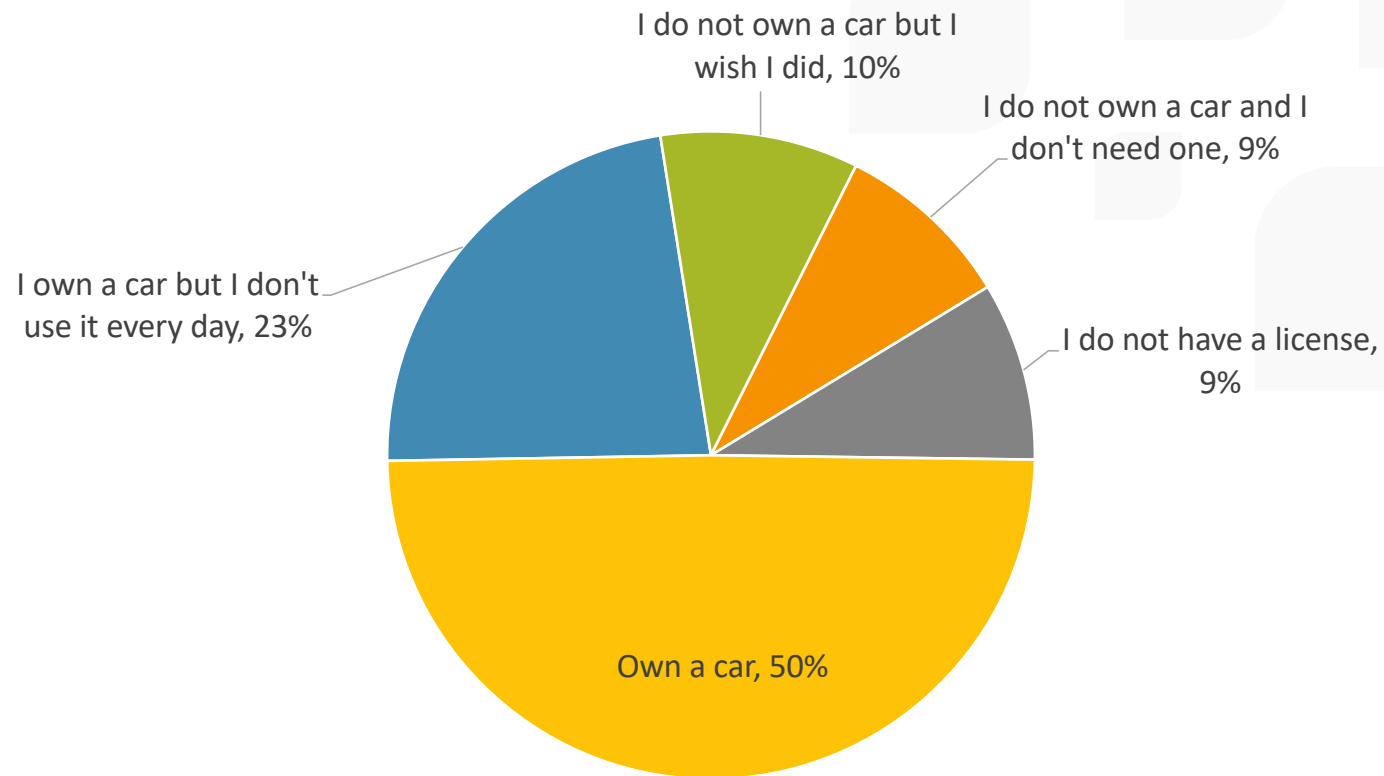


An aerial night photograph of a city street, likely during a large-scale event or protest. A massive crowd of people is visible, illuminated by streetlights and possibly event lighting, creating a dense, textured pattern of light and shadow. The crowd is moving along a wide street that curves through the frame. In the background, city buildings and other streetlights are visible, adding to the urban atmosphere. The overall scene conveys a sense of large-scale urban activity and movement.

URBANISM AND OWNERSHIP

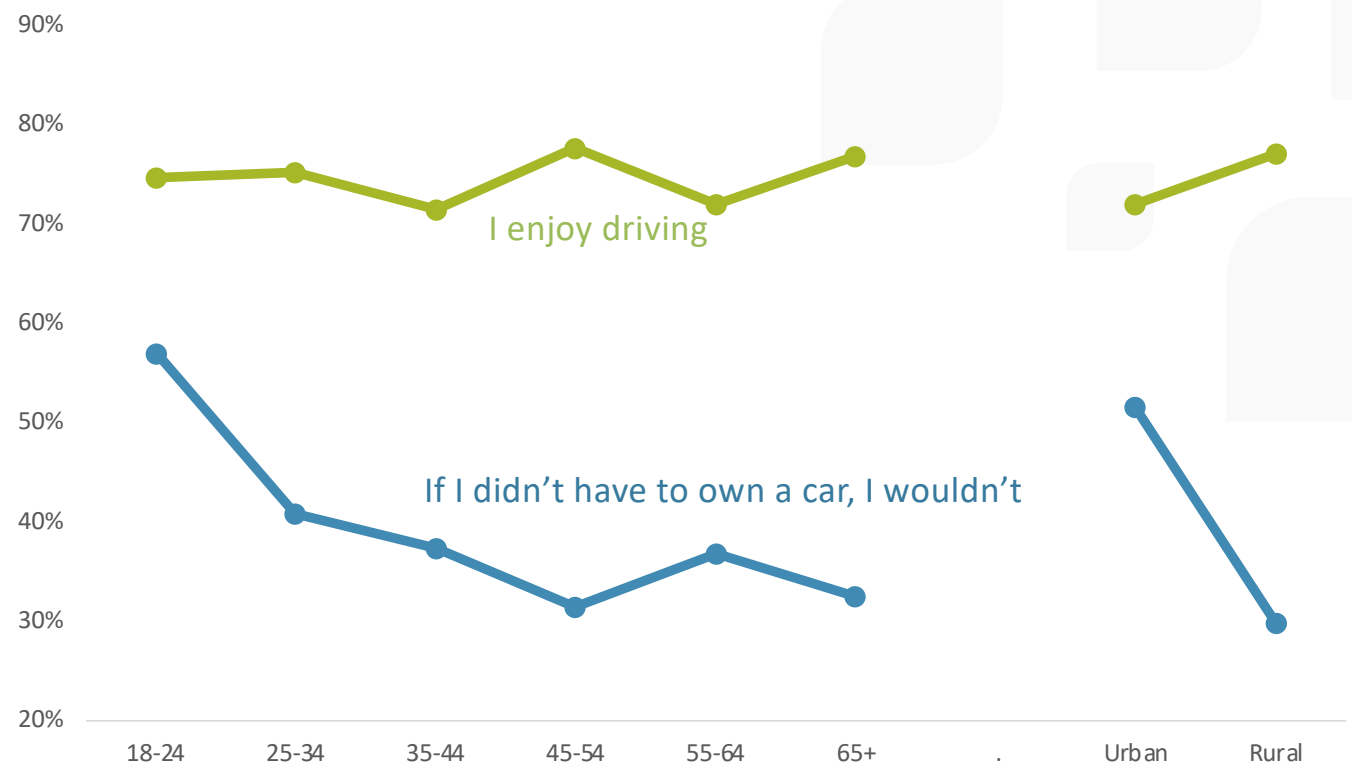
Urban Car Use

50% of urbanites either do not own a car or do not drive everyday



Love of Driving vs. Love of Owning

The love of driving in the US is Universal...just not owning



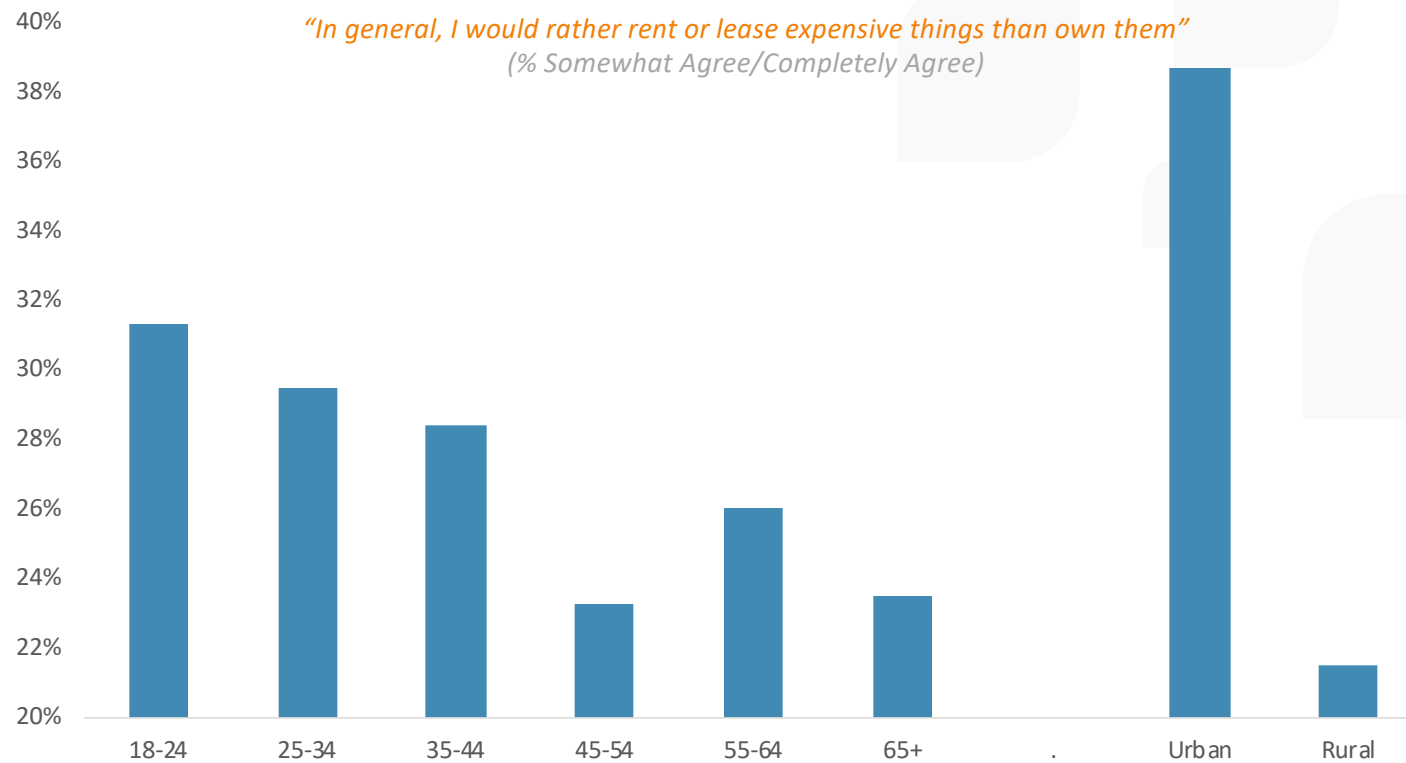
1 in 4

Americans who agreed with the statement
“In general, I would rather rent or lease expensive things than own them”

Source: 2018 New Mobility Study by Vison Mobility and CuriosityCX

The Cult of Ownership

Younger people in the US are more open to not owning things

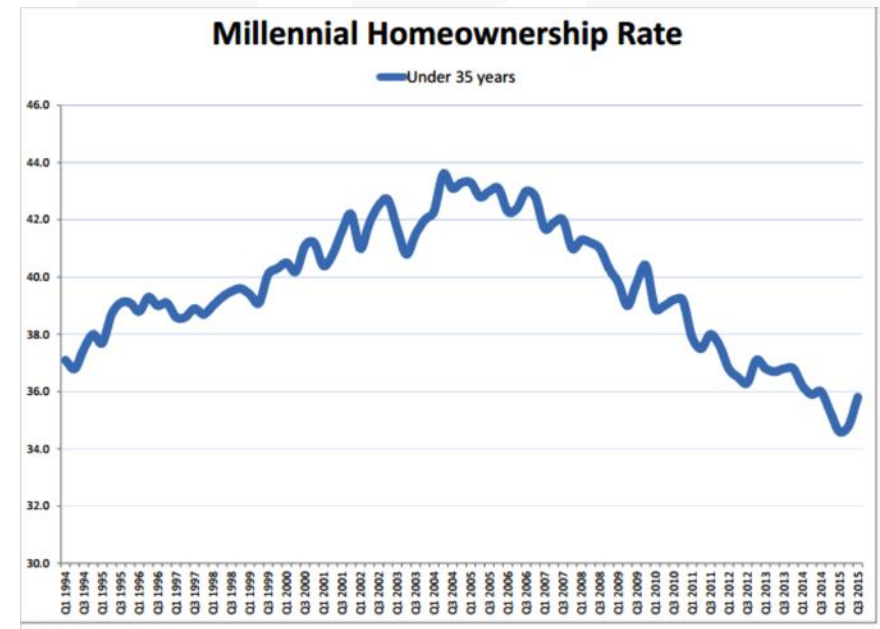
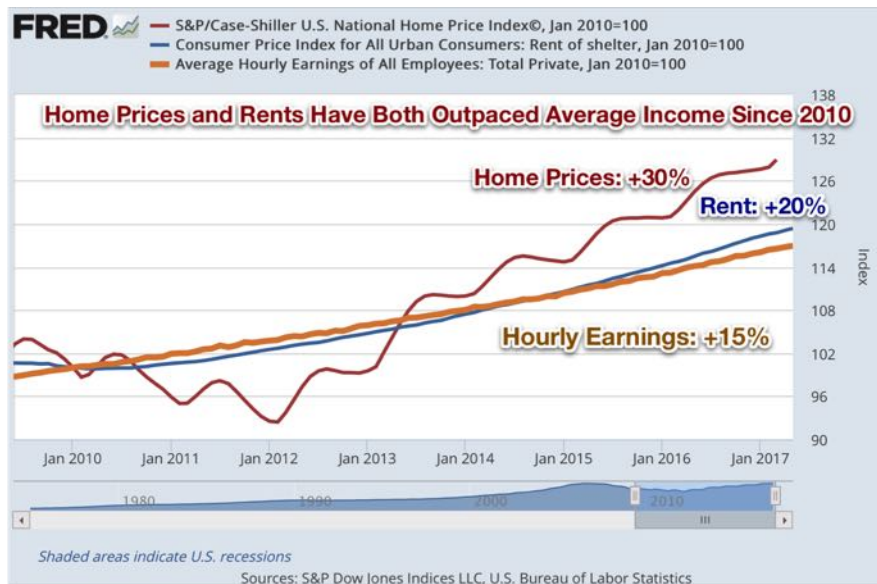


WHY?



Economic Forces

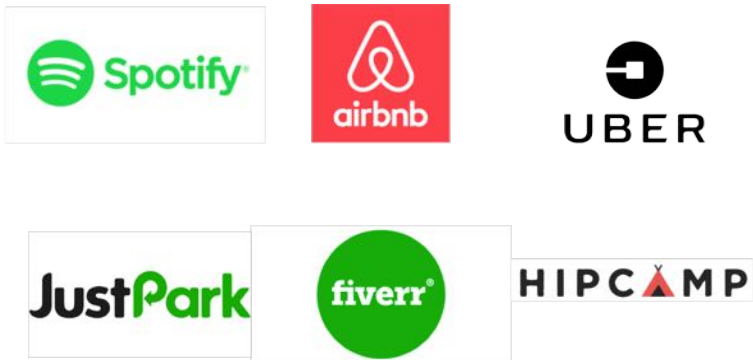
The cost of “expensive stuff” continues to put it out of reach for more and more people



Social Forces

The Young, Urban, and Educated are familiar with the [sharing economy](#) and are shedding possessions in favor of [experiences](#)

Sharing Economy

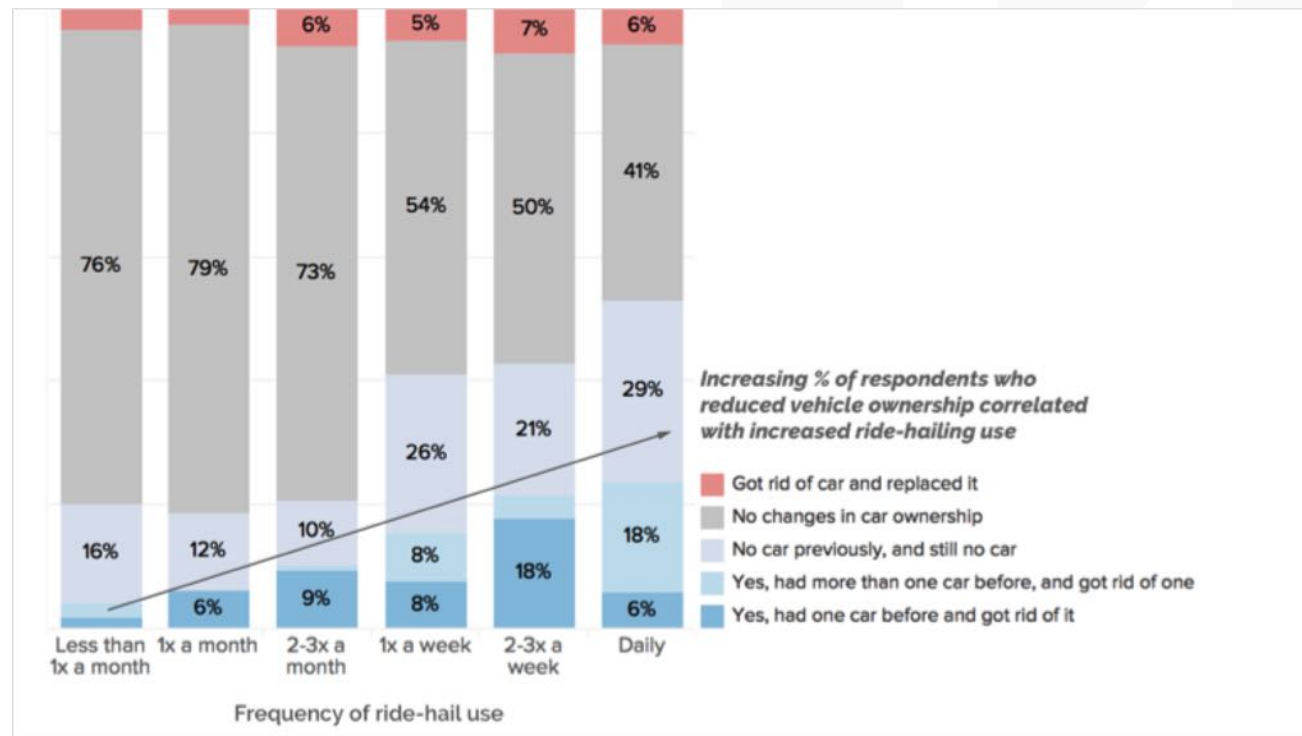


Experiences vs. Stuff



Are People Ditching their Cars?

As ride-hailing use increases, it substitutes personal use vehicles

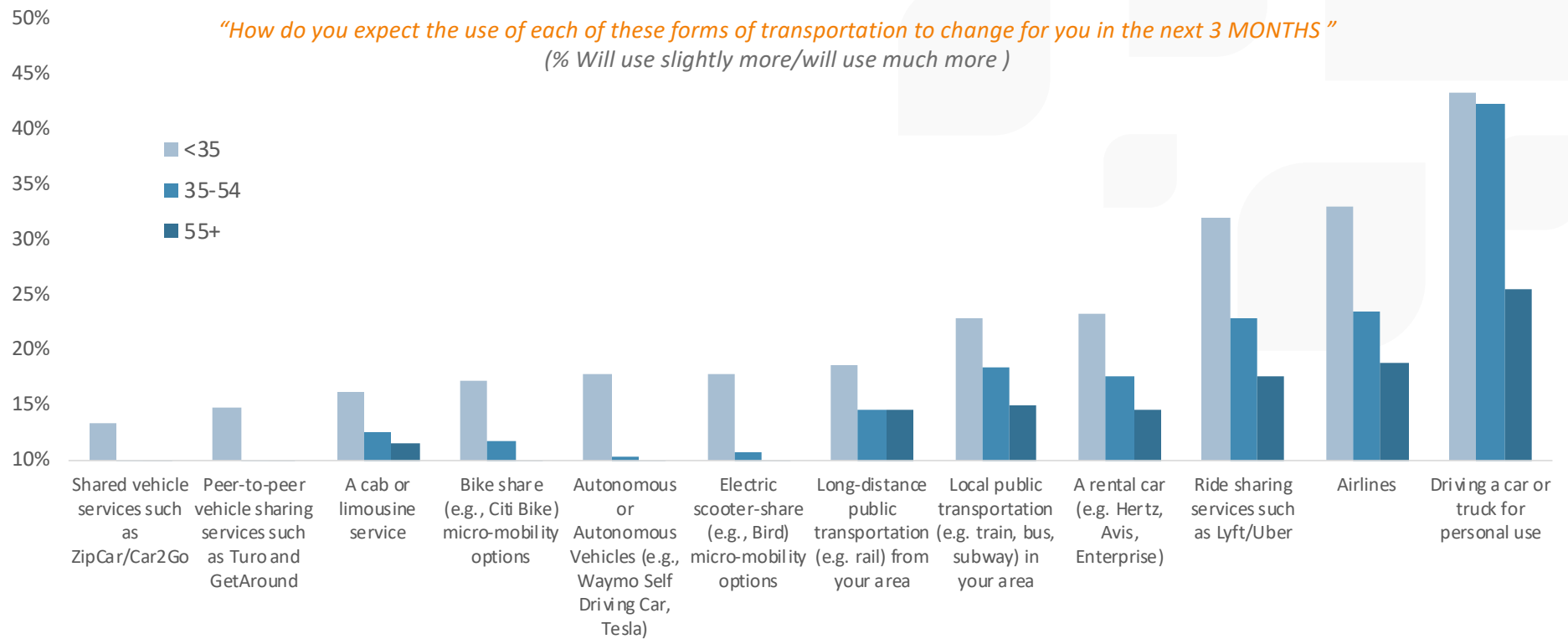


Source :Clewlow, R.R., and Mishra, G.S. (2018). Disruptive Transportation: The Adoption, Utilization and Impacts of Ride Hailing in the United States. UC Davis Institution of Transportation Studies.



Openness to New Forms of Transportation

Younger people in the US are more open to all forms of transportation



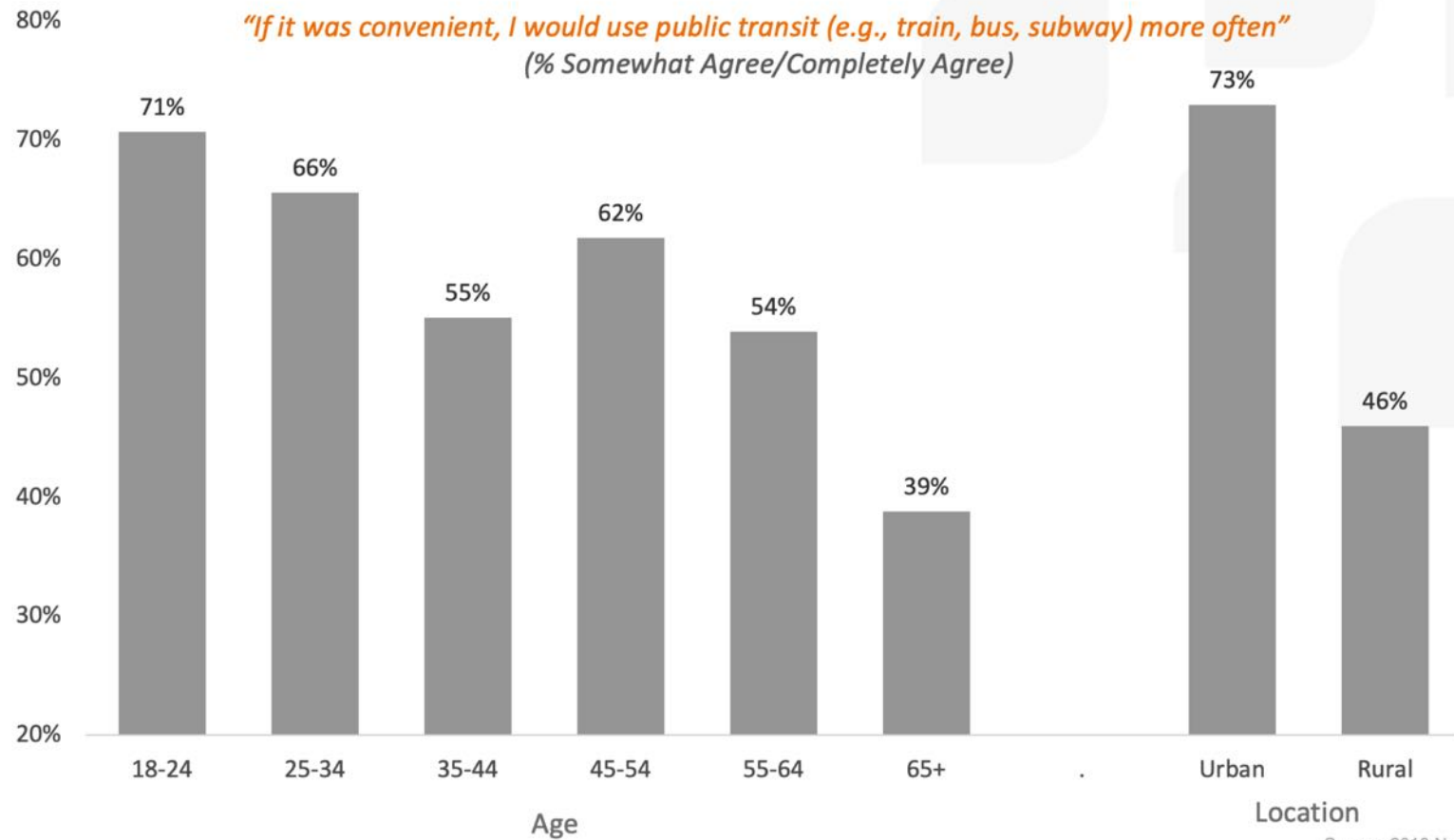
Source: 2018 New Mobility Study

Third Annual Mobility Study 2018



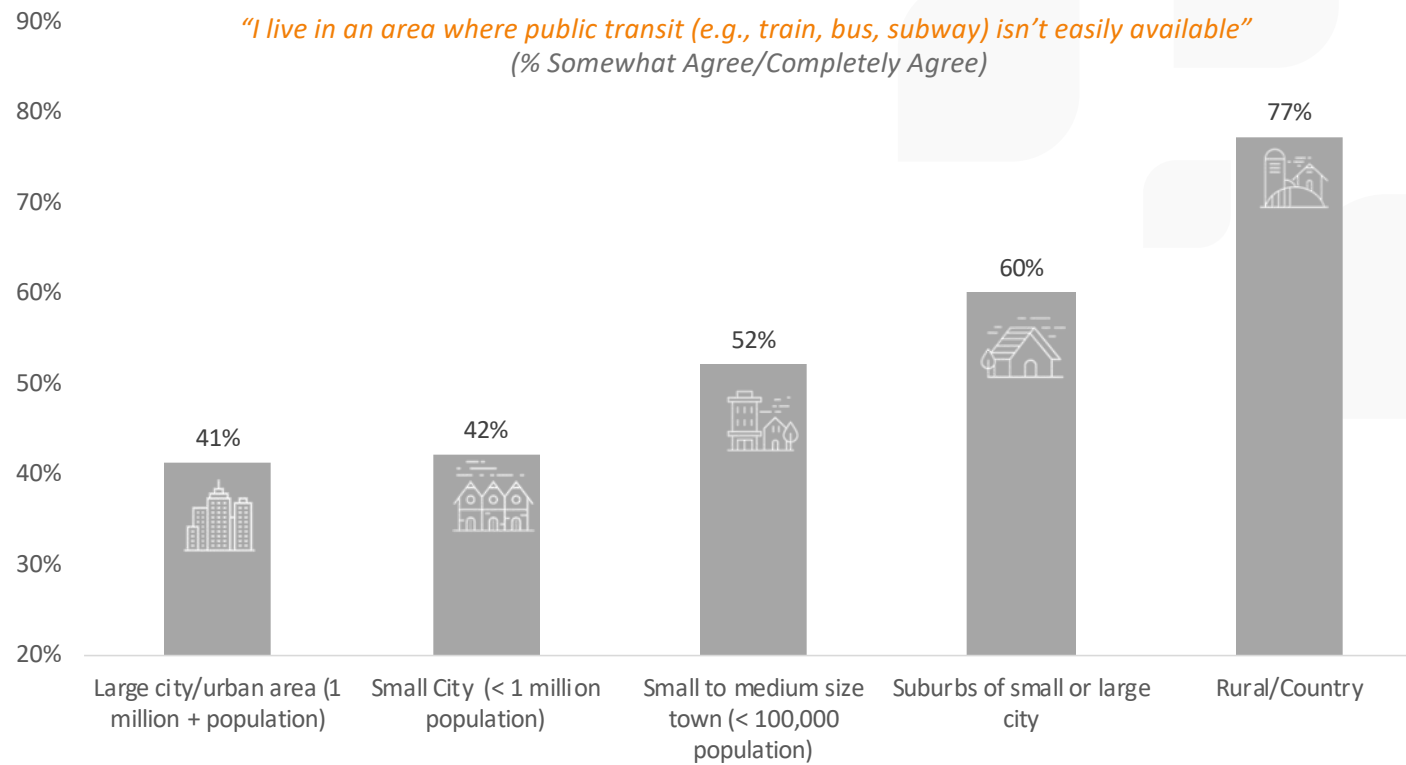
The Mass Transit Gap

Young people in the United States want to use forms of public mass transit



Mass Transit Gap

But public mass transit is concentrated in urban locations in the United States



The Future Autonomous Transit Map?



Source: <https://www.cambooth.net/>



Today's Agenda

Key mobility insights *shaping our industry*



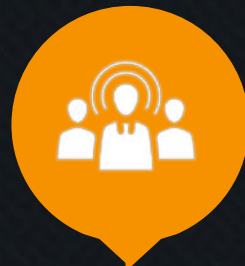
01

New Mobility
Landscape



02

Mobility Knowledge
and Adoption



03

Consumer
Sentiment

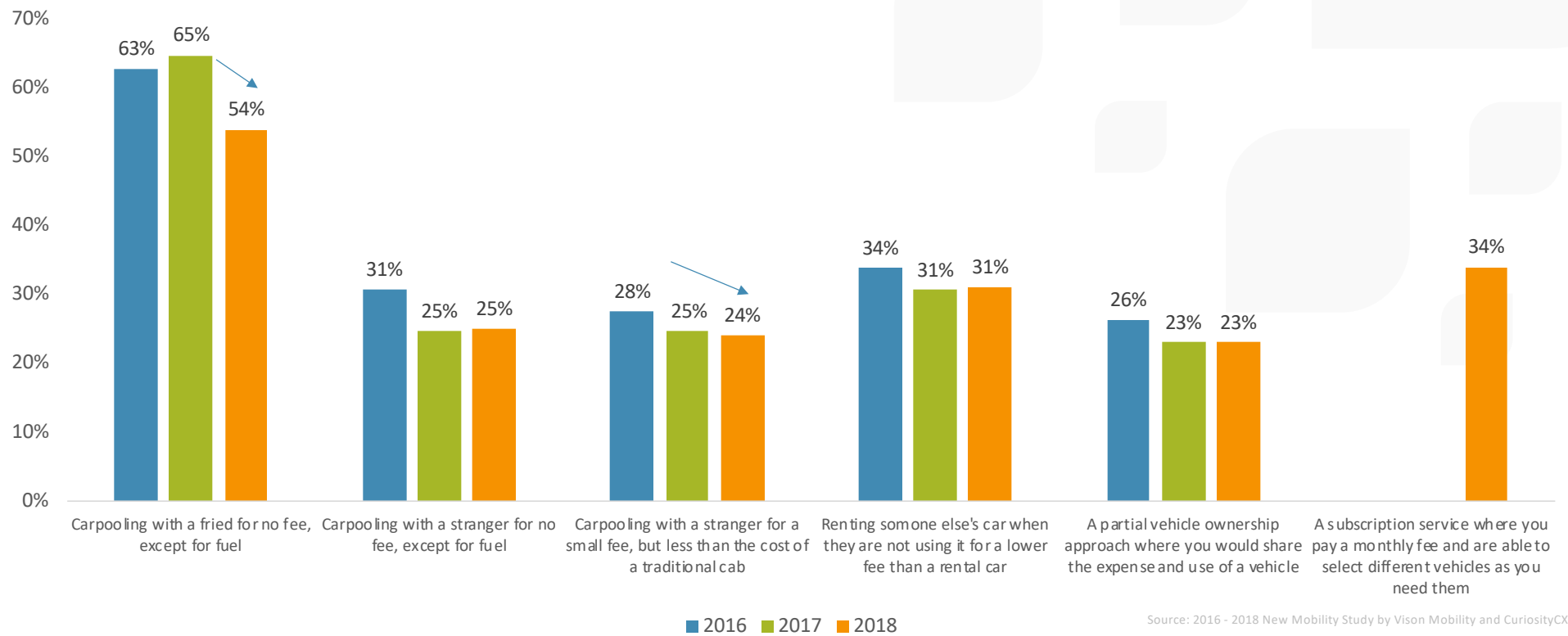


04

New Mobility
Interest

Mobility Interest

Interest in different mobility options among the public in the United States

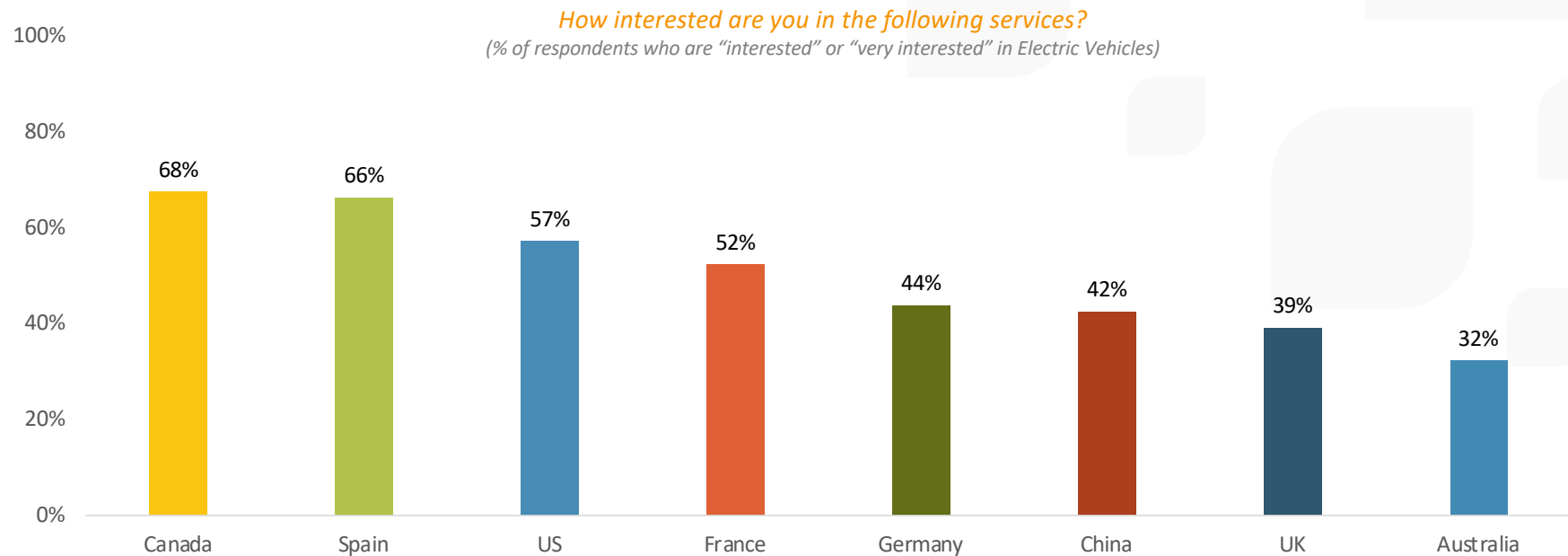


Source: 2016 - 2018 New Mobility Study by Vison Mobility and CuriosityCX



Electric Vehicle Interest

More than half the countries surveyed have more than 50% of people interested in EVs. Interest from the UK and Australia lag behind



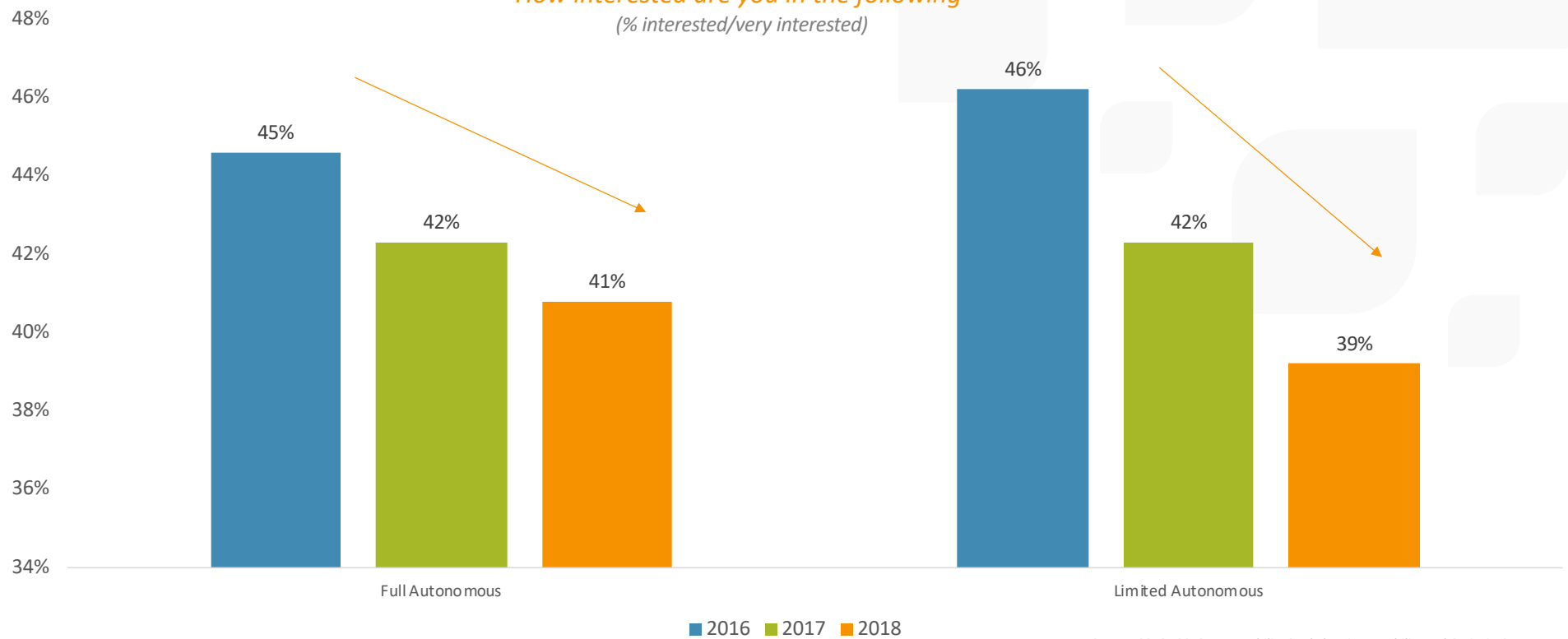
Note: This sentiment was not provided as an option for the China survey, so no China results as available to be presented. Canada and US samples presented exclude rural respondents

Source: 2018 Mobility Study by Vision Mobility, CuriosityCX and L.E.K. Consulting

Autonomous Interest

Use among the public in the United States of different mobility options

How interested are you in the following
(% interested/very interested)



■ 2016 ■ 2017 ■ 2018

Source: 2016 - 2018 New Mobility Study by Vison Mobility and CuriosityCX

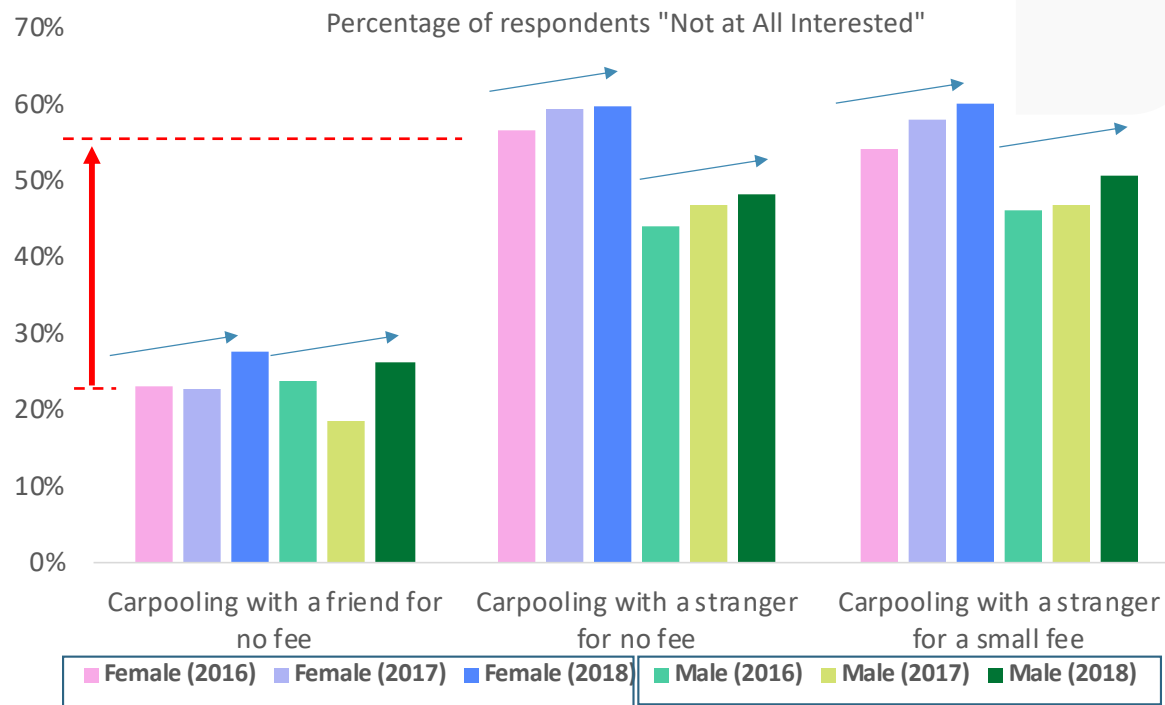




Ride Sharing— Still cool?

Riding Sharing Challenges

Less people interested in Ride sharing and few want to share with strangers due to trust concerns

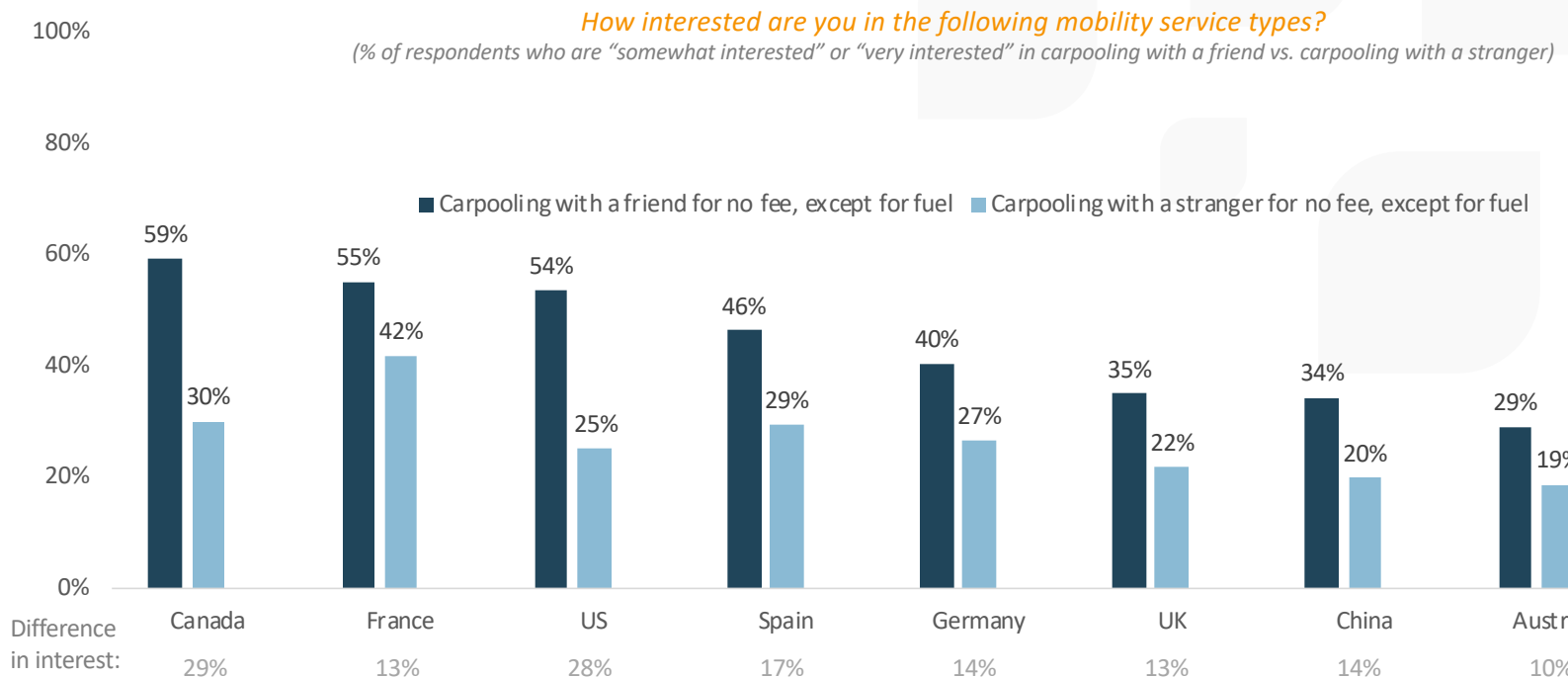


- Continued huge gap between ridesharing with friend vs stranger
- Increasing, across the board trend in those not at all interested in ride sharing / car pooling
- Big gap between men and women not interested in sharing rides with strangers

Source: 2016 - 2018 New Mobility Study by Vision Mobility and CuriosityCX

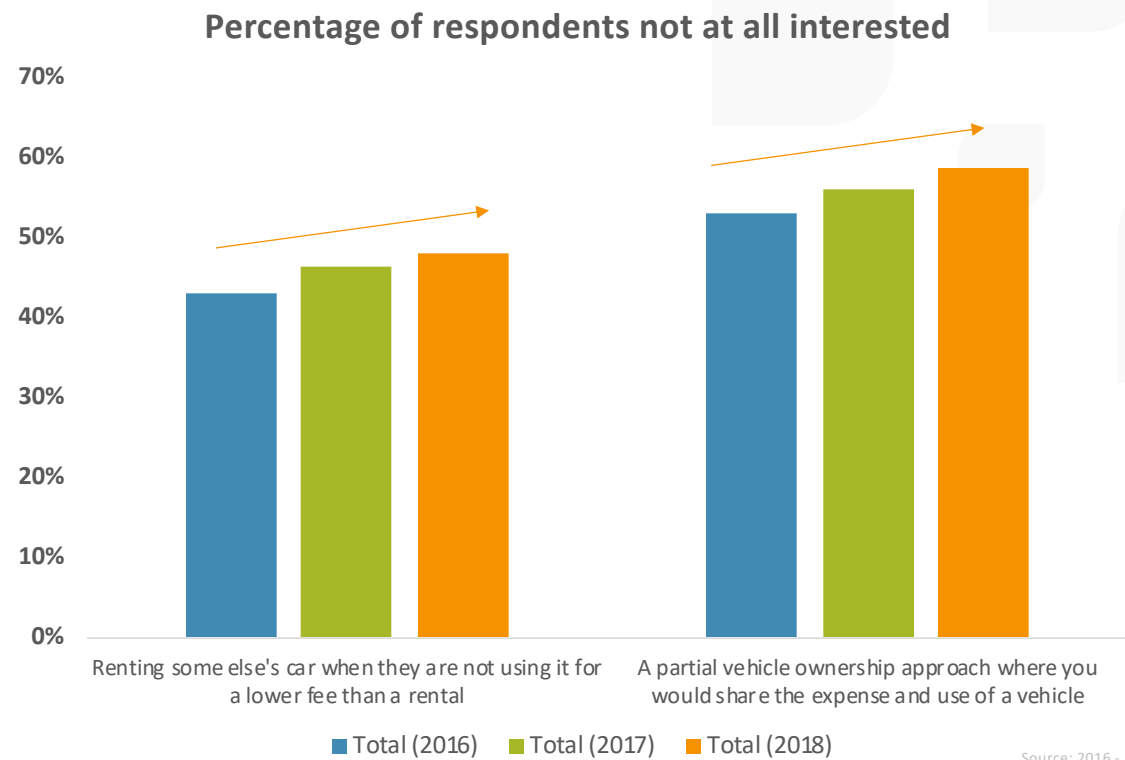
Car Pooling “Stranger Danger”

Carpooling with friends is favored. People are on average 40% less likely to carpool with strangers, highlighting potential trust issues



Vehicle Sharing Challenges

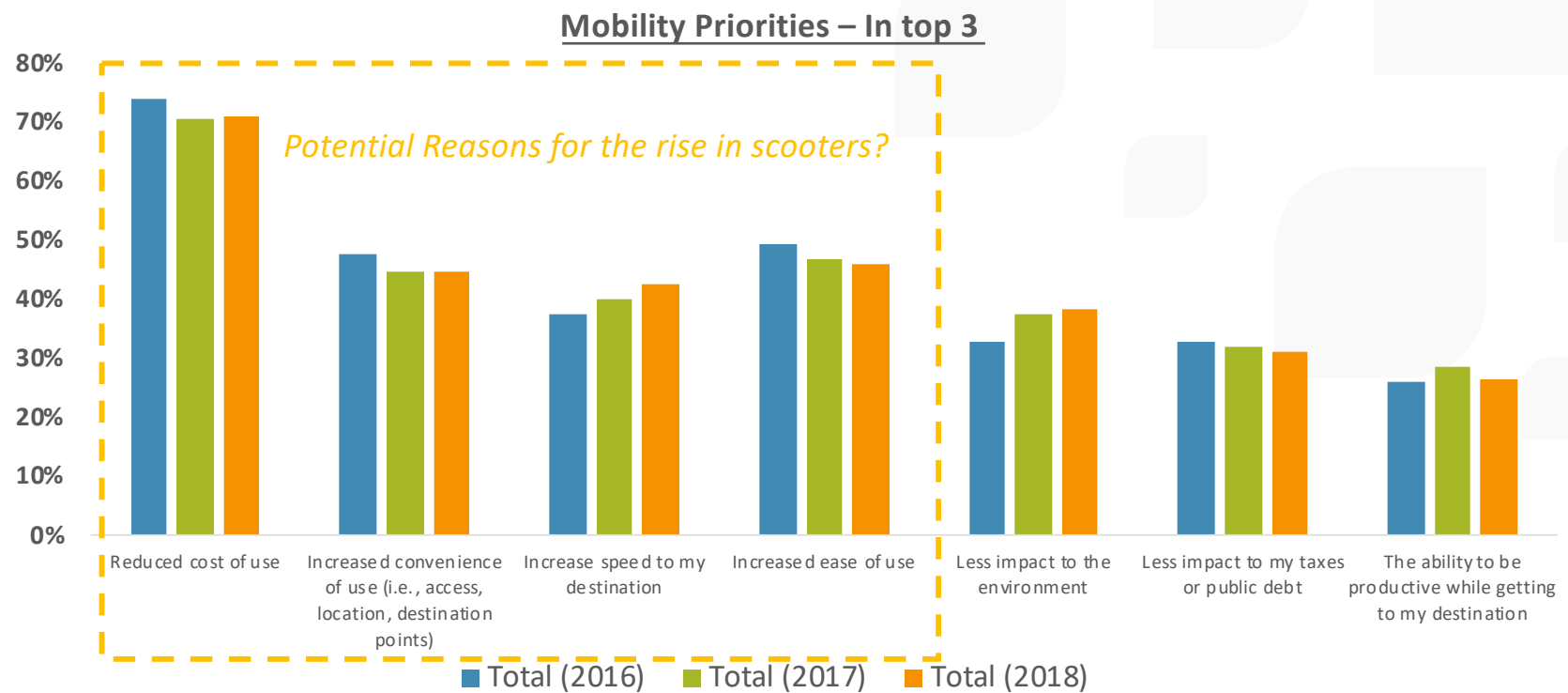
Vehicle Sharing has as many challenges as ride sharing



Source: 2016 - 2018 New Mobility Study by Vision Mobility and CuriosityCX

Mobility Priorities

Cost of use drives mobility priorities, but increased speed to destination is rising fast.



Source: 2016 Mobility Study

Third Annual Mobility Study 2018

Today's Agenda

Key mobility insights [shaping our industry](#)



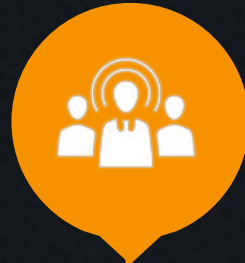
01

New Mobility
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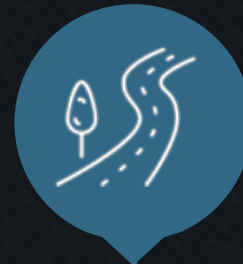
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Mobility Knowledge
and Adoption



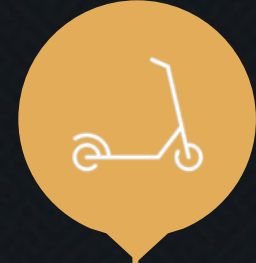
03

Consumer
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New Mobility
Interest



05

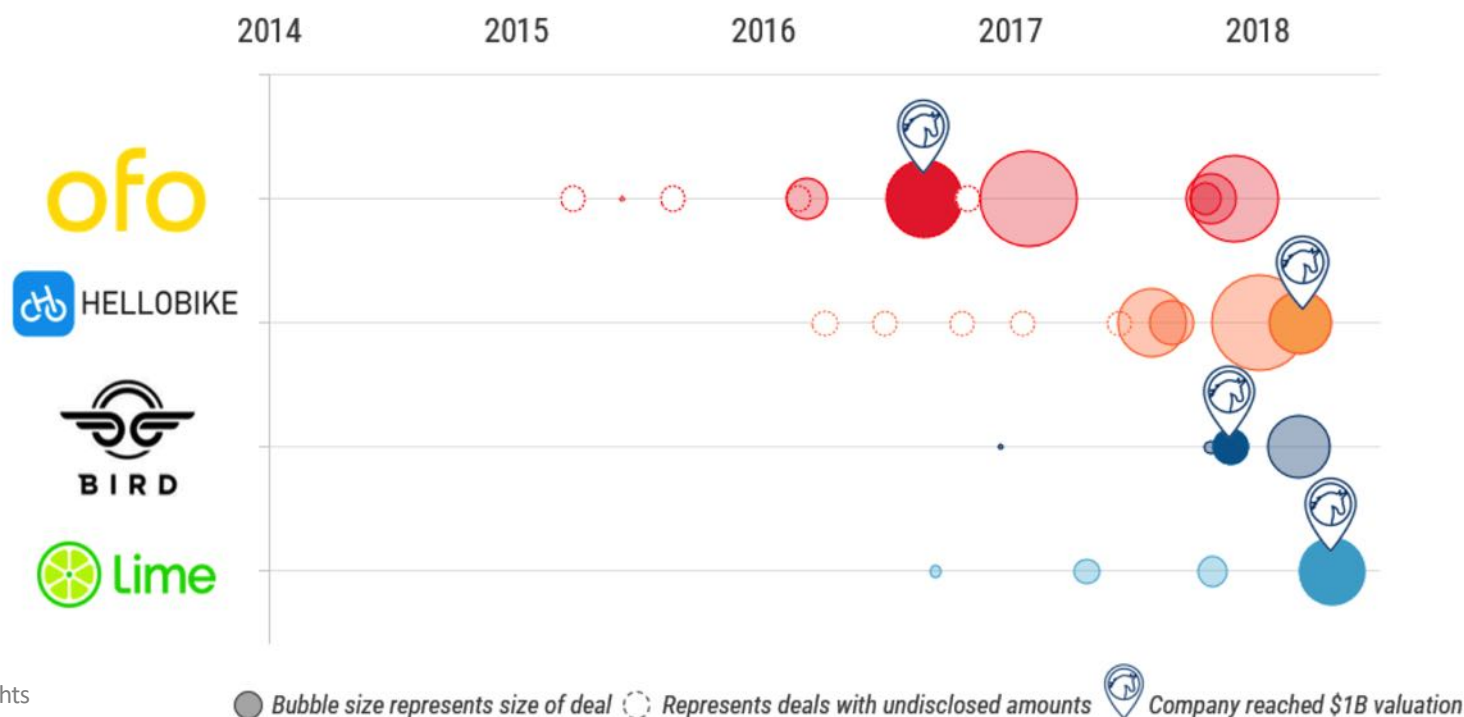
Micro Mobility

Investment in Micro-Mobility



For Bike & Scooter-Sharing Firms, A Huge Run-Up In Funding

2014 - 2018 YTD (as of 7/11/18)



Source: CBInsights

Background on Electric Scooter Sharing



- Bird, Lime, and SPIN are the three most common electric scooter sharing brands in the US
- Are battery charged and go approximately 15 MPH and travel about 20 miles on full-charge
- Are a new mobility trend designed to help reduce the need of autonomous travel for short distances to help create a “healthier and cleaner environment”
- Costs \$1 to start, then \$0.15 per minute to use



Where Are E-Scooter Offered?

72

Offered in:

- 12 Countries
- 28 U.S States
- 100+ Cities

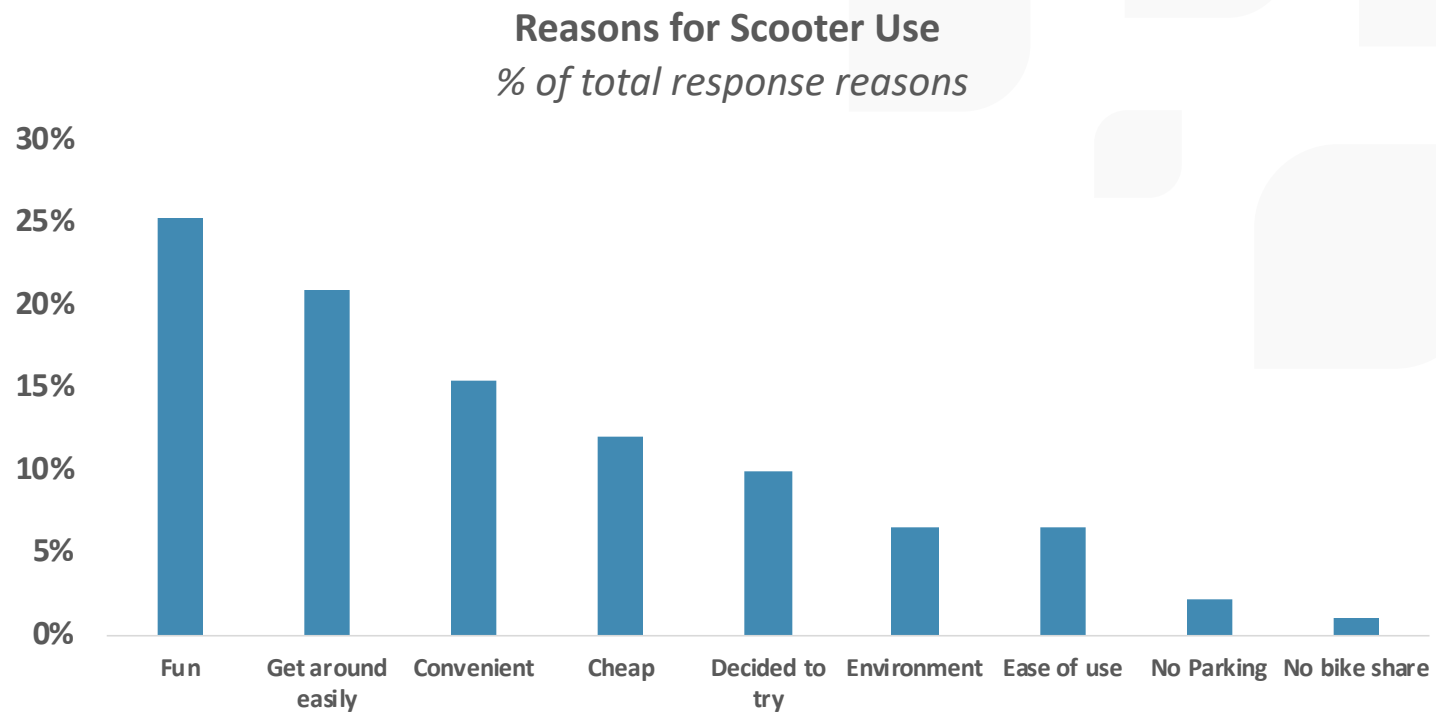
Key Competitors

- Bird
- Lime
- SPIN



Scooters – Reasons for Usage

They're fun, convenient and make it easy to get around



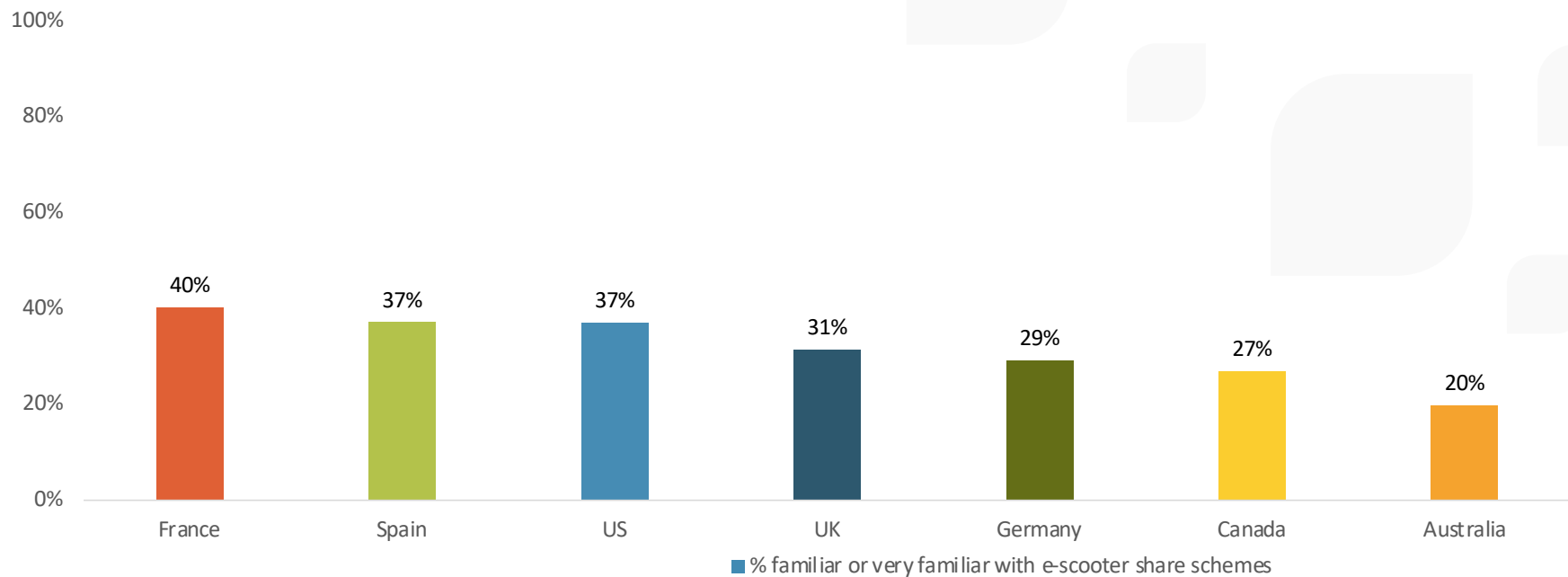
Source: 2016 Mobility Study

Third Annual Mobility Study 2018

Familiarity with E-scooters

France, the US and Spain have more familiarity with e-scooters. E-scooter familiarity is significantly lower in Australia

*How familiar are you with e-scooter share schemes?
(% of total respondents who are "familiar" or "very familiar")*



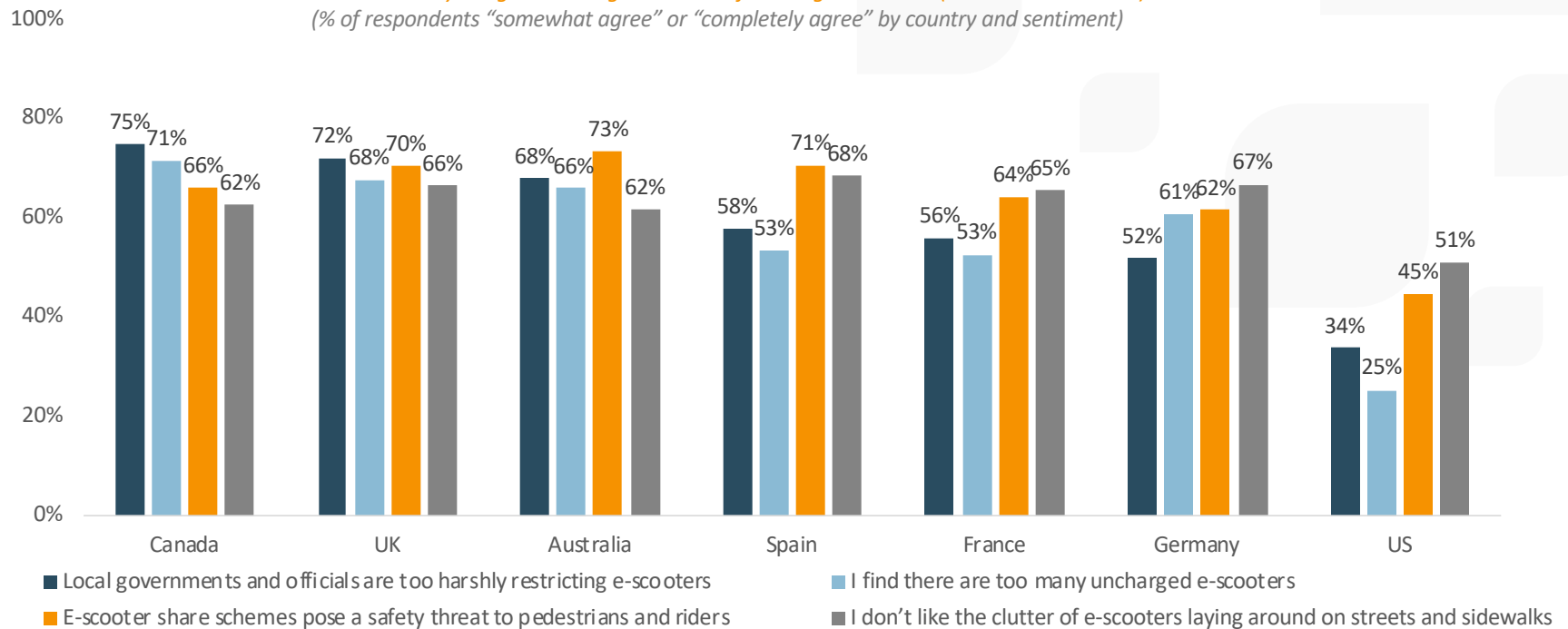
Note: Questions on e-scooters were not included in the China survey, so no China results are available to be presented. Canada and US samples presented exclude rural respondents

Source: 2018 Mobility Study by Vision Mobility, Curiosity and L.E.K. Consulting

Key Concerns with E-scooters across Countries

The top 2 e-scooter concerns across countries include **the potential safety threat** and their propensity to clutter streets. The US overall has the least concern with e-scooters

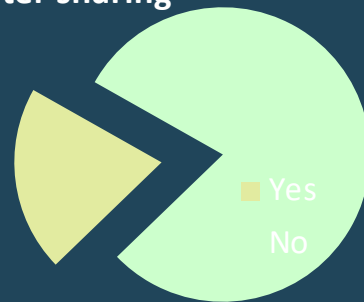
*How much do you agree or disagree with the following statements (related to e-scooters)?
(% of respondents "somewhat agree" or "completely agree" by country and sentiment)*



Familiarity and Adoption of E-Scooters

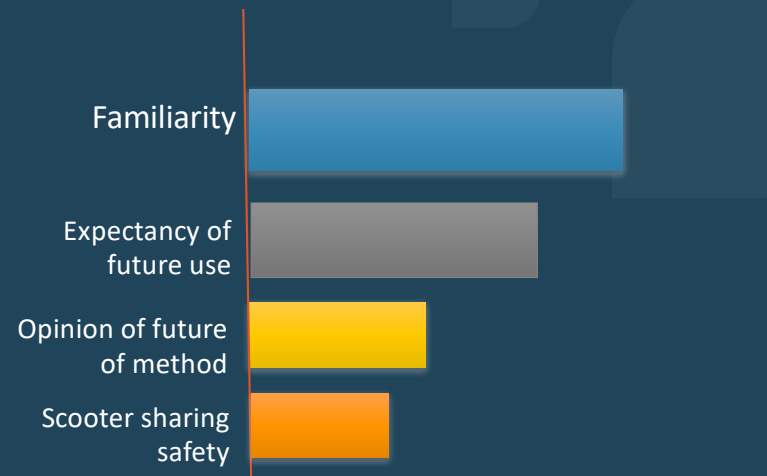
31% of both U.S and

Canadians surveyed were familiar with electric scooter sharing



Of those familiar **80%** have not used electric scooter sharing

Key Attitudes that impact electric scooter share usage



Qualitative Sample

77

Method:
IDI



7 Females



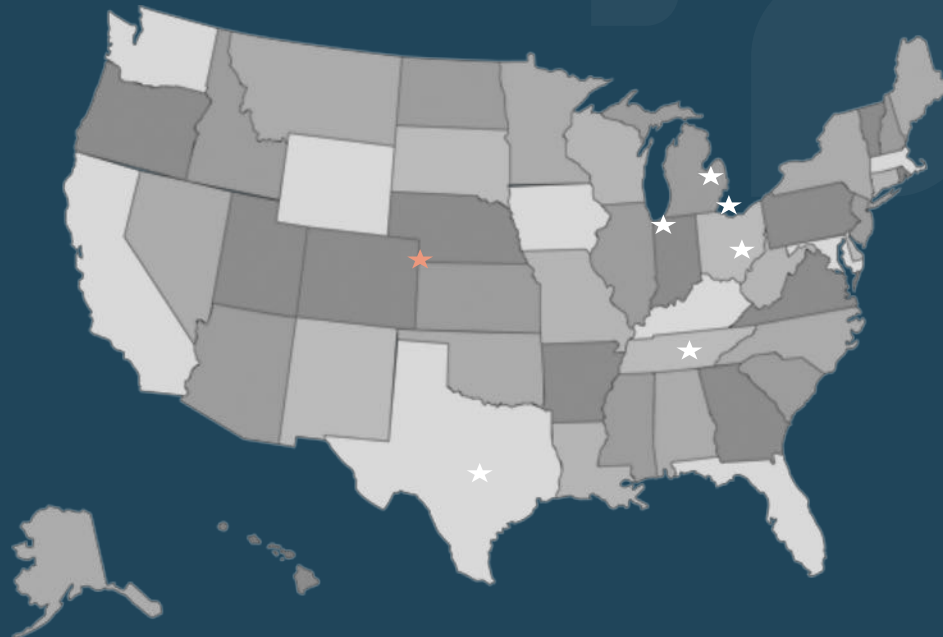
9 Males

Age Range

18



60



“It is an alternative to get right to your destination. No need to worry about paying for parking” -

Nashville User

“To get to an area or venue 3 miles or less away where it is more convenient and/or cheaper than driving” -

East Lansing User

“It is an alternative to get right to your destination” -

Nashville User

Individuals typically would use or do use when needing to get to a place fast without the stress of parking or the time of waiting for a rideshare service (Uber, Lyft)





Individuals felt that electric scooter sharing is not a “fad,” and will continue to be in the future, but not as a primary mobility method

“I think it will be a staple in major cities, but not an alternative to owning a car”-

Ann Arbor User

“Not functional in all areas. Terrain and traffic infrastructure are not always ideal for the scooter, other transportation methods will definitely trump this. I can see it staying around though for fun and city destinations”-

Chicago User

Not a fad as fuel cost increase and difficulty parking in high density urban areas, so good if a car isn’t absolutely necessary”-

East Lansing User



SUMMARY

- 1** Electric, Autonomous and Shared mobility is real, and forecast growth is very strong
- 2** Traditional Mobility knowledge and use is beginning to decline, as shared mobility (ride hailing and micro-mobility) increases
- 3** Pushback on car ownership increasing, particularly among millennials - even if they enjoy driving. It is driven by less desire to own, focus on experiences and high cost of housing / car ownership.
- 4** China mobility is different - car ownership is still aspirational, and alternative mobility options have much greater knowledge and use
- 5** Autonomous interest is declining, due to less hype and accidents from Uber and Tesla
- 6** Ride Sharing interest is falling as trust and personal space issues dominate consumer thinking
- 7** Micro mobility is fun, convenient and solves a transit problem, but with some safety and planning challenges apparent





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Questions

A copy of this presentation is available upon request.
We just ask you give us attribution if you use the data.

