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CONSUMER INSIGHTS

The evolution of the auto consumer

Automotive Intelligence Summit I Raleigh, NC

July 23, 2019

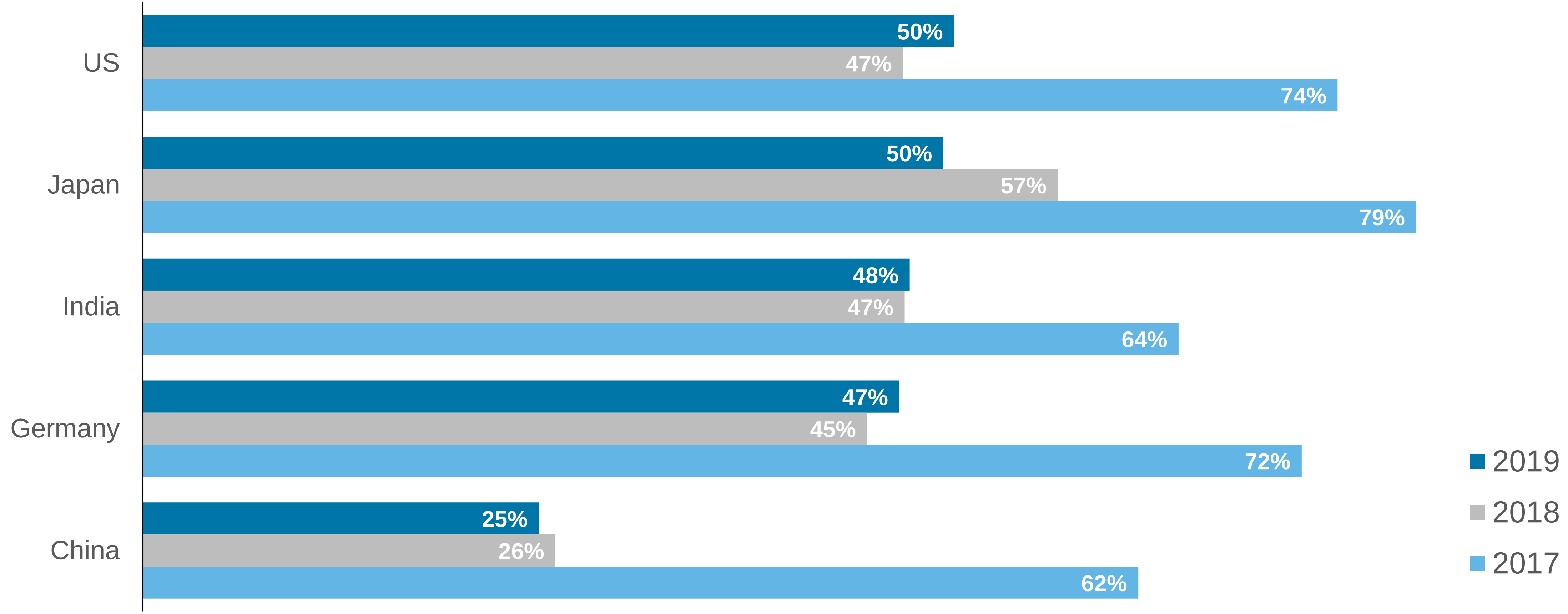
Is the future moving as fast as we think?

Consumers "pump the brakes" on Interest in AVs	As science fiction gets ever closer to reality, **consumers are questioning if autonomous vehicles will be safe** at the same time **trust in OEMs continues to erode**.
Electric vehicles finally showing potential to scale	**EV demand is growing in AP and EU regions** due to supportive environmental policies, big-brand bets, and shifting consumer attitudes. But, **low fuel prices in NA are keeping consumers away**.
Consumers may be reluctant to pay for connectivity	Consumer opinions are mixed as interest in time-saving features is high, but **significant concerns remain over privacy and data security.** OEMs also face an uphill battle getting people to pay for it.
Mobility revolution faces significant headwinds	Overall **consumer behavior is proving difficult to change.** A shared mobility future may hinge on younger people that have fully embraced the precepts of a digitally enhanced existence.
Digital is changing the way consumers approach retail	Stakeholders have to adjust to new realities, but **traditional channels still have a role to play** as consumers continue to value aspects of the **experience that are difficult to digitize**.

As autonomous vehicles draw closer to reality, consumers are taking a more critical view of the technology…

Consumer perception regarding the safety of self-driving vehicles has stalled in the last year…

Percentage of consumers who agree that autonomous vehicles will not be safe



Note: Percentage of respondents who strongly agreed or agreed have been added together.

Q3: To what extent do you agree or disagree with the following statements?

Sample size: Germany=1,733 [2019], 1,705 [2018], 1,574 [2017]; US=1,720 [2019], 1,730 [2018], 1,634 [2017]; China=1,735 [2019], 1,724 [2018], 1,633 [2017]; India=1,725 [2019], 1,728 [2018], 1,686 [2017]; Japan=1,717 [2019], 1,680 [2018], 1,656 [2017]

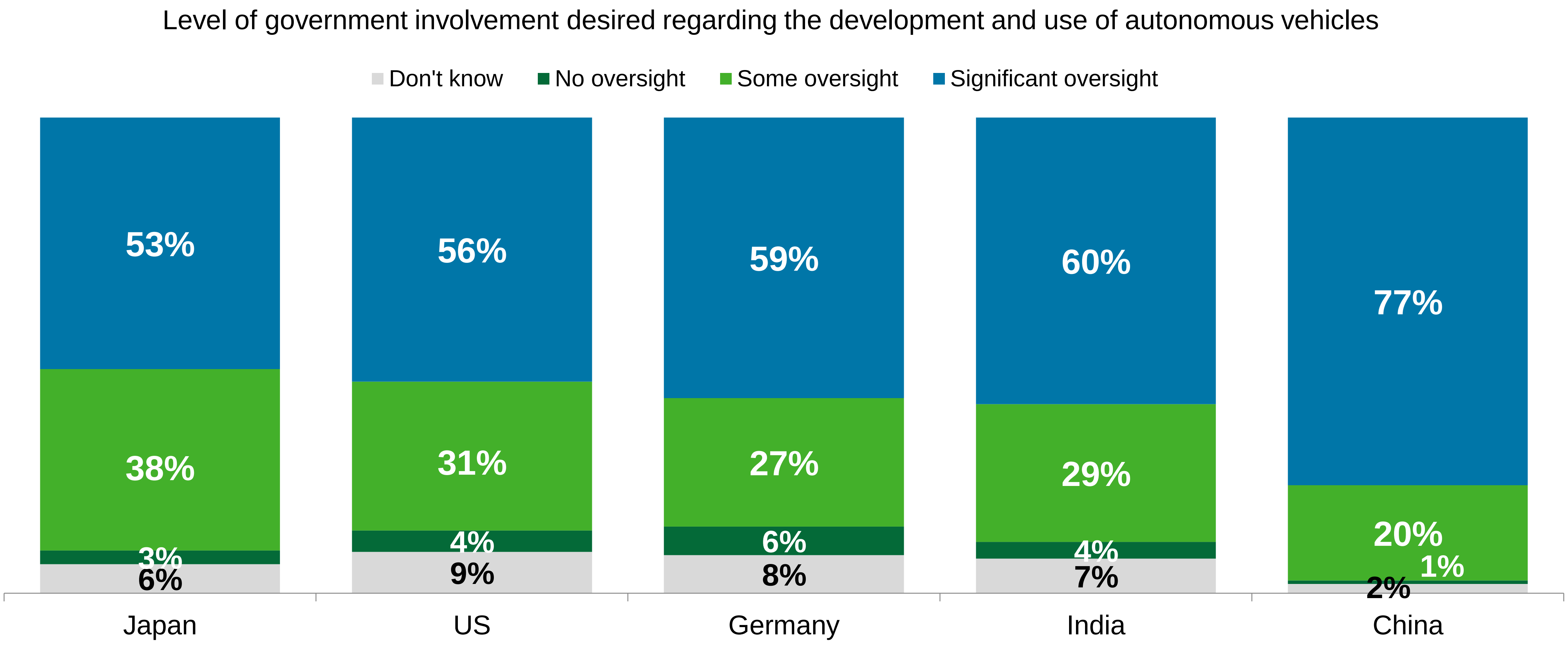
…as reports of accidents involving autonomous vehicles have had a significant impact on consumers' view of the technology.

Percentage of consumers who feel that media reports of accidents involving autonomous vehicles has made them more cautious of the technology (2019)

Note: Percentage of respondents who strongly agreed or agreed have been added together.
Q3: To what extent do you agree or disagree with the following statements?

Sample size: Germany=1,694; US=1,680; China=1,722; India=1,705; Japan=1,691

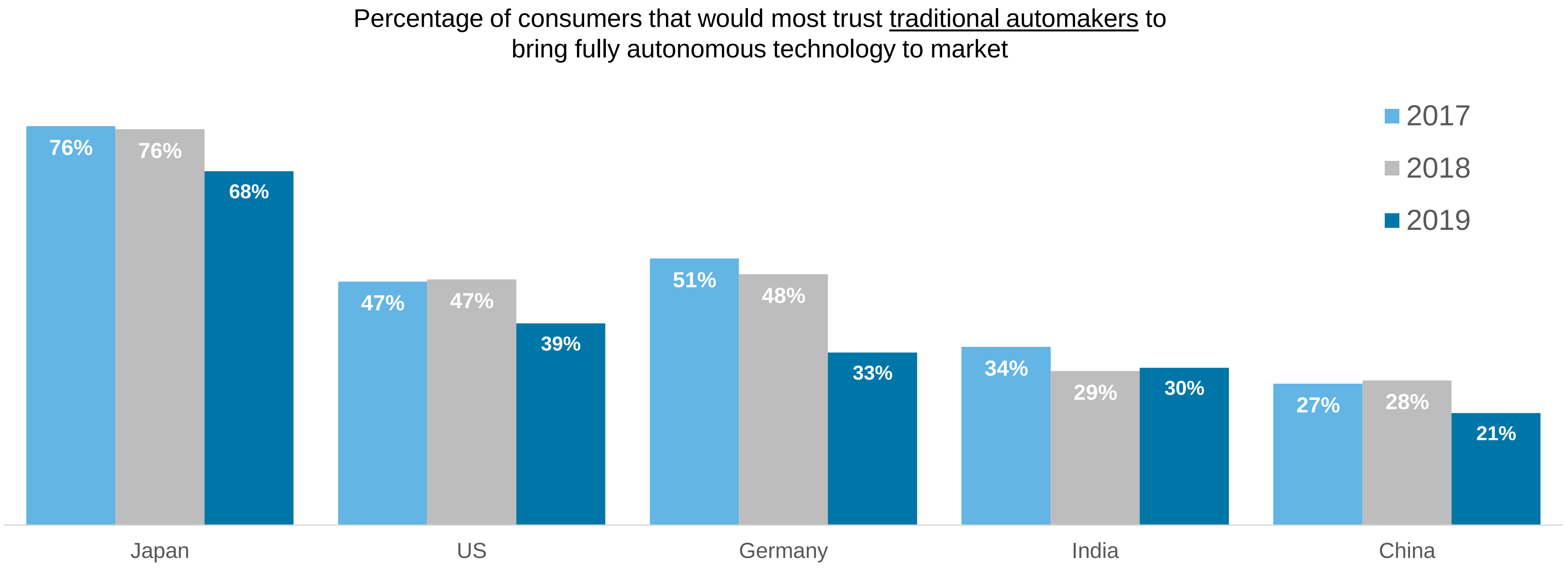
In fact, the majority of responding consumers want their governments to exert a significant amount of control over the development and use of autonomous vehicles.



Q7: To what extent do you think government should be involved in the development and use of autonomous vehicles by providing oversight and standards?

Sample size: Germany=1,694; US=1,680; China=1,722; India=1,705; Japan=1,691

At the same time, consumer trust in manufacturers to bring autonomous vehicle technology to market continues to erode across most core global auto markets.



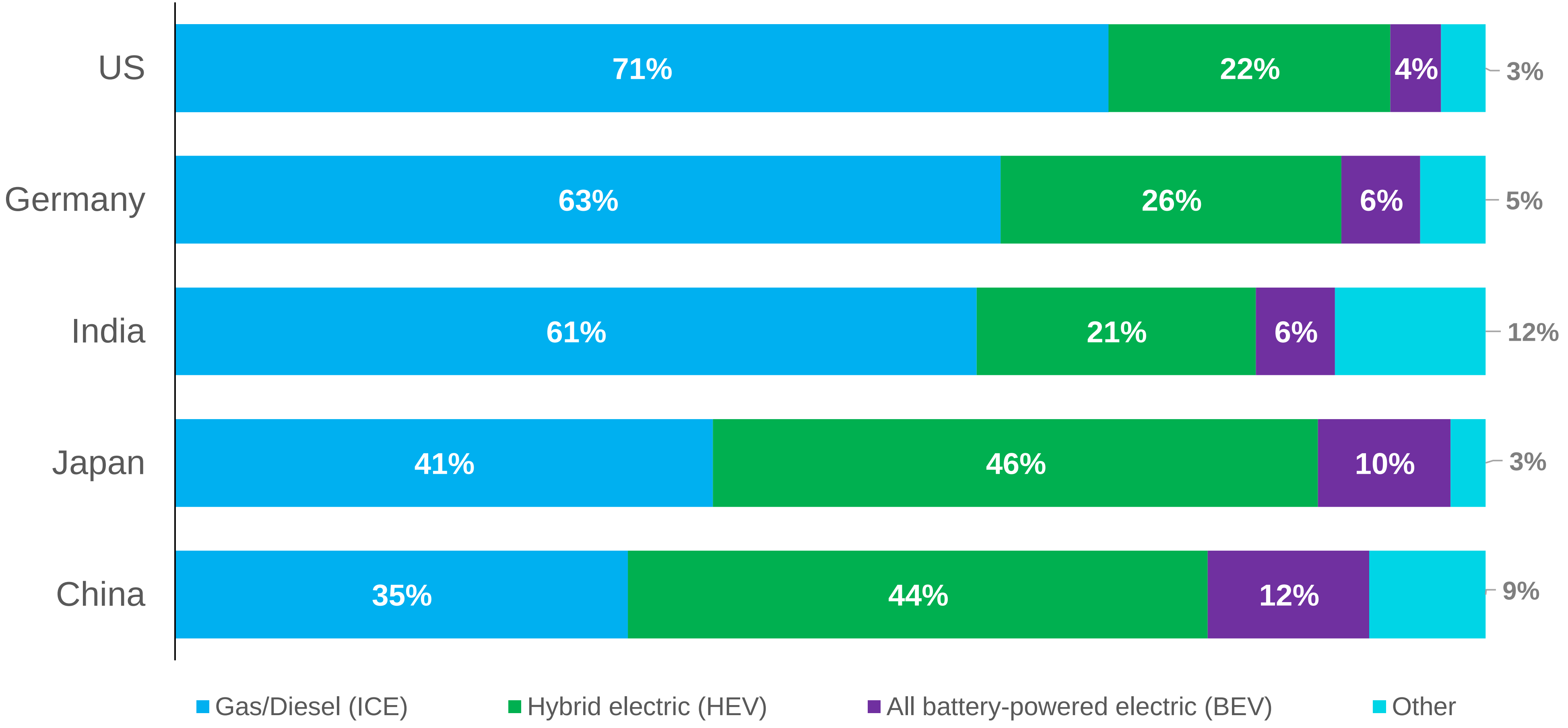
Q10: Which of the following type of company would you trust the most to bring fully autonomous (self-driving) vehicle technology to the market?

Sample size: Germany=1,733 [2019], 1,705 [2018], 1,574 [2017]; US=1,720 [2019], 1,760 [2018], 1,762 [2017]; China=1,735 [2019], 1,759 [2018], 1,748 [2017]; India=1,725 [2019], 1,761 [2018], 1,748 [2017]; Japan=1,717 [2019], 1,762 [2018], 1,747 [2017]

Electric vehicles are finally gaining traction, but growth will vary depending on global market…

Interest in alternative powertrain technology continues to expand as fewer people want traditional internal combustion engines (ICE) in their next vehicle.

Consumer powertrain preferences for their next vehicle (2019)



	2018	2019
US	20%	29%
Germany	34%	37%
India	31%	39%
Japan	48%	59%
China	61%	65%

Alternative Powertrain

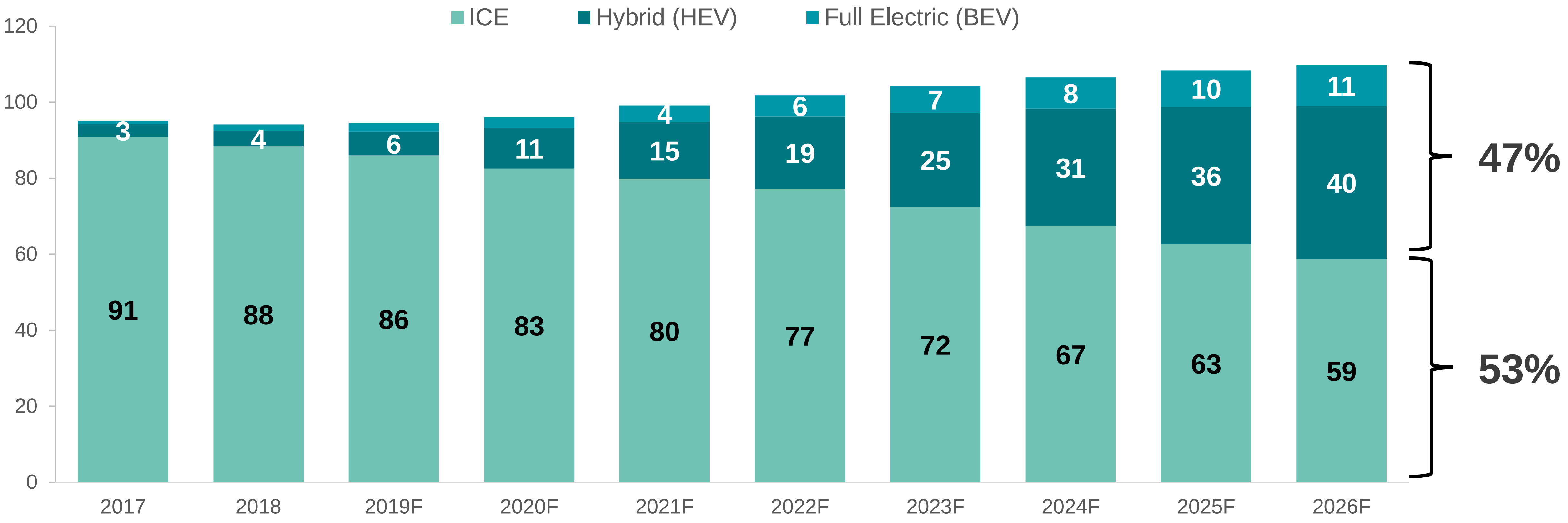
Note: “Other” category includes ethanol, CNG, and fuel cell.

Q45: What type of engine would you prefer in your next vehicle?

Sample size: Germany=1,273; US=1,471; China=1,566; India=1,591; Japan=860

As a result of increasing consumer interest, global production of electrified engines is poised for tremendous growth over the forecast horizon to account for just under half of the global total by 2026…

Global light vehicle engine production by type (millions of units)



Source: IHS Light Vehicle Engine Production Forecast

But, some consumers are still holding onto increasingly outdated perceptions of EV limitations centered around range anxiety, price premiums, charging time, and lack of infrastructure.

Largest concerns responding consumers have regarding all battery-powered vehicles (Full Battery Electric Vehicles - BEVs)

	China	Germany	India	Japan	US
Driving range	25%	35%	14%	18%	24%
Cost/price premium	9%	22%	14%	31%	26%
Time required to charge	12%	11%	11%	11%	10%
Lack of electric vehicle charging infrastructure	18%	20%	25%	23%	22%
Safety concerns with battery technology	22%	5%	22%	9%	8%
An all battery electric powertrain is not offered in the type of vehicle I want (e.g., SUV, truck)	11%	3%	7%	3%	5%
The brand I prefer doesn’t offer electrified vehicles	3%	2%	7%	3%	3%
Other	0%	2%	0%	2%	2%

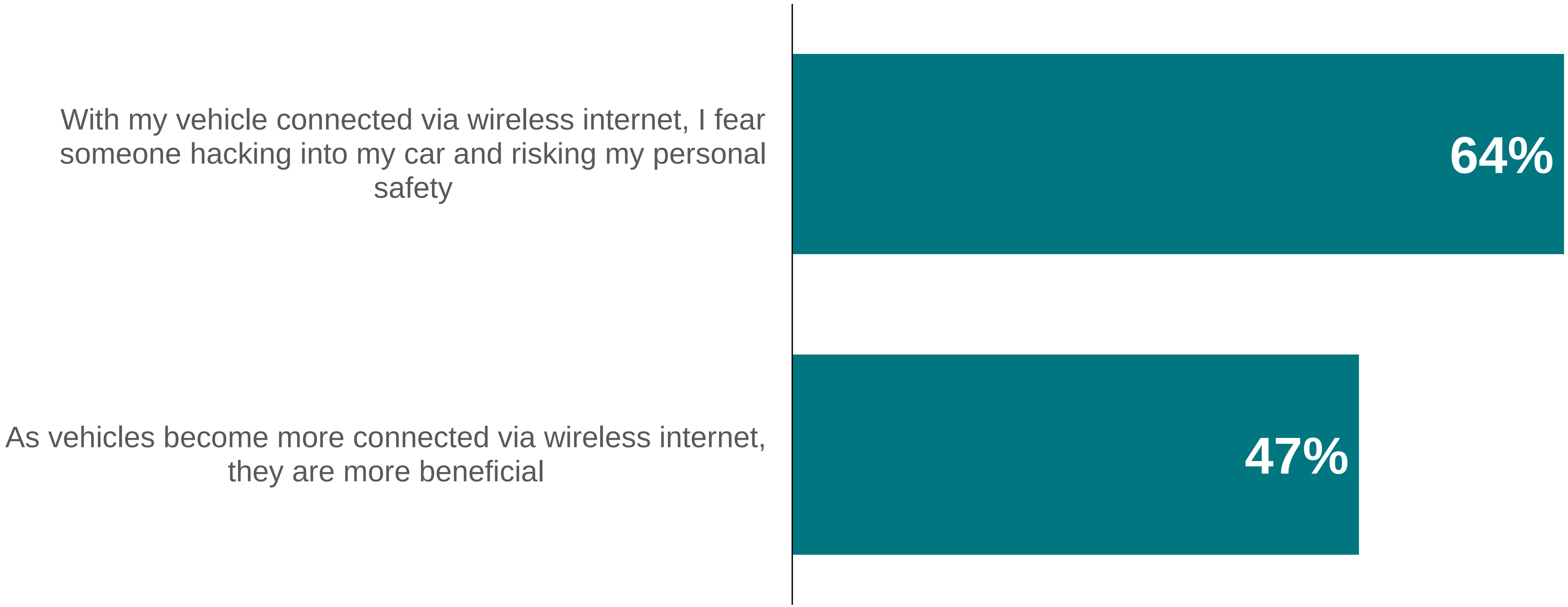
Top concern

Source: Deloitte Global Automotive Consumer Study (2018)

Concerns linger over data privacy and security, but big question is whether people are willing to pay for connected features…

More than half of consumers in the US are concerned by the idea that increased vehicle connectivity could put them at risk.

Percentage of US consumers who agree that…



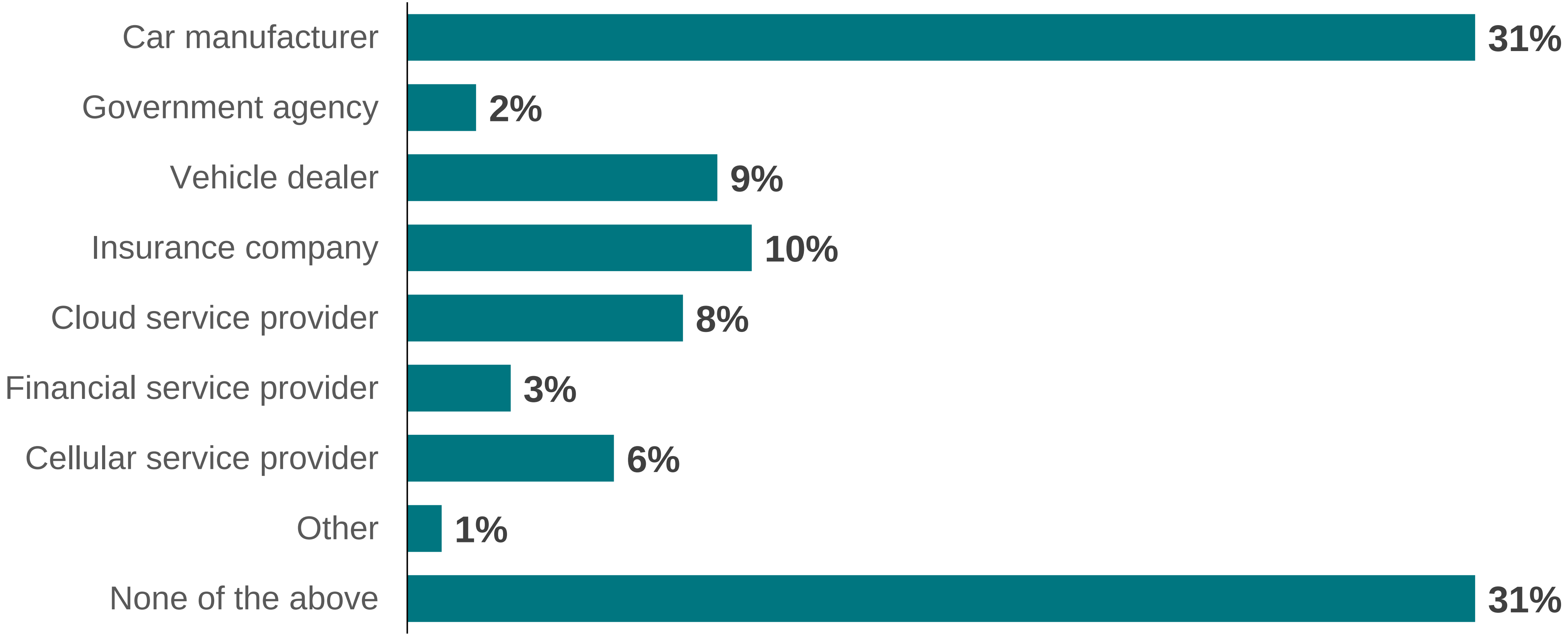
Note: Percentage of respondents who strongly agreed or agreed have been added together

Q3. To what extent do you agree with the following statements regarding future vehicle technology?

Sample size: n= 1,220

Trust is a big issue when it comes to managing data collected by the vehicle and US consumers are very much torn on the subject.

Consumer opinions on whom they trust the most to manage data generated/collected by their vehicle



Q23. In a scenario where you owned a connected vehicle, which of the following entities would you trust the most to manage the data being generated and shared?

Sample size: n=1,432

What do people want? Save me time and ensure my safety.

Percentage of people interested in each connected vehicle feature

	Category	China	Germany	India	Japan	US
Updates regarding traffic congestion and suggested alternate routes	Time	82%	73%	84%	76%	75%
Suggestions regarding safer routes	Safety	81%	68%	84%	75%	72%
Updates to improve road safety and prevent potential collisions	Safety	81%	67%	84%	71%	71%
Customized/optimized vehicle insurance plan	Cost	73%	43%	78%	53%	55%
Maintenance updates and vehicle health reporting	Cost	78%	64%	84%	66%	71%
Maintenance cost forecasts based on your driving habits	Cost	75%	49%	79%	57%	58%
Customized suggestions regarding ways to minimize service expenses	Cost	76%	53%	79%	61%	58%
Over-the-air vehicle software updates	Performance	71%	60%	75%	58%	53%
Access to nearby parking (i.e., availability, booking, and payment)	Service enabler	82%	63%	83%	68%	61%
Special offers regarding non-automotive products and services related to your journey or destination	Service enabler	68%	34%	71%	52%	41%
Receiving a discount for access to a Wi-Fi connection in your vehicle	Service enabler	69%	43%	73%	51%	55%

Top feature

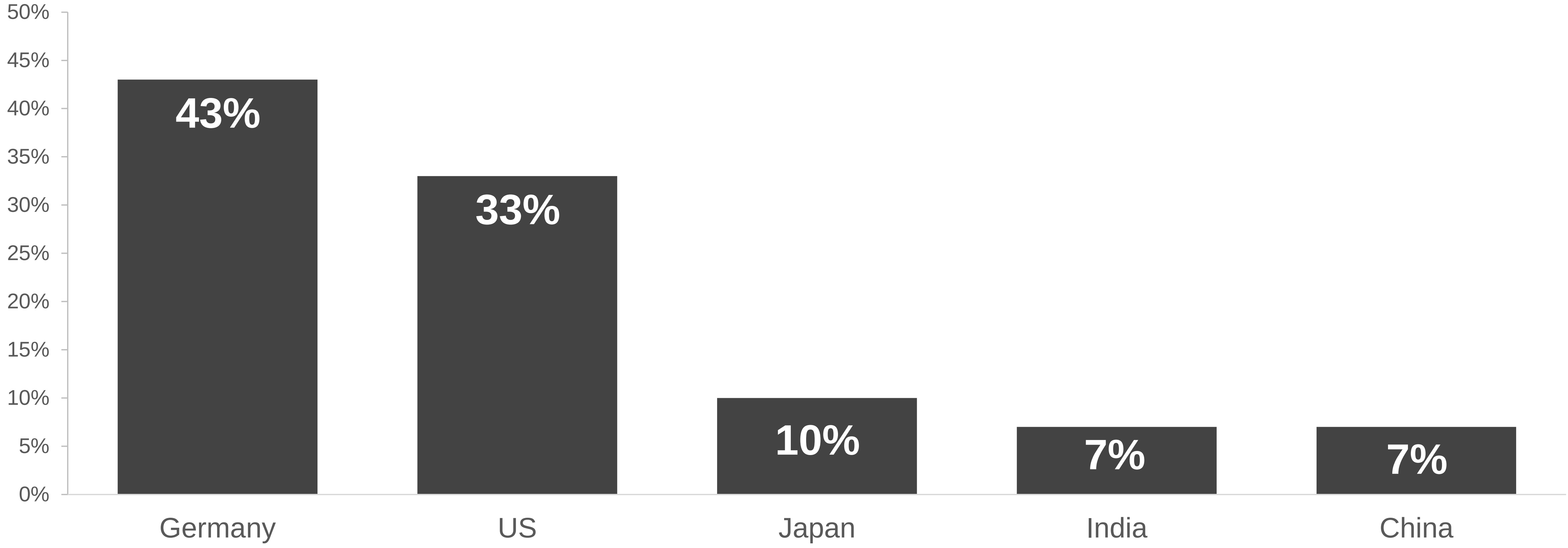
Note: Percentage of respondents who are somewhat or very interested have been added together.

Q21: How interested are you in the following benefits of a connected vehicle if it meant sharing either your own personal data or the data generated by the operation of your vehicle?

Sample size: Germany=1,207; US=1,432; China=1,229; India=1,234; Japan=814

But, OEMs may struggle to get consumers to pay for advanced connectivity features in some markets, even when it means increasing road safety.

Percent of people that would not pay extra for a vehicle that could communicate with other vehicles and road infrastructure to improve safety (2019)



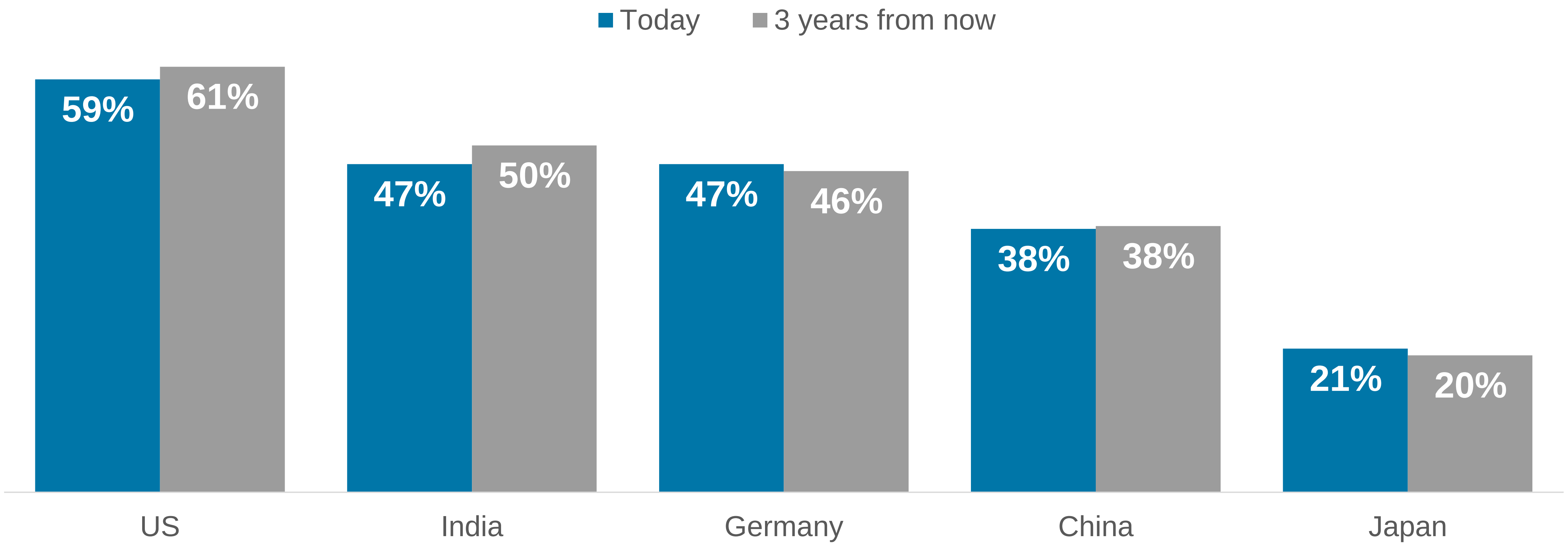
Q25: How much more would you be willing to pay for a vehicle that had the following connectivity technologies?

Sample size: Germany=1,207; US=1,432; China=1,229; India=1,234; Japan=814

A shared mobility future faces significant headwinds…

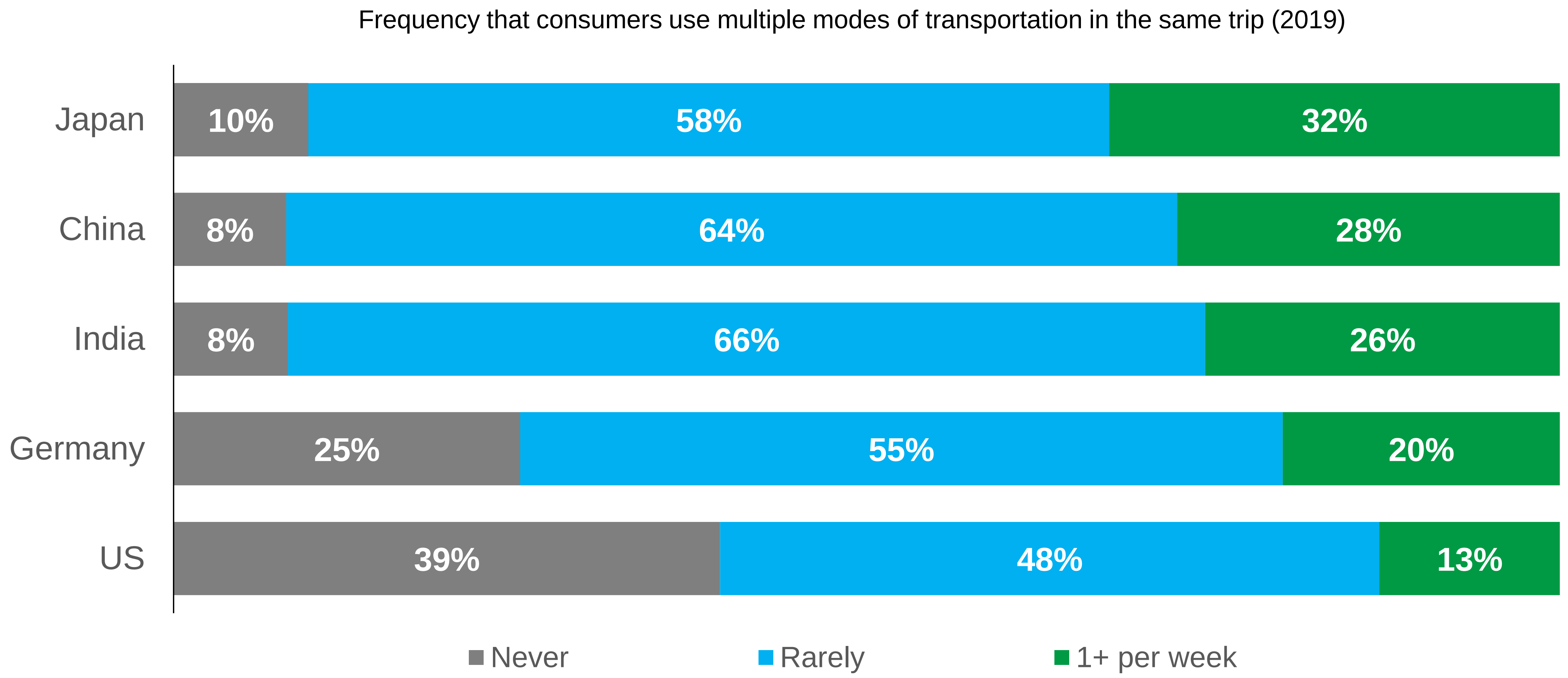
Daily usage of personally owned vehicles is quite high in some markets, but even where usage is lower, consumers expect to maintain the “status quo” into the next decade.

Percentage of consumers that use their own vehicle every day



Q26–Q27: Please indicate how often you use each transportation method (today vs. 3 years from now).
Sample size: Germany=1,773; US=1,750; China=1,760; India=1,755; Japan=1,770

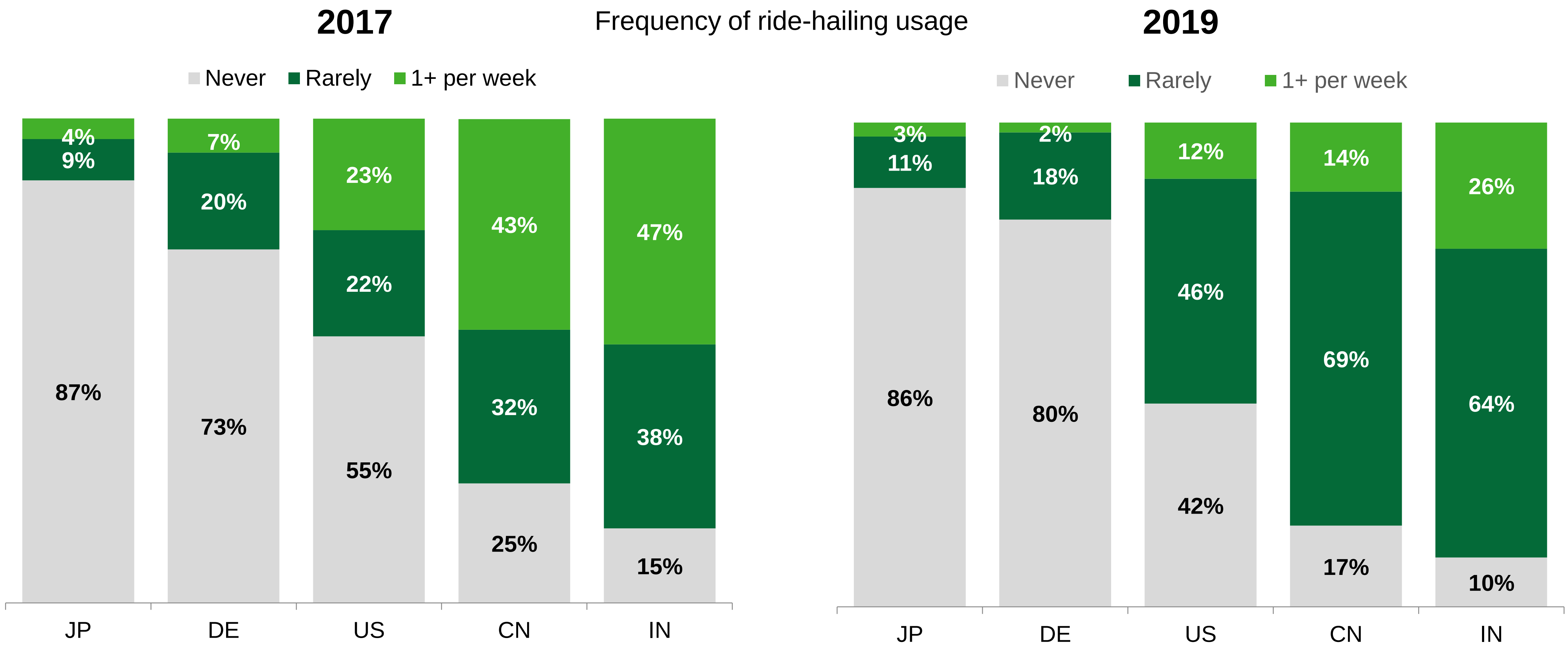
And, the idea of combining different modes of mobility into one trip remains largely an occasional behavior for most consumers.



Q29: How often do you use multiple modes of transportation in the same trip (e.g., a trip using a subway, commuter train, and your own vehicle)?

Sample size: Germany=1,773; US=1,750; China=1,760; India=1,755; Japan=1,770

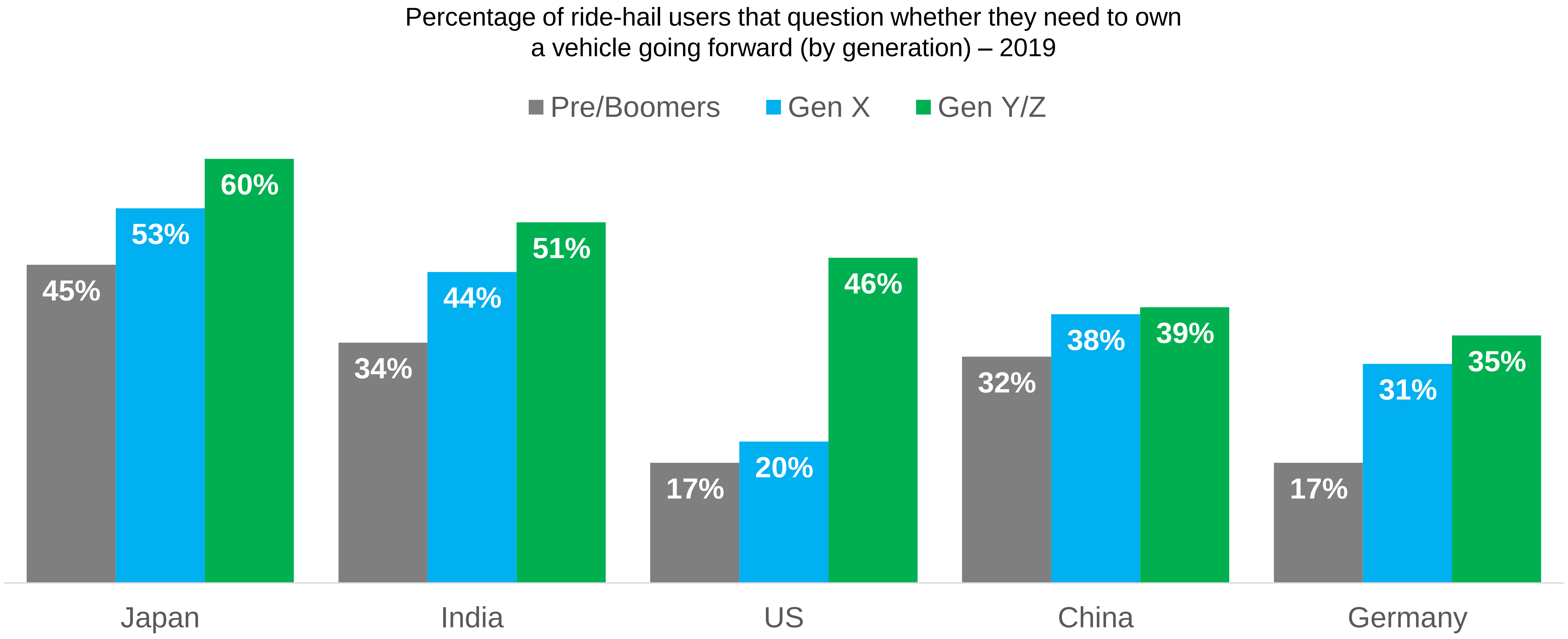
Even though ride-hailing has been integrated into some markets, the number of people reporting regular usage has actually decreased in the last two years.



Q36: How often do you currently use ride-hailing services?

Sample size: Germany (DE)=1,773 [2019], 1,752 [2017]; US=1,750 [2019], 1,768 [2017]; China (CN)=1,760 [2019], 1,751 [2017]; India (IN)=1,755 [2019], 1,754 [2017]; Japan (JP)=1,770 [2019], 1,752 [2017]

Having said all that, maybe the answer lies in simply waiting out the "old guard" as young people seem to be getting the idea of shared mobility in greater numbers.



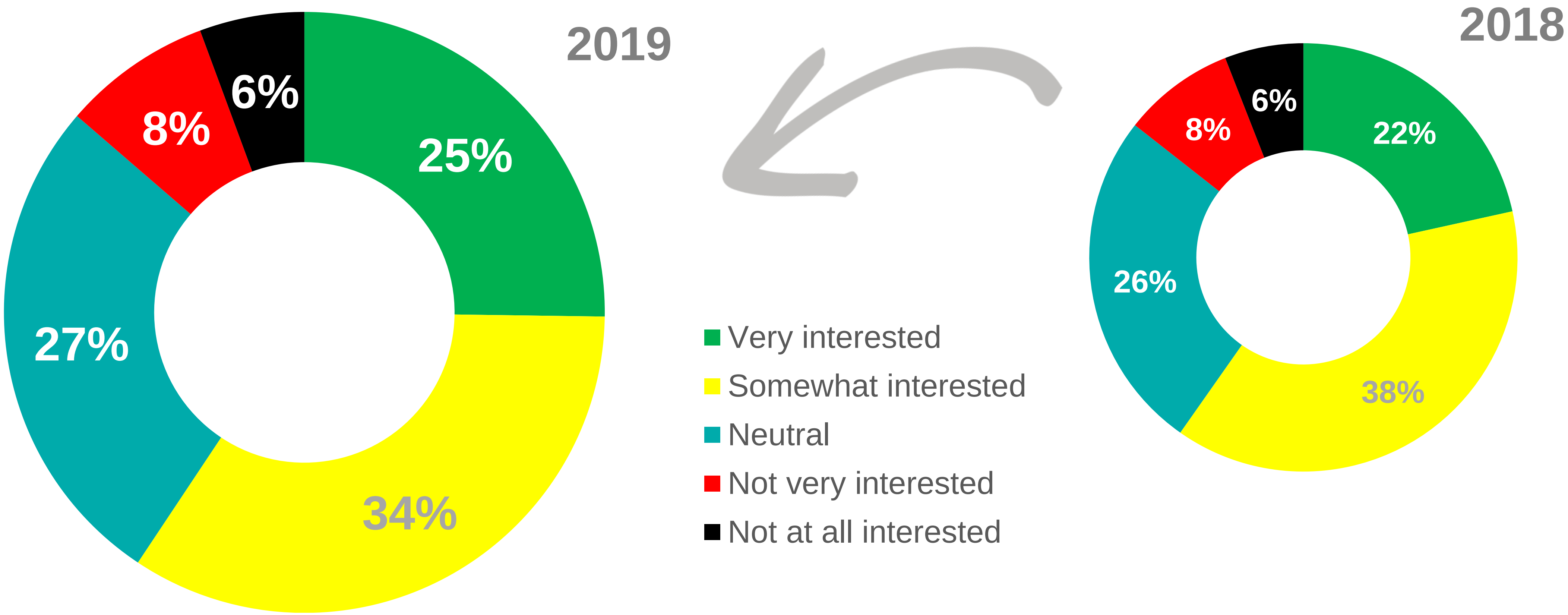
Q36c: Does your use of ride-hailing services make you question whether you need to own a vehicle going forward?

Sample size: Germany=360; US=1,015; China=1,465; India=1,546; Japan=239

The increasingly digital consumer is definitely starting to question the traditional auto retailing framework…

US consumer desire to leave the traditional dealer experience behind is edging up over time.

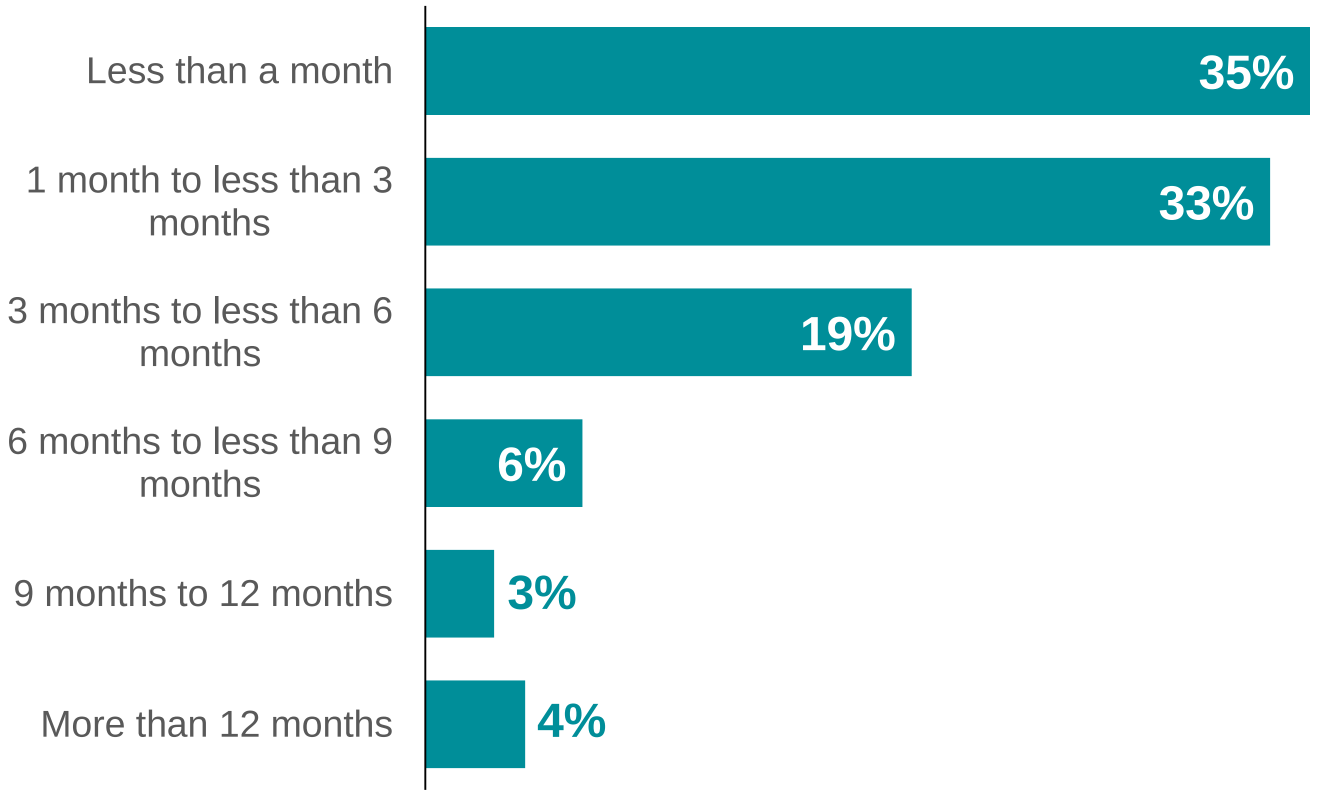
How interested are consumers in by-passing the dealer?



Q46. If you had the option to acquire your next vehicle directly from the manufacturer (via online process), how interested would you be?
Sample size: n=1,471

And, the buying process is definitely changing – you don't have a lot of time to intercept, interact, and influence a purchase decision.

Duration of doing research before deciding to acquire current vehicle



45% Percentage of people who visit their selling dealer only once

50% Percentage of people that don't visit any other dealers

30% Percentage of people that buy the same day they start visiting dealers

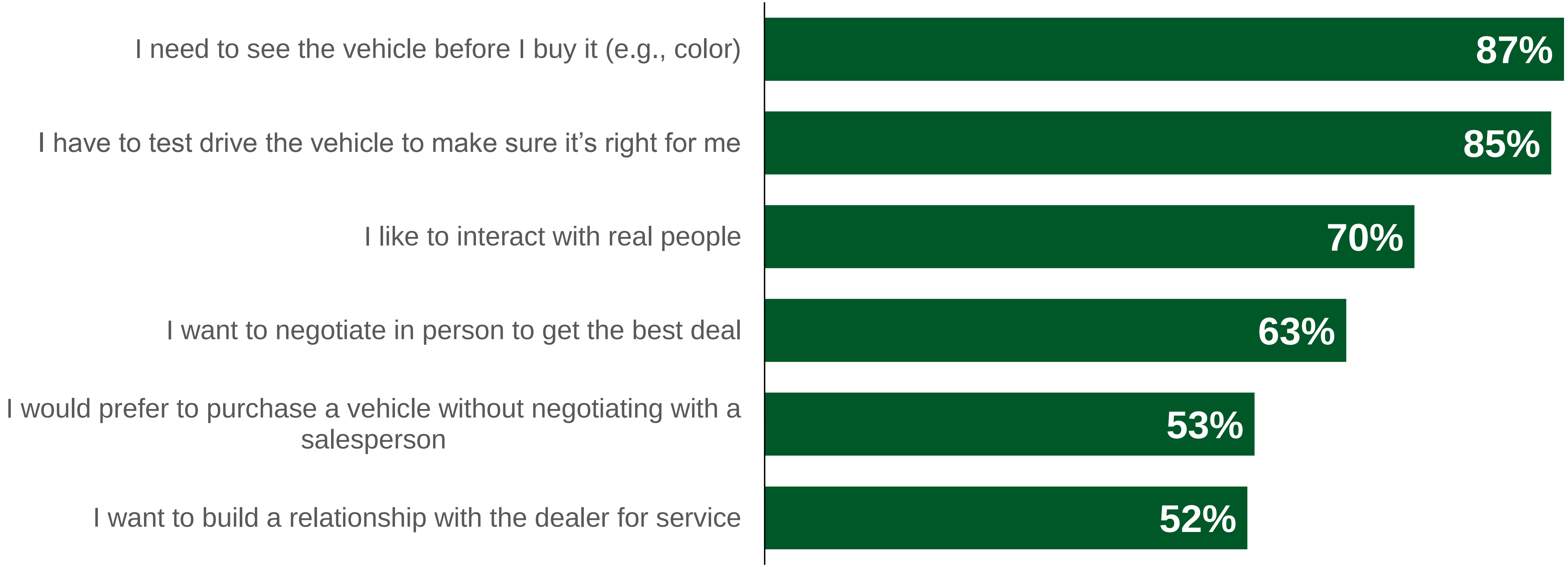
Q10. How long before you made the decision to acquire did you start researching your current vehicle?

Sample size: n=1,544

Source: 2018 Deloitte Global Automotive Consumer Study

But, some aspects of the vehicle buying experience remain very difficult to “digitize”.

How do people feel about their experiences at a dealership?



Note: Percentage of respondents who strongly agreed or agreed have been added together

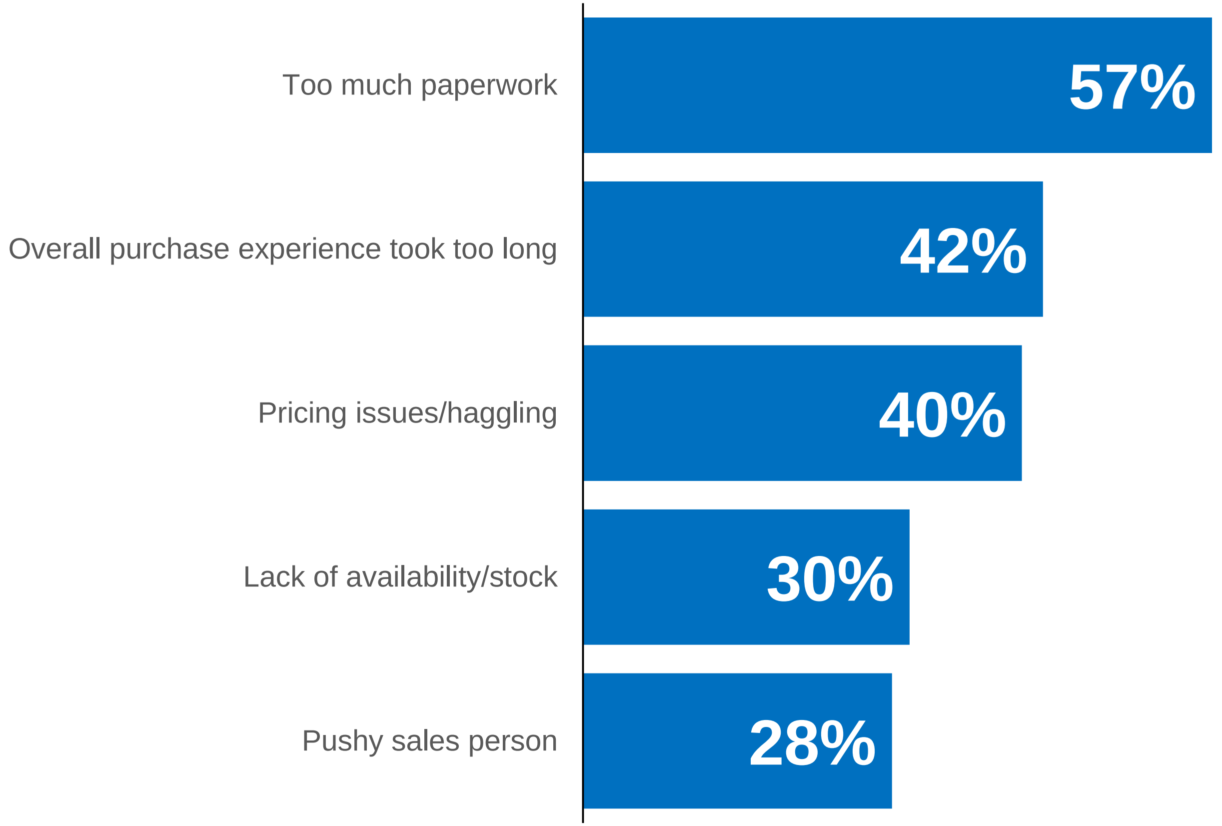
Q26. Thinking about your experience with dealerships, to what extent do you agree/disagree with the following statements?

Sample size: n=1,309

Source: 2018 Deloitte Global Automotive Consumer Study

So, despite all the work going into advanced vehicle technologies, we can’t take our eye of the ball when it comes to the customer experience.

Top 5 most disliked aspects of the dealer experience are…



Other low-hanging fruit…

- **48%** of vehicle owners have never been contacted by their OEM and 54% report being contact by their dealer only once or twice
- **81%** of consumers feel that minimizing paperwork is a somewhat or very important aspect of the buying process
- **30%** of consumers are utilizing third-party pricing support services to increase the amount of transparency in the buying process

Source: 2018 Deloitte Global Automotive Consumer Study

What does all this mean?

Longer timeline needed for AV adoption	Industry stakeholders are pulling back from ambitious announcements of imminent, large-scale autonomous deployments in favour of a more measured approach that acknowledges all the pieces that have yet to fall into place (e.g., regulatory framework, coordinated infrastructure).
EVs are coming and dealers need to adapt	North America following a slower EV adoption curve, but inflection point is coming and penetration will likely accelerate as OEMs strive to globalize big bets on being made on fundamentally new powertrain technology.
Pressure is mounting on some industry players	Enormous capital requirements to sustain innovation on multiple technology fronts may be leading some industry players to a breaking point (particularly in a softer global market) and there's no guarantee of an ROI even if they survive the storm.
Competitive landscape is poised for change	In an effort to spread the cost (and risk) of innovation, many auto companies across the value chain are looking to forge new strategic alliances and innovation partnerships which could be a precursor to a period of increased M&A activity in the sector.
Retail experience is changing	Digital is changing the way people approach the car-buying experience with more access to better information in a much shorter timeframe, but industry stakeholders shouldn't lose sight of the personal touch either.

Thank you.

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