

# Roads of the Future

Eco-friendly autos, self-driving cars, ridesharing,  
and other trends affecting the US auto industry



Crimson Hexagon

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# Methodology

For this auto industry report, we analyzed Crimson Hexagon’s library of more than one trillion posts from sources like Twitter, Facebook, Tumblr, Reddit and forums between 2010 and 2016. We also used data from non-social sources like the Air Resources Board, Ride Guru, and others.

By analyzing historical social media conversations about ridesharing, eco-friendly vehicles, self-driving technology and more, we were able to uncover emerging trends, track shifting consumer sentiment, and better understand the forces shaping the future of the auto industry.

# Introduction

When cars were first introduced to consumers at the beginning of last century, they almost instantly revolutionized everyday life. Physical distance became less important, and easy access to everything from jobs to groceries reshaped the geometry of modern existence.

But the transformation didn't stop there. Over time, automobiles continued to evolve. They became faster, safer, and cheaper. A car from 2008, a century after the release of the Model T, would be almost incomprehensible to Henry Ford.

And in the last few years, those changes have only accelerated. Today's forward-looking carmakers have largely moved on from making their vehicles faster, safer and cheaper. Instead, their attention has shifted to new horizons — designing cars to be more **eco-friendly**, easily **sharable**, and, increasingly, **autonomous**.

It likely won't be long before you can order an electric, self-driving Uber with the tap of a button.

Anytime an industry undergoes such a dramatic transformation, important questions need to be answered, and the auto industry is no exception. How have these technological developments changed the conversation around the automotive industry? Are consumers excited about the these changes? Anxious? Both?

In this report, we use social media conversations to analyze three big trends affecting the auto industry:

- Eco-friendly vehicles
- Self-driving cars
- Ridesharing vs. Taxis

We selected these three automotive trends due to their increasingly frequent press coverage, centrality to emerging policy debates and more. They are also topics well suited to social media analysis thanks to their topicality and overall impact.

## Key trends in the auto industry

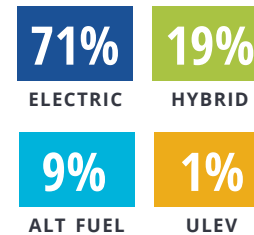
The automotive industry is in the midst of a transformation. Environmentally friendly cars, from Tesla and others, are making huge strides; self-driving cars have started hitting the streets; and ridesharing companies like Uber and Lyft are changing the way people get from Point A to Point B.

But what do these changes mean for consumers? Are they excited about a future where they can hop into a self-driving Uber? Or are they anxious about it? Will their next car be electric? Or will they forgo their next car altogether?

We analyzed millions of social media posts since 2010 to uncover several key findings about the future of the auto industry.

## Who's winning the eco-friendly car debate?

### Eco-Friendly Cars Share of Voice



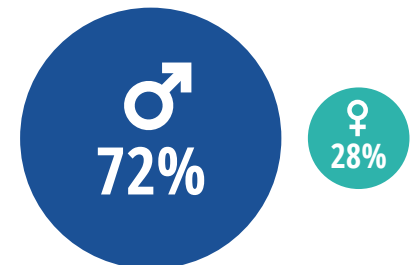
### Electric Surge

The eco-friendly conversation on social is dominated by electric cars, which account for 71% of the total discussion and dwarf other topics like hybrids and alternative fuels.

### Eco-Friendly, Electric, and Hybrid Cars

### Gender Gap

Men outnumber women in the environmentally friendly car conversation at a rate of nearly 3:1.



### Ask the Audience

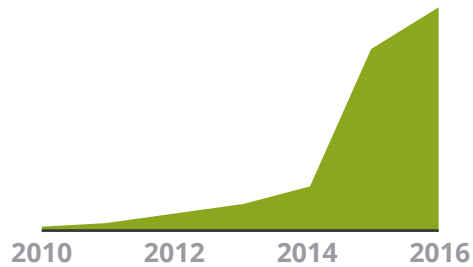
Consumers discussing electric cars are more likely to be interested in clean energy, renewable energy, and climate change than the people talking about hybrid cars.

Electric Cars  
**sustainability**  
**climate change**  
renewable energy

Hybrid Cars  
**homework**  
SportsCenter **hip hop**

## Are consumers ready for self-driving cars?

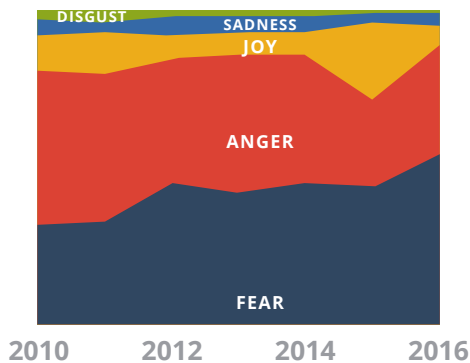
### Self-Driving Cars Discussion Trends



#### Code Hits the Road

Social conversation about self-driving cars has skyrocketed since 2014, growing nearly 6x.

### Emotion Trends: Self-Driving Cars



#### Fear Takes the Wheel

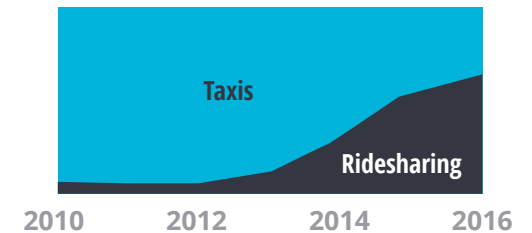
As conversation about self-driving cars has grown, consumers' anger and fear about the topic has steadily increased.

## The rise of ridesharing

### The Uberization of Cities

Since 2012, Uber and Lyft have gone from 5% share of voice compared to taxis in major cities to more than 60%.

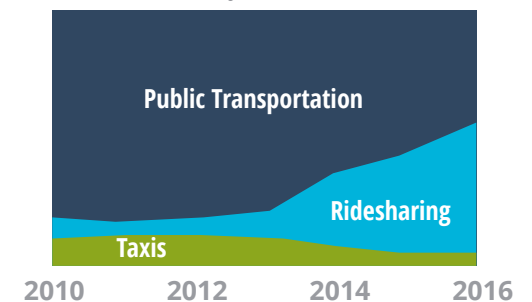
### Taxis vs Ridesharing



### Is Ridesharing Hurting Car Sales?

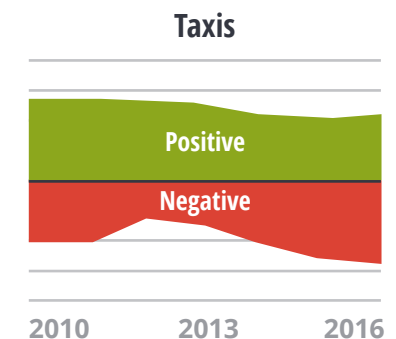
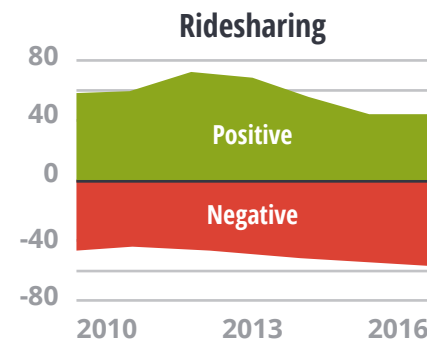
Conversation about ridesharing has taken a huge bite out of the car-buying (and public transit) conversation, especially in major cities.

### Transportation Discussion in Major Cities



### Negative Review?

As ridesharing has become more prevalent, it has also become more unpopular — at least on social media. Net sentiment has gone from about 40% positive to 15% negative.



# Green Machines

## Electric, hybrid and the inevitability of eco-friendly cars

These days, it's not a question of if the auto industry will go green but when. The transformation started years ago but has really picked up steam in the last few, as the world's foremost auto companies (and upstarts like Tesla) roll out more (and more affordable) eco-friendly options. A world with predominantly energy-efficient, clean-powered cars can't be far off.

But the real question is about how we get there. What are the incremental changes that will bring about the auto industry of the future? Will it rely more on electric cars or hybrids? Government credits or a whole new marketplace? Will existing auto giants remake their images in time or be supplanted by eco-friendly startups?

Underlying all these questions is the ultimate factor: the consumer. How are American consumers processing (and talking about) the changes to their vehicles? What are the eco-friendly features most desired by consumers? Are they more driven by climate concerns or fuel-efficiency? How do they interpret the evolving auto industry, and how does this affect their decisions about which cars they buy?

Real-time consumer sentiment about evolving topics is notoriously difficult to get at, but luckily we have a powerful tool on our side: social media analytics. By analyzing the millions of car-related conversations that occur on social media and forums every day, we're able to paint a clear and up-to-the-minute picture of the eco-friendly automotive landscape.

**Specifically, we studied the social conversations surrounding eco-friendly cars since 2010 to understand:**

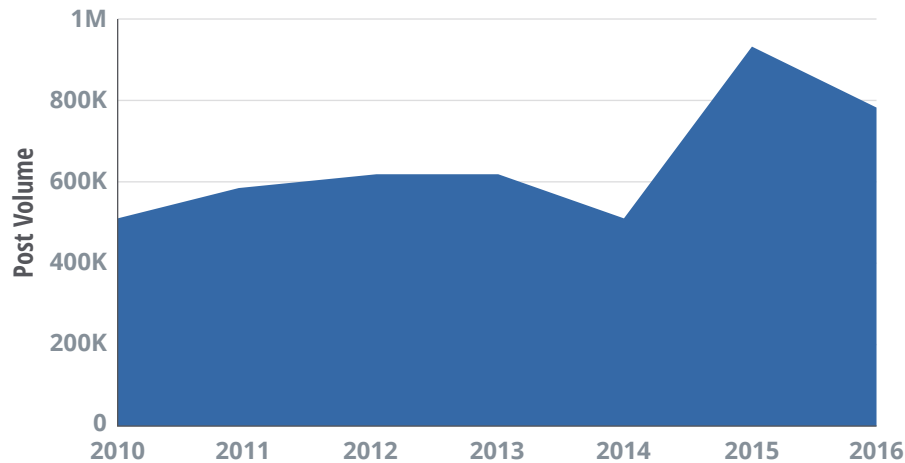
- The electric vs. Hybrid Debate
- Common Topics in the green car conversation
- The audiences for eco-friendly vehicles

# Eco-friendly conversation

## Tracking the social media discussion of green cars

If you need proof that the age of eco-friendly autos is upon us, look no further than social media. Eco-friendly cars have been a popular topic on social platforms like Twitter and Facebook for several years, but the conversation really started to spike in 2015.

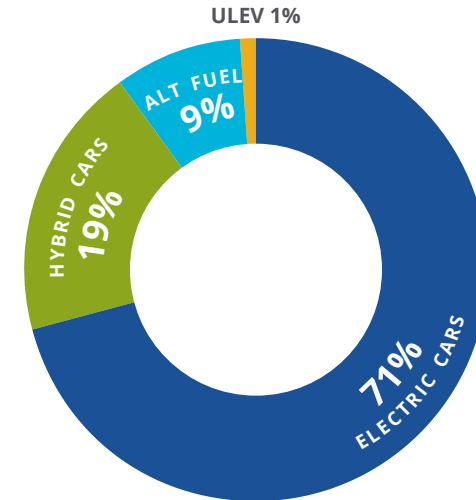
Eco-Friendly Cars Discussion Trend



No single topic caused the surge in conversation volume; instead it was collection of related, often overlapping issues. Climate change, vehicle efficiency, renewable energy, and more are all part of the eco-friendly vehicle conversation. But when we dove in, we found that **electric cars** have become a driving force in the conversation, particularly within the last few years.

Electric cars (or EVs) dominate the eco-friendly conversation, dwarfing other topics like alternative fuels.

Eco-Friendly Cars Share of Voice



But it is the conversation volume discrepancy between electric cars and hybrid cars that is most interesting. Often thought to be the two main options vying for supremacy in the eco-friendly car landscape of the future, electric and hybrid cars have been moving in opposite directions over the last half decade. **If hybrid cars were a bridge to get us to fully electric cars, it appears that, at least in consumers' eyes, the time for 100% electric cars has arrived.**

In the next section we'll look at how the conversation around electric and hybrid vehicles has evolved since 2010.

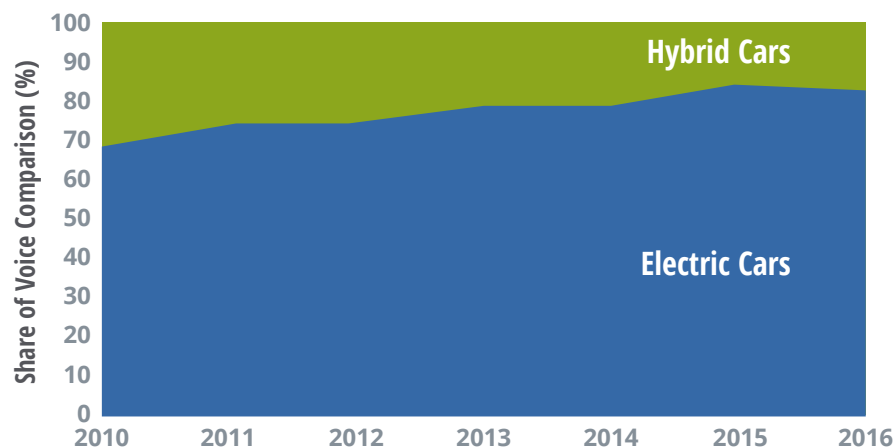
# Electric vs. hybrid

## How have electric vehicles surged past hybrids?

We've already shown that consumers are talking much more about EVs than hybrids, but the real question is: what are they saying? What can we learn about consumer opinion of hybrid and electric cars by analyzing the social conversation surrounding them?

To start, let's look at how the conversation breakdown about electric and hybrid cars has changed over time.

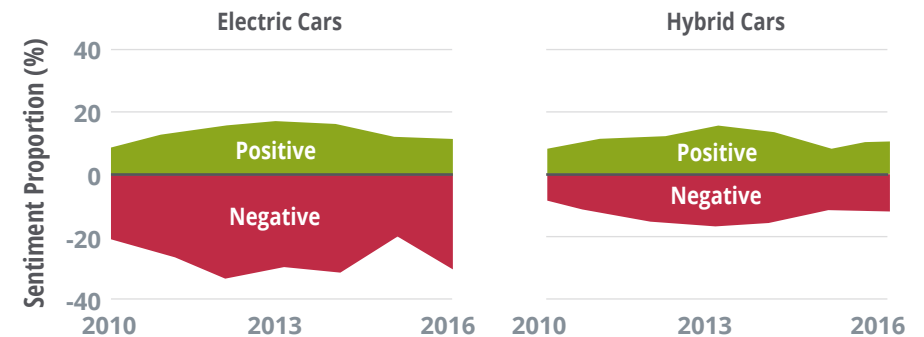
### Electric Cars vs Hybrid Cars Share of Voice Trend



Between 2010 and 2016, electric car conversation has outpaced hybrid conversation at a rate of nearly three to one. And, if anything, the gulf is widening.

Social volume clearly indicates that electric cars are winning the electric-hybrid debate, but this is only part of the puzzle. To really understand the issue, we must dig deeper and answer the 'why' part of the question: Why has the conversation around electric cars surged while the discussion of hybrids has stalled?

### Electric Cars vs Hybrid Cars Sentiment Trend

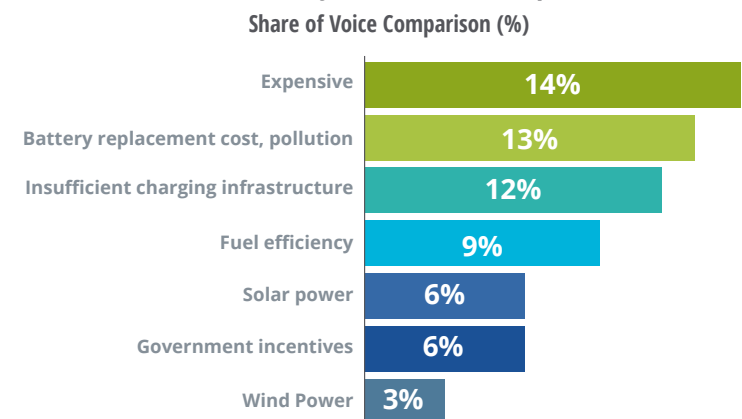


Despite driving more of the conversation, electric cars are viewed more negatively overall than hybrid cars. This might not be as surprising as it seems. Fully electric cars have **only recently emerged** as viable commercial options, and consumers are still acquainting themselves with EV's pros and cons compared to the more established hybrid model. The growing conversation volume about EVs on social suggests that consumers are more interested in them, but the increasingly negative sentiment indicates that they still have concerns and questions about if EVs meet their needs.

Unsurprisingly, the negative conversation surrounding electric cars seems to be increasingly focused on the concrete realities of owning an electric vehicle, including their (for now) **higher average price tag**.

Indeed, when we look at the conversation topics for eco-friendly cars, we see a large volume of posts about the cost of ownership.

### Eco-Friendly Cars Discussion Topics





# What people are saying about eco-friendly cars

## Charging infrastructure

 **Brett Ryan Bonowicz**  
@BRBonowicz

The electric vehicle charger situation at LAX is awful. Too few charges, too many cars, and no way to move charged cars from spots.


10:57 AM - 16 April 2012

## Wind power

 **Chris Layfield**  
@piccolan

Google made a self driving car? That's awesome. Could adding wind turbines on electric cars increase drive time by charging while driving?

2:29 AM - 10 Oct 2010

 **Wes Brooks**  
@WesGBrooks

What if electric cars had wind turbines to charge their batteries? As you drive, you create your own wind energy. [#WhyNot?](#)

8:41 PM - 26 Aug 2012

## Cost

 **Burton Reaves**  
@2f9korf

Honda electric car gets 118 mpg, but costs add up

4:00 AM - 9 Jun 2012

 **The reCYNstance**  
@cycyn

I've vowed for my future home to be solar powered, but I'm still waiting for an AFFORDABLE electric car I can charge on solar as well. -\_-

8:57 PM - 6 Nov 2015

 **Andrew Freund**  
@Andrew\_Freund

@capflowwatch in addition to the initial cost, electric car owners will have to spend \$7500 on a new battery every 5 years. [#tcot](#)

1:51 PM - 3 Oct 2011

## Government incentives

 **Baetona 500 Champion**  
@KINGDUB24


Cool Facts: the government gives a \$7500 tax check to anyone that buys an electric car

9:17 PM - 28 Jan 2014

 **Chris Martens @ GDC**  
@chrisamaphone

why would i get tax credit for owning an alternative fuel car but none for not owning any car at all?

10:57 AM - 16 April 2012

 **Ryan Singel**  
@rsingel

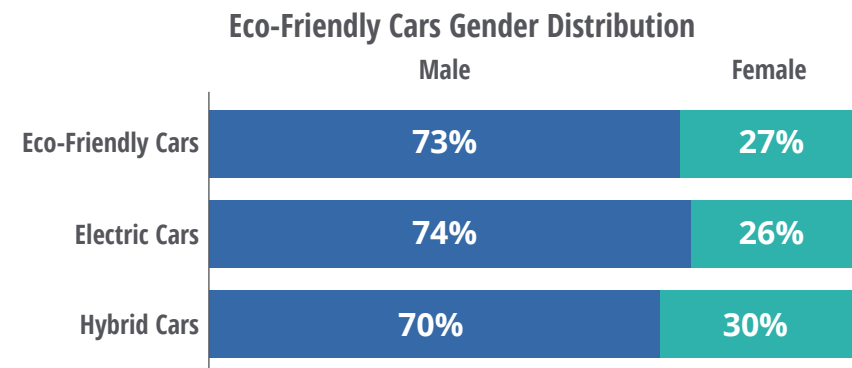
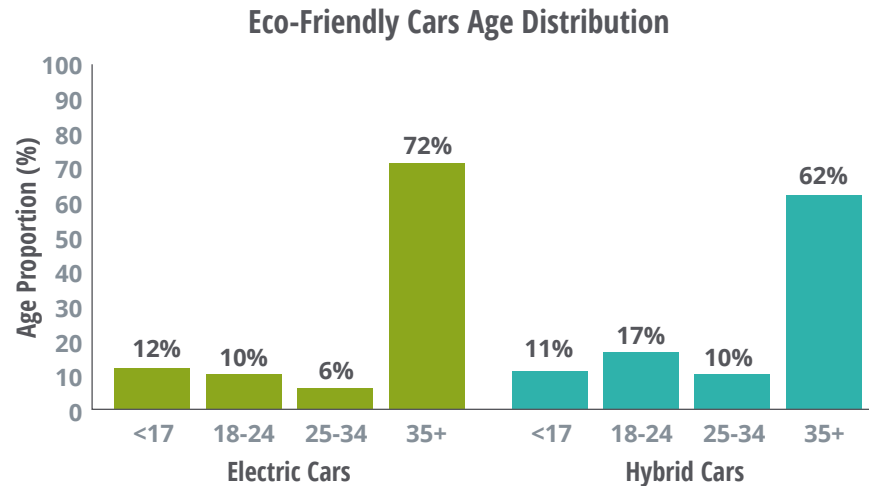
So rich folk get a giant tax credit for buying an electric car. Nothing for buying an electric bike, bike or bus pass OR not owning a car.

1:01 AM - 4 Jun 2015

# Who's talking about green cars?

## The demographics of the eco-friendly car discussion

We've talked about the major topics in the eco-friendly car conversation, but who's doing the talking? The short answer is older men. Our analysis showed that almost three-quarters of the people posting about the topic are over 35, and the same proportion are men.



Interestingly, when we divide the conversation along the familiar lines of 'electric' and 'hybrid' we begin to see a little more granularity in the demographics. Specifically, we see that the hybrid audience is slightly younger and more female.

But it's not just about demographics. What can we learn by looking at the other interests of people in both camps?

## What else is the eco-friendly car audience interested in?

### Electric vs Hybrid Car Affinities

Electric Cars	Hybrid Cars
<b>One Direction</b> (5x more vs Hybrid Cars)	<b>Nutrition</b> (3x more vs Electric Cars)
<b>Electric Cars</b> (3x more)	<b>Louis CK</b> (2x more)
<b>Clean Energy</b> (2x more)	<b>Beauty</b> (2x more)
<b>Constitution</b> (2x more)	<b>Shoes</b> (2x more)
<b>Conservative Politics</b> (2x more)	<b>Comic Books</b> (2x more)
<b>Renewable Energy</b> (2x more)	<b>SportsCenter</b> (2x more)
<b>Climate Change</b> (2x more)	<b>Hip Hop</b> (2x more)
<b>Sustainability</b> (2x more)	<b>Homework</b> (2x more)

Both audiences have traditional pop culture interests (One Direction, Sports Center, comic books, etc.) but consumers discussing electric cars are much more likely to be interested in environmental topics than those talking about hybrid cars — renewable energy, climate change, and sustainability are all twice as frequently discussed by the electric car audience than the hybrid audience.

Interestingly, the EV audience is also more likely to be interested in the constitution and conservative politics. For two audiences that are thought to be largely overlapping, there are actually quite a few meaningful differences between EV and hybrid fans.

Understanding who is talking about eco-friendly cars and what they're saying is essential to help make sense of the trends affecting the auto industry, but is this all just talk? Or are the shifting conversation patterns actually having an impact on sales?

In the next section, we'll combine social data with actual sales data to analyze the intersection of social media conversation and eco-friendly vehicle sales.

# Are eco-friendly car fans voting with their wallets?

## Analyzing the correlation between social conversation volume and sales

One of the most important questions in the field of social media analytics is whether there is a correlation between conversation and action. Or, in this case: **Do shifts in the social conversation about eco-friendly cars translate to actual sales?**

Based on what we've seen in the data so far — EV conversation greatly outpacing hybrid conversation — we'd expect that EV sales figures would similarly be expanding its lead over hybrid sales. Is this the case?

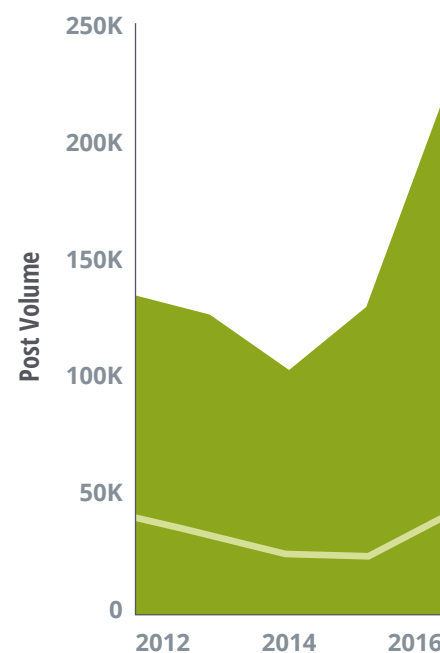
Yes and no. To understand this question, let's first separate the electric and hybrid conversations and compare the respective social conversation volumes for each to units sold.

### Hybrid vs. electrics sales

When we segment the eco-friendly conversation into its two main groups — hybrid and electric — we begin to see a story of divergence: Both in terms of sales and conversation volume, **hybrid is stalling while electric is picking up speed.**

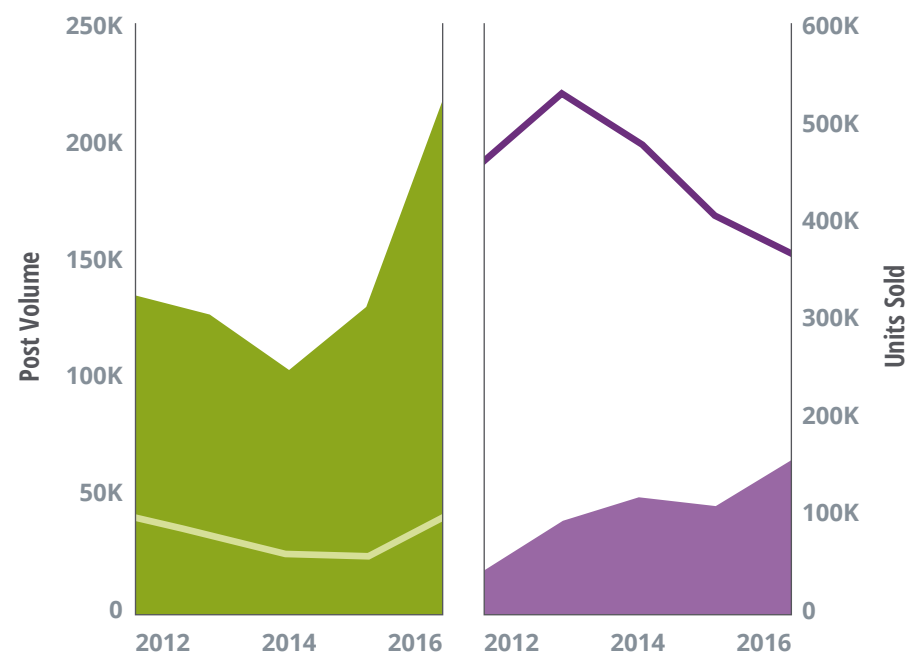
### Electric vs Hybrid Total Discussion

■ Electric Total Posts ■ Hybrid Total Posts



### Electric vs Hybrid Units Sold

■ Electric Units Sold ■ Hybrid Units Sold



For now, more hybrid cars than purely electric vehicles are sold in the US each year, but the data suggests electric sales will likely move ahead of hybrids in the near future, as the number of units sold sales has dropped steadily each year since 2013. Nearly 500,000 hybrid vehicles were sold in 2013, but that declined to about 350,000 by 2016. Hybrid conversation, during the same timeframe, has remained flat.

On the other side of the road, electric vehicles are starting to hit their stride. While electric sales still trail hybrid sales, they have climbed nearly 4x since 2012. Conversation volume during that period has nearly doubled.

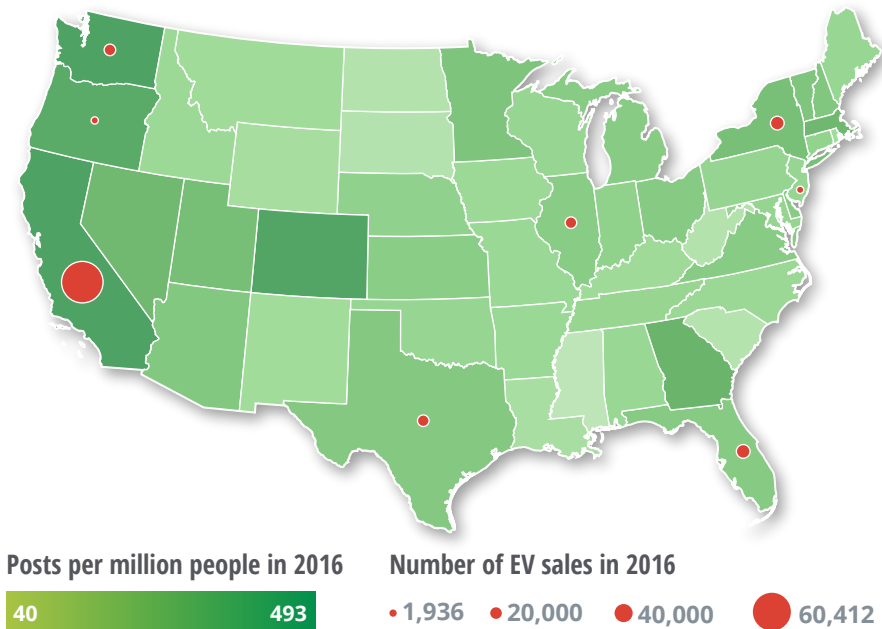
**Clearly there is a correlation here.** In terms of eco-friendly vehicles at least, social conversation volume and sales move in tandem.

Of course, EV sales and conversation volumes are not equally distributed throughout the US. Is there a correlation, on a state-by-state basis, between social conversation volume and eco-friendly car sales?

## Mapping eco-friendly car conversation and sales

To answer this question properly, a little background information is necessary. Since 1990, the US government has been mandating a certain percentage of eco-friendly car sales in specific states. In the chart below, those states are denoted with red circles relative to the number of eco-friendly cars sold in 2016. The states themselves are shaded based on the amount of social conversation about eco-friendly cars from those states' residents — the darker the green, the more per-capita conversation about eco-friendly vehicles.

Hybrid and Electric Car Discussion and Number of Zero Emission Car Sales in 2016



Clearly, there is a correlation here. Most of the states with the highest proportion of eco-friendly auto conversation also have the highest totals of eco-friendly cars sold, most notably California, Washington and New York.

There are exceptions. New Jersey, for example, is not one of the top states in terms of eco-friendly car conversation, but it is in terms of sales. Conversely, Oregon has relatively high conversation volume, but not proportionally high sales, compared to the other states

with mandates. Florida, for example, isn't home to as much social conversation, but it's ahead of Oregon in terms of units sold.

Another interesting question when comparing conversation volumes and sales figures is the adoption curve — i.e. understanding the lag between consumer interest and actual sales. This is especially important when we compare products at various stages of development and availability, like hybrid and electric vehicles.

## Conclusion

Eco-friendly cars have been a hot topic in the auto industry for many years, but social media data suggests that the category is just now hitting its stride. Sales are rising, and new manufacturers are joining the fray every year.

But the market is not yet mature. Companies in the auto industry (and beyond) still don't know which eco-friendly options will prevail, or even if the market segment will continue to grow at all. Moreover, there is still a lot to learn in terms of who a green-car buyer is and what they care about.

But eco-friendly cars are far from the only development affecting the auto industry. In the next section, we'll look at the social media conversation surrounding self-driving cars.

# Self-Driving Cars

## Utopia or dystopia?

As recently as a few years ago, self-driving cars seemed like more dream than reality. But in the last few years, technological advances, evolving laws, and the growing ubiquity of AI have helped self-driving cars gain momentum.

But this isn't all welcome news. Fears of hacking, news of accidents, and economic concerns are combining to cast doubt over the development of truly autonomous vehicles.

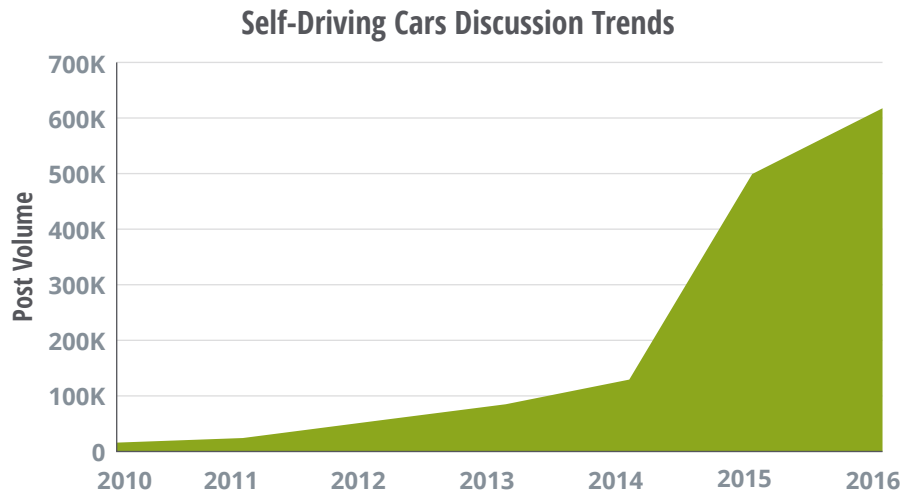
All this raises a natural question: Do consumers want self-driving cars?

In this section, we analyze social media conversations to see how consumers discuss self-driving cars, and whether they're ready for these vehicles to hit the road.

# In the driver's seat

## Social conversation about autonomous vehicles has soared

There is no denying that driverless cars are on consumers' minds. Just look at this graph charting conversation volume around self-driving cars.



That is a sharp rise. From about 10,000 posts in 2010, driverless cars are now the subject of more than 600,000 posts in 2016.

But pure conversation volume doesn't tell us much, other than the fact that driverless cars are officially in the zeitgeist. What's more important is what those posts are about, and what they can tell us about consumers' opinions about the rapidly developing technology.

### Self-Driving Car Topics

When we dig into the posts about self-driving cars, several patterns start to emerge. Our initial analysis of the [self-driving car conversation](#), we learned that consumers are anxious or fearful about the rise of self-driving cars for three main reasons:

- ✓ Hackers
- ✓ Emergency situations
- ✓ Job loss

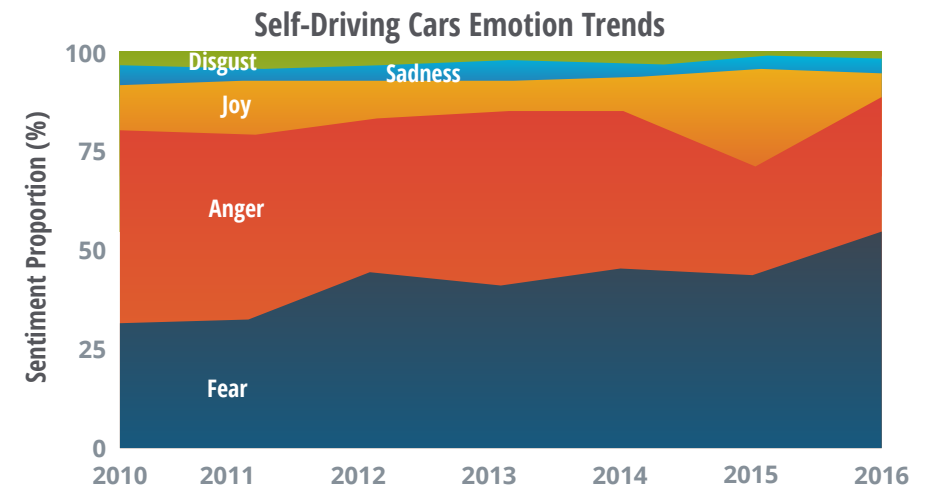
Unsurprisingly, these common topics have dragged the overall autonomous vehicle conversation to be more negative.

## The sentiment of the self-driving conversation

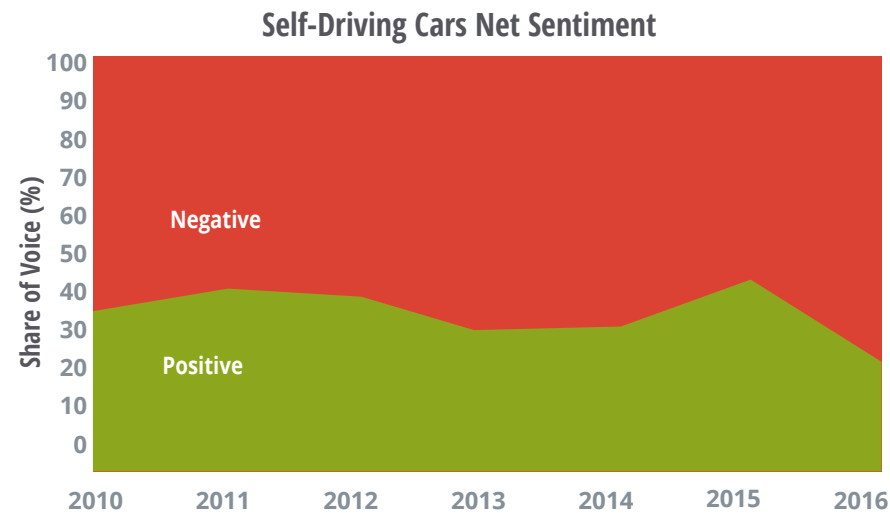
Indeed, when we analyze the emotions associated with posts about self-driving cars since 2010, we see that nearly 90% of the overall self-driving car conversation is not only classified as negative, but classified as anger or fear. Indeed, both those categories are rising.

**As self-driving cars become a reality, consumers are increasingly fearful of them.**

Unsurprisingly, this spike in fear and anger — coupled with the growing discussion about hacking and accidents — is mirrored in a recent dip in the overall sentiment around the topic. In fact, as of the beginning of 2017, negative driverless car conversation is 3x more common than positive.



Unsurprisingly, the high volume of posts associated with negative emotions like anger and fear is affecting the overall consumer sentiment around self-driving cars. Although never extremely high, positive sentiment about driverless cars has dipped to just 20% within the last year.



Clearly, consumers have some serious doubts about the adoption of self-driving cars — but how do these fears fit into the larger discussion about the future of the auto industry? Are these anxieties the result of knee-jerk responses to a new (potentially dangerous) technology? Or do they hint at something larger?

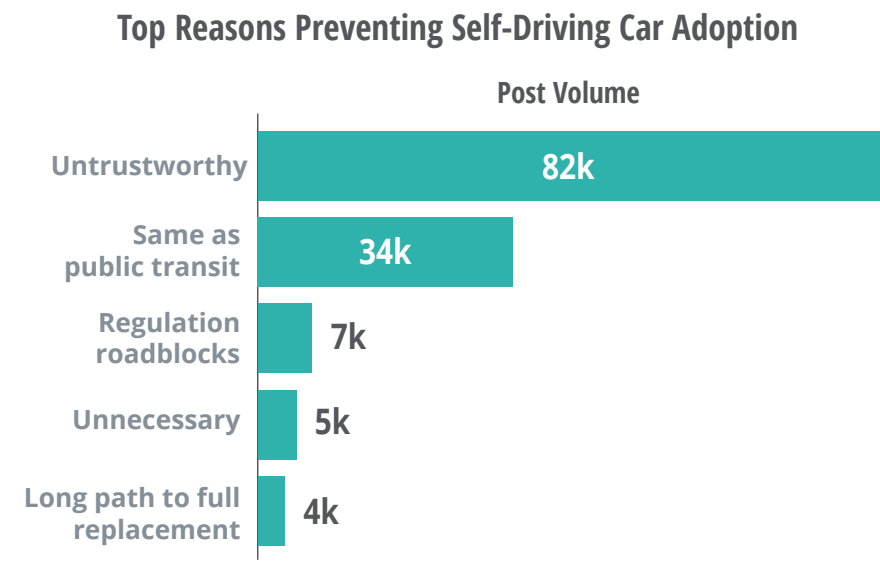
To answer that, we looked out how consumer fears about driverless cars fit into the more general discussion of the developing technology.

# Bumpy road ahead?

## What obstacles stand in the way of a self-driving future?

When we took a more granular look at the common topics in the self-driving car conversation, we saw that, while fears about the trustworthiness of AI drivers still dominate the conversation, there are also several other important topics that consumers discuss when talking about self-driving cars.

Here's a list of the most common topics in the overall conversation.



As we saw in the last section, the 'untrustworthy' bucket — which contains the fear-steeped topics like hacker concerns and emergency worries — dominate the conversation, but consumers are also talking about more objective, industry-specific topics.

Now that we've seen the major topics associated with the conversation, we're left with one important remaining question: who is doing the talking and what are they saying?

# What people are saying about self-driving cars



**Thompson**

@FreneticPony

Self driving car question: Does the car swerve into a wall to kill its occupant, or plow through multiple cyclists, killing them?

7:14 PM - 16 Aug 2015



**Ms Anonymous**

@BoundlessMind

I would only need a driver-less car if I'm travelling on the interstate for hours. Otherwise it's unnecessary

9:21 PM - 25 May 2014



**Will Federman** ✓

@wfederman

[@moorehn](#) [@AlexJamesFitz](#) I worry that autonomous cars will gladly kill me to avoid killing legal pedestrians and others breaking the law

11:08 AM - 16 Dec 2015



**Holiday**

@HolidayJesus

In less than 12 years self driving cars will be a common thing and mobile networks will be dirt cheap if regulation doesn't screw us.

2:25 AM - 13 Mar 2014



**shaun fyffe**

@SleeplessCanuk

Stop the nonsense, Tesla's self driving car killed someone. Why are we pushing this? Who can afford that? Come on, it's just stupid

1:46 AM - 1 Jul 2016



**amitava santu**

@SantuAmitava

The rules will determine when and if a fully autonomous car could be driven on roads.

12:34 AM - 16 Mar 2016



**Joe Bob Briggs**

@therealjoebob

New York has had a self-driving car problem for 147 years. It's called the subway. [#firstworldproblems](#)

8:29 PM - 13 Jul 2016



**devnullo**

@Devnull23

Apple iWatch & self driving cars. What do either of these do to further our evolution & quality of the biosphere? They are useless toys

6:24 AM - 30 Mar 2015

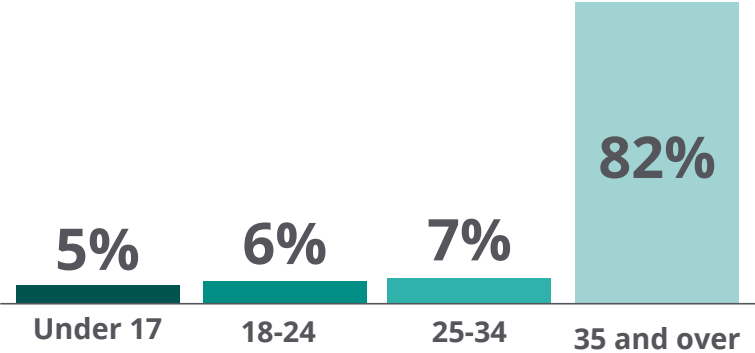


# Backseat drivers

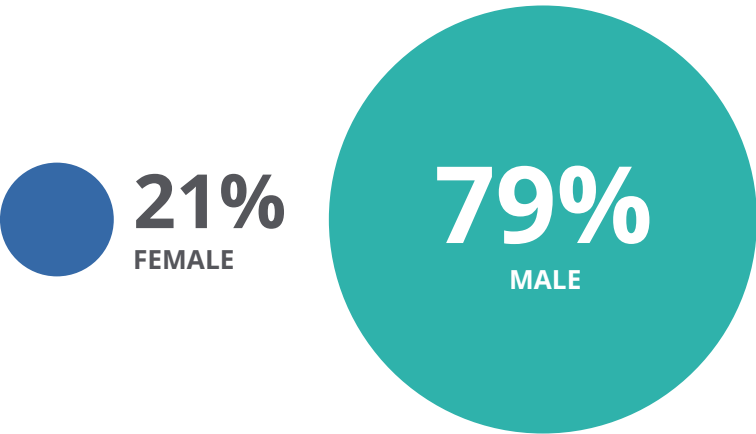
## Analyzing the self-driving car audience

When we dug into the demographics of people discussing self-driving cars, we discovered that it is not too different from the audience that discusses eco-friendly cars — it is predominantly men over 35.

Self-Driving Cars Age Distribution



Self-Driving Cars Gender Distribution



# Conclusion

There’s no two ways about it: Consumers are anxious about self-driving cars. Our analysis of the social media conversation showed that, as self-driving technology speeds toward reality, people worry more and more about concerns over hacking, accidents, and job loss.

Our analysis revealed, too, that self-driving cars are not an isolated topic. They are related to larger trends affecting the automotive industry, especially ridesharing.

In the next section, we dive deep into the ridesharing conversation to see what social media data can tell us about consumers’ opinions around the rise of Uber, Lyft, and other ridesharing options.

# The Rise of Ridesharing

## Are Uber and Lyft transforming the auto landscape?

The two ridesharing giants on the landscape, Uber and Lyft, may have only existed since 2009 and 2012, respectively, but they have already fully disrupted the taxi industry, and are in the midst of transforming the automotive industry as a whole.

Nowhere is this trend clearer than on social media. Over the last several years, ridesharing services have become an incredibly popular topic of conversation on social platforms. In 2010, taxis outpaced ridesharing as a conversation topic on social at a rate of nearly 20 to 1. Fast forward to 2016, and the conversation has essentially done a 180: Uber and Lyft make up nearly two-thirds of the overall discussion.

It's not just taxis. The entire conversation about cars — especially about buying new ones — has been affected by the rise of ridesharing.

In this section, we analyze both of these issues using social media data to analyze the social rise of ridesharing and its impact on the automotive industry.

Specifically, we will use social media data to analyze the following topics:

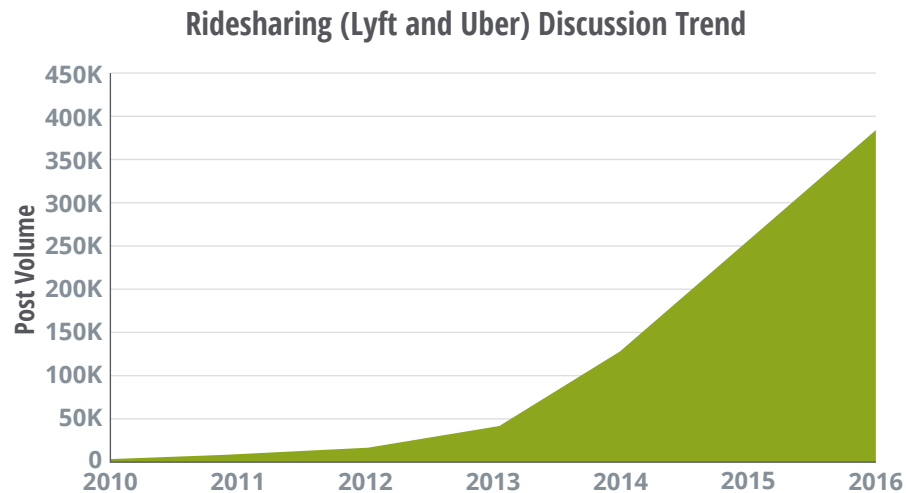
- The shift in ridesharing vs. taxi discussion
- The evolving sentiment around Uber and Lyft
- How ridesharing is affecting the car-buying conversation

# From zero to sixty

## The rise of ridesharing conversation

Before we look at the specific ways the rise of ridesharing is affecting the auto industry, it's helpful to zoom out for a second and analyze the conversation around ridesharing itself. From essentially no conversation in 2010, Uber and Lyft have surged to account for a huge volume of social media conversation in the last few years.

Here's how the conversation surrounding Uber and Lyft in the 10 major US cities we analyzed has grown since 2010.



Few trends, in any industry, have experienced the rapid growth that ridesharing has. Of course, it's not just social conversation: Uber now fulfills more than one million rides daily and operates in more than 300 cities worldwide.

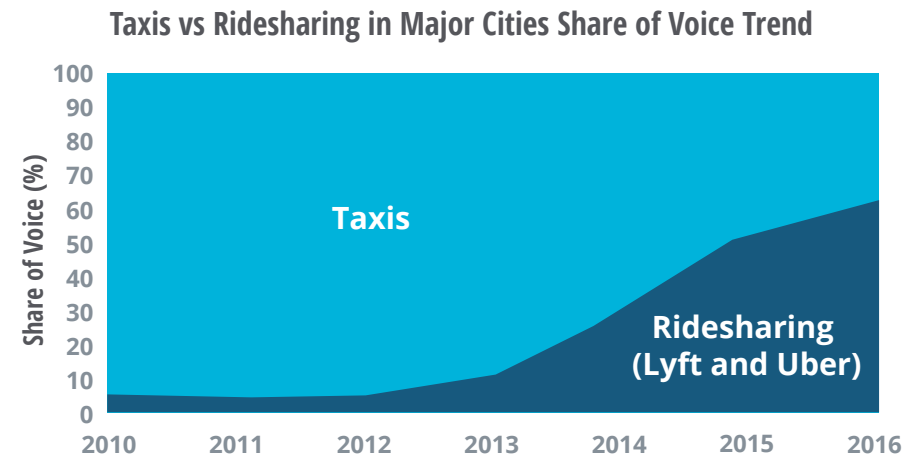
As a result, ridesharing has had a significant impact on many adjacent industries, including taxis and new car sales.

Let's look at taxis first.

# Is ridesharing dispatching with cabs?

## Uber and Lyft have sped past taxis

As recently as five years ago, taxis dominated the conversation about inner-city travel. But, in the last few years, Uber and Lyft have sharked up a huge portion of this discussion.



From less than 5% of the conversation as recently as 2012, ridesharing has quickly climbed into the driver's seat, now accounting for more than 60% of the overall conversation about taxis and ridesharing.

It is hard to overstate how significant this trend is. When we look at 2016 alone, we can more easily see exactly how dominant ridesharing has become in the conversation, accounting for nearly twice as many social posts during the course of the year.

## Taxis vs Ridesharing Total Discussion Volume in Major Cities in 2016



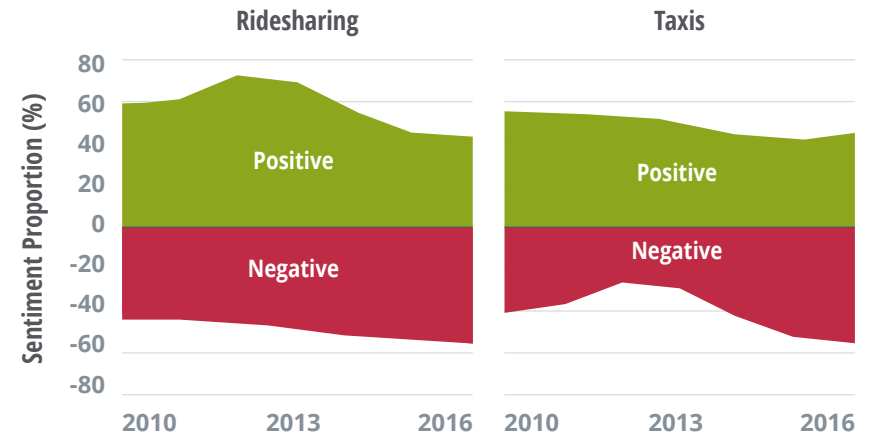
But overall post volume is a blunt tool for understanding the conversation. For a more nuanced understanding, we need to look at sentiment. Doing so reveals that ridesharing's lead over taxis may not be quite as dominating as the volume suggests.

## How do consumers feel about ridesharing?

### Consumers are sharing rides more, but they're not always happy about it

When we look at the sentiment behind the posts about ridesharing and taxis, we see that the ridesharing conversation is much more volatile. In fact, since 2013, as ridesharing options became more ubiquitous, the conversation has become more negative. (A quick note on our methodology: For much of our ridesharing and taxi analysis, we focused on major US cities, because this is where the bulk of the conversation around both options occurs.)

## Ridesharing and Taxis in Major Cities Sentiment Trend



Excluding neutral posts, we can see that net sentiment around taxis has stayed relatively flat since 2010, although it has become slightly more negative. About 45% of the taxi conversation in 2010 was negative, but it has since climbed to almost 60%.

Ridesharing, though, has had a bumpier ride. It started the decade with about a 60-40 split in terms of positive and negative sentiment. As Uber and Lyft became more popular in 2012 and 2013, that sentiment split became much more favorable — 75% positive and 25% negative at its peak. But since then, it has seen a precipitous drop, and now sits at a roughly 60-40 positive-negative split. And if the trend continues, it will get worse.

This shouldn't necessarily be surprising. Taxis have remained essentially unchanged for decades, so it is not shocking to learn that the conversation about them has been relatively stable. Ridesharing, on the other hand, has changed substantially since 2010. New regulations, evolving pricing structures, and mass adoption all contribute to the overall social post volume, and, unsurprisingly, much of this conversation is negative.

When we analyze the specific posts within the ridesharing conversation, we start to see the specific topics driving the negative sentiment.

## Key topics in the ridesharing conversation

Within the overall conversation, there are some common themes that frequently come up. Here they are, ranked by volume:

### Interaction with drivers (260k)

Interactions with Uber and Lyft drivers are often the source for entertaining stories and complaints, which are shared on social media.

### Night rides (21k)

Ridesharing services such as Uber and Lyft have not yet proven themselves substitutes for public transportation services. As complements to public transportation, ridesharing services are frequently used at night, after public transportation has been shut down.

### Price (19k)

The average ride for Uber is \$13.36. For Lyft it is \$12.53. People use social media to complain about the high costs for relatively short rides.

### uberPOOL and Lyft Line (13k)

Frequently using Uber and Lyft can take a toll on one's wallet. People discuss popular pooling services offered by Uber and Lyft, a cheaper alternative to the standard services offered. However, people express grievances like faulty pickup algorithms, which can be problematic when dealing with multiple riders.

### Ruined a ride (8k)

Wrong routes, lateness, and general driving mistakes concern many ridesharing users.

### Driver and rider ratings (7k)

Ratings are the subject of concern for Uber riders, who choose drivers with high ratings to service them and hope that drivers rate them highly. People discuss the steps drivers take to generate a higher rating for themselves. People also discuss reasons to rate a driver lowly.

### Creepy drivers (4k)


Assault, unwelcome advances, and drivers making riders feel uncomfortable comprise a sizable amount of the ridesharing conversation about drivers.

## What people are saying about ridesharing

 **Julia Schroder**  
@JuliaNoFoolia


Why is it that @Uber drivers who use @Waze are literally ALWAYS late for pickup and drop off? I demand answers!!!

8:49 AM - 12 Oct 2016

 **Emily King Echoles**  
@emily\_echols

Had a lovely night with great people until @Uber charged me \$50 for a two mile ride. Beware friends, take the bus!

7:41 AM - 1 Feb 2015

 **Tim**  
@FlipperPA

So yeah, @Uber pool sucks. We were 80% of the way to get to our destination and had to backtrack to near the start to get someone. Crap algorithm.

9:12 PM - 20 Feb 2016

 **Tarynn Law**  
@tarynnjane

My @Uber driver who is probably like idk 50 just invited me to get lunch with him and I am creeped out

6:24 AM - 30 Mar 2015

## Key topics in the taxi conversation

Just like the ridesharing conversation, the taxi conversation can be broken into several buckets of common conversation topics:

### Picking up travelers from airports (39k)

Because some major airports do not permit Lyft and/or Uber to operate there, travelers have to use taxis as an alternative means of transportation to shuttle buses and public transportation.

### Expensive (13k)

In major cities especially, taxis are costly in comparison to ridesharing and public transportation.

### Lack of cab availability (3k)

In contrast to on-demand ridesharing services Lyft and Uber, cabs elude people.

### Discrimination concerns (3k)

Some feel taxi drivers may hold racist views, notably for African Americans. Their views manifest in their actions — not picking up African Americans, not traveling to areas with a higher African American population (Harlem), and casually holding racist conversations with their riders.

### No surge pricing with taxis (3k)

Even though taxi fares are more expensive than ridesharing fares overall, when ridesharing companies apply surge pricing, riding a taxi can be cheaper.

## What people are saying about taxis



**thatSkinnyBrownGirl**

@StyleSkinny

So you can't hail a cab in LA? Solid.

4:07 PM - 3 Aug 2011



**Holy Cow**

@TURXJOKES

Taxis in New York are so expensive that it's cheaper to just get mugged and wait for the ambulance to arrive...

1:00 PM - 10 Mar 2014



**C. Wichura**

@cwichura

So @Uber surge pricing is totally borked. Estimating twice what a cab to the airport costs. And I could have already gotten in 5 cabs.

9:37 AM - 12 Sep 2016



**Dustin Allen**

@dusteallen

Took a cab instead of Uber from the airport. It was so expensive. Now I remember why I don't use cabs in SF.

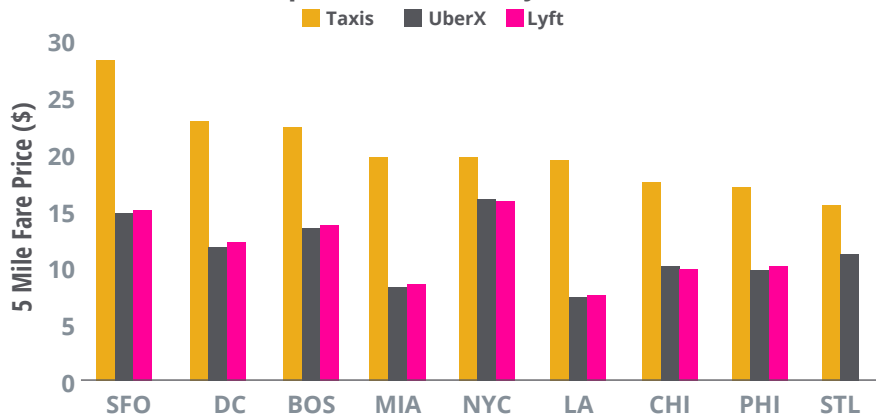
1:35 AM - 25 Feb 2016

# Fare or foul?

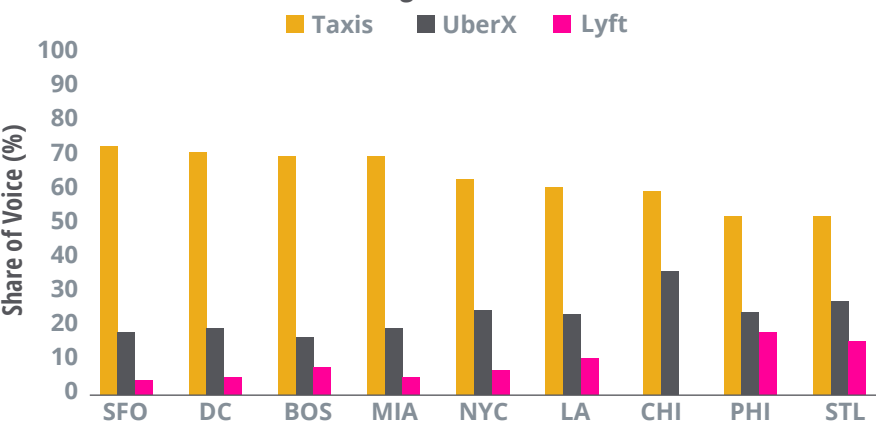
## Consumers talk a lot about the cost of getting around the city

Seeing as price is a main driver of conversation, we decided to analyze the social media conversation around the costs of the three main competitors — taxis, Uber and Lyft — to see if there was a connection between social post volume and actual fares. Using fare data from RideGuru, we found a very strong correlation.

Fare Comparison of Ubers, Lyfts, and Taxis



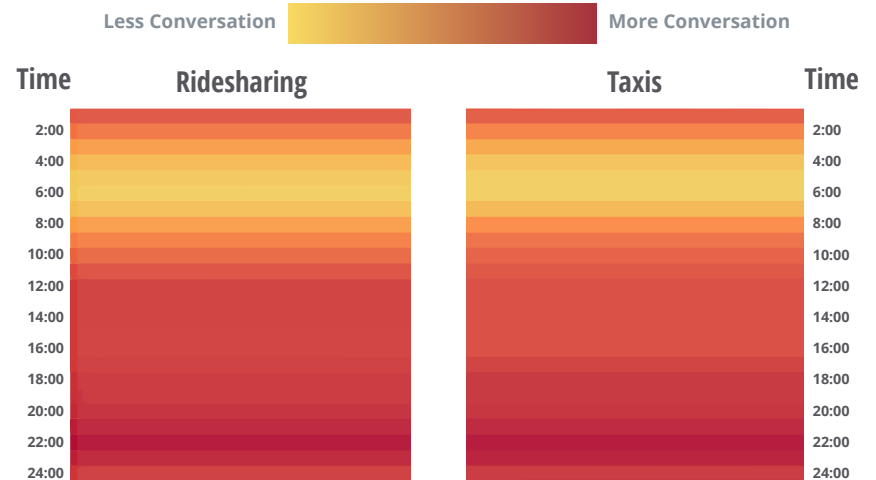
Discussion of High Fares, Share of Voice



According to the data, taxis are appreciably more expensive than either Ubers or Lyfts, and this discrepancy is mirrored in the social media conversation about the relative costs of each service.

Of course, the conversation around taxis and ridesharing is not evenly distributed throughout the week. The conversation for each type of service peaks at night, around 10pm or later. Interestingly, when comparing discussion between taxis and ridesharing during prime time late night hours over the past two years, we found that taxis are discussed more frequently during the week but on the weekend, when ridesharing companies will typically implement surge charges and availability is limited, ridesharing discussion is higher. We found that almost quarter of surge price discussion occurs Thursday-Saturday between the hours of 8pm-4am.

Conversation Heatmap by Time of Day

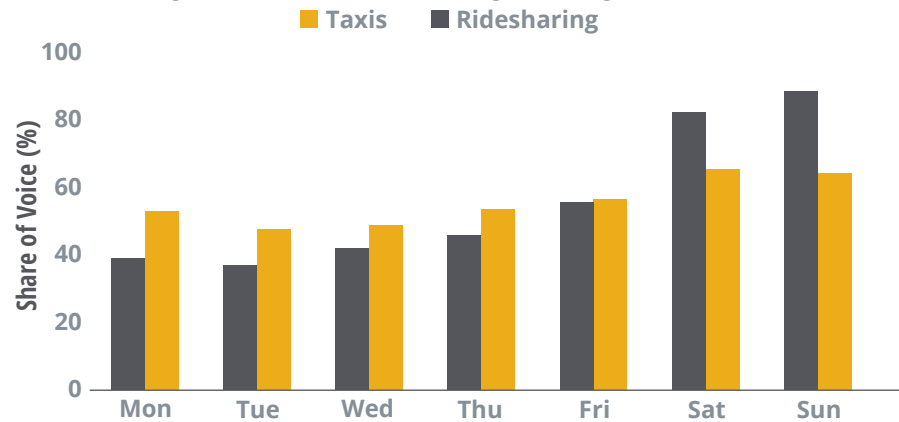


Diving into this topic more thoroughly, we learned that this conversation is largely influenced by an important ridesharing topic that we haven't yet discussed: surge pricing.

## The surge is on

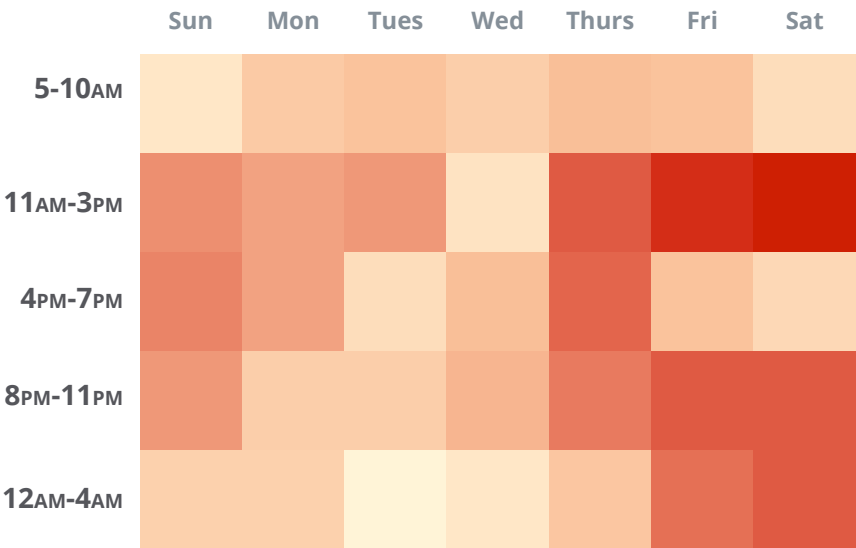
Once we started looking at the peak conversation times for both taxis and ridesharing apps, we realized that the huge uptick in conversation around ridesharing on late weekend nights was driven largely by consumers discussing surge pricing. In fact, taxis routinely outpace Uber and Lyft in terms of conversation volume during the week, but when the weekend rolls around (and surge pricing becomes more of a factor) ridesharing takes the lead.

Ridesharing vs Taxi Discussion During Late Night Hours (10PM-3AM)



The chart above looks just at the hours between 10pm and 3am — routinely popular times for surge pricing — but when we expanded the timeframe, the picture became even clearer. Social media conversations about ridesharing skyrocket during standard surge hours, including lunch hours on Fridays and Saturdays.

Surge Price Discussion Heatmap



Ridesharing rose to fame by offering a more convenient, on-demand, and less expensive option to taxis. In the last few years, apps like Uber and Lyft have done exactly that, and social media conversation confirms this. **Ridesharing has quickly outpaced taxis in terms of social media conversation volume.**

But the impact of ridesharing extends well beyond taxis. Uber and Lyft have fundamentally changed the way consumers think about transportation, especially in cities. As a result, brands within the auto industry, especially carmakers, have taken notice.

In the next section, we'll look at how the rise of ridesharing has affected car buying.

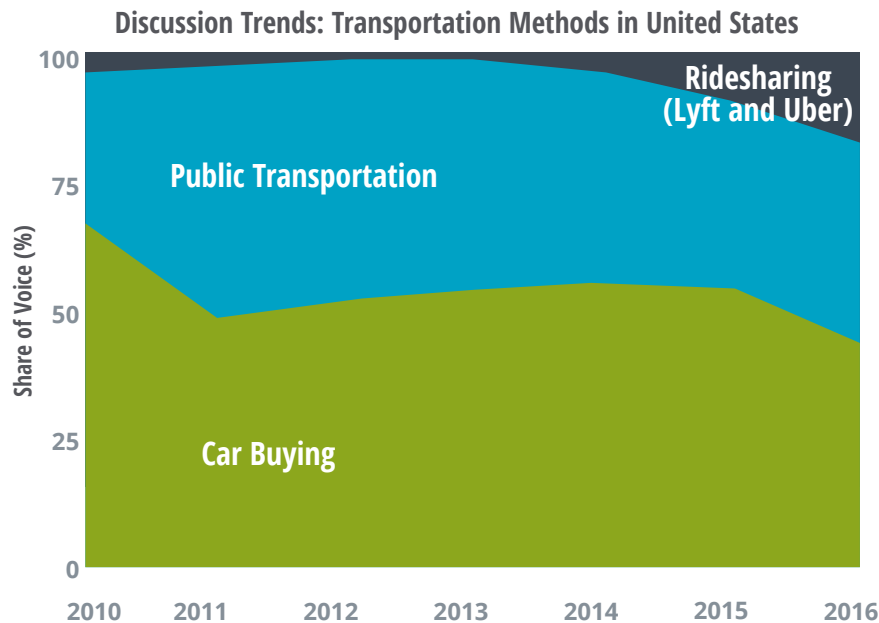


# Who needs a car these days?

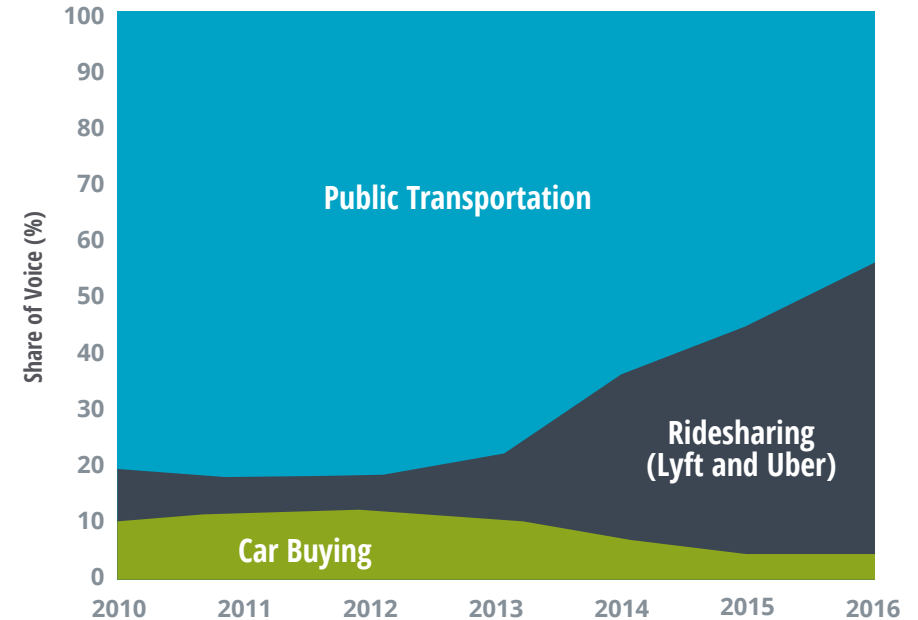
## Ridesharing has changed the conversation around car buying

After record sales in 2016, the car industry has hit a rough patch. Unsurprisingly, the increase use of ridesharing among American city dwellers is considered one of the main drivers of this downward trend.

Analyzing the social conversation around car buying, ridesharing, and public transportation reinforces this theory. Ridesharing still makes up a relatively small portion of the overall conversation, but it is growing rapidly.



## Discussion Trends: Transportation Methods in Major Cities



This trend becomes even more stark when we zoom in on major cities, areas in which public transportation and ridesharing are much more prevalent.

The major cities we analyzed were: Austin, Boston, Chicago, Los Angeles, Miami, New York, Philadelphia, San Francisco, St. Louis, and Washington, D.C.

It's clear that the rise of the ridesharing conversation is eating away at the car-buying conversation. What's causing this reversal? What are consumers saying about the relative merits of ridesharing vs. car ownership?

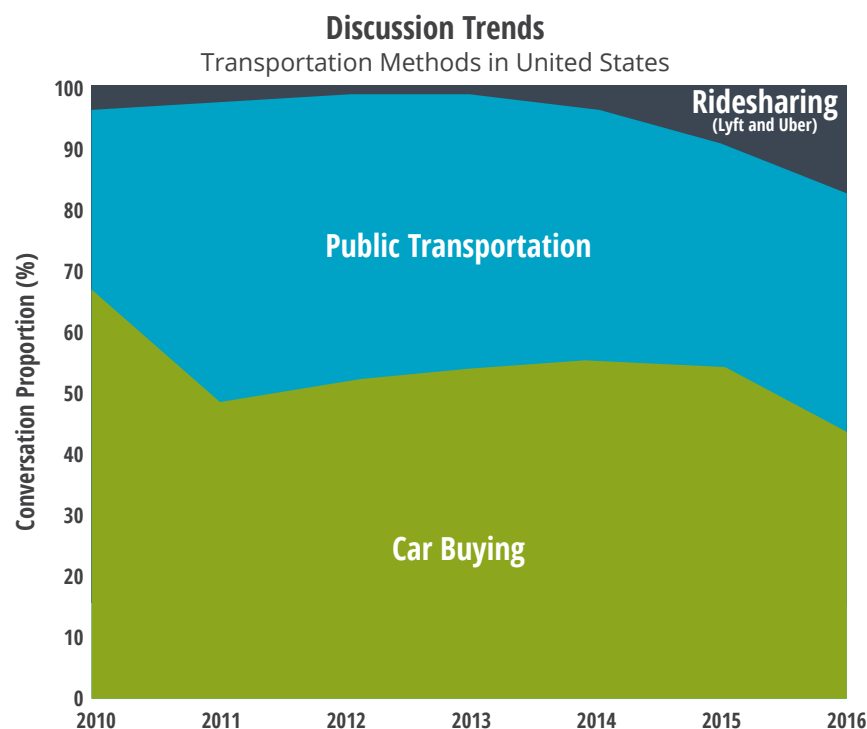
Let's start by looking at the conversation around car buying.

# Is car buying hitting a roadblock?

## The impact of ridesharing on car ownership

2016 was a record year for car sales, but 2017 is shaping up to be a different story<sup>1</sup>. After selling 17.5 million light vehicles to Americans who drove 1.58 trillion miles in six months, automakers are starting to see that trend go in reverse, according to experts.

Why are car-buying prospects so gloomy? What is going on in consumers' minds (or wallets) that is leading them to hold off on buying that next car?

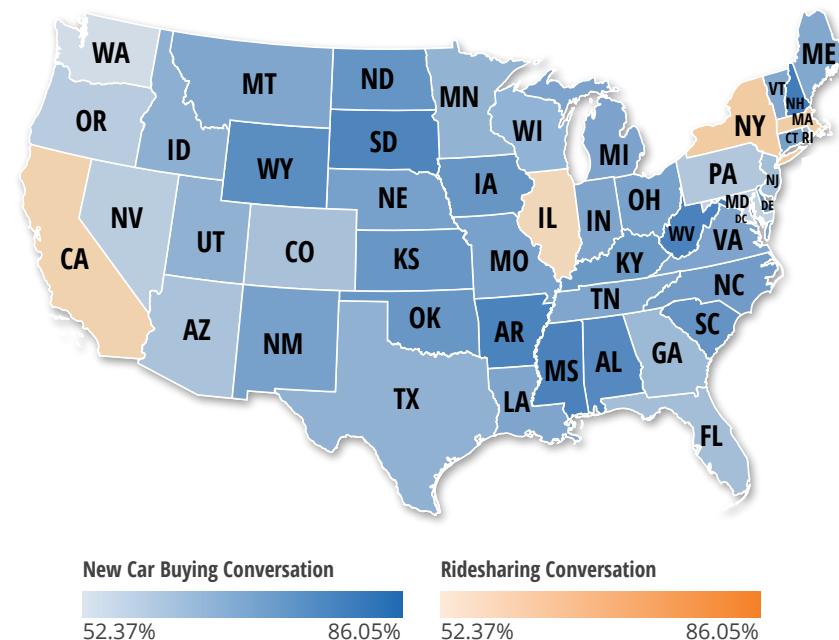


Social media offers some important clues about why car ownership might be going in reverse.

The first thing to note is that car buying remains the most discussed transportation method. But within the overall transportation discussion, we see that its hold may be slipping—especially in cities.

## Where do people talk about car buying?

The map below tells us that states without a comprehensive public transit system or that are located in more rural areas rely more on cars.



But in metropolitan areas, the wheels may be starting to come off, thanks largely to the rise in ridesharing. In major cities the conversation about ridesharing started growing significantly around 2014, increasing from 5% to nearly 20%.

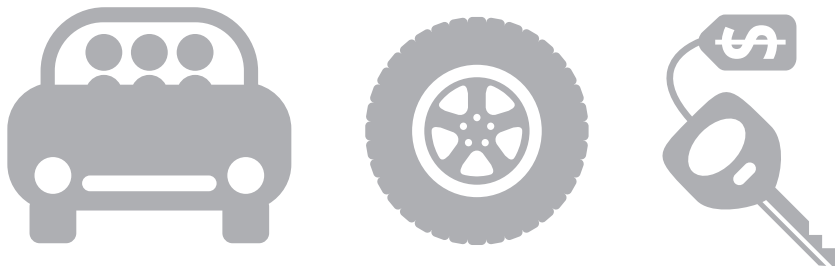
To get a clearer picture, let's dive into the conversation surrounding car buying.

## Car buying conversation topics

The talk of car-buying on social was dominated by first-time car buyers **(25k)** expressing joy as they hit the first-car milestone. Many **(5k)** expressed desire to purchase a used car, and discussed the cost effectiveness of buying a high quality used car versus a new car.

The more somber conversations, however, were around the realities of car ownership, especially related to the financial difficulties associated with low credit scores, monthly payments, and auto loans **(2k)**.

Americans will not abandon car-ownership completely, but social data suggests that the idea has begun to gain traction and people see the merits of not owning a car—on an average, car buyers paid \$34,077<sup>2</sup> last year, and insurance prices shot up 7.2%, the largest annual increase<sup>3</sup> since October 2003.



## Car buying

### Buying a new car (25k)

People share their joy after buying a new car, express desire to purchase a new car, and discuss family and friends' experiences with new car-buying.

### Buying a used car (5k)

People express desire to purchase a used car, many discussing the cost effectiveness of buying a high quality used car, as opposed to a new car. Additionally, plenty of jokes surround "buying a used car," a euphemism for low quality.

### Buying the first car (3k)

Car-buying is a milestone for many, who excitedly share their joy on social media. It is a symbol of transition into adulthood. Others discuss intent to purchase their first car.

### Auto loans needed for car buying (2k)

People discuss taking out loans for a new car. Many concerns are centered around not being taught the importance of loans in high school.

### Celebrating homeownership (2k)

Many express aspirational desire to buy a car after buying a home. In many cases, home and car ownership are closely related with family planning.

### Credit score concerns (1k)

People worry about low credit scores negatively impacting their ability to buy a car, while others rejoice high credit scores. Others lament not being taught the value of a credit score and its impact on car buying in high school.

## Afterword

Consumer insights are perhaps the most important ingredient in any brand or agency's strategy. How can you make sure you're engaging consumers and tapping into their likes and desires if you don't know what's on their minds? This is especially true for trends, fads and emerging preferences that are notoriously difficult to pin down before they're already obsolete.

Social media analytics can help brands and agencies do just that. Social media data can serve as a window into the minds of millions of consumers, and when it's analyzed well, it can help you understand:

- The emerging trends in any industry
- How different audience segments feel about a given topic
- Consumer preferences and how they've changed over time



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