



2014

Global Automotive Consumer Study

The changing nature of mobility

Exploring consumer preferences in key
markets around the world



Introduction

Forces are changing the mobility landscape, affording consumers more choices than ever before in meeting their transportation needs. For automotive companies, these shifting consumer demands result in a number of complex questions that may ultimately impact their products and how they engage with their customers.

To explore consumers' mobility choices and transportation decisions, Deloitte Touche Tohmatsu Limited (DTTL) fielded a survey in 19 countries. In total, more than 23,000 individuals representing a broad range of cross generational Baby Boomers, Generation X (Gen X), and Generation Y (Gen Y) automotive consumers responded to the survey. This broad and diverse consumer demographic allowed for in-depth analysis through multiple lenses, including generational, socio-economic, gender, and many others.

The objectives of the study centered on understanding the factors influencing consumers' mobility decisions as new transportation models (e.g., car-sharing, etc.) emerge. The study also analyzed the different tradeoffs consumers are willing to accept to own a vehicle, and examined how preferences for powertrains, technology (inside and outside of the vehicle), and lifestyle needs impact consumers' choice in the purchase or lease decision. The study also sought to assess the customer experience and the factors influencing the final vehicle purchase decision.

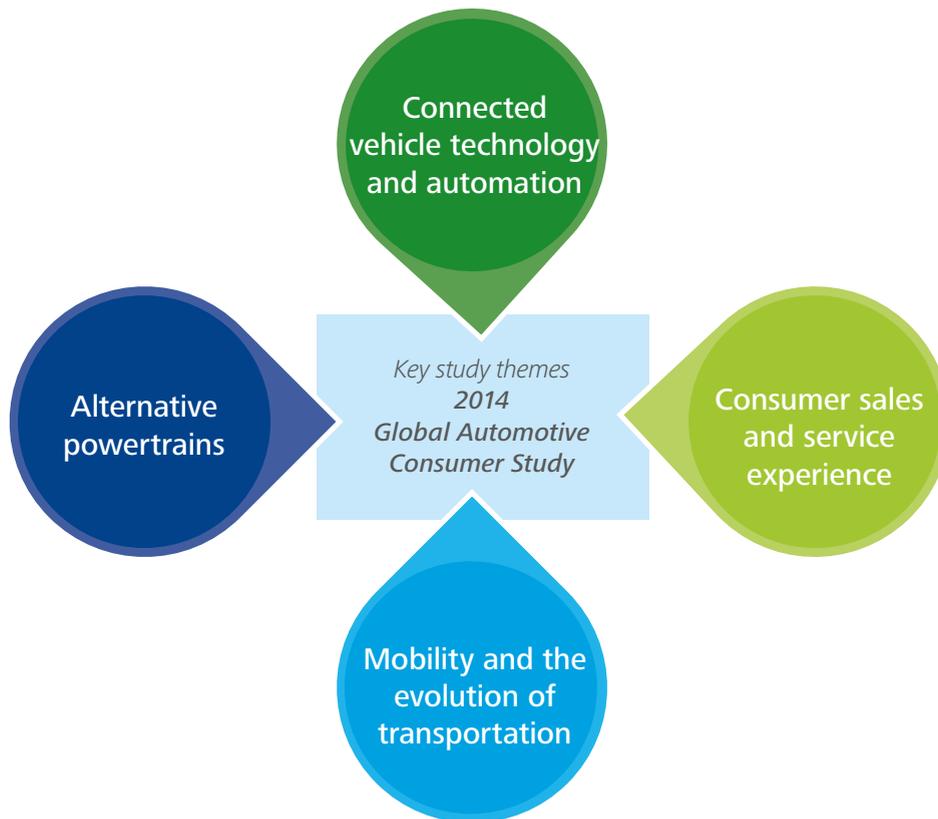
The following pages highlight the key findings for six of the 19 countries covered in the study, providing perspectives on the consumer mobility trends in both developed and emerging markets, including the United States, Germany, Japan, China, India, and Brazil. These findings form the foundation for an informed dialogue between automakers, dealers, and non-automotive companies working within the industry about the factors that will increasingly impact how consumers around the world choose to get from one place to another.

Contents

About the Global Automotive Consumer Study	1
Global key findings about Gen Y consumers	3
Why conduct a global automotive study?	4
Gen Y market potential	6
Decision criteria	7
Driver profiles	8
Mobility intentions	9
Alternative powertrains	12
Vehicle technology	16
Autonomous vehicles	18
The customer experience	19

About the Global Automotive Consumer Study

The 2014 Global Automotive Consumer Study focuses on "the changing nature of mobility" and how mobility affects various aspects of the automobile buying and ownership experience. Within the mobility theme, the study examines how alternative powertrains, connected vehicle technology and automation, and the sales channel experience influences the transportation choices of automotive consumers.



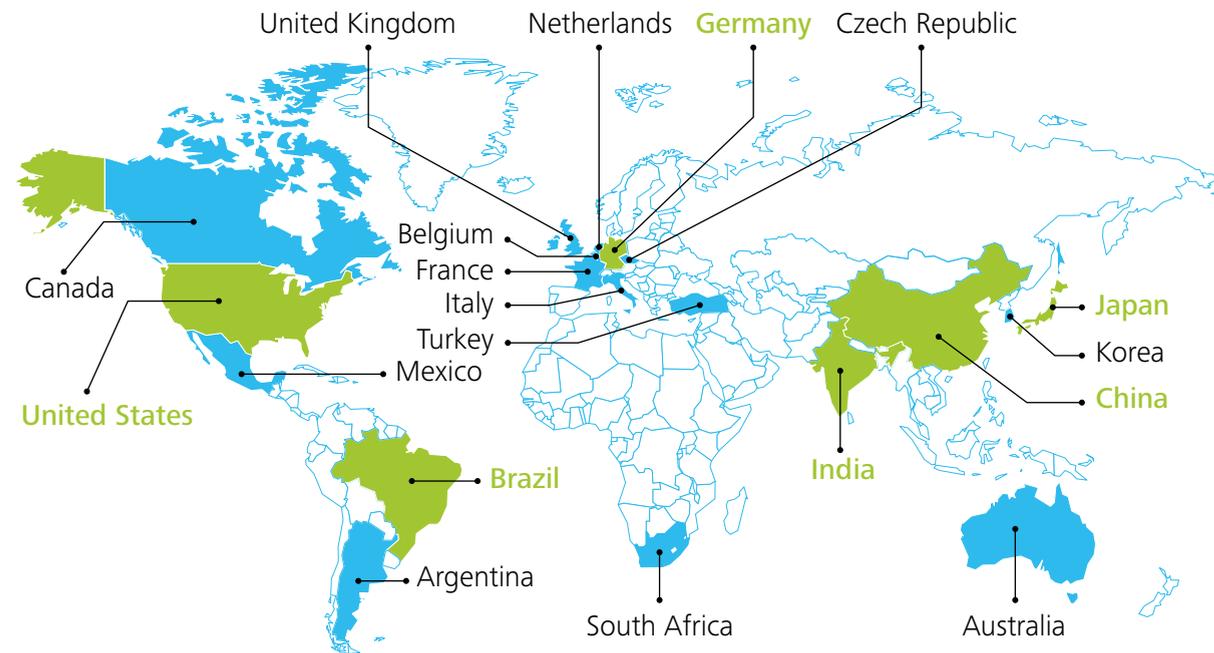
The *2014 Global Automotive Consumer Study*

is based on a survey of *over 23,000 consumers* in *19 countries*.

Three developed and three emerging markets were selected to further analyze and highlight consumer trends and insights. Key findings and insights on the following pages are based on responses from consumers in six focus countries:

▶ United States Germany Japan China India Brazil

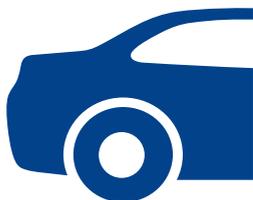
Participating countries



■ Focus country ■ Other survey countries



Global¹ key findings about Gen Y consumers



Globally¹, Gen Y consumers are *interested in owning or leasing vehicles*, with over **80%** in emerging markets expecting to *buy in the next five years*

A majority of Gen Y consumers think they will be *driving an alternative engine or fuel vehicle in five years* and they are *willing to pay more for it*²



In all countries¹, interest decreases as autonomy increases, but Gen Y consumers in **emerging markets** are **more comfortable with advanced levels of autonomy**

Reasons for not buying: Gen Y feels that **high costs** and the fact that lifestyle needs can be met by **walking and public transportation** are the primary factors



Consumers see the **greatest benefits of vehicle technology** in improved safety and increased fuel efficiency



Over 50% of Gen Y consumers are influenced by **friends and family** during the purchase process

Gen Y consumers want **vehicle technologies** that protects them from themselves, including technologies that:

- Recognize the presence of other vehicles on the road
- Automatically block them from engaging in dangerous driving situations

¹ Six focus countries (including both emerging and developed markets) were used for global analysis: U.S., Germany, Japan, China, India, Brazil.

² Although cost is still a primary motivation.



Why conduct a global automotive study?

As these powerful and dynamic forces continue to take shape, consumer mobility preferences are rapidly evolving.



Hyper-urbanization



Generational views



Connected technology and software

Description	Hyper-urbanization	Generational views	Connected technology and software
Impact	<ul style="list-style-type: none"> In 2006, the world reached a critical midpoint with over half of the world's population was living in a city. The trend is expected to accelerate, with approximately 70% of the world's population expected to live in cities by 2050.³ 	<ul style="list-style-type: none"> Baby Boomers, Gen X, and Gen Y consumers view their mobility needs and preferences differently. While Baby Boomers tend to gravitate toward traditional vehicle ownership models, younger generations are highly interested in models that provide access to mobility, allow them to remain connected (and productive), at a reduced cost. 	<ul style="list-style-type: none"> Innovations in Vehicle to Vehicle (V2V) and Vehicle to Infrastructure (V2I) connectivity, mobile phones, apps, and smart card technology are disrupting the automotive industry. Consumers will likely expect experiences that go beyond the sales or service transaction and leverage technology to integrate with their connected lifestyles—both inside and outside of the vehicle.
	<ul style="list-style-type: none"> Overcrowding, the realities of traffic, and new capabilities enabled by technology are leading to more collaborative approaches to transport. For example, the “sharing economy,” driverless cars, and improved public transportation. This trend has the potential to threaten vehicle sales, particularly in developed economies where profit margins are higher today. 	<ul style="list-style-type: none"> These differing expectations of mobility, along with disruptions of traditional ownership models, will change how original equipment manufacturers (OEMs) engage their customers. This fundamental shift in buying behavior with a new generation of consumers present significant opportunities and challenges for OEMs. 	<ul style="list-style-type: none"> The formerly clear lines—between humans and machines, between ownership and non-ownership, between goods and services—will blur as a result of connectivity and the information generated and used interchangeably by people and machines.

³United Nations Department of Economic and Social Affairs – Population Division, *World Urbanization Prospects, The 2011 Revision*, March 2012.



	Digital exhaust	Convergence of the public and private sectors	Sustainability and environmental concerns
Description	<ul style="list-style-type: none"> Automobiles and infrastructure will generate a large amount of digital exhaust that will create both opportunities and challenges for consumers, manufacturers, government, and businesses. Every action taken can be measured and quantified in the connected vehicle of the future. This data provides opportunities for a more integrated and seamless mobility system. 	<ul style="list-style-type: none"> Government will likely not be able to fully fund nor take primary responsibility for the requirements supporting tomorrow's transportation systems. The sheer complexity of transportation systems of the future will likely require many players to be involved. 	<ul style="list-style-type: none"> Continued concerns regarding environmental sustainability and a focus on improving fuel efficiency are leading to ever increasing government targets and expectations in countries around the world such as EU 2020: 60.6 miles per gallon, Japan 2020: 55.1 miles per gallon, and U.S. 2025: 54.5 miles per gallon.⁴ Automakers are being challenged to develop more fuel efficient engines and alternative powertrains to comply with the evolving standards.
Impact	<ul style="list-style-type: none"> If used correctly, this data could allow for automotive and non-automotive companies to gain insight on the consumer behavior and vehicle performance, as well as identify new potential growth opportunities and/or business models. Because data will be produced across disparate sources, management and integration of the data will be the barrier to optimizing the use of the data. 	<ul style="list-style-type: none"> The mass adoption and use of new public transportation, electric cars, and autonomous/driverless cars, and the supporting infrastructure requirements is likely to require increased public-private collaborations to address both development costs and ongoing operations. 	<ul style="list-style-type: none"> In the future, consumers will have the ability to choose from a mix of proven powertrain options that best meet their lifestyle needs and are competitively priced – including more efficient internal combustion engines, electric vehicles (EVs), hybrid electric, and vehicles powered by natural gas.

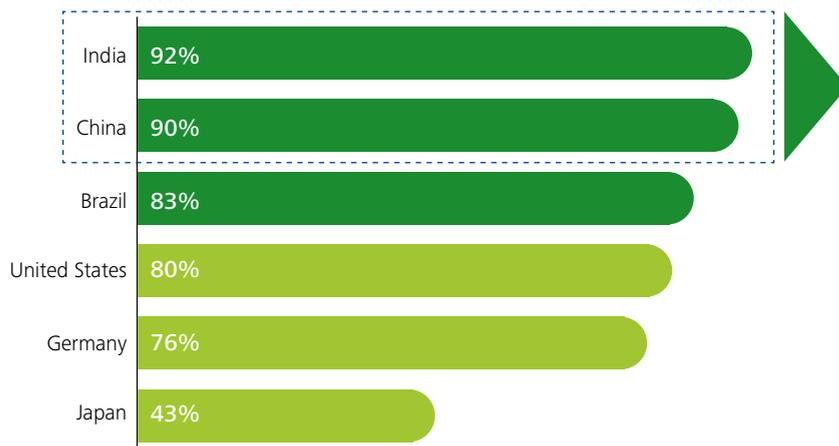
⁴The International Council on Clean Transportation, *Global Comparison of Light-Duty Vehicle Fuel Economy/GHG Emissions Standards*, June 2012.



Gen Y market potential

There are **2B Gen Y consumers** worldwide⁵ and *over 80% emerging markets* plan to purchase or lease a vehicle **within the next five years**.

Percentage of Gen Y consumers who expect to buy a car in the next five years



In China and India alone,
 **680 million**
*Gen Y consumers*⁶
plan to buy within five years

■ Emerging markets ■ Developed markets

⁵ Economist Intelligence Unit, accessed on March 11, 2014.

⁶ Estimate using data from the Economist Intelligence Unit (EIU) – Gen Y population (age 20 to 37 years) for India and China is calculated as: Population in the age group of 20 to 35 years + 0.6 X (Population in the age group of 35 to 39 years).



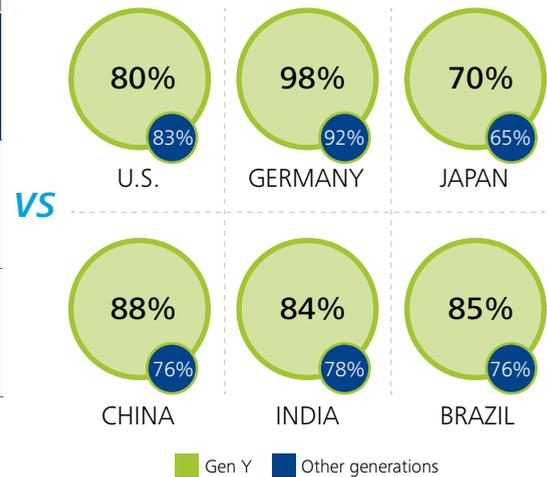
Decision criteria

Affordability and *needs met by walking / public transportation* are top reasons across Gen Y for not owning a vehicle.

Top three reasons Gen Y does not buy⁷

	U.S.	Germany	Japan ⁸	China	India	Brazil
1						
2						
3						

Despite significant interest from consumers who do not own in the current line up of vehicles



Top reason for other generations

Affordability

Parking is inconvenient, unavailable, or too expensive

Maintenance costs

Lifestyle needs met by bike or motorized two-wheel vehicle

Lifestyle needs met by walking / public transit

Environmental concerns

I am interested in cars currently on the market.

⁷For segment of Gen Y respondents that currently do not own or lease a vehicle.

⁸Top reason for other generations: Lifestyle needs met by walking / public transit.

What would get Gen Y into a car?



In **China** and **India**, parking is also a significant factor – over 50% of Gen Y say **more convenient and less costly parking would get them in a car**



Driver profiles

Most consumers value low cost,

except in **China** and **India**, where *convenience is most important*.

						
Eco-friendly	Low cost	Convenience	Utility	Luxury	Technology	Love to drive
I make green choices in my life. When going somewhere, I want to do so in an eco-friendly manner, even if that means more time and money.	My total cost when going somewhere needs to be low, and I will choose a transportation option that is cheapest.	When going somewhere, I want to do so in the fastest and easiest way and am willing to use any transportation option to achieve this.	I have things to do and getting somewhere needs to fit the demands of my lifestyle. My transportation option must have the functionality to meet these demands (e.g., I require a truck to haul my equipment/ tools).	I value luxury and want to be noticed when I go somewhere. I feel a sense of pride driving a luxury vehicle and am willing to pay more for the features and the brand name.	Connected technology is important to me when going somewhere. To do this, my transportation choice needs to be integrated with my electronic devices, and it needs to access, consume, and create information.	I look forward to driving because getting there is half the fun.

How would you describe yourself as a commuter?

Top two most frequent descriptions consumers used to describe themselves as commuters

Ranking	United States	Germany	Japan	China	India	Brazil
1						
2						

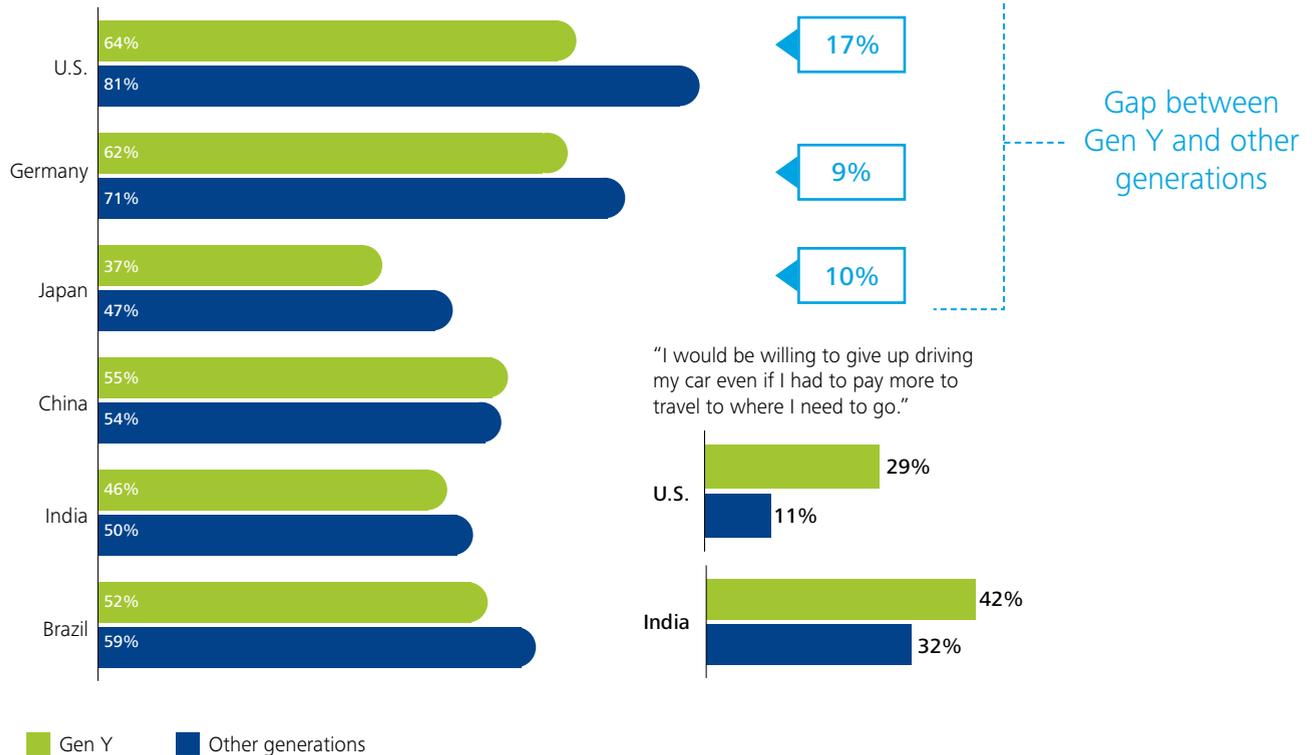
"Low cost" is not a primary factor in China and India



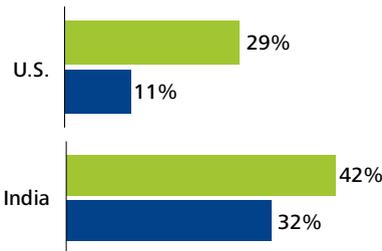
Mobility intentions

On average, approximately *50% of consumers do not consider personal cars* as a preferred mode of transportation. The gap between Gen Y and other generations is widest in developed markets.

Preferred mode of transport is the personal car



"I would be willing to give up driving my car even if I had to pay more to travel to where I need to go."

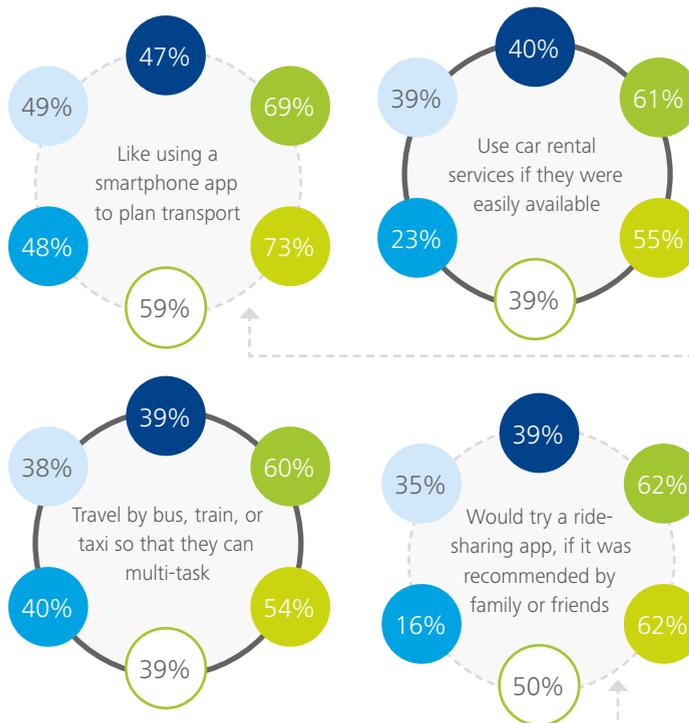


In the U.S., Gen Y is also **3X** more likely than other generations to *abandon their vehicles*, but India has the **highest abandonment rate**.



The study revealed that automakers are *losing Gen Y* consumers to *alternative mobility options* that reduce costs and offer convenience

Percentage of **Gen Y** respondents that agree with the following statements:

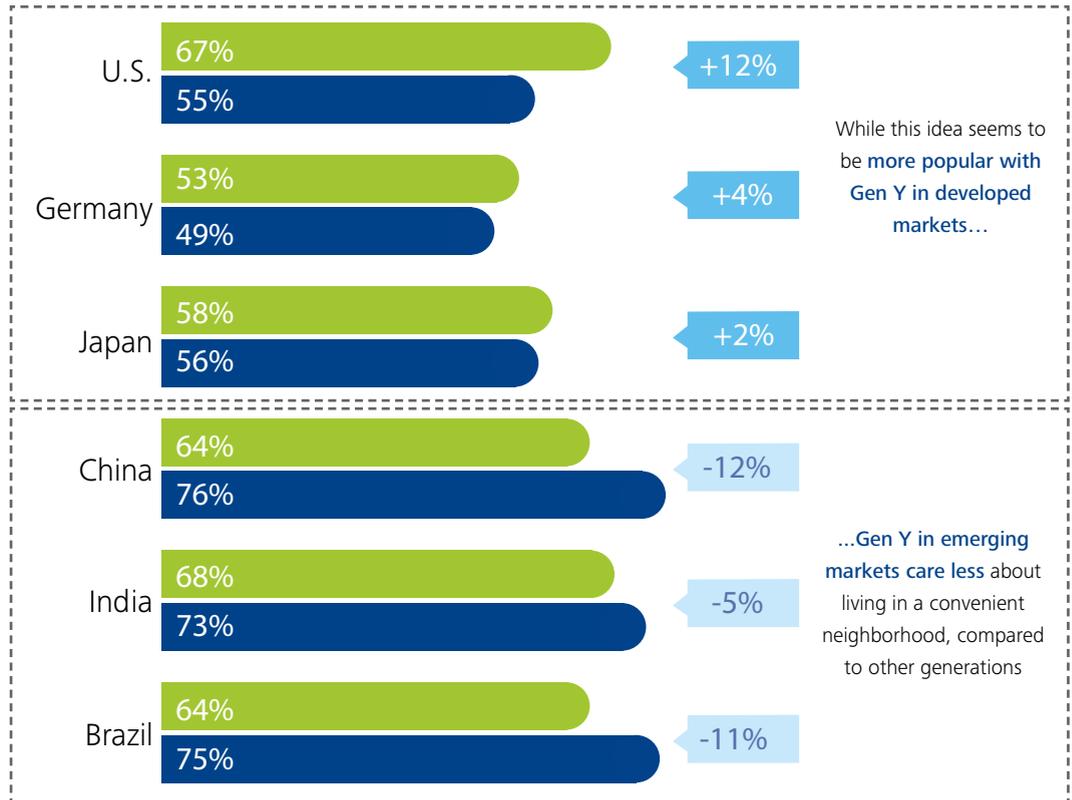


In all six countries, **Gen Y** consumers are **more open to using transportation apps** on their smartphones, and are also **more open to peer recommendations**, compared to other generations.

Lifestyle is another primary reason that influences consumers' decision to abandon their vehicles.

"I would prefer living in a neighborhood that has everything within walking distance."

Over half of all consumers prefer to have everything within walking distance



■ Gen Y ■ Other generations

Note: "Strongly Agree" and "Agree" responses have been summed up together.



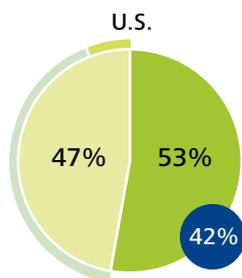
Alternative engines and fuels

Except in Germany, a majority of Gen Y *expect to be driving an alternative vehicle* in the next five years.

What does Gen Y expect to be driving in five years?

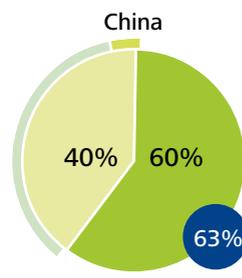
Gen Y: ■ Alternative engines/fuels ■ Traditional engines⁹
 Other generations: ■ Alternative engines/fuels

Hybrid electric is the predominant choice for Gen Y in the **U.S., Germany, Japan, China** and **Brazil**, but *compressed natural gas* is the top choice in **India**.



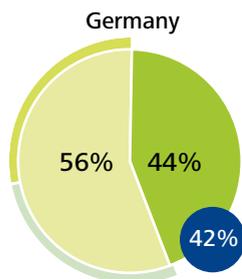
Top alternative engine/fuel vehicles

Hybrid electric (not plug-in)	27%
Plug-in hybrid electric	7%
Compressed natural gas-powered	7%
All battery-powered electric	7%
■ 6% diesel ■ 41% gasoline	

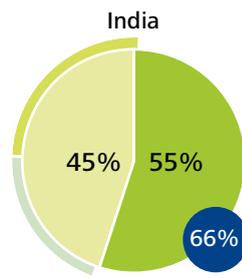


Top alternative engine/fuel vehicles

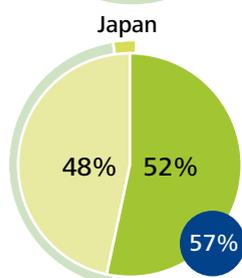
Hybrid electric (not plug-in)	25%
Plug-in hybrid electric	10%
Compressed natural gas-powered	10%
All battery-powered electric	8%
■ 4% diesel ■ 36% gasoline	



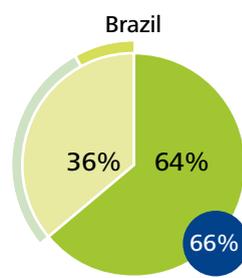
Hybrid electric (not plug-in)	18%
Plug-in hybrid electric	9%
All battery-powered electric	8%
Compressed natural gas-powered	7%
■ 28% diesel ■ 28% gasoline	



Compressed natural gas-powered	13%
Hybrid electric (not plug-in)	12%
All battery-powered electric	11%
Fuel cell electric vehicle (FCEV)	11%
■ 25% diesel ■ 20% gasoline	



Hybrid electric (not plug-in)	26%
Plug-in hybrid electric	11%
All battery-powered electric	7%
Fuel cell electric vehicle (FCEV)	5%
■ 3% diesel ■ 45% gasoline	



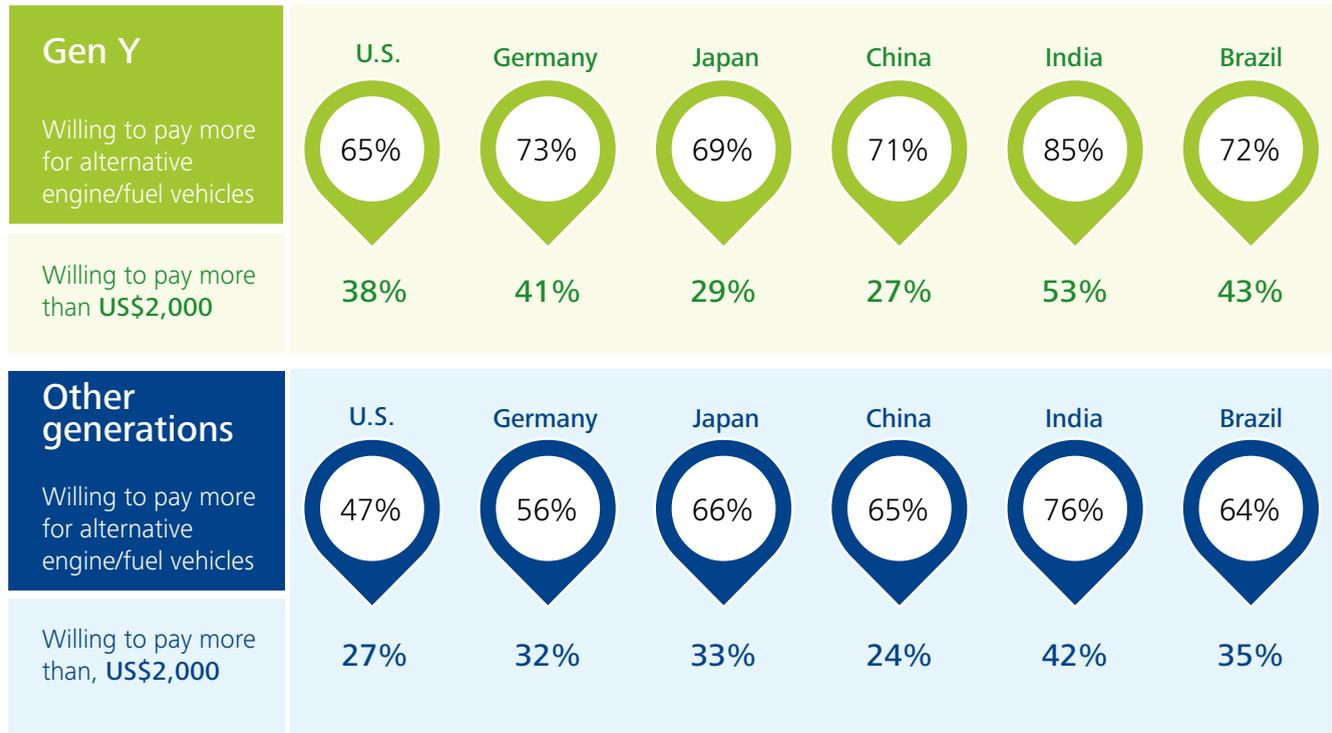
Hybrid electric (not plug-in)	23%
Plug-in hybrid electric	12%
Compressed natural gas-powered	11%
Fuel cell electric vehicle (FCEV)	10%
■ 8% diesel ■ 28% gasoline	

⁹Includes gasoline and diesel-powered engines

Gen Y is

willing to pay more

for an alternative engine and fuel

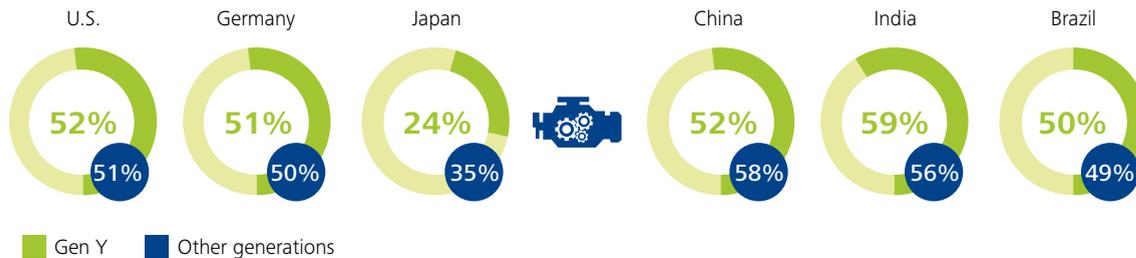


A majority of consumers feel

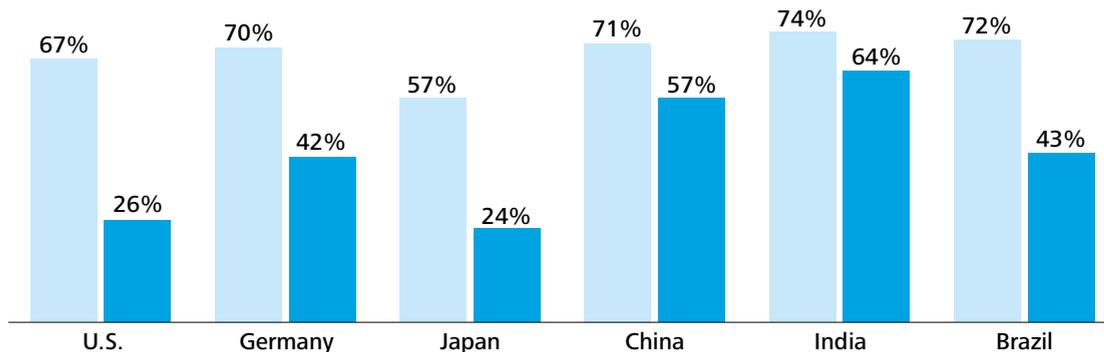
there are not enough alternative powertrain options in the market...

Percentage of Gen Y consumers that agree

"Manufacturers do not offer enough alternative fuel engines in vehicles I would actually want to drive."



...And consumers in all focus countries *prefer a range of engine options* over a specialized line of vehicles.



"I would prefer that automotive companies offer a *range of engine options for each model* that they produce."¹⁰

"I would prefer a vehicle from an automotive manufacturer that offers a *specialized line of vehicles* that only have alternative engines so that people know I'm environmentally conscious."⁹

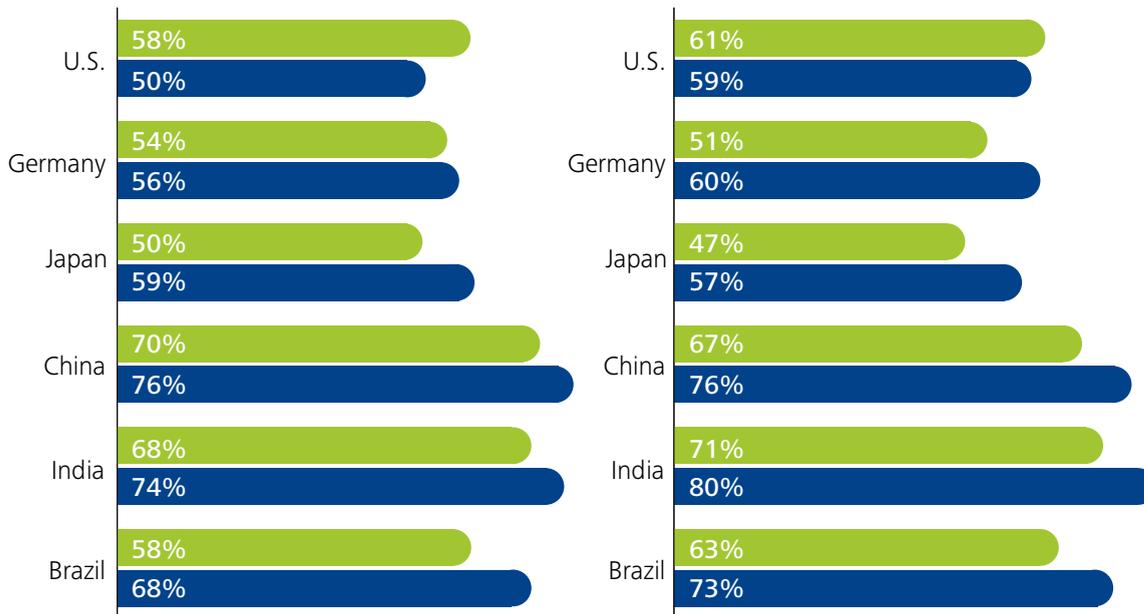
¹⁰ Preference of consumers across all generations

Globally,

over half of the consumers *support government standards and incentives* to switch to alternative powertrains...

"I would support more *government programs that reward consumers* who switch to or own vehicles with alternative fuel engines and/or high fuel efficiency engines."

"I would support more *government standards* that require manufacturers to produce vehicles that have better fuel efficiency."



■ Gen Y ■ Other generations

...But in all countries except the U.S., *Gen Y is generally less supportive* of government programs and regulations, compared to other generations.



Vehicle technology

Gen Y consumers believe there are **significant benefits from new vehicle technologies and advancements**

Greatest benefits¹¹ All six countries ranked



Vehicles that do not crash



Vehicles that use alternative fuels

as the greatest benefits

Other benefits Gen Y also sees significant benefits in

Driverless vehicles



49%
China

Fully-connected vehicles



64%
India

Increased use of micro-cars



52%
Brazil

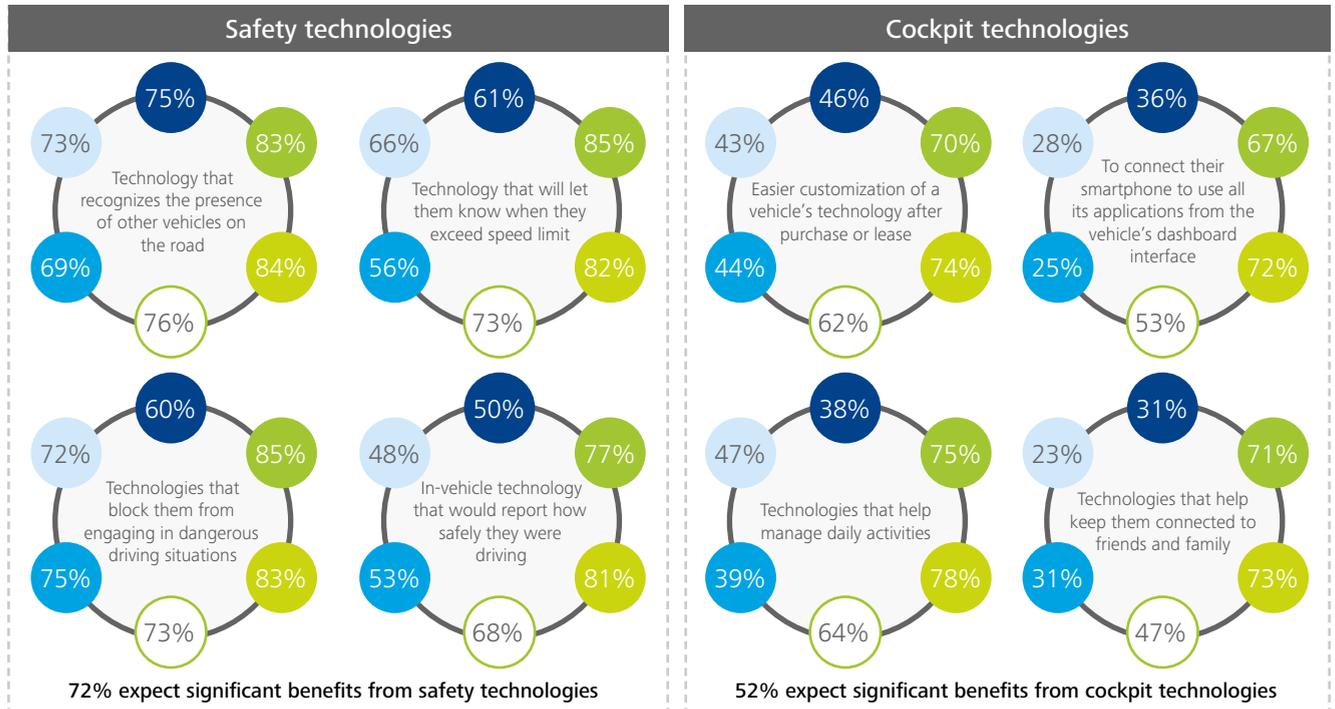
Gen Y wants technology that protects them from themselves, including:

- Technology that recognizes the presence of other vehicles on the road
- In-vehicle technologies that would automatically block them from engaging in dangerous driving situations

¹¹Highest percent of respondents indicating they expect significant benefits from these automotive technologies.

Consumers desire *safety technologies more than* cockpit technologies.

And consumers in **emerging markets** have a *greater interest in vehicle technologies overall*, compared to **developed markets**.

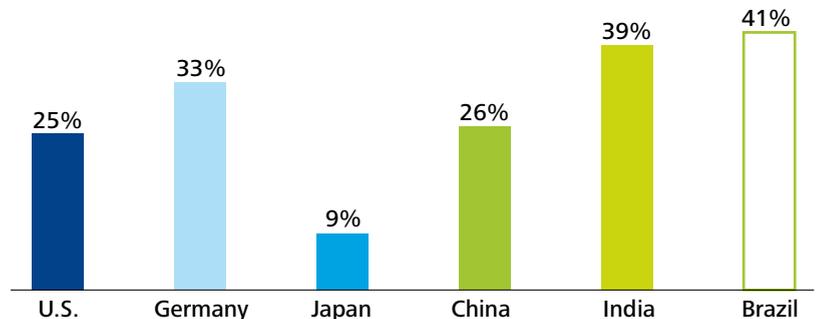


■ U.S. ■ Germany ■ Japan ■ China ■ India ■ Brazil

Percent of respondents indicating they expect significant benefits from these automotive technologies

But consumers, especially in developed countries, *are not willing to pay much*.

Willing to pay **US\$2,500 or more** for safety and cockpit technologies



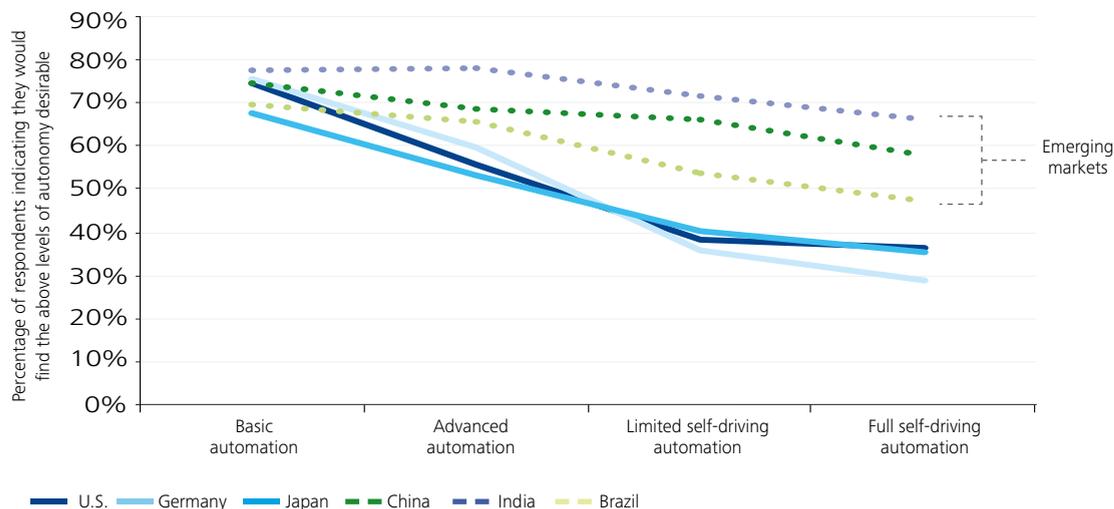


Autonomous vehicles

In general, consumers today find

higher levels of automation less desirable...

But *emerging markets are more open to autonomous vehicles.*



Gen Y consumers in the **United States** are generally *more comfortable with autonomous vehicles*.¹²

U.S. federal government definitions for autonomous (driverless) vehicles

- **Basic:** Allows the vehicle to assist the driver by performing specific tasks like anti-lock braking (prevent from skidding) and/or traction control (to prevent loss of grip with the road).
- **Advanced:** Combines at least two functions such as adaptive cruise control and lane centering technology in unison to relieve the driver of control of those functions.
- **Limited self-driving:** Allows the vehicle to take over all driving functions under certain traffic and environmental conditions. If conditions changed, the vehicle would recognize this and the driver would then be expected to be available to take back control of the vehicle.
- **Full self-driving:** Allows the vehicle to take over all driving functions for an entire trip. The driver would simply need to provide an address and the vehicle would take over and require no other involvement from the driver.

Source: Based on U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA) definitions, May 2013.

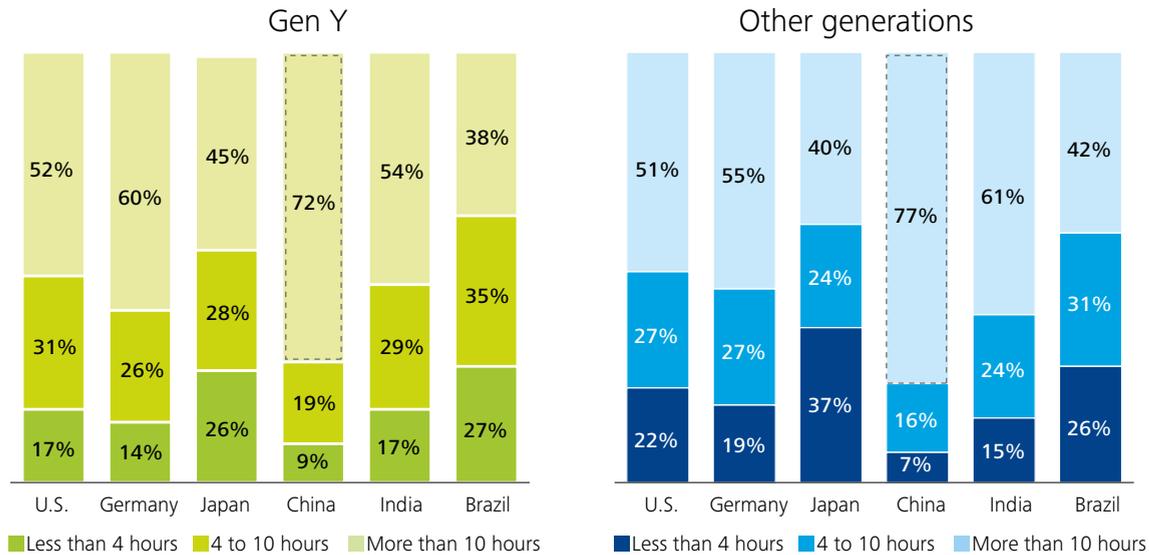
¹² In the US 47% of Gen Y consumers compared to 31% of Other Generations consumers indicated that they would find "fully self-driving" autonomous vehicle desirable, while 46% of Gen Y compared to 35% of Other Generations indicated that they would find "limited self-driving" autonomous vehicle desirable



The customer experience

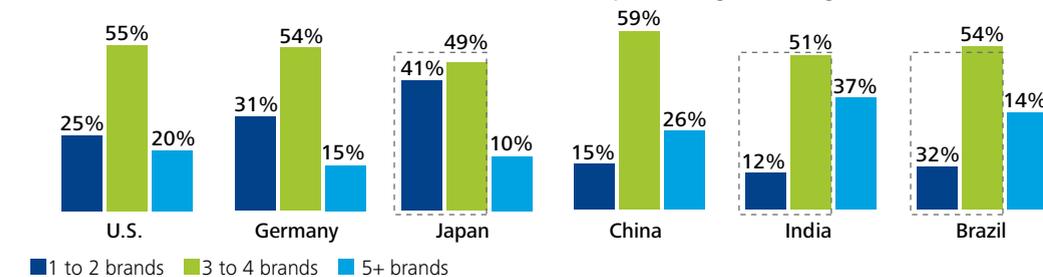
Consumers in **China** spend the most time researching, with roughly *3/4* spending *10 hours or more*.

Time spent researching possible vehicles



The majority of consumers in all six focus countries *consider 3 or more brands* when purchasing or leasing a vehicle

Number of brands considered when purchasing or leasing a vehicle



Impacting the purchase decision

Automakers *can influence more through traditional sources for information* vs. social media or the dealer experience.

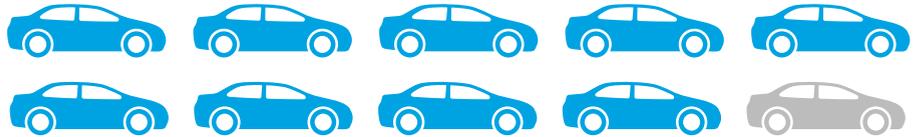
Information sources when purchasing / leasing

	Family and friends
	Car reviews on independent websites
	Manufacturer websites
	News articles/media reviews
	Salesperson at the dealership
	Social networking sites

Ranking ¹³	United States	Germany	Japan	China	India	Brazil
1						
2						
3						
4						
5						
6						

¹³Based on the percent of respondents indicating this source is a significant impact on the purchase decision

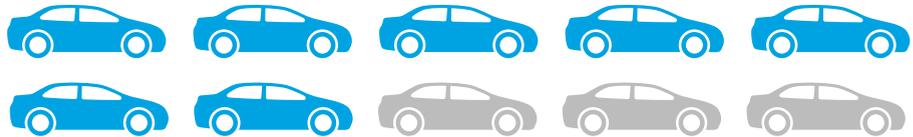
9 out of 10



U.S. consumers want an *extremely efficient* purchase process...
while consumers in other countries are slightly less demanding.

In India, only

7 out of 10



consumers want an *extremely efficient* purchase process.

Average acceptable time per phase for all consumers

	U.S.	India
Getting information from dealerships	37 minutes	48 minutes
Waiting to test drive a vehicle	28 minutes	45 minutes
Processing paperwork and registration	39 minutes	57 minutes
Processing financing	38 minutes	62 minutes
Performing simple maintenance service	45 minutes	57 minutes

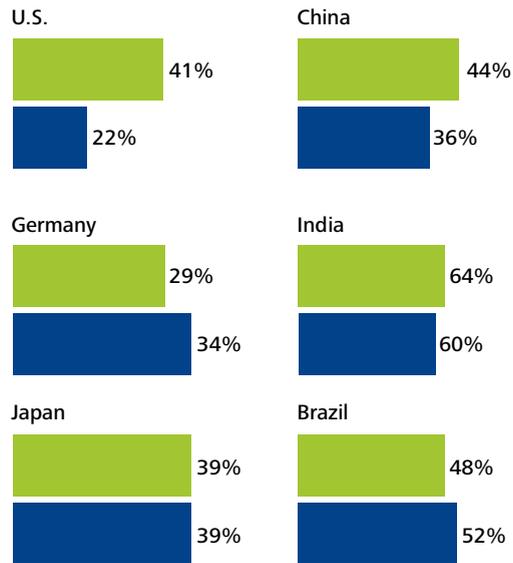
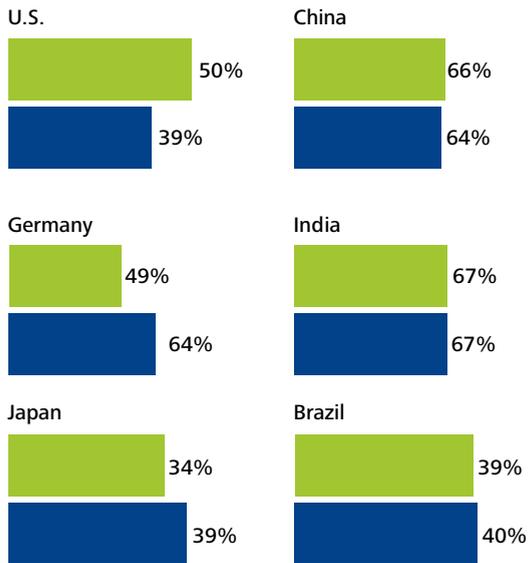
Total difference in
average acceptable
process time =

81
minutes

Gen Y generally feels respected, but automakers must enhance the overall experience to *improve Gen Y's perception and experience.*

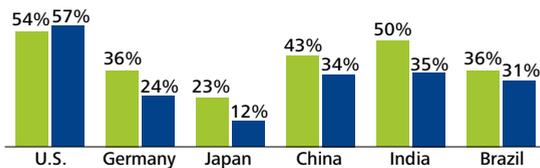
"Automotive salespeople treat me fairly and with respect."

"I have a positive attitude towards automotive dealers."



■ Gen Y ■ Other generations

Gen Y consumers are *less interested in negotiating with a dealer.*

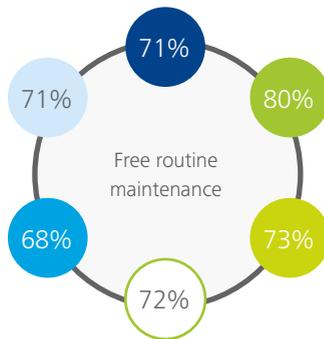


The attitude consumers have towards dealers in China is cause for concern for automakers – many are replicating the dealer experience established in other markets for China vs. trying new models to improve the dealership experience.

Opportunities reside in areas that offer *convenience* and *additional value for money after the sale.*

Across the countries analyzed, **cost** and **quality** of the service bundle **influences over 60%** of consumers' purchase decision.

When choosing a vehicle to purchase or lease, how important to you are each of the following attributes?
 Percentage of Gen Y respondents that agreed with the following statements



When it comes to after-sales services, **Gen Y consumers in emerging markets expect more** from dealerships.



- U.S.
- Germany
- Japan
- China
- India
- Brazil

Contacts

Joe Vitale

Global Automotive Industry Leader
Deloitte Touche Tohmatsu Limited
jvitale@deloitte.com

Craig Giffi

Vice Chairman and U.S. Automotive
Industry Leader
Deloitte United States (Deloitte LLP)
cgiffi@deloitte.com

Masato Sase

Deloitte Japan
msase@tohmatu.co.jp

Ivar Berntz

Deloitte Brazil
iberntz@deloitte.com

Kumar Kandaswami

Deloitte India
kkumar@deloitte.com

Thomas Schiller

Deloitte Germany
tschiller@deloitte.de

Marco Hecker

Deloitte China
mhecker@deloitte.com.cn

Contributors

Bruce Brown

Deloitte United States
(Deloitte Consulting LLP)
brubrown@deloitte.com

Michelle Drew

Deloitte United States
(Deloitte Services LP)
midrew@deloitte.com

Candan Erenguc

Deloitte United States
(Deloitte Consulting LLP)
cerenguc@deloitte.com

Masa Hasegawa

Deloitte United States
(Deloitte Consulting LLP)
mahasegawa@deloitte.com

Robert Hill

Deloitte Japan
robehill@deloitte.com

Steve Schmith

Deloitte United States
(Deloitte Services LP)
sschmith@deloitte.com

Bharath Gangula

Deloitte United States
(Deloitte Services LP)
bgangula@deloitte.com

Acknowledgements

DTTL would like to thank the following professionals who have contributed to the Global Automotive Consumer Study and this publication. Matthew Josephson, Kaitlyn Peale, and Sam Hyde all from Deloitte United States (Deloitte Consulting LLP); Srinivasa Reddy Tummalapalli and Sandeepan Mondal from Deloitte United States India; Karen Ambari from Deloitte United States (Deloitte Services LP); Bee Animashaun, Abhishek Khurana, and Jennifer McHugh from DTTL Global Manufacturing Industry Group; Professor Clay Voorhees from Michigan State University.

DTTL Global Manufacturing Industry group

The DTTL Global Manufacturing Industry group is comprised of around 2,000 member firm partners and over 13,000 industry professionals in over 45 countries. The group's deep industry knowledge, service line experience, and thought leadership allows them to solve complex business issues with member firm clients in every corner of the globe. Deloitte member firms attract, develop, and retain the very best professionals and instill a set of shared values centered on integrity, value to clients, and commitment to each other and strength from diversity. Deloitte member firms provide professional services to 78 percent of the manufacturing industry companies on the Fortune Global 500®. For more information about the Global Manufacturing Industry group, please visit www.deloitte.com/manufacturing.

About Deloitte

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee ("DTTL"), its network of member firms, and their related entities. DTTL and each of its member firms are legally separate and independent entities. DTTL (also referred to as "Deloitte Global") does not provide services to clients. Please see www.deloitte.com/about for a more detailed description of DTTL and its member firms.

Deloitte provides audit, tax, consulting, and financial advisory services to public and private clients spanning multiple industries. With a globally connected network of member firms in more than 150 countries and territories, Deloitte brings world-class capabilities and high-quality service to clients, delivering the insights they need to address their most complex business challenges. Deloitte's more than 200,000 professionals are committed to becoming the standard of excellence.

© 2014. For more information, contact Deloitte Touche Tohmatsu Limited.

Last updated August 2014