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2020 Global Automotive Consumer Study

Is consumer interest in advanced technologies on the move?

North America



To learn more about the Global
Automotive Consumer Study, visit
www.deloitte.com/autoconsumers

For more than a decade, Deloitte has been exploring consumers' changing automotive expectations and the evolving mobility ecosystem.

Key insights from our Global Automotive Consumer study over the years:

- 2010 Overall value ranked as the primary factor when evaluating brands
- 2011 "Cockpit technology" and the shopping experience led differentiators
- 2012 Interest in hybrids driven by cost and convenience, while interest in connectivity centres on safety
- 2014 Shared mobility emerges as an alternative to owning a vehicle
- 2017 Interest in full autonomy grows, but consumers want a track record of safety
- 2018 Consumers in many global markets continue to move away from internal combustion engines (ICE)
- 2019 Consumers "pump the brakes" on interest in autonomous vehicles

The Global Automotive Consumer Study helps inform Deloitte's work and insights into the evolution of mobility, smart cities, connectivity, transportation, and other changes transforming the movement of people and goods.

2020 Deloitte Global Automotive Consumer Study

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 overall goal of this annual study is to answer important questions that can help companies prioritize and better position their business strategies and investments.

Mixed feelings about increased connectivity

There is a significant difference between North American countries regarding the percentage of people that believe increased vehicle connectivity is beneficial.



Interest in AVs stalled in most markets

At least half of consumers across North America agree that media reports of accidents involving vehicles in autonomous mode make them more cautious of the technology.



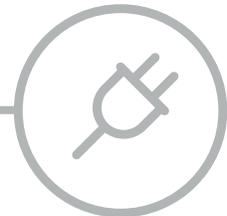
Consumers remain resistant to multimodal mobility

North American consumer behaviour regarding multimodal mobility may be difficult to shift, as people don't regularly combine different types of transportation in a single trip.



Interest in EVs continues to grow across North America

The number of people that most want an alternative engine in their next vehicle is growing rapidly across the region as people look to hybrids going forward.



Even as original equipment manufacturers (OEMs) continue to spend billions on R&D in advanced vehicle features, questions remain regarding consumers' willingness to pay for them.

Percentage of consumers that are unwilling to pay more than US\$500¹ for a vehicle with advanced technologies

Advanced technology category	Canada	Mexico	United States
Safety	68%	53%	60%
Connectivity	74%	58%	66%
Infotainment	83%	67%	75%
Autonomy	63%	43%	58%
Alternative engine solutions	53%	39%	54%

¹ For Canada, the amount is C\$600, and for Mexico, the amount is 10,000 pesos.

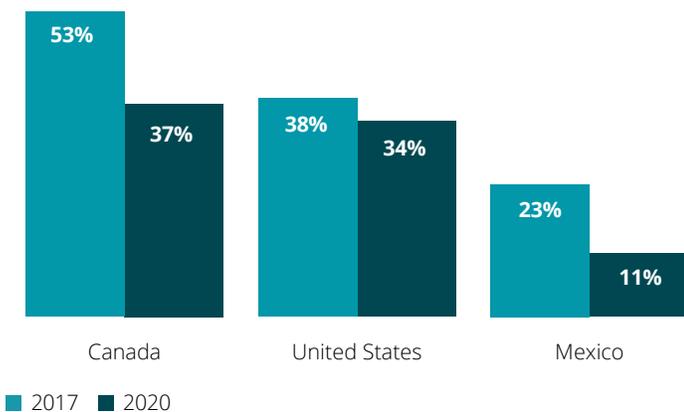
Q7. How much more would you be willing to pay for a vehicle that had each of the technologies listed below and that met your wants and needs?

Sample size: Canada=1,296; Mexico=1,262; United States=3,006

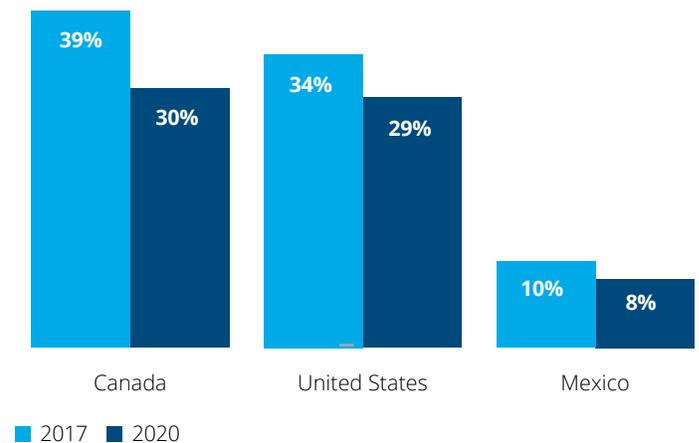
However, there is some evidence to suggest that consumers' willingness to pay at least something for advanced technologies has improved over the last few years.

Percentage of consumers who are unwilling to pay any more for . . .

Autonomous technologies



Alternative engine technologies



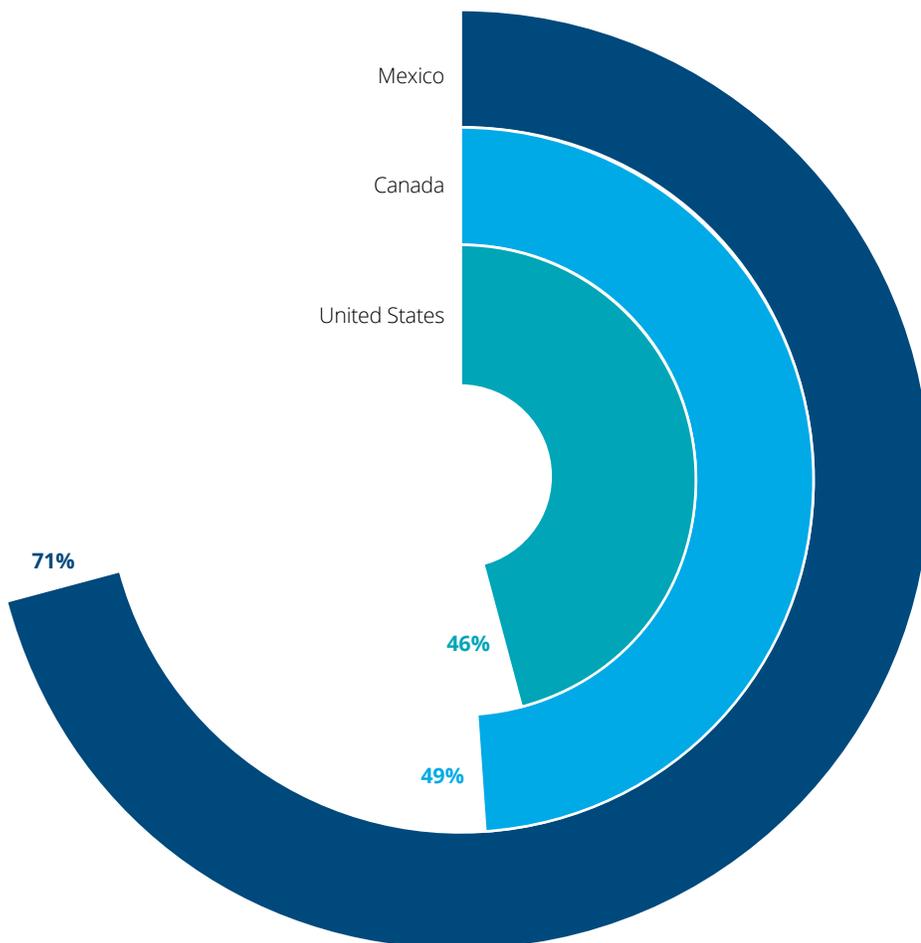
Q7. How much more would you be willing to pay for a vehicle that had each of the technologies listed below and that met your wants and needs?

Sample size (2020/2017): Canada=1,296/1,256; Mexico=1,262/1,245; United States=3,006/1,754

What do consumers think about connected vehicles?

More than two-thirds of consumers in Mexico feel that increased vehicle connectivity is beneficial, while less than half of consumers in United States or Canada think so.

Percentage of consumers who feel that increased vehicle connectivity will be beneficial



Note: Percentage of respondents who strongly agreed or agreed have been added together; did not consider "NA/don't know" responses.

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

Sample size: Canada=1,258; Mexico=1,245; United States=2,922

Consumer opinion also differs on specific concerns around connectivity, including the security of biometric data generated and shared by connected vehicles.

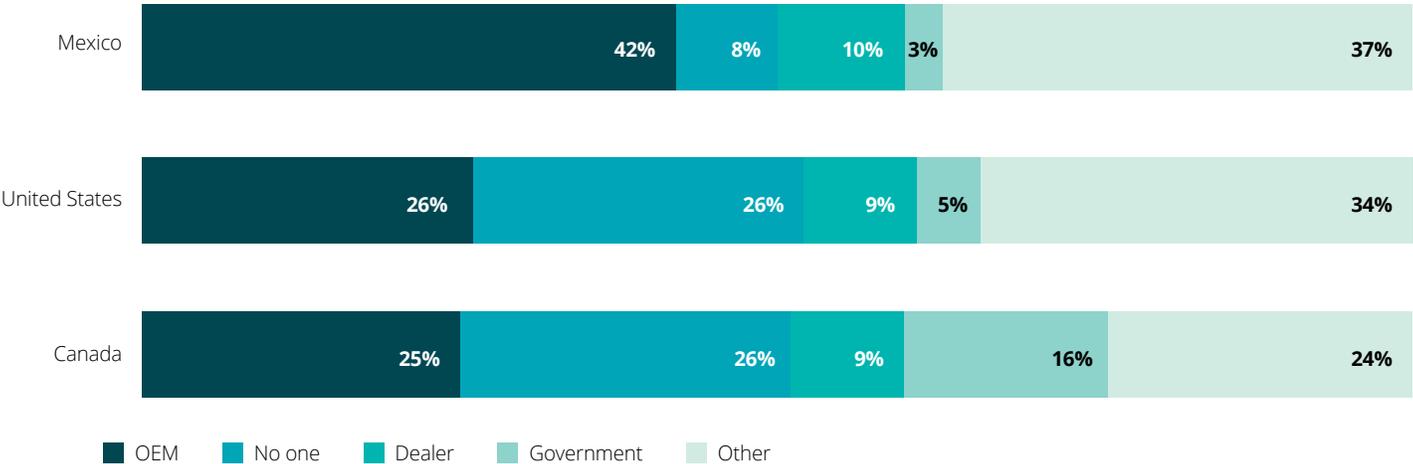
Percentage of consumers who are somewhat/very concerned about the concept of biometric data being captured and shared with external parties



Note: Biometric data refers to information about the vehicle occupant(s) such as heart rate, blood pressure, blood alcohol level, etc.
 Q34. As vehicles become more and more connected to the internet, how concerned would you be if the following types of data were shared with your vehicle manufacturer, dealer, insurance company, and/or other third parties?
 Sample size: Canada=1,296; Mexico=1,262; United States=3,006

People are also concerned about who would best manage the data being generated and shared by the vehicle.

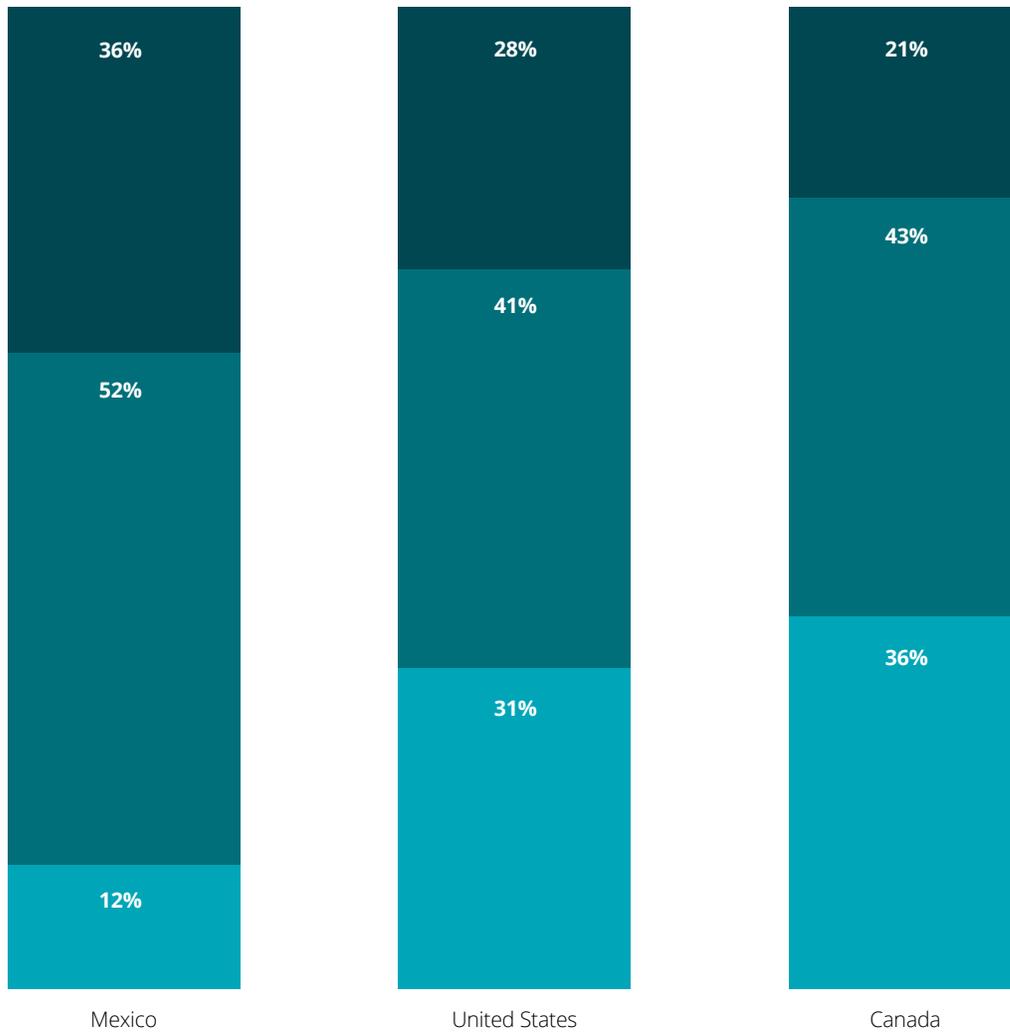
Consumer preference regarding the type of entity they would most trust to manage the data being generated and shared by a connected car



Note: The "other" category includes financial service providers, insurance companies, cellular service providers, and cloud service providers.
 Q36. 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: Canada=1,296; Mexico=1,262; United States=3,006

OEMs may also struggle to get consumers to pay for advanced connectivity features even when it means increasing road safety.

Extra amount that consumers would pay for a vehicle that could communicate with other vehicles and road infrastructure to improve safety



None A little More than a little

Note: Definition for "a little" is less than or equal to: Mexico (10,000 pesos); United States (US\$500); and Canada (C\$750).

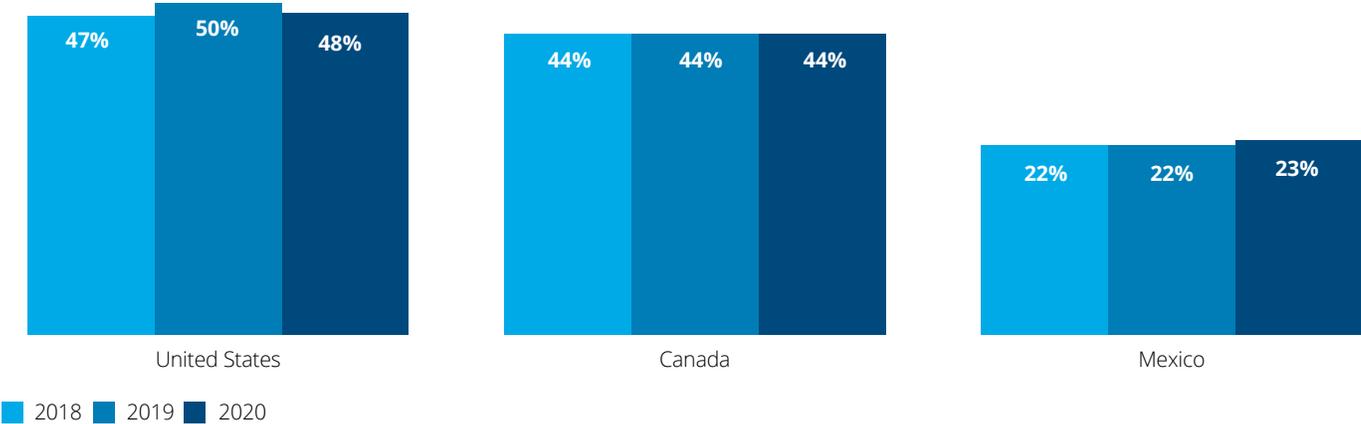
Q37. How much more would you be willing to pay for a vehicle that had the following connectivity technologies?

Sample size: Canada=1,296; Mexico=1,262; United States=3,006

What do consumers think about autonomous vehicle technology?

Although consumer perception regarding the safety of self-driving vehicles varies by country, overall sentiment remains relatively flat on a year-over-year basis.

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; did not consider "NA/don't know" responses.
 Q3. To what extent do you agree with the following statements regarding future vehicle technology?
 Sample size: Canada= 1,277 [2020], 1,250 [2019], 1,225 [2018]; Mexico=1,231 [2020], 1,226 [2019], 1,231 [2018]; United States= 2,950 [2020], 1,720 [2019], 1,730 [2018]

Reports of accidents involving autonomous vehicles have had a significant and lasting 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



Note: Percentage of respondents who strongly agreed or agreed have been added together; did not consider "NA/don't know" responses.
 Q3. To what extent do you agree with the following statements regarding future vehicle technology?
 Sample size: Canada=1,270; Mexico=1,240; United States=2,940

Half of the consumers in the United States and Canada are concerned about the idea of autonomous vehicles being tested in areas where they live.

Percentage of consumers who are somewhat/very concerned with fully autonomous vehicles being tested on public roads where they live



Note: Percentage of respondents who said "somewhat concerned" or "very concerned" have been added together.

Q4. How concerned are you with each of the following scenarios?

Sample size: Canada=1,296; Mexico=1,262; United States=3,006

Three-quarters of consumers in Mexico would feel more comfortable with the idea of riding in an AV if it were government-certified.

Percentage of consumers who feel that government safety certification makes them more likely to ride in a self-driving car



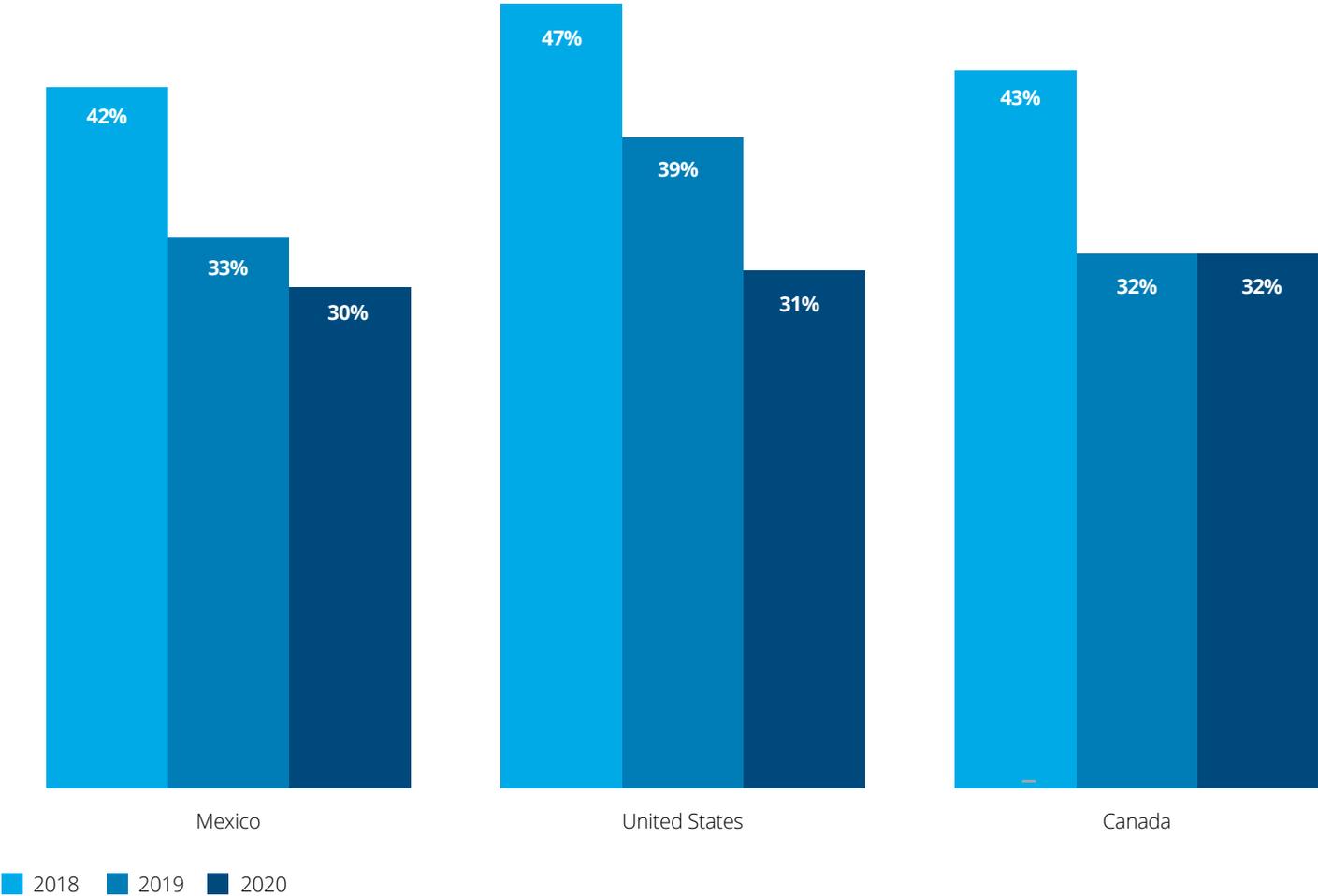
Note: Percentage of respondents who said "somewhat more likely" or "significantly more likely" have been added together; did not consider "don't know" responses.

Q5. To what extent do you agree with the following statements regarding future vehicle technology?

Sample size: Canada=1,256; Mexico=1,240; United States=2,903

Consumer trust in traditional manufacturers to bring AV technology to market continues to decline across the North American region . . .

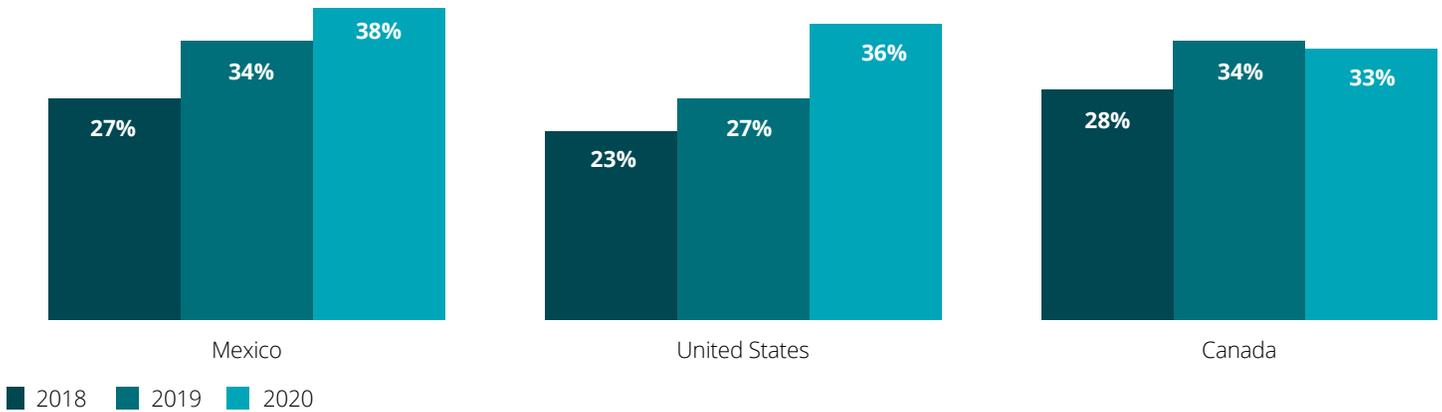
Percentage of consumers that would most trust traditional automakers to bring fully autonomous technology to market



Q6. 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: Canada=1,296 [2020], 1,278 [2019], 1,262 [2018]; Mexico=1,262 [2020], 1,256 [2019], 1,270 [2018]; United States=3,006 [2020], 1,250 [2019], 1,261 [2018]

... as trust in a new player that specializes in autonomous vehicle technology continues to grow ...

Percentage of consumers that would most trust a new company that specializes in autonomous vehicles to bring fully autonomous technology to market

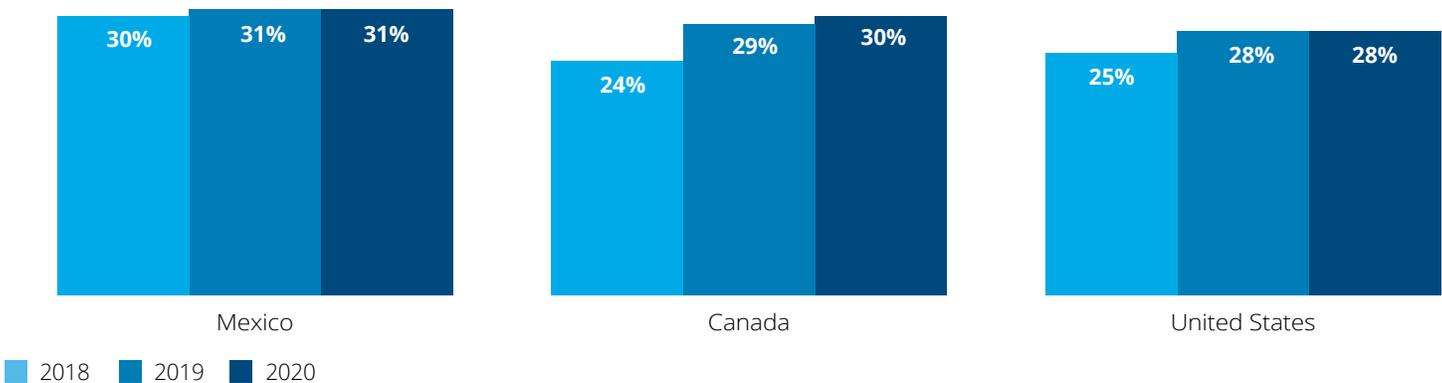


Q6. Which of the following type of company would you trust the most to bring fully-autonomous (self-driving) vehicle technology to the market?

Sample size: Canada=1,296 [2020], 1,278 [2019], 1,262 [2018]; Mexico=1,262 [2020], 1,256 [2019], 1,270 [2018]; United States=3,006 [2020], 1,250 [2019], 1,261 [2018]

... and trust in existing technology companies inches upward, particularly in Canada.

Percentage of consumers that would most trust an existing technology company to bring fully autonomous technology to market



Q6. 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: Canada=1,296 [2020], 1,278 [2019], 1,262 [2018]; Mexico=1,262 [2020], 1,256 [2019], 1,270 [2018]; United States=3,006 [2020], 1,250 [2019], 1,261 [2018]

What do consumers think about new mobility models?

Greater access to mass transit is, by far, the top method to reduce traffic congestion for consumers in both Canada and the United States.

Ways to reduce traffic congestion

	Canada	Mexico	United States
Road tolls/congestion charges	9%	9%	8%
High-occupancy express lanes	18%	26%	21%
Greater access to mass transit	48%	17%	44%
V2V connectivity	10%	16%	13%
Regulations that restrict car use	7%	18%	6%
Creation of low or zero-emission zones	3%	9%	4%
Other	5%	5%	4%

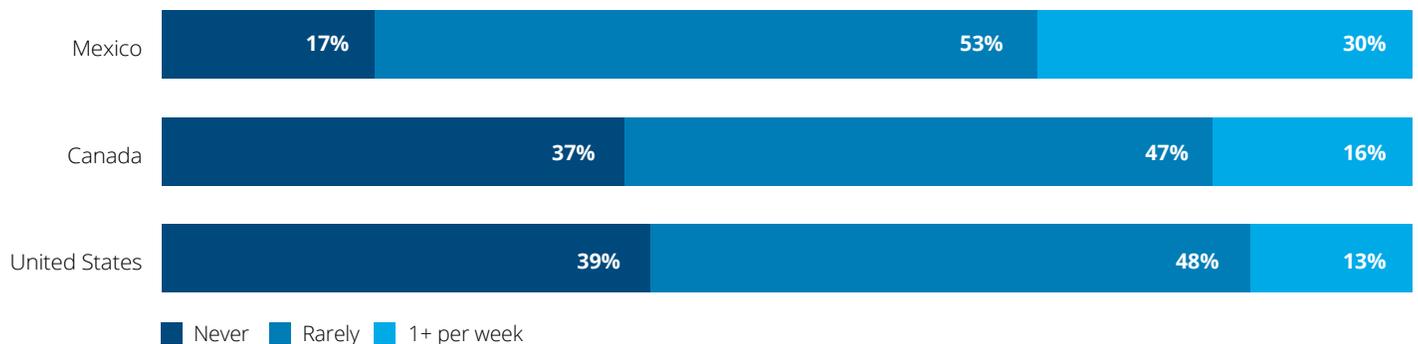
■ Top option

Q43. In your opinion, what is the best way to reduce traffic congestion?

Sample size: Canada=1,296; Mexico=1,262; United States=3,006

Having said that, the idea of combining different modes of transportation into a single trip remains largely an occasional behaviour for most consumers.

Frequency that consumers use multiple modes of transportation in the same trip

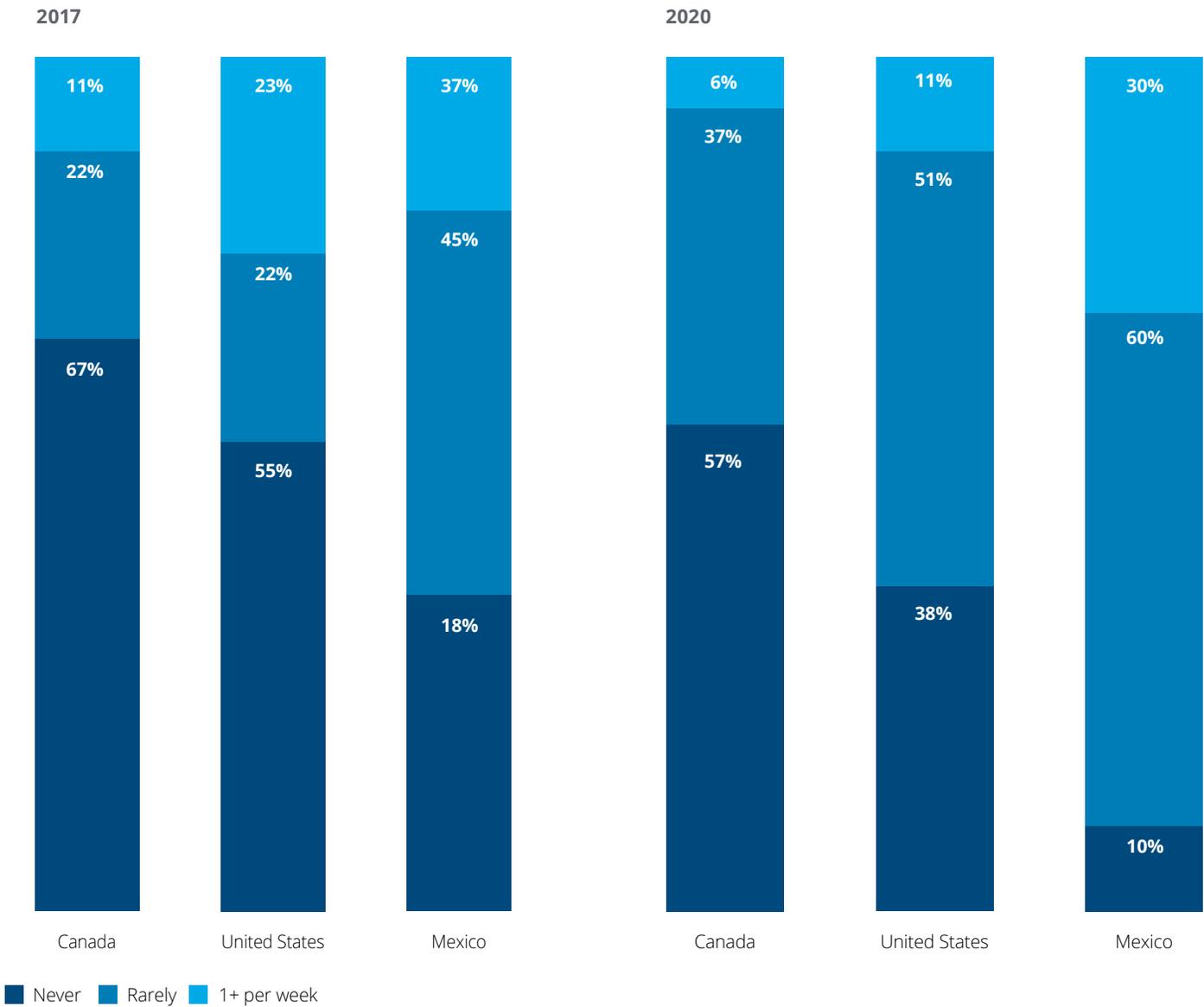


Q39. How often do you use multiple modes of transportation in the same trip (such as a trip using a subway, commuter train, and your own vehicle)?

Sample size: Canada=1,296; Mexico=1,262; United States=3,006

The number of people reporting occasional use of ride-hailing services has increased in the last few years as consumers see multiple benefits, such as...

Frequency of ride-hailing usage



Q40. How often do you currently use ride-hailing services?

Sample size: Canada=1,296 [2020], 1,265 [2017]; Mexico=1,262 [2020], 1,250 [2017]; United States=3,006 [2020], 1,768 [2017]

... an ability to multitask, not having to find a place to park, and reducing the level of concern regarding drunk driving or getting lost.

Top three benefits of using ride-hailing services (2019)

Canada

No need to find or pay for parking	24%
No worries about alcohol consumption	20%
Less costly than owning or driving a car	19%

Mexico

Ability to multitask (text/check email/watch a video)	36%
No worries about navigating or getting lost	19%
No need to find or pay for parking	13%

United States

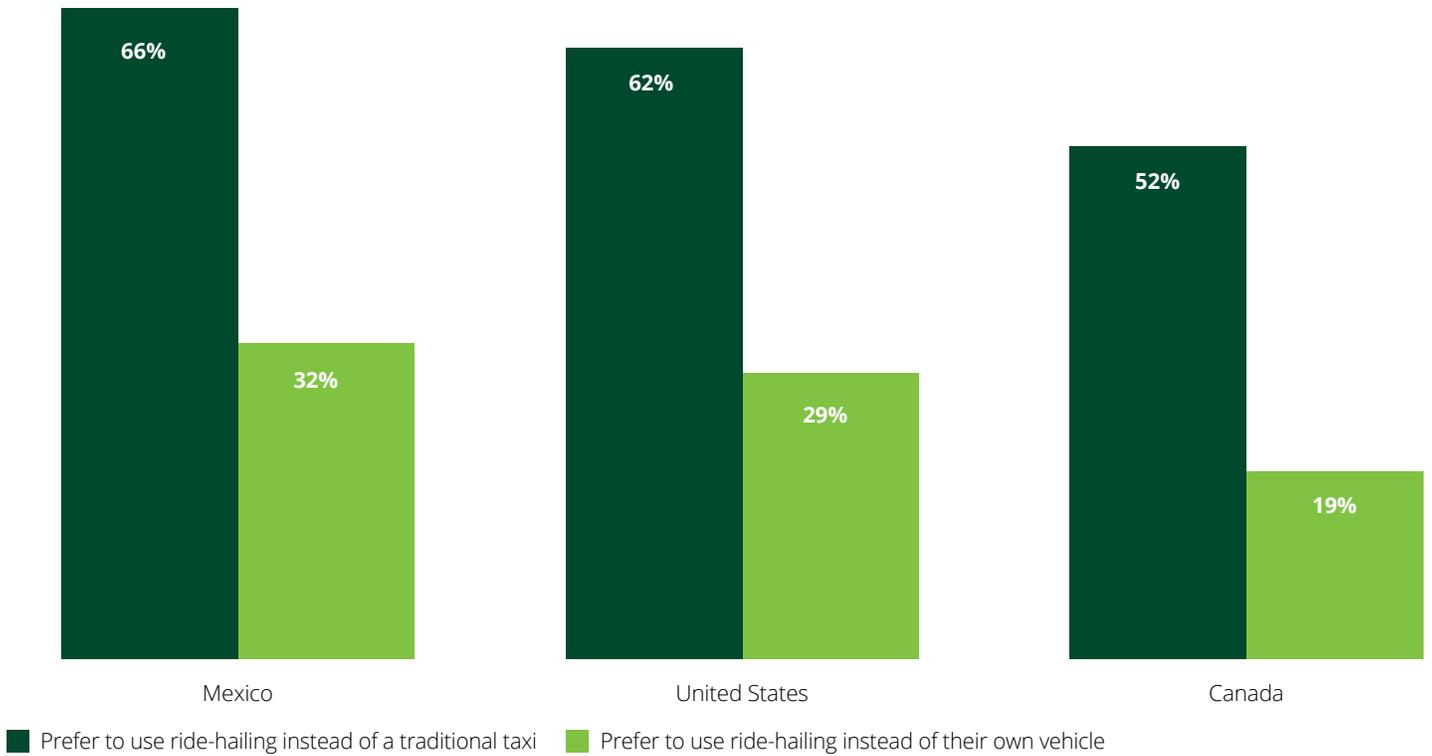
No need to find or pay for parking	21%
Ability to multitask (text/check email/watch a video)	21%
No worries about alcohol consumption	19%

Q36b. What is the most important benefit of using a ride-hailing service?

Sample size: Canada=405; Mexico=1,079; United States=1,015

For the most part, consumers prefer to use ride-hailing services as a replacement for a traditional taxi.

Consumer preferences regarding the usage of ride-hailing services



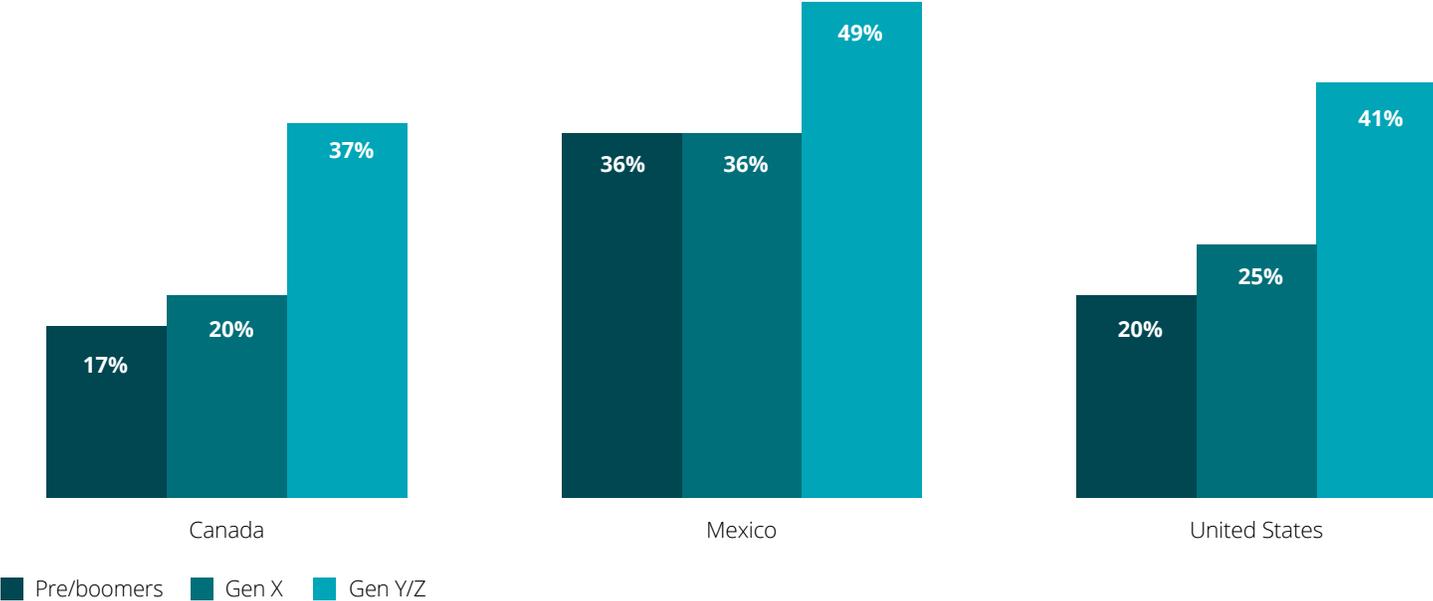
Note: Percentage of respondents who strongly agreed or agreed have been added together.

Q41. To what extent do you agree with the following statements?

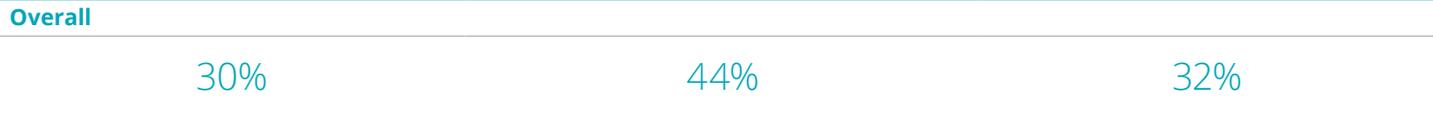
Sample size: Canada=555; Mexico=1,134; United States=1,874

Having said that, younger people appear to be more in tune with alternative mobility, even to the point of wondering if they still need to own a vehicle.

Percentage of ride-hail users that question whether they need to own a vehicle going forward (by generation)



Average across all generations

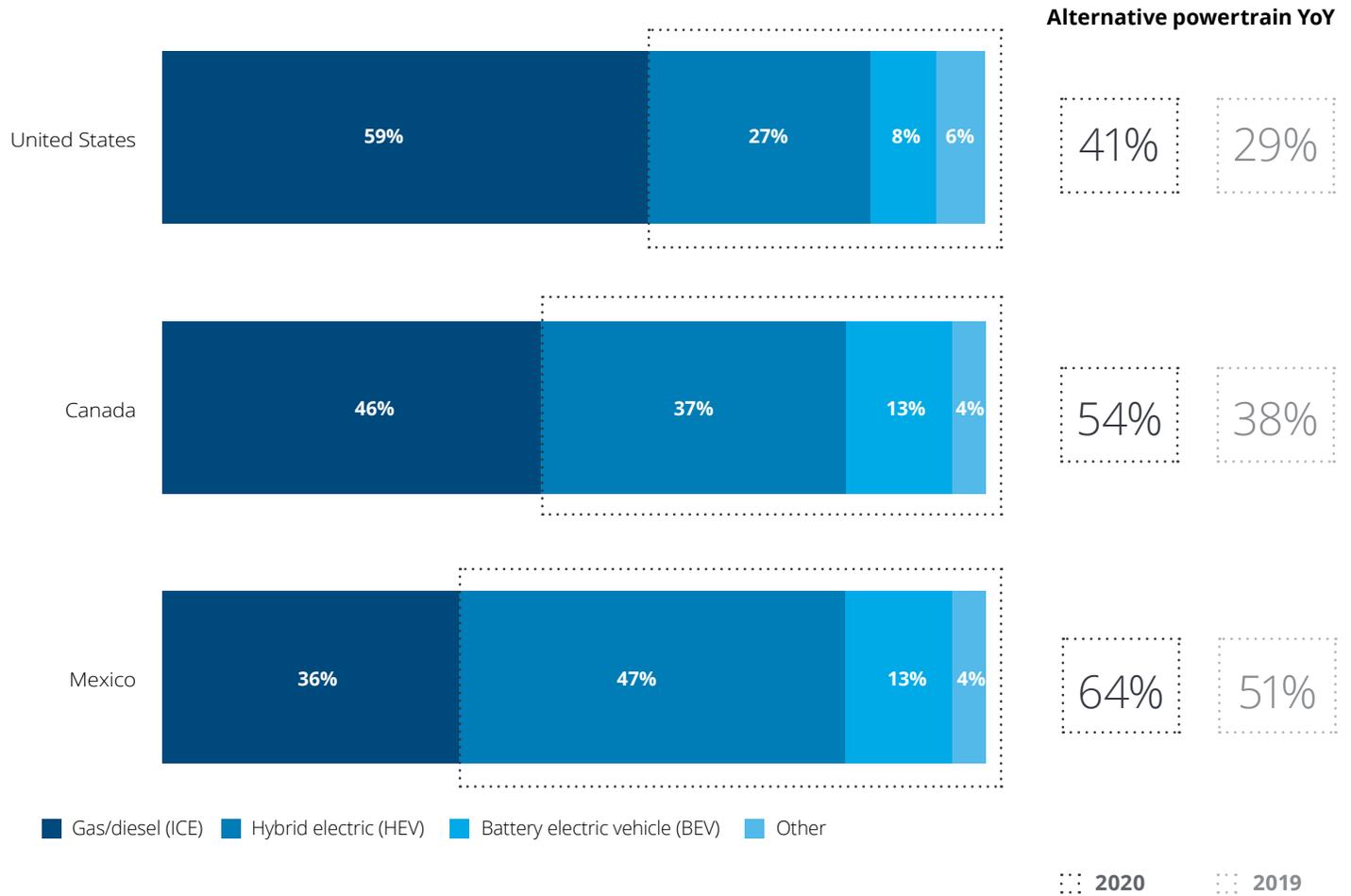


Q42. Does your use of ride-hailing services make you question whether you need to own a vehicle going forward?
 Sample size: Canada=Pre boomers (123), Gen X (103), Gen Y/Z (329); Mexico=Pre boomers (174), Gen X (230), Gen Y/Z (730); United States=Pre boomers (529), Gen X (337), Gen Y/Z (1,008)

What do consumers think about electric vehicle (EV) technology?

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

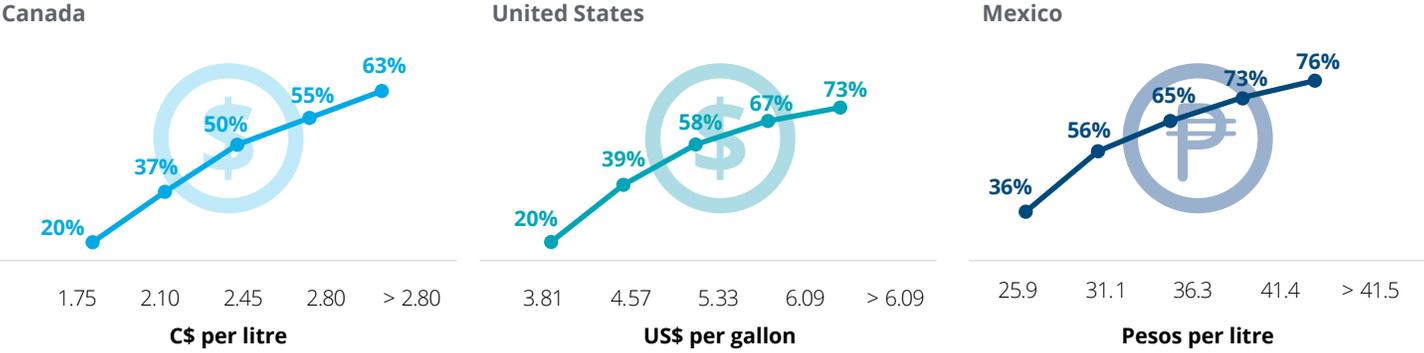
Consumer powertrain preferences for their next vehicle (2020)



Note: "Other" category includes ethanol, CNG, and hydrogen fuel cell.
 Q52. What type of engine would you prefer in your next vehicle?
 Sample size: Canada=1,128; Mexico=1,167; United States=2,522

Interest in battery electric vehicles (BEVs) would likely rise if fossil fuel prices increased significantly.

Percentage of consumers (cumulative) who are much more likely to consider BEVs if gasoline prices reach...



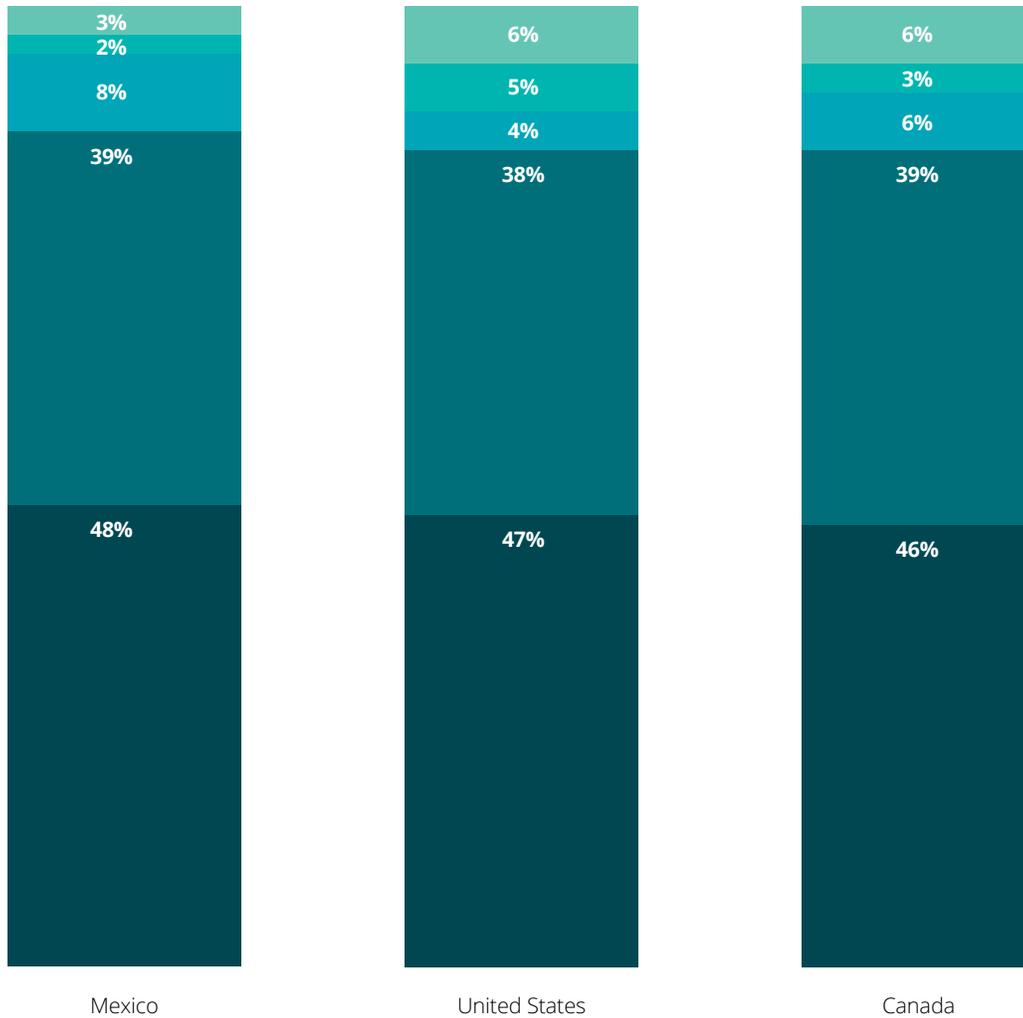
Note: Remaining percentage of consumers for each nation are those for whom the price of gasoline is not a deciding factor in whether to choose a BEV or not and those who said "don't know."

Q29. At what price for gasoline would you be much more likely to consider buying or leasing an all-battery-powered electric vehicle (BEV)?

Sample size: Canada=1,296; Mexico=1,262; United States=3,006

Lower emissions, as well as lower operating costs, are the primary reasons consumers consider hybrids or BEVs.

Reasons consumers consider hybrids or BEVs



Lower emissions
 Lower vehicle operating costs
 Rebates/tax incentives
 Social status/keeping up with latest technology
 Vehicle brand/other

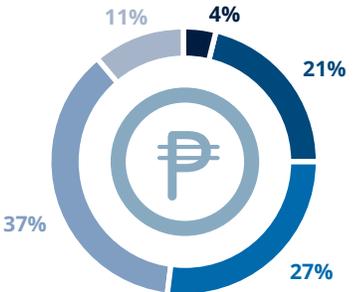
Q54. What is the main reason you are considering an electrified vehicle?

Sample size: Canada=562; Mexico=702; United States=869

Consumers in Canada and the United States are not willing to pay very much extra for an EV.

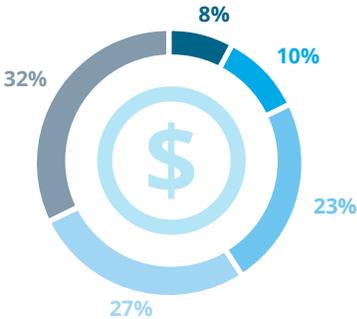
The premium consumers would be willing to pay for an EV compared with a similar ICE vehicle

Mexico



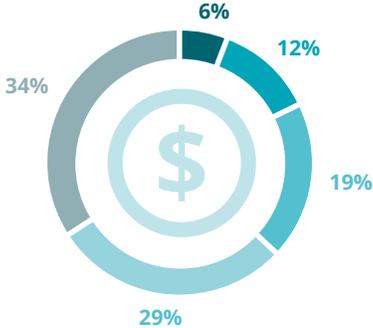
- Wouldn't pay more
- <20,000 pesos
- 20,000-60,000 pesos
- >60,000 pesos
- Don't know

Canada



- Wouldn't pay more
- C\$1,500
- C\$1,500-4,500
- C\$4,500
- >C\$4,500
- Don't know

United States



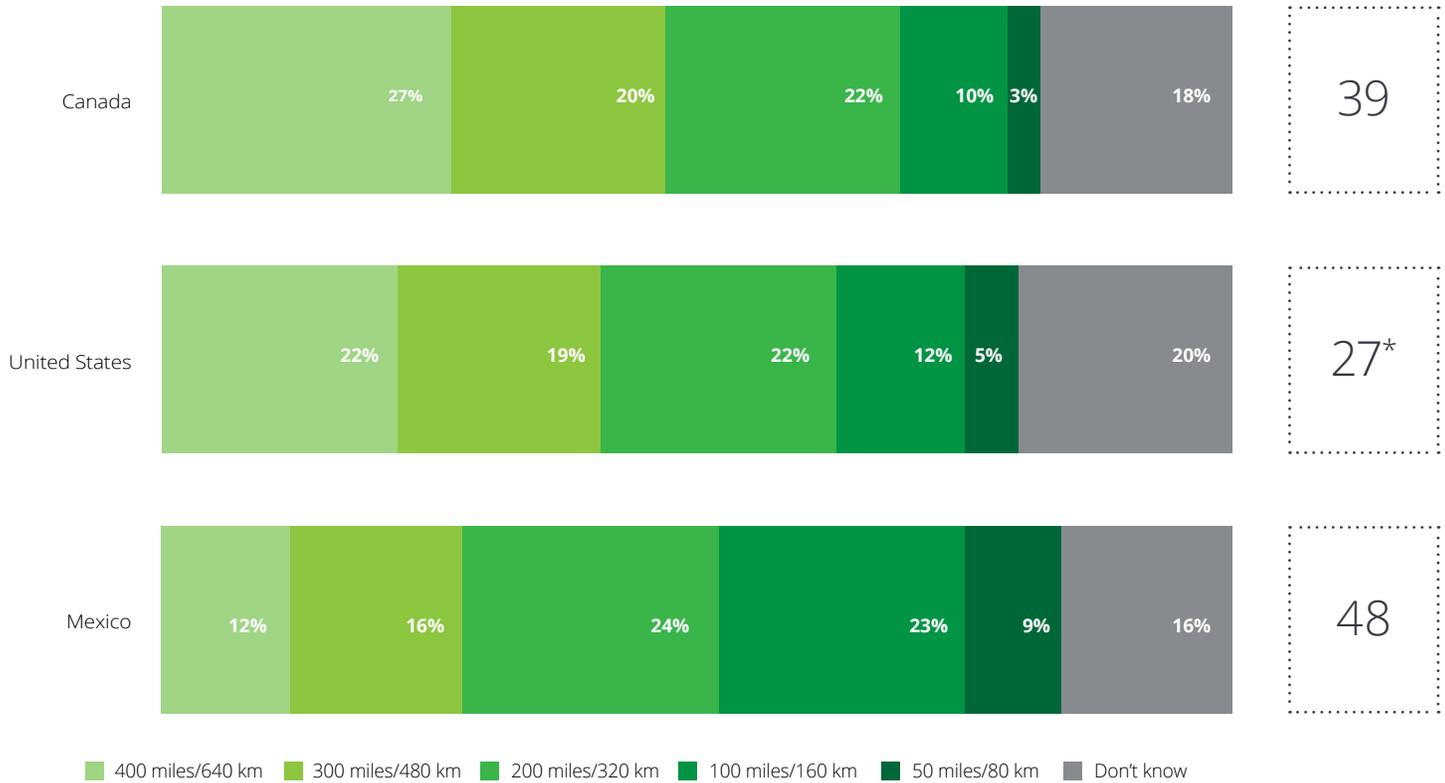
- Wouldn't pay more
- <US\$1,000
- US\$1,000-3,000
- >US\$3,000
- Don't know

Q25. How much more would you be willing to pay for an electric vehicle, compared with a similar vehicle with a traditional internal combustion engine?
 Sample size: Canada=1,296; Mexico=1,262; United States=3,006

Expectations regarding the acceptable range of a BEV are quite significant, even though daily transportation requirements are modest by comparison.

Minimum driving range consumers are expecting from a BEV (km)

On average, how far do you drive each day (km)?



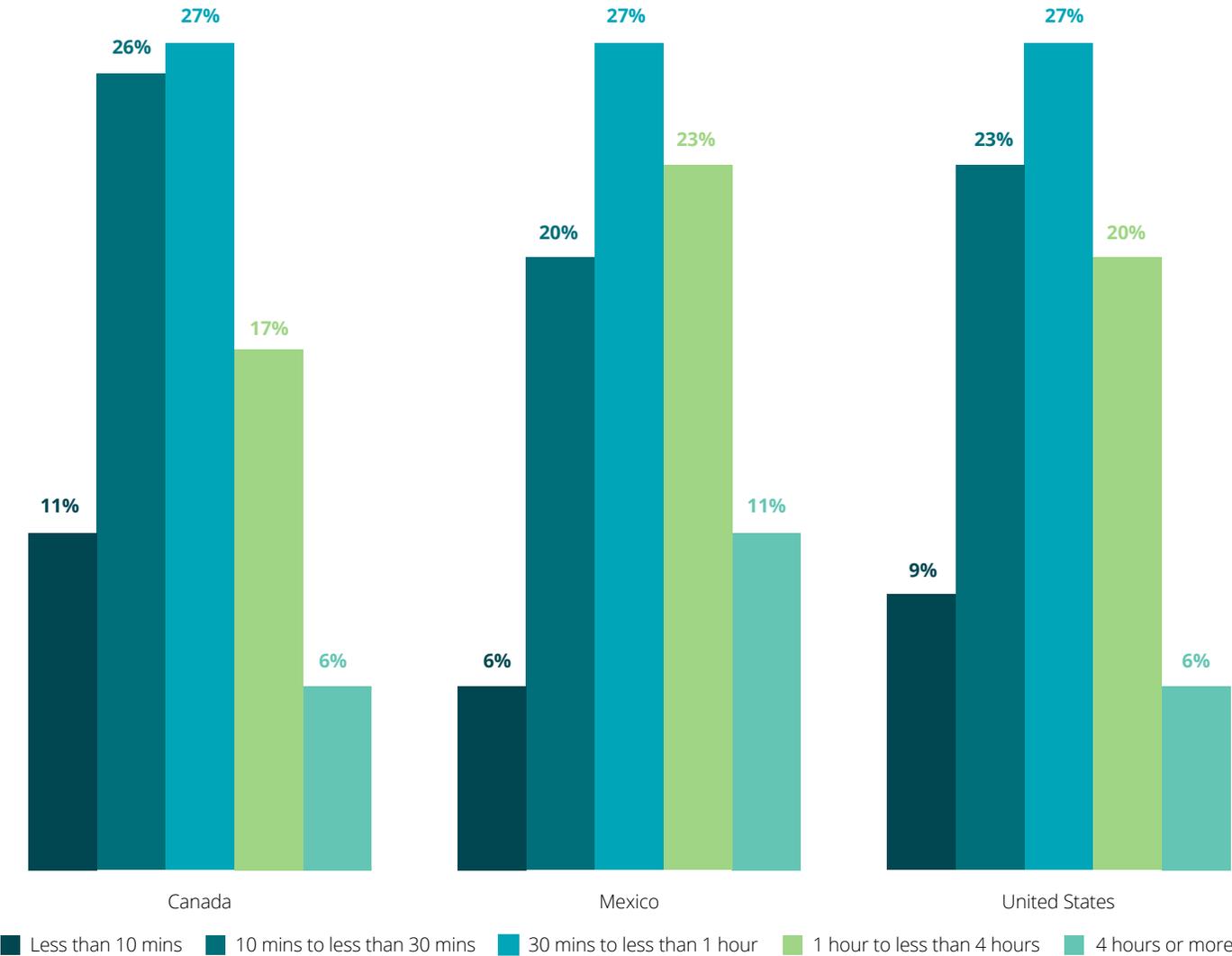
* Miles

Q27. What is the minimum driving range that an all-battery-powered electric vehicle (BEV) needs to have?

Sample size: Canada=1,296; Mexico=1,262; United States=3,006

In addition, a significant proportion of consumers are willing to wait at least 30 minutes to fully charge a BEV.

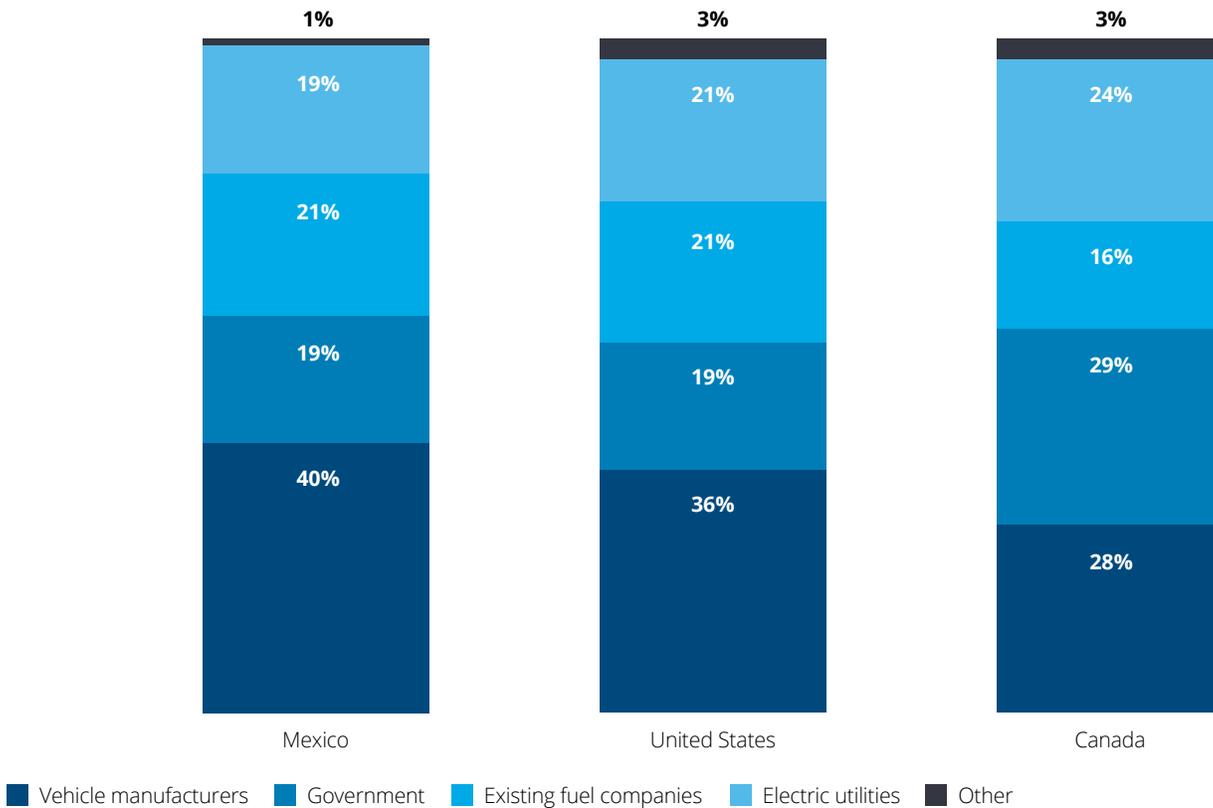
Amount of time consumers are willing to wait to fully recharge a BEV



Note: Sum of percentages for a country may not add up to 100%, as "don't know" percentage is not shown above.
Q28. How long should it take to fully recharge an all-battery-powered electric vehicle (BEV)?
Sample size: Canada=1,296; Mexico=1,262; United States=3,006

There are a variety of opinions when it comes to who consumers think should be responsible for building EV charging networks, potentially opening the door to public-private partnerships.

Consumer opinions on whom they think is responsible for building publicly accessible EV charging stations and other infrastructure

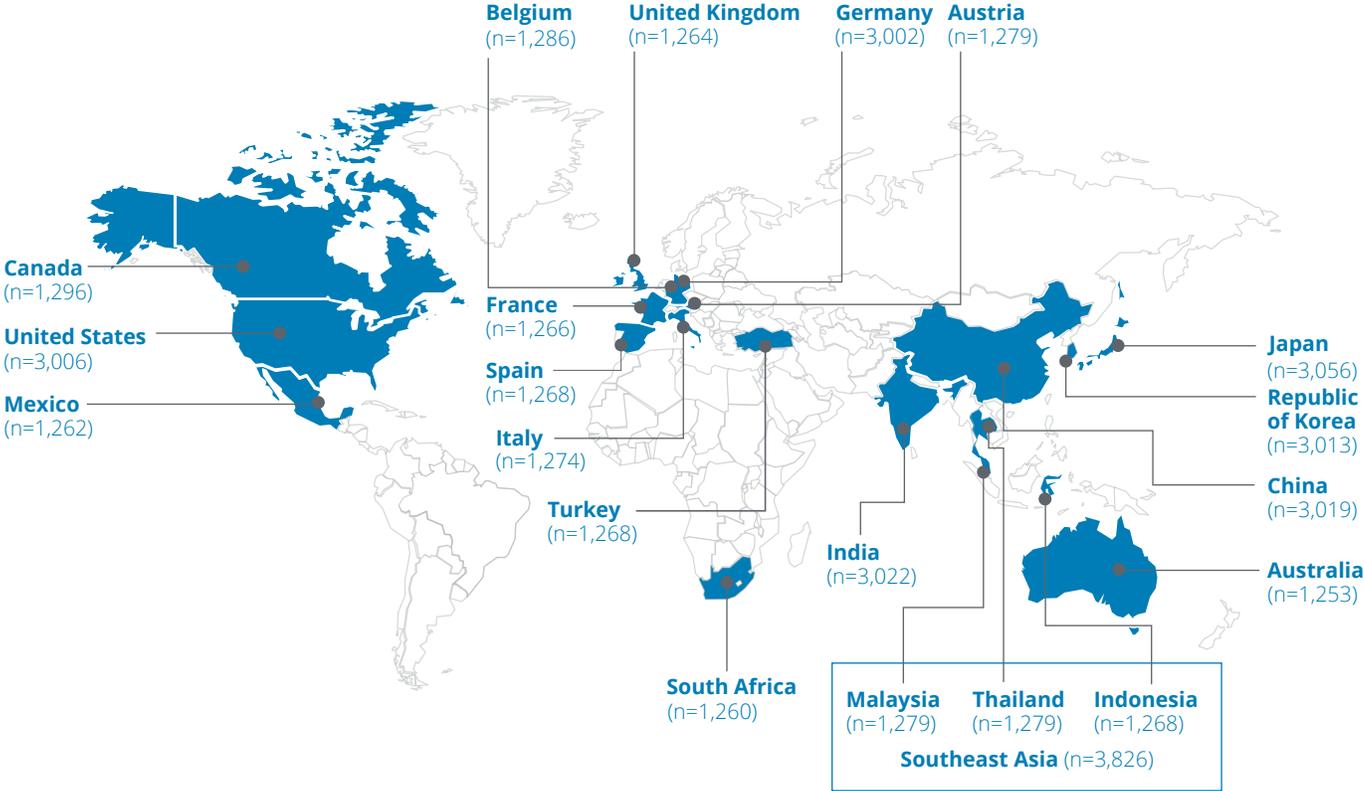


Q31. In your opinion, who should be primarily responsible for building publicly accessible electric vehicle charging stations and other EV infrastructure?
 Sample size: Canada=1,296; Mexico=1,262; United States=3,006

About the study

Global study coverage

The 2020 study includes more than 35,000 consumer responses across 20 global markets.

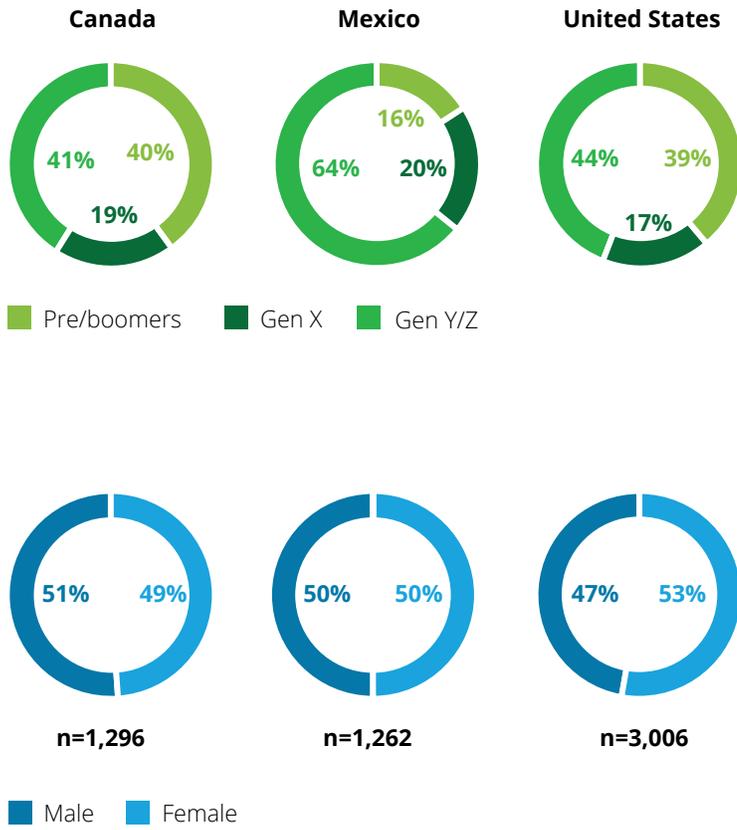


Study methodology

The study is fielded using an online panel methodology where consumers of driving age are invited to complete the questionnaire (translated into local languages) via email. It was fielded in 20 countries and designed to be nationally representative of the overall population in each market.

Note: "n" represents the number of survey respondents in each country.

The study was designed to be nationally representative of the overall population in each market.



Note: "n" represents the number of survey respondents in each country; Pre boomers: Born before 1965; Gen X: Born between 1965–1976; Gen Y/Z: Born after 1976 (sample excludes consumers under 18 years of age).

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