What American Drivers Think About Connected Car Data and Privacy

A Consumer Survey Conducted by Otonomo and Edison Research

August 2018

Foreword

Connected cars—and the ecosystems of apps that will build up around them—promise to make driving safer, more convenient, and more rewarding. At Otonomo, we have seen a number of innovative mobility services taking shape as a result of the new datasets that connected cars are capturing through their many sensors and systems.

Yet these new capabilities are just becoming real at a time when many consumers worry about their privacy. Over the past year, data harvesting on social media sites and companies' revelations about data breaches have been a constant source of headlines. We wanted to know how these controversies would affect drivers' willingness to share their car data, which can contain personal information: where they go, when they start and stop, and how fast they travel.

If automotive manufacturers and the mobility services that consume connected car data want to foster an ecosystem that delivers value to all of its participants, these companies need to earn their drivers' trust. We commissioned a consumer study, fielded by Edison Research, to quantify any potential trust gaps and to glean insights that will help the connected car data ecosystem to mature faster.

The study was conducted in April and May 2018, as the GDPR deadline in Europe loomed and data and privacy were in the headlines every day. Since 96% of connected car owners and 93% of new car buyers also own a smartphone, the consumers represented in this survey are "digitally aware" and presumably have significant exposure to mobile apps and their data-sharing practices.

We were encouraged by the interest consumers expressed in services based on connected car data and by their willingness to share both anonymous and personal data. We were also encouraged by the level of trust that they place in automotive OEMs. However, the entire ecosystem has work to do to address privacy concerns. This study will provide actionable takeaways to chart your company's course to success in this new connected car ecosystem.

Enjoy the read.

Lisa Joy Rosner
Chief Marketing Officer
Otonomo

Table of Contents

Executive Summary

An ecosystem is beginning to emerge around connected car data, which is the data today's cars are capturing in their sensors and systems. While the innovative mobility services being developed in this ecosystem will make driving safer, more convenient, and more rewarding, the ecosystem cannot grow without the willingness of drivers to share anonymous and personal data.

This survey of 1,070 American connected car drivers and new car buyers, commissioned by Otonomo and fielded by Edison Research in April and May 2018, found that **as many as 94% of drivers expressed interest in apps and services based on connected car data**—even services that are not yet on the market.

- 94% are interested in their cars **alerting them to dangerous driving conditions** ahead
- 93% are interested in **faster response times for emergency responders** in the event of an accident
- 92% are interested in **early detection of necessary maintenance** and repairs
- 84% are interested in **improvement of quality and safety of roads**, based on feedback from their cars
- 84% are interested in having their cars **suggest gas stations** on the route when they need gas
- 79% are interested in **discounted insurance based on driving data** specific to their cars
- 62% are interested in having their cars suggest **coupons to be used depending on their location and time of day**
- 44% are interested in an app that allows **deliveries to their vehicle's trunk**

Approximately 80% of those who expressed interest in a number of these services (including real-time alerts of dangerous driving conditions, early detection of maintenance and repairs, and even faster response times for emergency responders in the event of an accident) stated a **willingness to share anonymous or personal connected car data** in order to gain access to these capabilities.

The drivers in this study stated a willingness to share their data in spite of their general concerns about doing so with apps and services. About two-thirds of drivers have chosen not to use an app or service because of concerns about how their personal information would be handled. When deciding whether to allow an app to collect data, the most important factors that drivers consider are:

- How **trustworthy they perceive the company to be** (68% of drivers indicated this was "very important")
- Whether they are told **exactly what the data are being used for** and who has access to it (63% of drivers indicated this was "very important")

In one of the most important findings of this study, both new car buyers and connected car owners placed a significant amount of trust in car manufacturers to properly secure their data. While trust in social media sites was relatively low (less than half of either group indicated they had confidence that social media sites would properly secure their data), confidence in car manufacturers was high—**71% of new car buyers and 77% of connected car owners were confident or somewhat confident that car manufacturers would properly secure their data.**

Methodology

The Otonomo-Edison Research Survey is a U.S. online survey of 1,070 persons 18 and older. Of that total, 514 were connected car owners, and 794 planned to purchase a new car in the next year. (Note: there was some overlap between the two groups.) Participants were recruited through Survey Sampling International using their online panel and completed their surveys in April and May 2018.

The data in this survey was weighted to match the most recent United States population estimates from the U.S. Census Bureau for age, sex, and race.

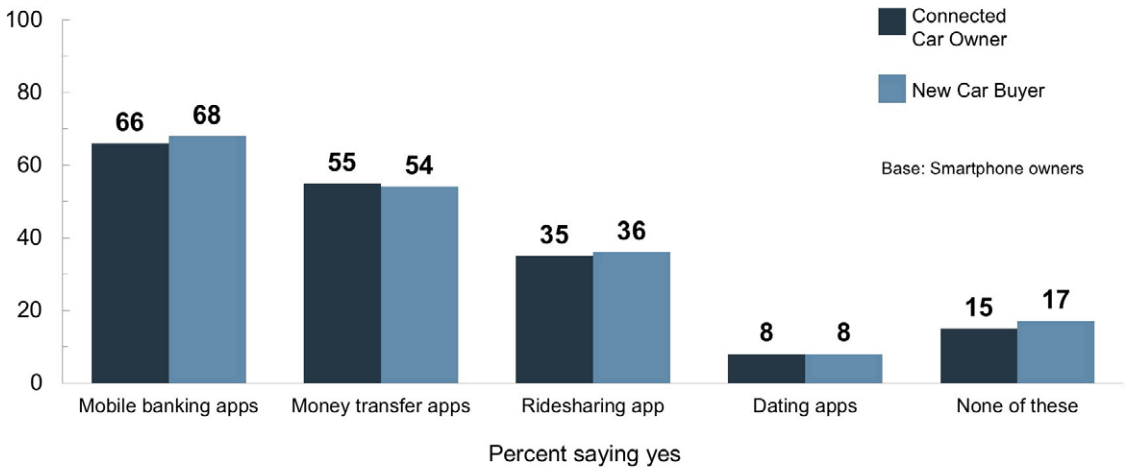



Section 1
The Digital Profile of Drivers in the Survey

Technology Permeates the Daily Lives of Connected Car Owners and New Car Buyers

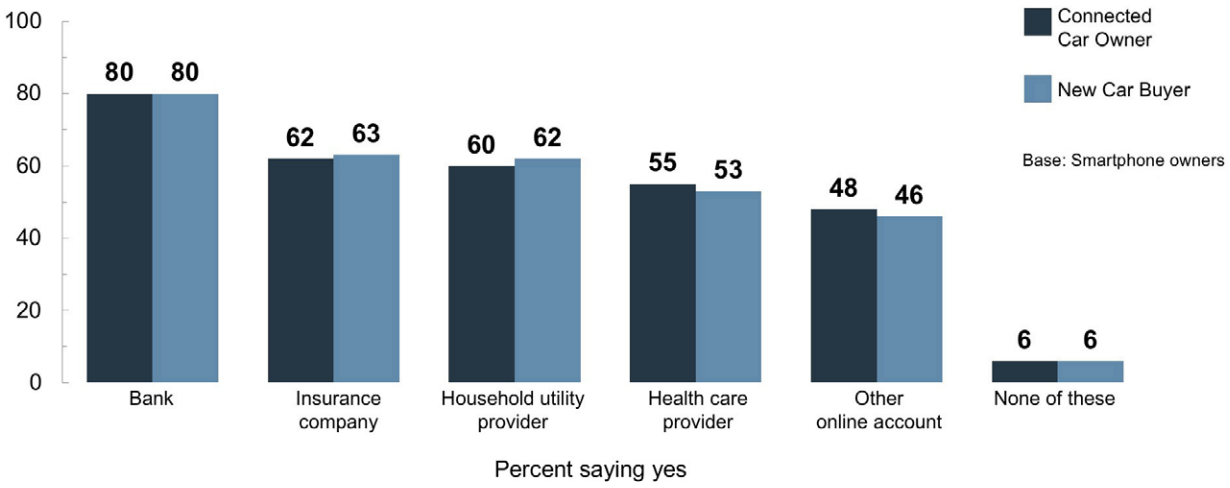
Like American consumers overall, connected car owners and new car buyers rely on technology for many aspects of their daily lives. Ninety-six percent of connected car owners and 93% of new car buyers own a smartphone. About two-thirds of these consumers have a mobile banking app on their phones, and about one-third have a ridesharing app.

Do you have any of the following types of apps on your smartphone?



These smartphone owners use online services such as online banking and management of insurance policies and utilities.

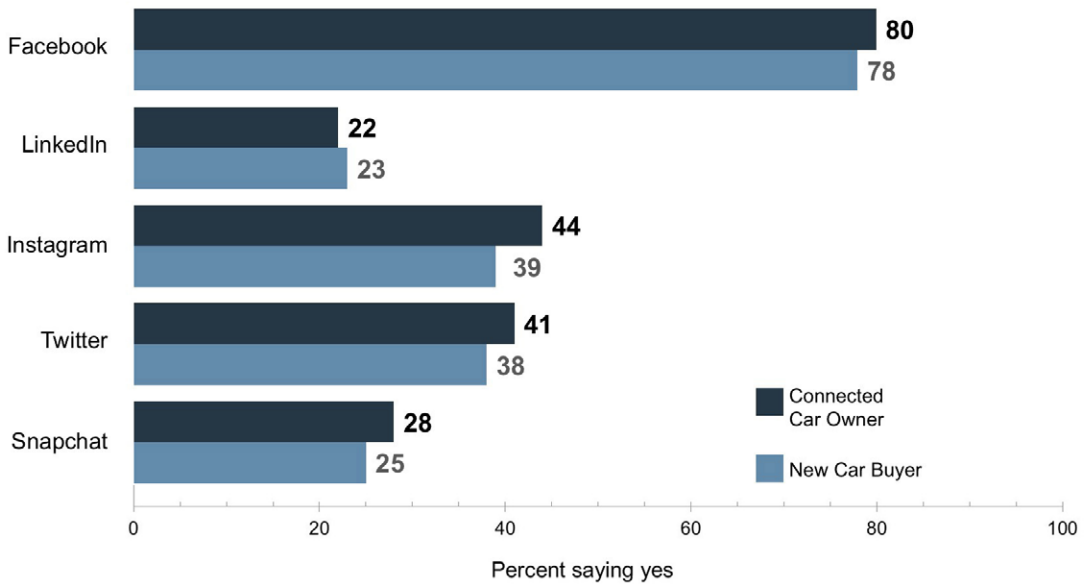
Do you have an online account with any of the following?



Drivers who completed the survey are also active on online social media sites, with the vast majority using Facebook or another property. Ninety-two percent of connected car owners and 90% of new car buyers currently use at least one social media site.

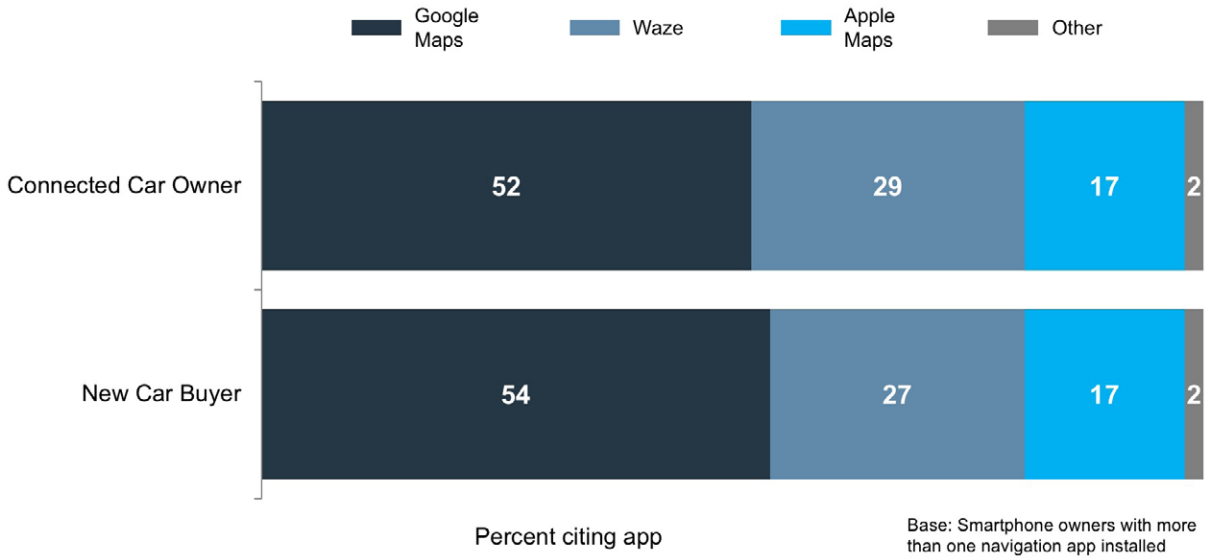
Social Media Sites Used

"Which social media sites have you used in the past week?"

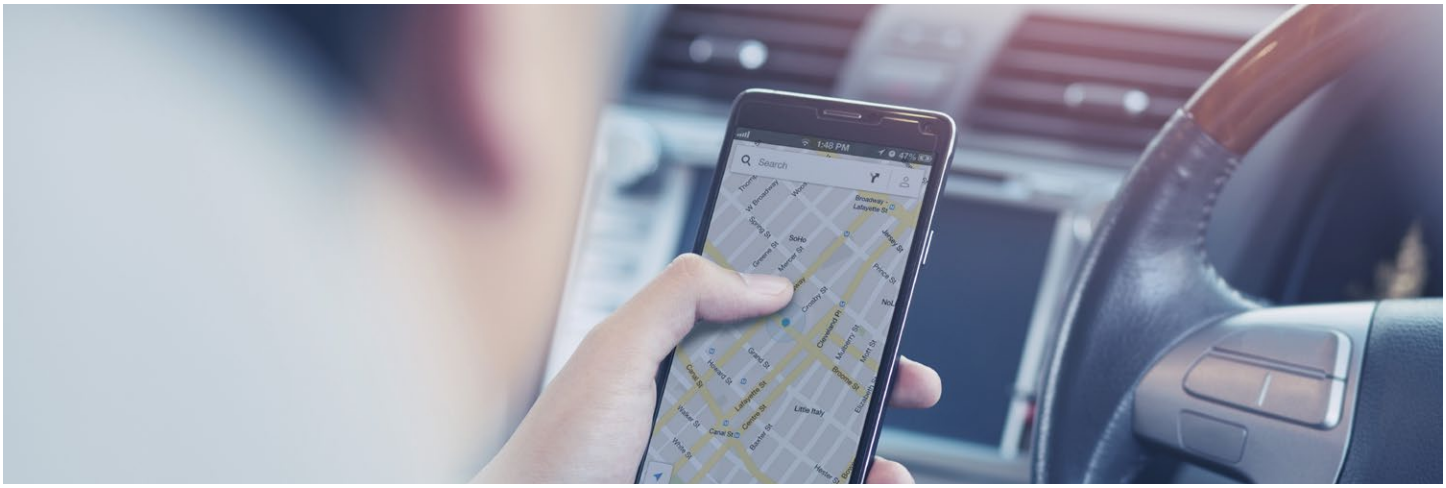


Ninety-six percent of smartphone owners in the survey have at least one navigation app on their smartphone, with Google Maps having the highest adoption at 84% and the most mentions as the preferred choice among consumers who have more than one navigation app installed.

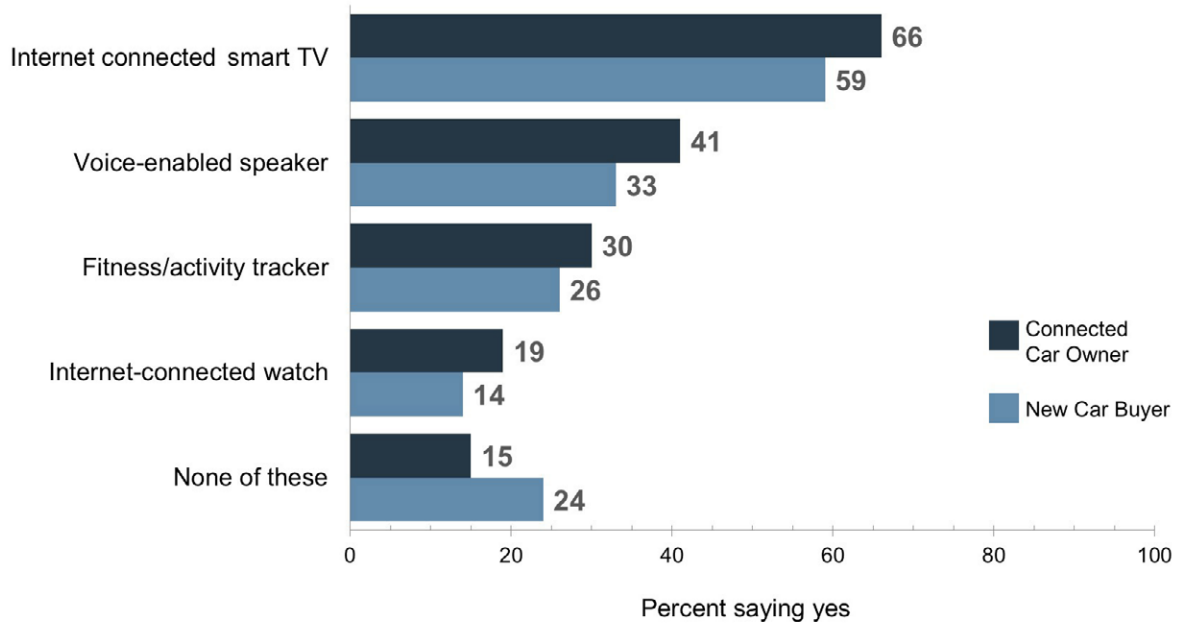
Which navigation app do you use the most?



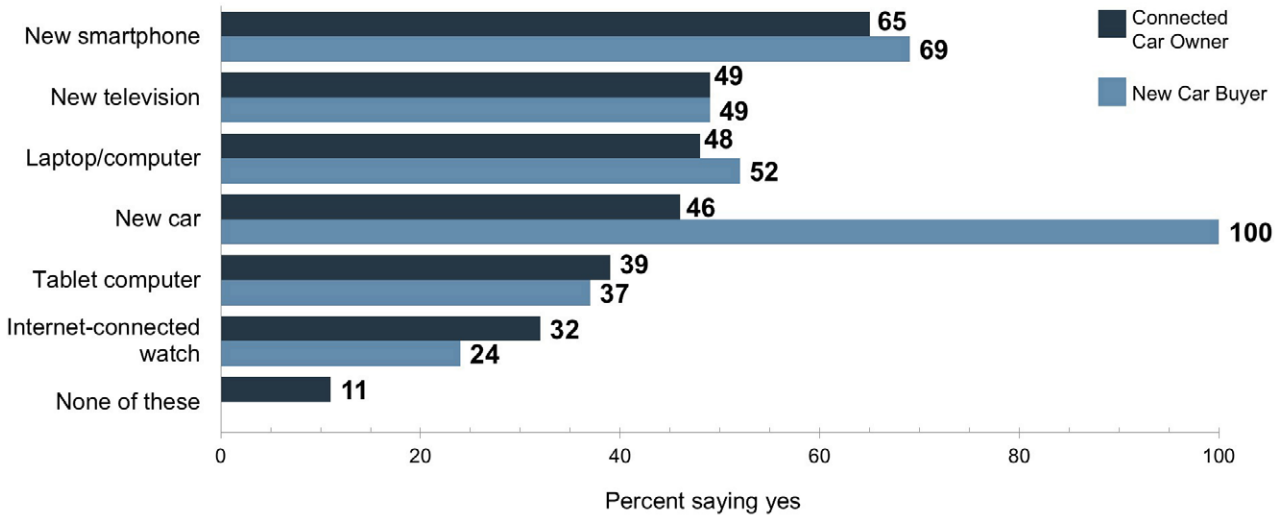
Many connected car owners and new car buyers also own other Internet-enabled devices such as smart TVs, smart speakers, and fitness/ activity trackers. New car buyers are actively seeking some of these other consumer technologies in the same time frame as their car purchase.



Do you own a/an…?

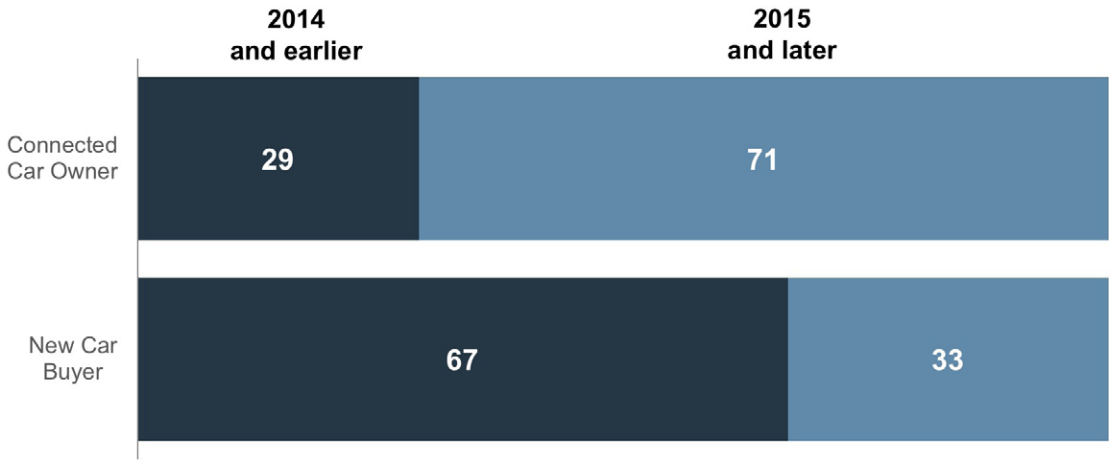


In the next year do you plan to purchase a/an…?



Not surprisingly, connected car owners have later-model cars than all the drivers planning to buy a new car. (Keep in mind that in this sample, connected car owners may also be new car buyers.)

What is the model year of your primary car?



Key takeaways

- Technology companies and mobile-intensive businesses like banks are setting high user experience expectations in consumers' minds. Automotive OEMs should invest adequate resources in user experience for their own apps, and consider partnering with best-of-breed technology providers to provide mobility services that are not core to their value propositions.
- New car buyers are dialed in. Market to them on the social media channels they use, and incorporate relevant lifestyle items such as smart TVs or smart speakers into your advertising.

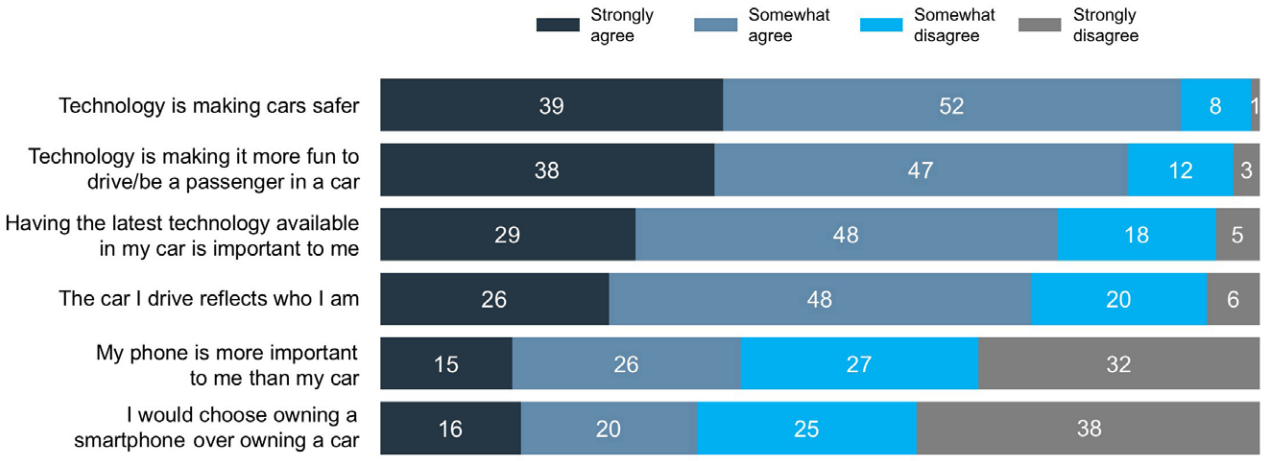
Section 2
Attitudes About Technology in Cars

Drivers View Technology in Cars Positively

Generally, drivers express a high rate of acceptance for technology in cars. Approximately 90% of both samples agree that technology is making cars safer, and approximately eight in ten agree that technology is also making it more fun to drive or be a passenger in a car.

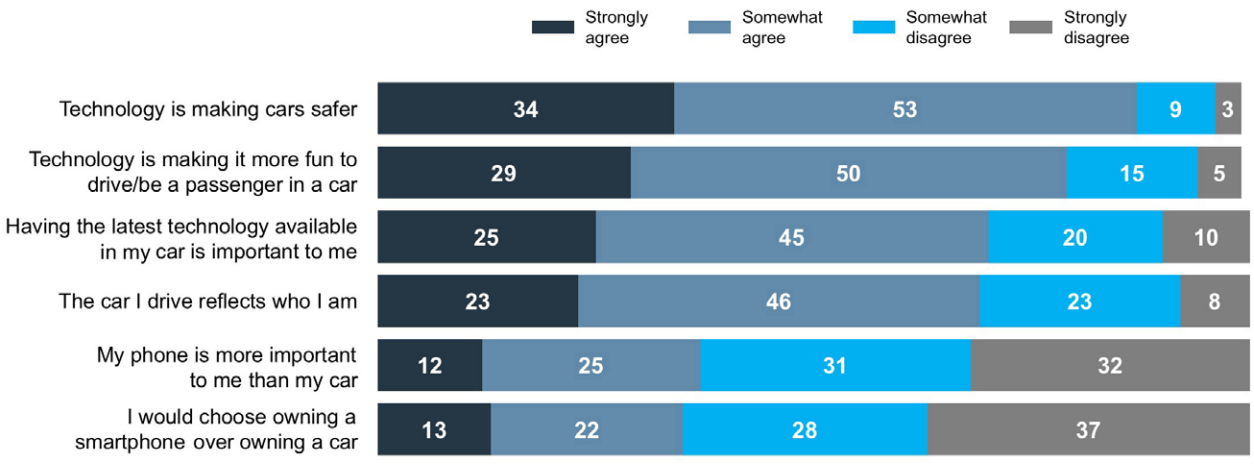
Technology and car ownership attitudes among connected car owners

"How much do you agree or disagree with the following statements?"



Technology and car ownership attitudes among new car buyers

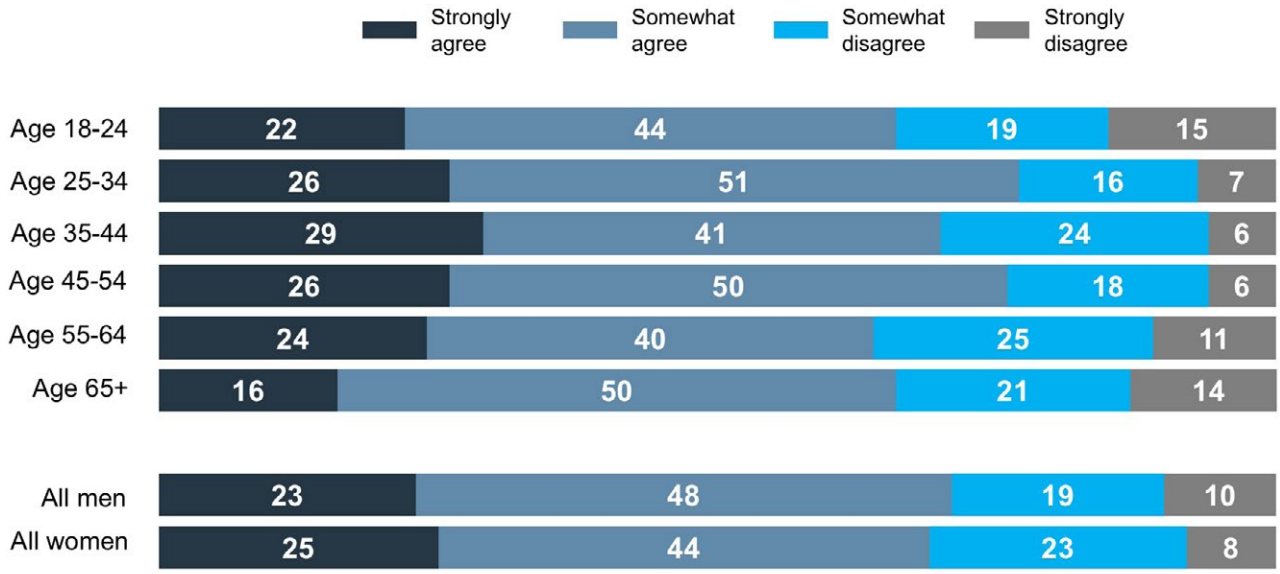
"How much do you agree or disagree with the following statements?"



In breaking down technology acceptance by age and gender, the survey data show some interesting differences. While men and women express similar views, drivers under 24 and over 65 express less enthusiasm about having the latest technology in their cars. Within the 65+ age group, just 16% strongly agree that having the latest technology in their cars is important to them, compared to 24% of respondents as a whole.

Having the latest technology available in my car is important to me

Connected car owners and new car buyers combined



Key takeaways

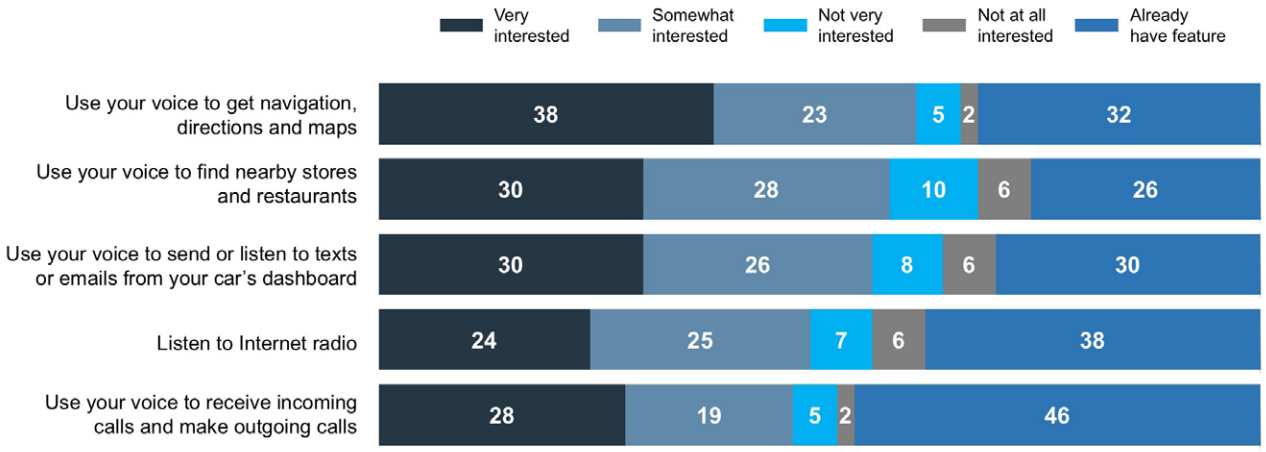
- **Technology in cars is a strong selling point, particularly to buyers in the 25-64 age groups.**
- **Connected car owners understand the safety and fun value propositions of connected cars better than new car buyers do. Safety should be an important message, especially for family cars. Fun could be an important message for younger and older buyers.**

Connected Car Owners and New Car Buyers Want Internet-Enabled Features

We asked connected car owners and new car buyers about their interest in currently available technologies that leverage Internet connections. The vast majority of respondents already have these capabilities or are interested in using them. Connected car owners and new car buyers express very high levels of interest in voice-based services in particular.

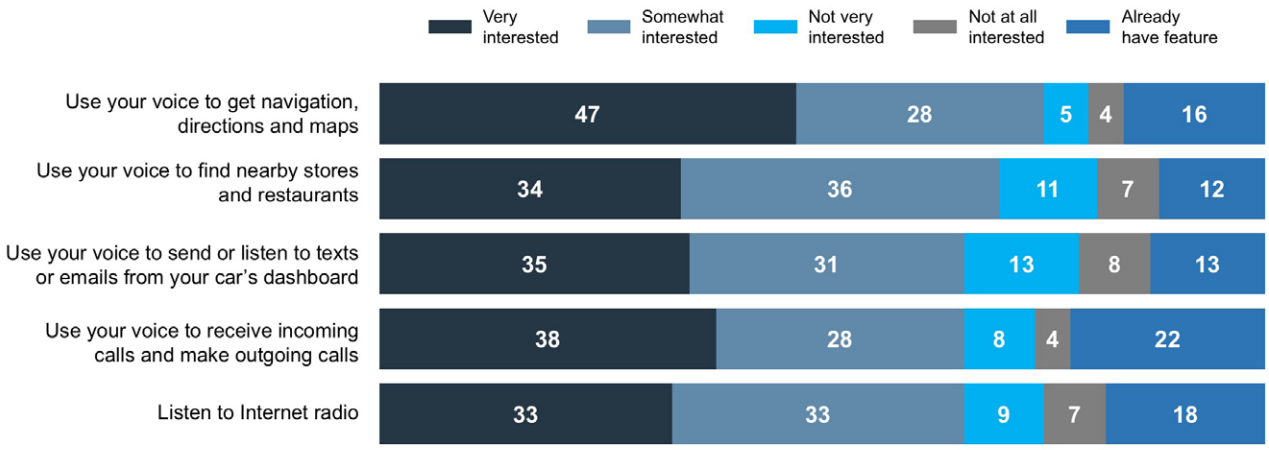
Connected car owners' interest in existing apps and services

"How interested are you in the ability to..."



New car buyers' interest in existing apps and services

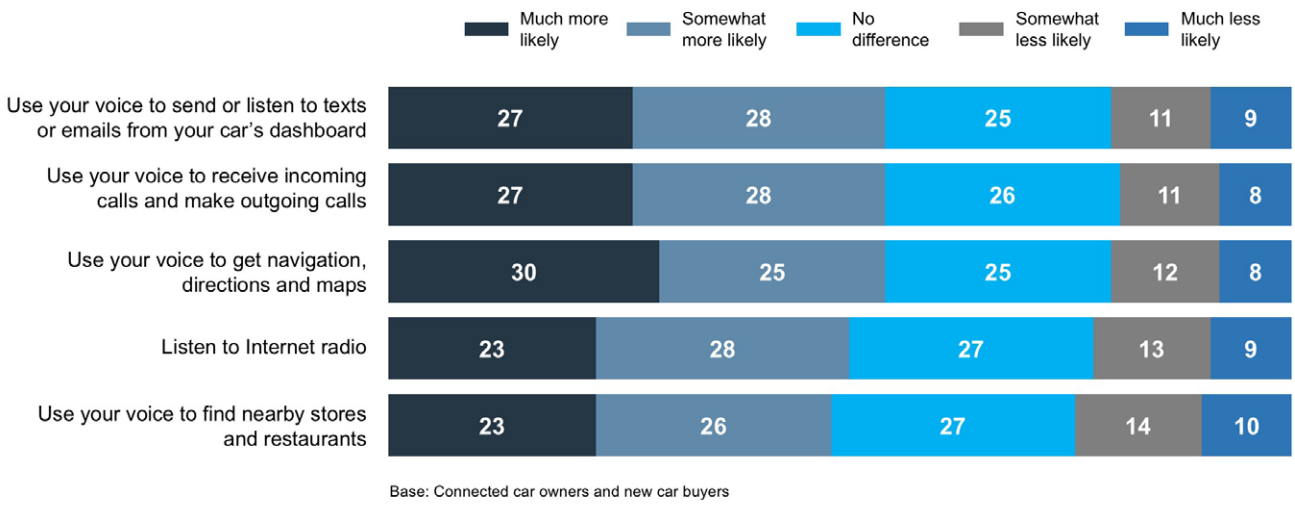
"How interested are you in the ability to..."



Given that one of the main survey goals was to understand drivers' attitudes about privacy, the survey asked respondents if they would be more likely to use a service if they had to provide a username and password when setting it up. Just over half of respondents said they would be somewhat or much more likely to use services with usernames and passwords. Approximately one-quarter of respondents said that registration would not have an impact.

Effect of user registration on service adoption

"Would you be more or less likely to use the feature if you had to provide a username and password when you set it up?"



Base: Connected car owners and new car buyers

Key takeaways

- **Consumers are reliant on voice. Make sure that voice is a core component of your strategy.**
- **User registration is not necessarily a barrier to service adoption. And, it's an important way to communicate your privacy policies and set expectations about how you will use drivers' data.**

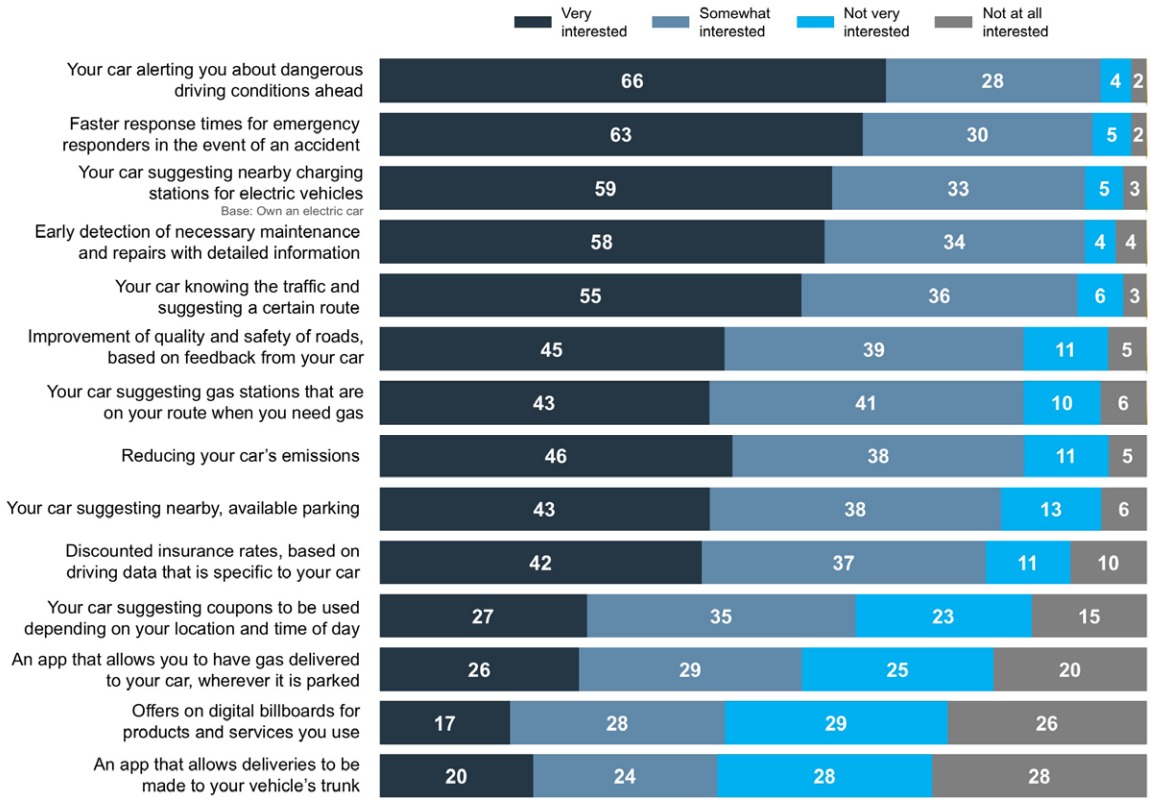
Section 3
Interest in Connected Car Services

Drivers Express Strong Demand for New Services Based on Connected Car Data

When asked about services that can or will be available in cars, as many as 94% of connected car owners and new car buyers expressed interest. The differences in interest levels between these two groups were not statistically significant. Strong levels of potential demand emerged for services that are similar to currently available technologies, for example, hazard alerting and roadside assistance, as well as more innovative services like predictive maintenance. Almost half of consumers expressed interest in in-vehicle delivery, even though it is not available yet in the mainstream.

Apps and services that increase safety and convenience generated the most interest among drivers. However, it's interesting to note that close to half of consumers also expressed interest in personalized advertising on digital billboards.

Driver interest in new apps and services based on connected car data



Key takeaway

Early-adopter consumers are ready to have innovative mobility apps and services in their cars. They want services that are available, and they even express interest in services that are still being developed. As these consumers see the value in mobility apps and services, the later adopters will follow. Automotive OEMs should invest in making their connected car data available to these services, because compatibility will be a potential competitive advantage.

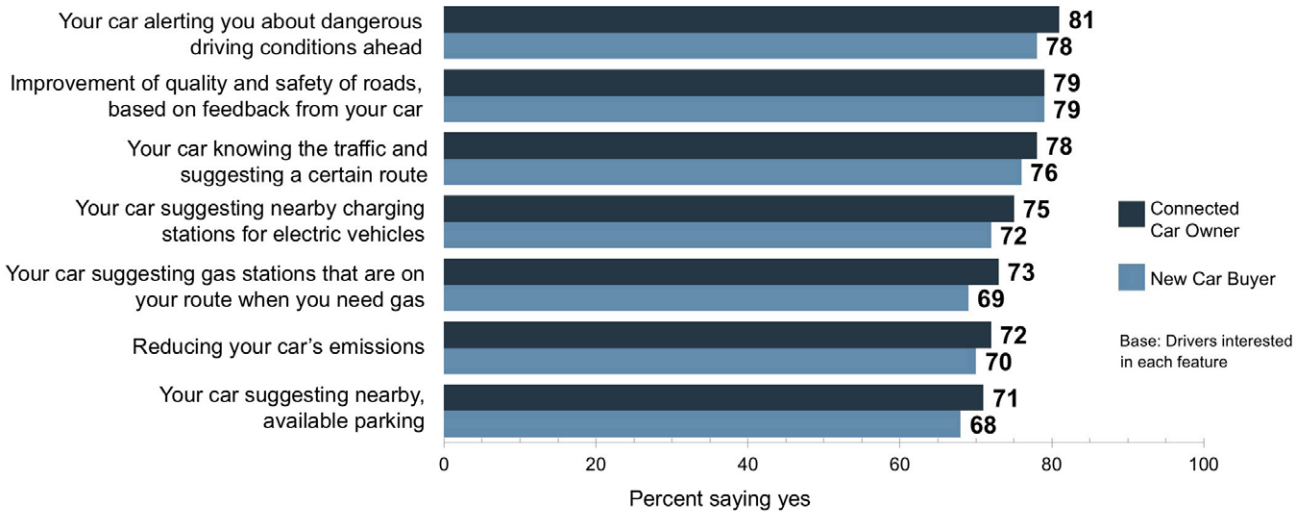
Section 4
Attitudes Towards Connected Car Data Sharing

Drivers Are Willing to Share Their Data to Get New Services

The survey then asked those consumers who had expressed interest in specific services whether they would be willing to share their own car's data in order to gain access to that capability. Of those who expressed interest in real-time alerts about dangerous driving conditions, early detection of maintenance and repairs, and even-faster response times for emergency responders in the event of an accident, approximately 80% stated a willingness to share their car's data.

Drivers' willingness to share anonymous data

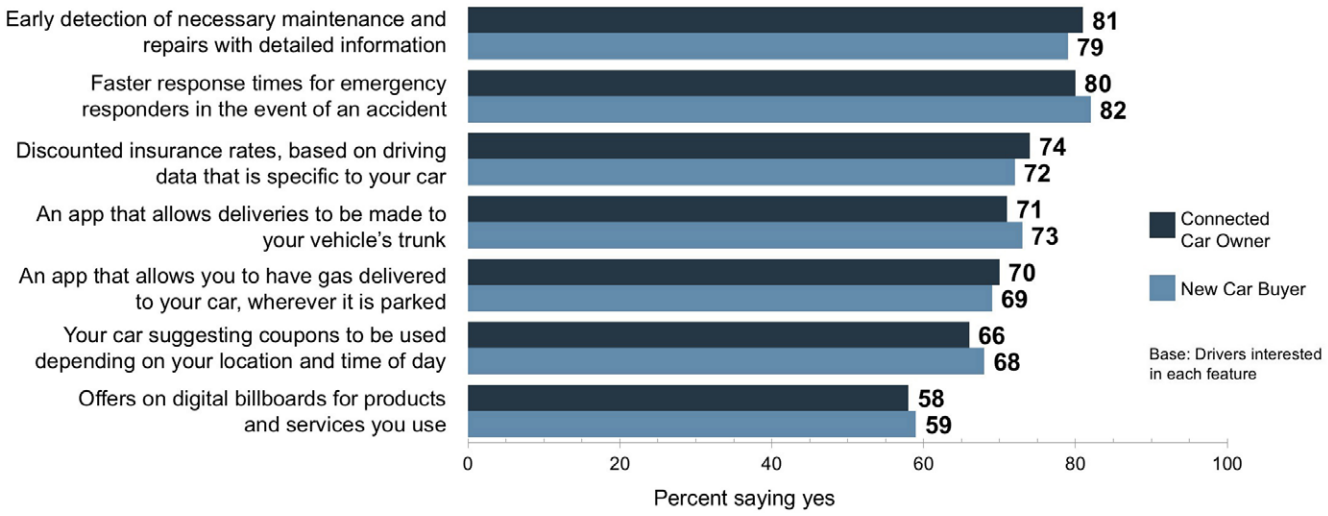
"The features you said you were interested in may require your car to share anonymous data with a service provider/ app. Would you allow your car's data to be shared in order to get each feature?"



Drivers interested in these services were not just willing to share their data anonymously. When asked if they would share personal data, that is, data specific to them, 70% or more said yes for several safety- and convenience-related use cases. More than half of drivers were willing to share their data for marketing-related use cases, coupons and digital billboards.

Drivers' willingness to share personal data

"The features you said you were interested in may require your car to share data specific to you. Would you allow your car's data to be shared in order to get each feature?"



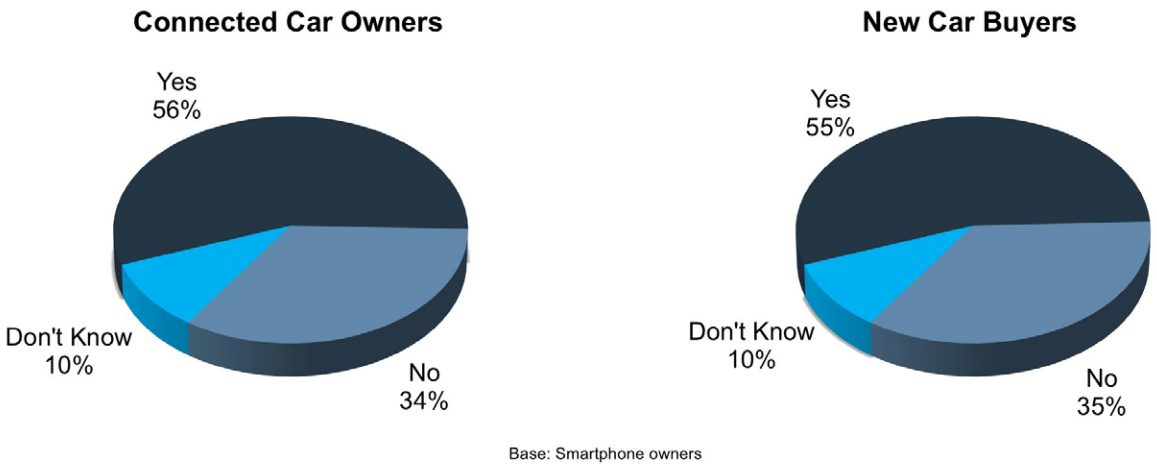
Key takeaway

Given that this survey was fielded shortly after several high-profile data-sharing controversies, it was surprising the extent to which drivers are open to sharing data for connected car data use cases that involve both anonymous and personal data sharing.

Yet in General, Consumers Express Data Sharing Concerns

For many of the new connected car services in the survey, the proportion of drivers who are willing to share their data is higher than the proportion of drivers who say they *ever* allow apps to collect anonymous data through the app, such as location. Overall, just 54% of respondents say they allow apps to collect data. Thirty-six percent say they do not allow apps to collect data, and 10% say they don't know.

Do you ever allow apps to collect anonymous data through the app, such as your location?

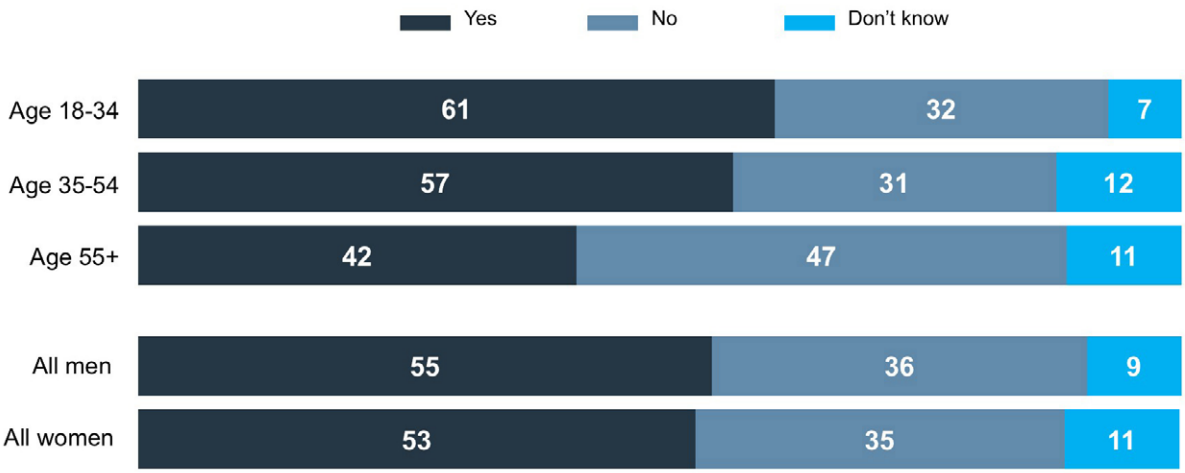


Base: Smartphone owners

Willingness to let apps collect data varies significantly among people of different age groups, with younger consumers being more willing to share data than older consumers.

Differences in willingness to let apps collect data by age

"Do you ever allow apps to collect anonymous data through the app, such as your location?"

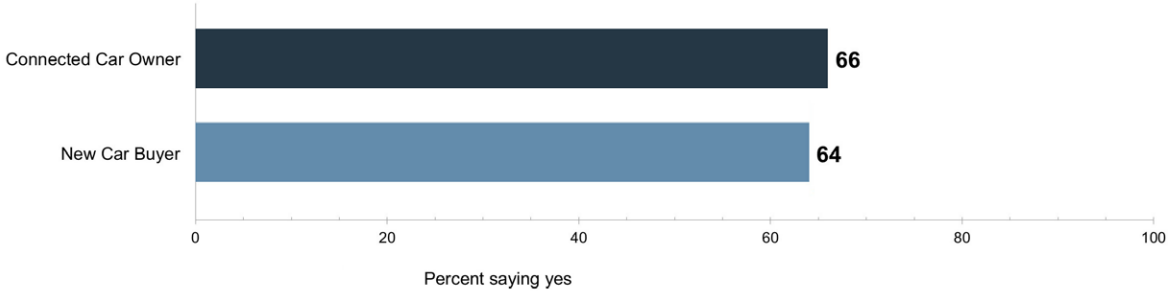


Base: Smartphone owners

The study also asked connected car owners and new car buyers if they ever have chosen not to use online services and apps because of concerns about personal information. Two-thirds say they have chosen not to use an app or service because of these concerns.

Have you ever chosen to not use an online service/app…

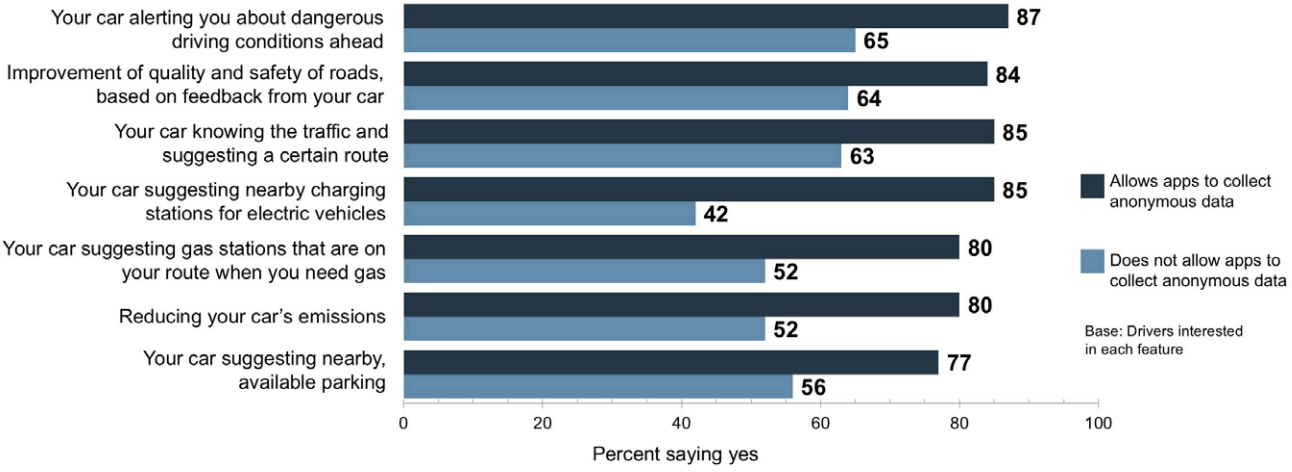
"Because you were worried about how your personal information would be handled?"



Comparing these numbers to the drivers' willingness to share anonymous or specific data in order to gain access to mobility-related capabilities illustrates the strength of the value proposition for the new services made possible by connected car data. Among the respondents who are interested in connected car services but say they *never* share data with smartphone apps, more than half would share anonymous data in order to get the services in which they said they were interested. (Electric vehicle charging was the exception, but it is not a statistically significant sample.)

Willingness to share anonymous data among people who expressed interest in services AND say they never share data with apps

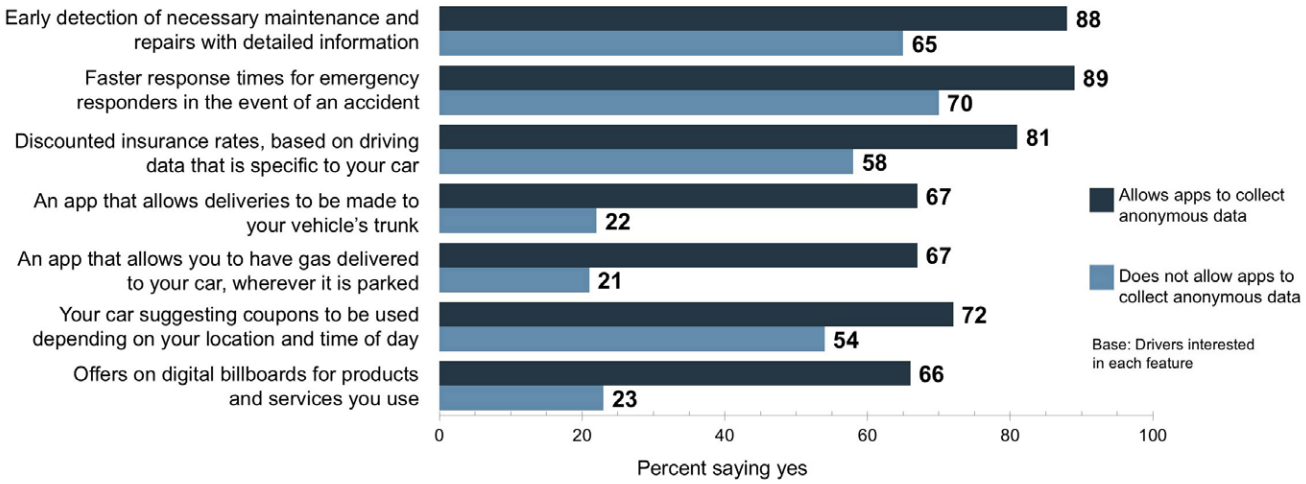
"The features you said you were interested in may require your car to share anonymous data. Would you allow your car's data to be shared in order to get each feature?"



Furthermore, more than half of "non-sharers" would share personal data to get predictive maintenance, faster emergency response, discounted insurance, and contextual coupons.

Willingness to share personal data among people who expressed interest in services AND say they never share data with apps

"The features you said you were interested in may require your car to share data specific to you. Would you allow your car's data to be shared in order to get each feature?"



Key takeaway

The value proposition for innovative mobility services may reach drivers who don't fit in traditional app-using demographics. Use traditional marketing channels such as print and the dealer network, not just digital channels, to educate drivers about these services.

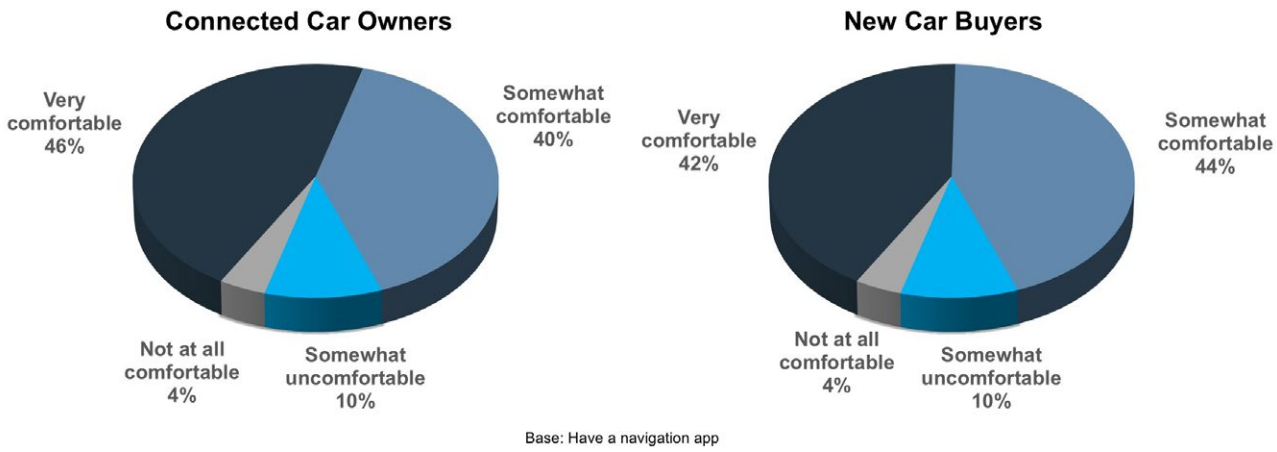
But Do They Really Know What Data They're Sharing Today?

These responses also raise questions about the extent to which drivers are aware that they already share their data with the apps and services they use today.

Consider mobility-related smartphone apps. According to our survey, more than 80% of connected car owners and new car buyers have Google Maps installed. More than one-third have a ridesharing app installed. Both of these types of apps rely extensively on anonymous and personal user data. We asked smartphone users with navigation apps whether they trust that provider with their data, and for the most part they were comfortable.

Most consumers trust their navigation app

"Earlier you said you have a navigation app. Navigation apps collect information about your location, the speed your car is traveling, and your destination. How comfortable are you with this app having your data?"



Base: Have a navigation app

Will consumers gain more awareness of what data is being collected on them? When they fully realize what data Google, Lyft, and Uber collect, will they change their behavior? Consumer behavior on social media sites since the Cambridge Analytica scandal suggests that they will not change, but it's too early to be sure.

Key takeaway

The transportation ecosystem has a responsibility to educate consumers and give them transparency about connected car data. Connected car drivers and new car buyers appear to have an incomplete picture of how much data is being harvested from all the apps on their smartphones, but they are willing to share data from their vehicles.

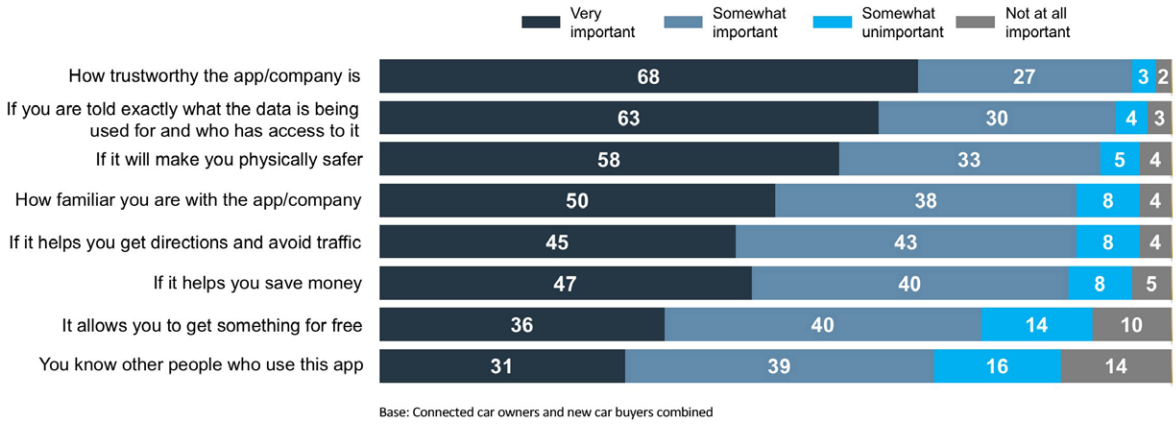
Section 5
Factors That Drive Consumer Trust

Brand and Data Usage Transparency Matter Most

When drivers try to decide whether to allow an app to collect data, the two factors that are most important to their decision process are **how trustworthy they perceive the company to be**, and **whether they are told exactly what the data are being used for** and who has access to it. Beyond those two factors, consumers consider the **value proposition of the app itself**: the safety, convenience, and cost-saving advantages it delivers.

Factors in deciding whether to allow an app to collect data

"How important are each of the following when deciding whether to allow an app to collect data?"



Base: Connected car owners and new car buyers combined

Automotive OEMs already recognize the importance of brand-building and are making investments that will support their role in promoting new uses of connected car data. Large technology companies like Google and Uber have stepped up their investments in general brand-building over the past year. For startups hoping to break into the connected car market, brand-building will be similarly important.

The second most important factor, transparency, merits additional exploration. Today's apps and services communicate their data collection practices in lengthy terms of service full of legal language. The data suggest that the necessary knowledge isn't making its way to consumers. So what can the connected car data ecosystem do differently?

Look to Emerging Data Protection Best Practices

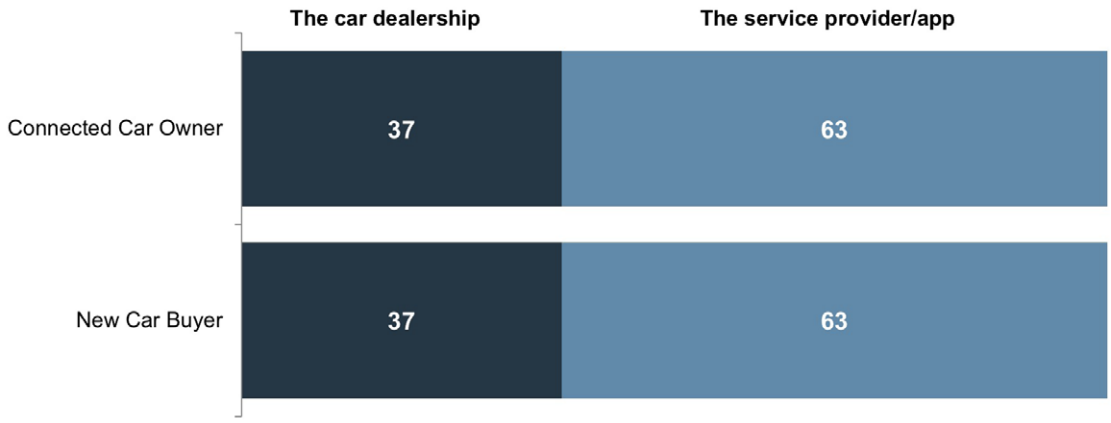
The European Union General Data Protection Regulation (GDPR) has driven significant changes in how many organizations handle consumer data. GDPR mandates clear communications about data usage, and it mandates an explicit consent-management process. Many companies are not limiting these business practices to the EU but are adopting all or part of them worldwide. OEMs can adapt GDPR requirements as a model for interacting with their connected car owners.

Dealers Have a Role to Play in Creating Transparency

One unique factor in the connected car data ecosystem is the dealer network. We asked drivers where they would expect to find information about data collection and usage practices, and more than one-third said they would look to their car dealers.

If your new car's data was to be collected anonymously and shared with a service provider/app

"Would you expect to find that information from...?"



Buying a new car is already a lengthy, multi-step process full of forms and disclosures. Adding more disclosures about connected car data would probably do little to improve drivers' understanding. However, dealers could reinforce communications that happen through other channels. For example, dealers could offer videos or educational materials to be consumed while drivers are waiting for service to be completed.

Key takeaway

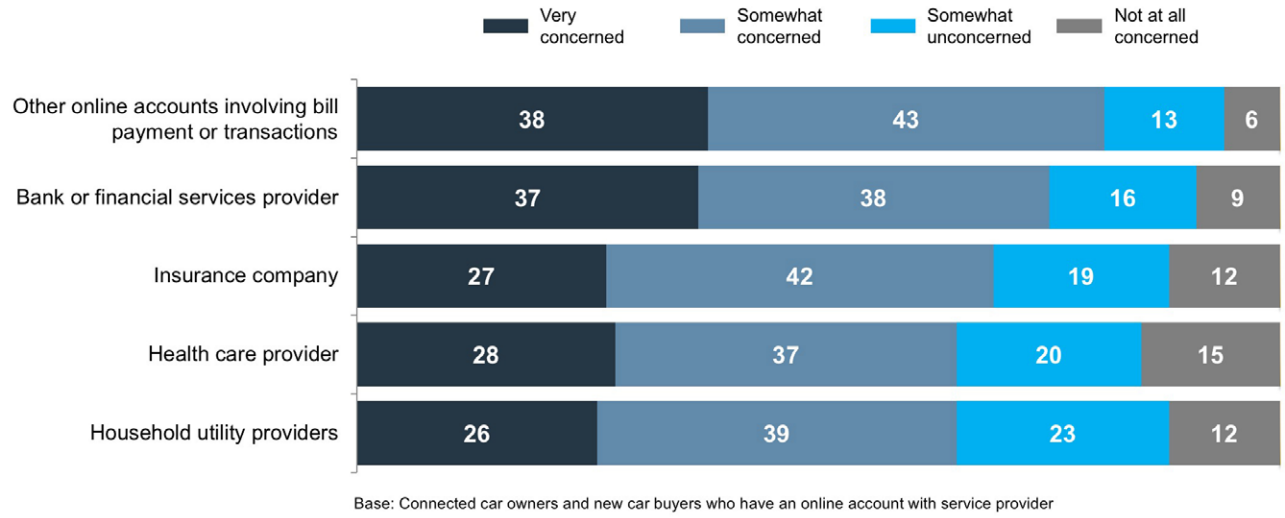
Build a transparency strategy for your data collection practices that goes beyond bringing new legalese into the new car buying process. Consider making your dealer network part of this strategy.

Many Drivers Also Have Data Security Concerns

The survey also explores drivers' attitudes about data security, looking at the types of accounts that drivers told us they already have.

Connected car owner and new car buyer data security concerns with existing online accounts

"How concerned are you about the security of the data you share with your..."

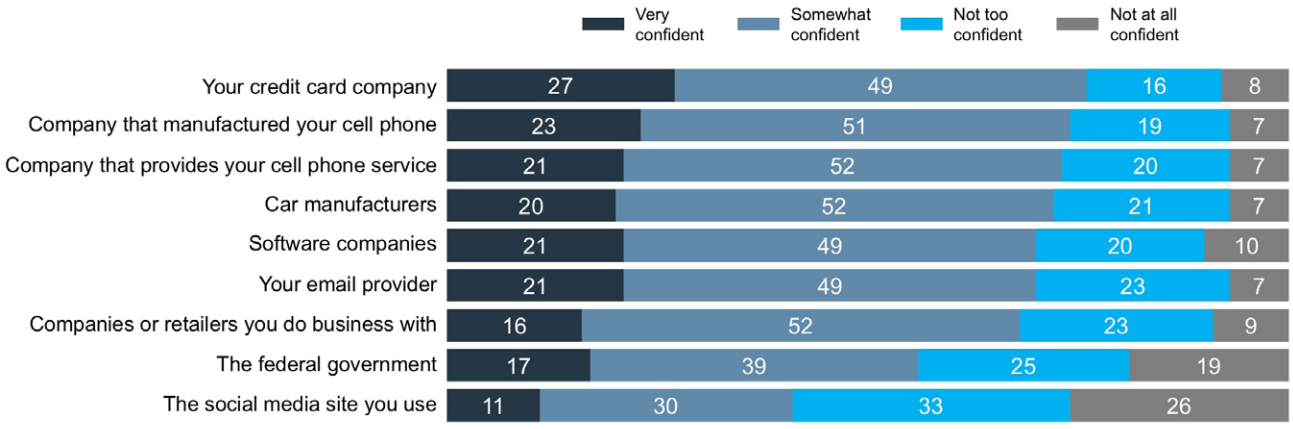


Base: Connected car owners and new car buyers who have an online account with service provider

The survey also asked respondents how confident they were about specific types of organizations' ability to properly secure their data. Credit card companies earned the most confidence, followed by cell phone manufacturers, cellular network operators, and automotive OEMs. Drivers expressed the lowest level of confidence in social media sites—more than 60% were not confident that they would secure personal data.

Driver confidence in organizations to secure personal data

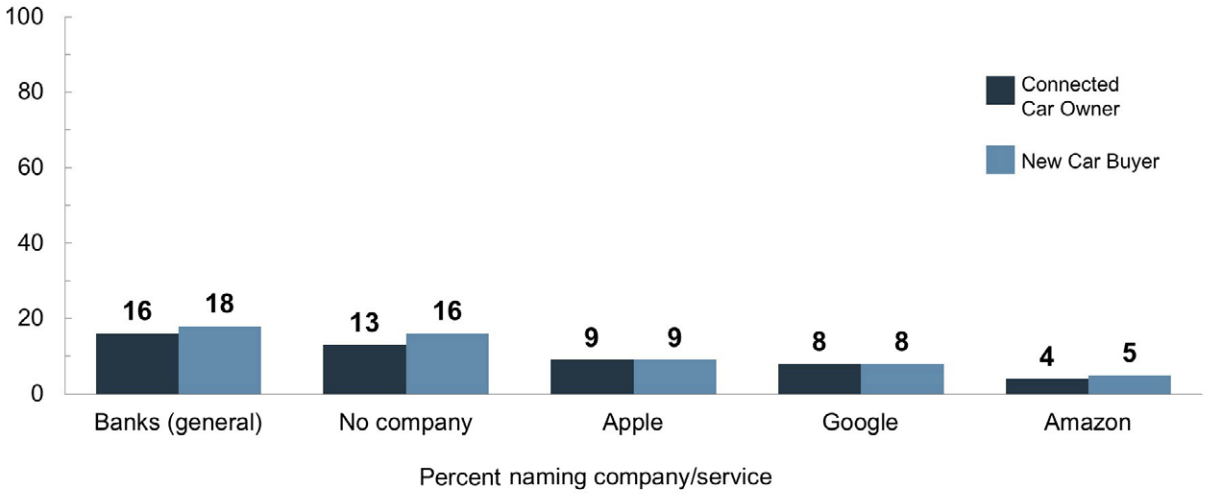
"How confident are you that companies and organizations will properly secure your data?"



Base: Connected car owners and new car buyers combined

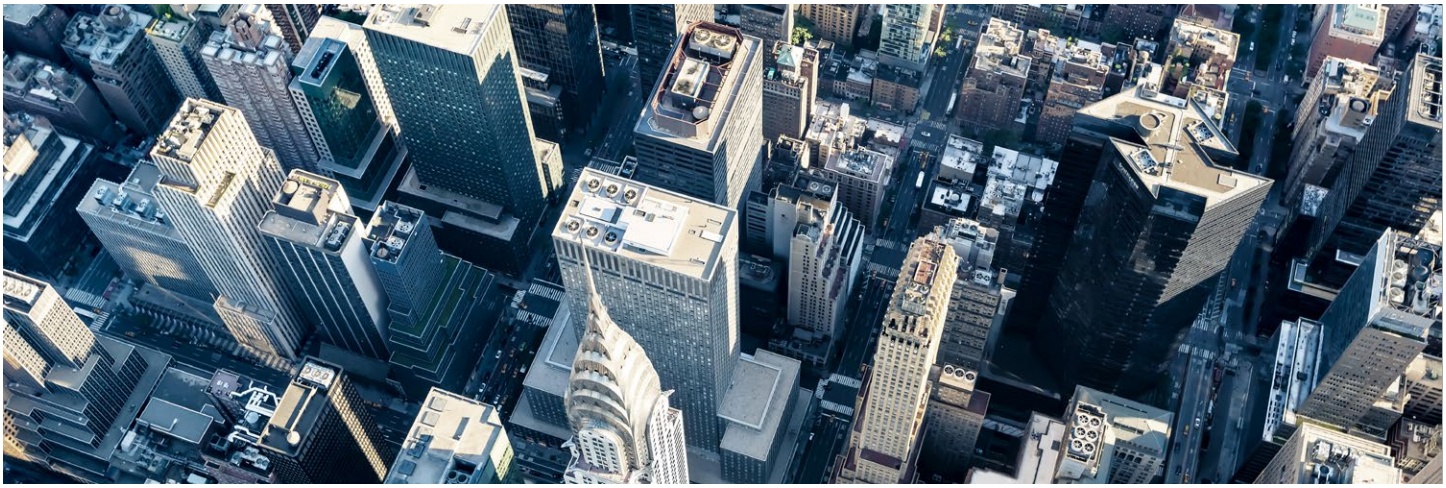
Finally, in an open-ended question, respondents named the company they trust most to keep their personal information safe. Banks (with no specific name mentioned) earned the most mentions, followed by "no company" and three of the most recognized technology brands: Apple, Google, and Amazon. Looking deeper at these brands, Apple is known for its customer support, while Google and Amazon are known for delivering extremely high-value services.

Which company or service do you trust most to keep your personal information safe?



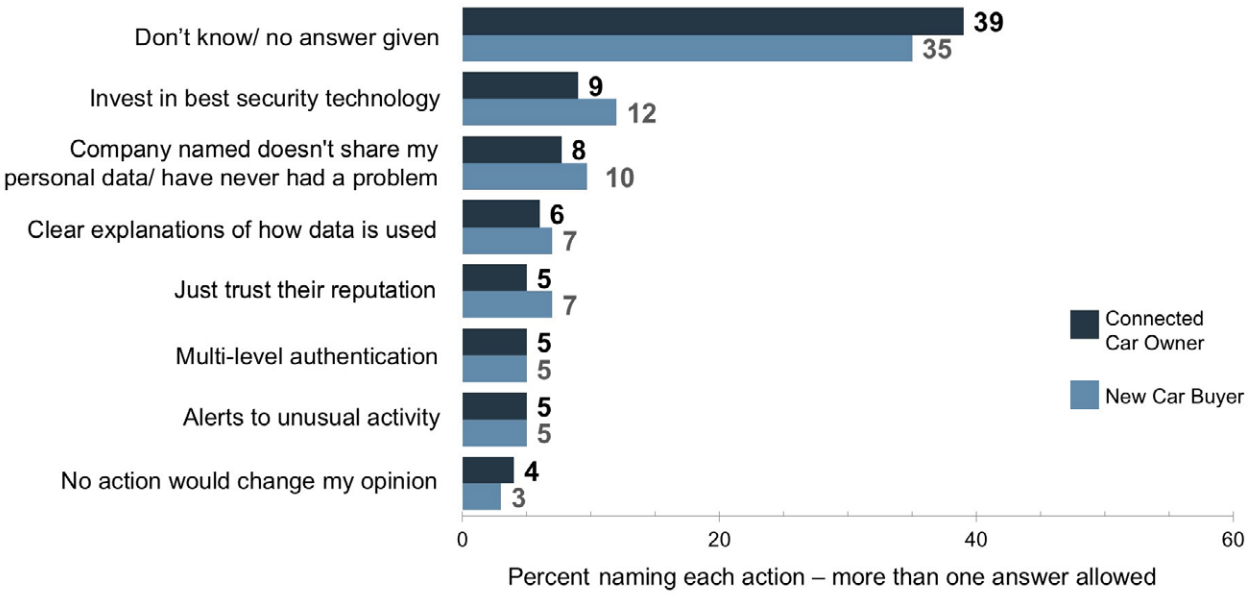
The survey then asked respondents what those companies actually do to earn their trust. This is a hard question to answer: Close to 40% of our sample did not know or did not name an action that their trusted companies take. Looking at the responses the survey respondents provided, three actions stand out:

- Invest in world-class security systems and educate drivers about them
- Transparency: Clearly explain to drivers how their data will be used
- Build technology and processes to alert drivers to unusual activity: Banks have been best-in-class when it comes to notifying their customers about suspicious activity that could signal a compromised account. This could explain why respondents name them as trusted companies.



Actions that companies can take to earn trust

"Please list any action the company you trust most takes to make you feel like you can trust them with your personal information."



Key takeaways

- **Again, transparency about how connected car data will be used is key to earning drivers' trust and willingness to share the data they own. Make this a focus of every new connected car offering and have straightforward, intuitive ways for consumers to grant and revoke their consent.**
- **Continue to monitor consumer attitudes about data privacy. The sometimes-conflicting findings within the study underscore consumers' evolving understanding about data privacy and security and their lack of confidence in the organizations that collect data from them every day.**

Section 6
Driver Sentiment on OEMs

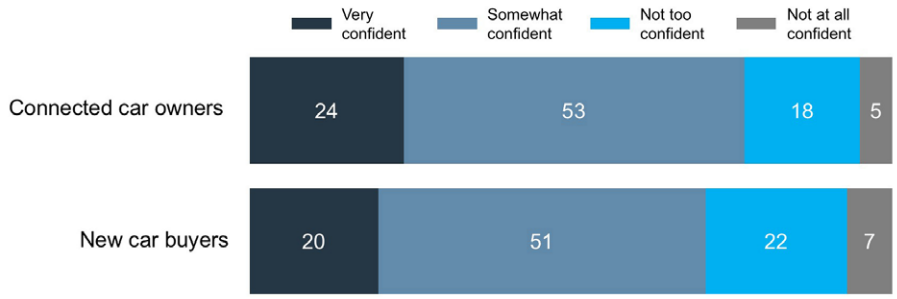
Drivers Have Fairly High Trust in OEMs

Only recently have consumers come to think of their automotive manufacturers as important data stewards. As connected cars become virtually all new car sales and take over the roads, automotive manufacturers will need to take steps to build their reputations as data stewards.

Fortunately, consumers place relatively high trust in automotive manufacturers today. Seventy-two percent of drivers in our survey—71% of new car buyers and 77% of connected car owners—were confident or somewhat confident that automotive OEMs would properly secure their data. The confidence measure for connected car owners compares favorably with that of credit card companies, with whom the vast majority of consumers have direct experience.

Confidence in automotive manufacturers as data stewards: connected car owners vs. new car buyers

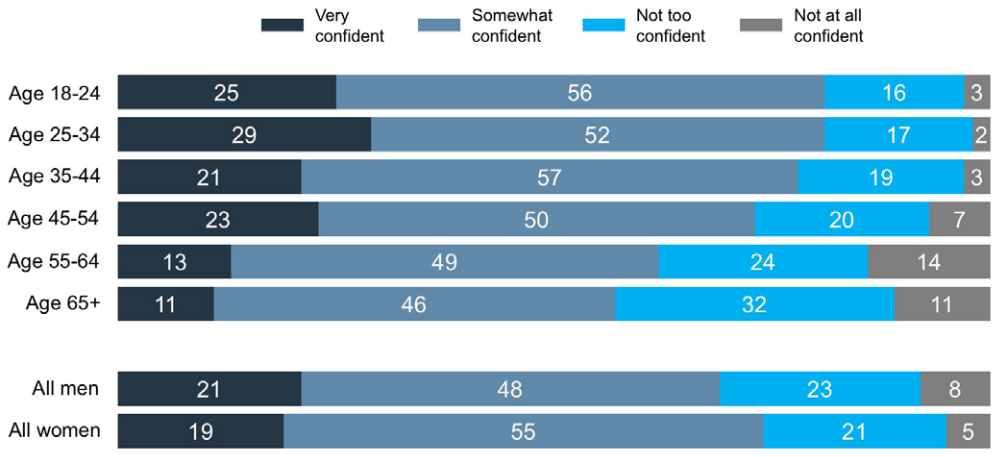
"How confident are you that car manufacturers will properly secure your data?"



Some small differences in confidence emerged across demographic groups, generally with younger drivers having more confidence than older drivers and women having more confidence than men. However, these differences are not statistically significant.

Confidence in automotive manufacturers as data stewards: by age and gender

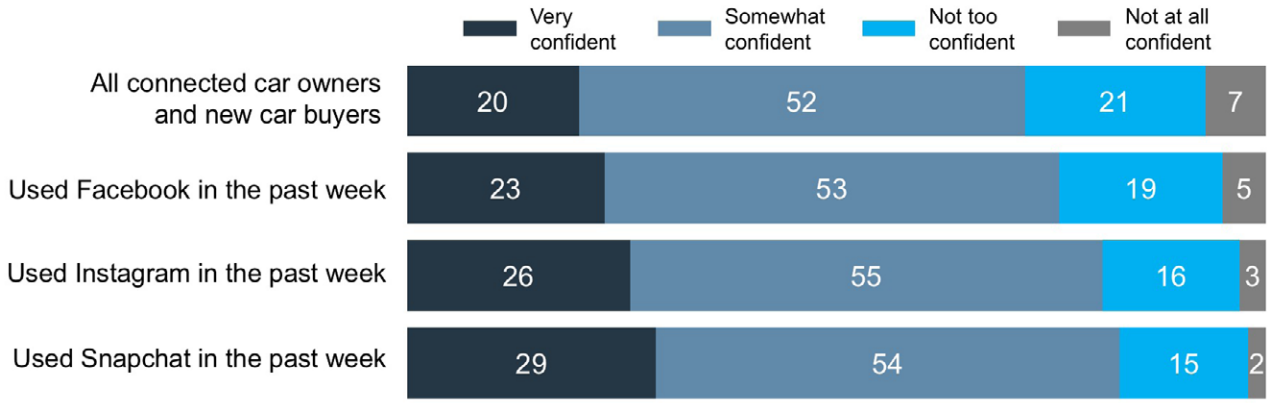
"How confident are you that car manufacturers will properly secure your data?"



We also saw that regular social media users (that is, people who used Facebook, Instagram, or Snapchat in the past week) exhibit more confidence than non-users. This may be a factor of their age.

Confidence in automotive manufacturers as data stewards: social media use in the last week

"How confident are you that car manufacturers will properly secure your data?"



When asked why they thought a specific manufacturer is trustworthy in general (i.e., the whole brand and not just its data practices), the top two reasons survey respondents cited were personal experience with the brand and "good reputation." Reliability, features/ technology, and quality were mentioned significantly less frequently.

Key takeaways

- **Automotive OEMs targeting younger drivers will need to incorporate messages about data stewardship into their brand marketing and public relations.**
- **Older drivers will need more education on the value propositions of mobility services that use connected car data.**

Section 7
Parting Thoughts

In the wake of controversies involving corporate use of Americans' personal data without their consent, we expected that American new car buyers and connected car owners would be cautious about sharing anonymous and personal connected car data with the host of new apps and services that are emerging in the mobility ecosystem. We were surprised to see the level of interest that drivers express in these new services—even ones that are not yet on the market—and their willingness to share their personal data for a safer and improved driving experience. These results underscore the perceived value of new mobility services based on connected car data.

As connected car data stewards, automotive manufacturers hold the keys to building a healthy ecosystem for connected car data that operates to the benefit of consumers. Both new car buyers and connected car owners place trust in OEMs, even as trust in other industries remains low. However, OEMs need to continue earning this trust by demonstrating transparency and making a strong commitment to data security and data privacy practices.

Automotive OEMs should:

- Focus on educating drivers and car owners about what data gets collected by their connected car models, how that data can be used, and how that data is secured
- Build a clear strategy for data transparency, making the entire consent-management process intuitive and incorporating dealer networks
- Work to integrate with the hottest new apps based on connected car data
- Invest in technologies that keep connected car data secure and that ensure it gets used only by the apps and services for which consumers have given permission
- Market the significant advantages that connected cars offer in terms of safety, convenience and fun

About Otonomo

Otonomo paves the way for new apps and services that make transportation safer, more convenient, and truly rewarding. We offer the first neutral connected car data services platform, which provides simple, secure data access and transforms data into actionable insights for services such as predictive maintenance, emergency services, on-demand fueling, in-vehicle delivery, insurance, and smart cities. With a research and development center in Herzliya, Israel, and presence in the United States, Europe, and Japan, we have more than 75 partners in our ecosystem. Leading venture capital and strategic investors include Bessemer Venture Partners, Aptiv, Dell Technologies Capital, Hearst Ventures, StageOne Ventures, and Maniv Mobility.

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