

McKinsey China Auto Consumer Insights 2021

The race to win: How automakers can succeed in a post-pandemic China

Executive Summary

In 2020, COVID-19 ushered in an array of new developments that changed the way we think about China's auto market. To understand these changes, McKinsey conducted an in-depth survey of the behavior and attitudes of China's auto consumers. We identified six post-pandemic imperatives automakers should consider:

- 1. Prioritize product upgrades:** As China's auto market continues to plateau, original equipment manufacturers (OEMs) should consider optimizing their customer engagement to enhance brand recognition for prospective and existing customers. Product upgrades are needed to meet the growing customer demand for "trade-ups." In order to take advantage of these trade-up opportunities, OEMs should consider prioritizing models in the RMB 200,000-300,000 price range, while seeking to build competitive breakthrough products.
- 2. Invest in brand-building:** Local brands are becoming stronger, while joint venture (JV) brands are quickly losing brand influence across all segments except the high-end. In some price bands, local brands have carved out consumer recognition equal to those of JV brands. In order to create a clear brand statement and enter the initial consideration set of potential customers, OEMs need to invest more heavily in branding.
- 3. Push digital omni-channel marketing to the fore:** Our study shows that digital channels play an increasingly important role in consumers' decision-making. Automakers need to optimize digital touchpoints and promote their digital channels while establishing systems to manage online operations. The rapid change of consumer retail formats has triggered a strong desire among car buyers for a fully-digitized experience in new car sales and after-sales services. OEMs should recognize these changes in consumer behavior and transform their retail network, while collaborating closely with 4S business partners.
- 4. Focus on NEVs:** Despite subsidy cuts and a shrinking non-private market in 2020, China's new energy vehicle (NEV) manufacturers ended the year with double-digit growth and significantly higher brand loyalty. In order to stay relevant in the race for NEV market share, incumbents should shift their focus from Internal Combustion Engine (ICE)-based NEVs to native platforms capable of creating breakthrough NEV products that can compete against the leading NEV start-ups.
- 5. Tap into consumer interest in connected cars:** Chinese consumers are more interested than ever in smart vehicle technologies, and they are willing to pay a premium for innovative features. Eighty percent of consumers report that autonomous driving will be a key factor in their decision-making when they buy their next car. Meanwhile, 69 percent of consumers think that over-the-air update technology, or OTA, is an important feature, and 62 percent of those are willing to pay for it. OEMs should track such shifts in consumer interest, and design their products accordingly.
- 6. Explore the potential of MaaS:** Our survey suggests that consumers have become more open to long-term leases. Fifty-five percent of respondents said they would consider postponing their purchase and drive a leased car for one to three years. Mobility as a service, or MaaS, provides access to that opportunity. OEMs will need to ensure that their value proposition is compatible with this trend in order to win market share.



Trade-ups are trending

Key insights:

- Auto sales slumped in early 2020 when consumers pushed back purchase decisions, but as the pandemic was brought under control, both auto sales volume and consumer purchase intention swiftly recovered
- While market expansion continues to stall, repurchase demand is overwhelming; trade-up demand in the RMB 200,000-and-below price range is particularly strong

Bright spots in a declining market

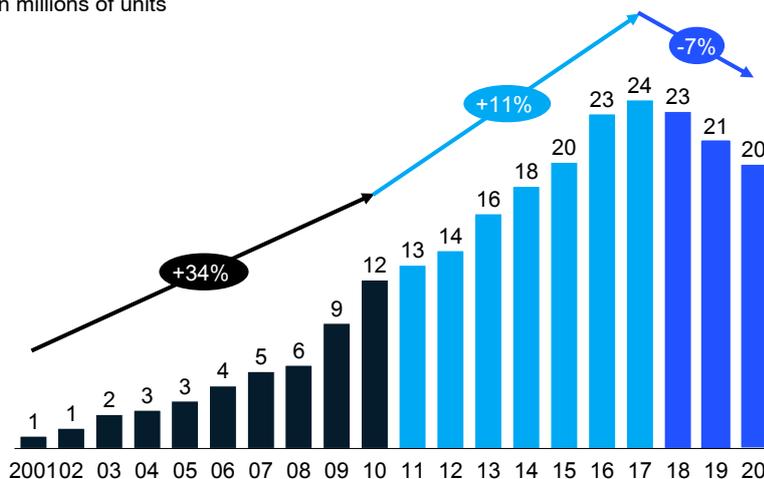
While China's auto sales have fallen consistently since 2018, there have been some notable areas of growth. Expanding segments include premium brands and NEVs (Exhibit 1).

Exhibit 1

China's passenger vehicle (PV) sales fell ~7% in 2020, but some bright spots persisted

After about 20 years of continuous growth, PV sales have fallen for three years in a row

Passenger vehicle sales in China
In millions of units



COVID-19 hit markets hard, while China held its ground in some areas

2020 vs 2019

	China	US
Growth of premium segment	13%	-12%
Growth of NEV Sales	22%	4%

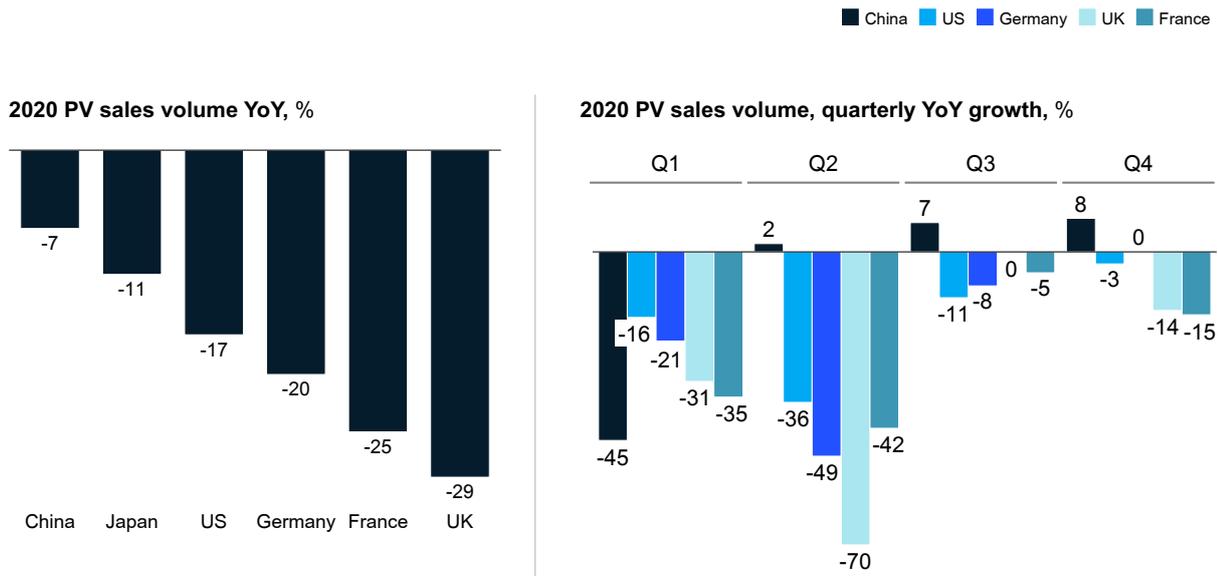
Source: IHS Markit (March, 2021); China new car insurance registration database; NEV Volumes

The auto market recovered quickly from COVID-19

In 2020, China's auto market confounded early pessimism to stage a rapid second-quarter recovery, before recording a full-year contraction of just 7 percent. Though unspectacular in comparison to previous years, China's performance compared favorably to a range of other leading markets. The chart below compares China's new car sales volume in 2020 with other developed markets (Exhibit 2).

Exhibit 2

China's PV market recovery has outpaced other countries



Source: IHS Markit (March 2021); China new car insurance registration database

Trade-ups are popular in a saturated market

China's passenger vehicle market has shown signs of saturation since 2017. Among the respondents in our survey, the proportion of first-time buyers during this period dropped from 90 percent to 59 percent. That said, in tier 3 and tier 4 cities, as well as among consumers with household monthly income of less than RMB 24,000, 80 percent of respondents were first-time buyers (Exhibit 3).

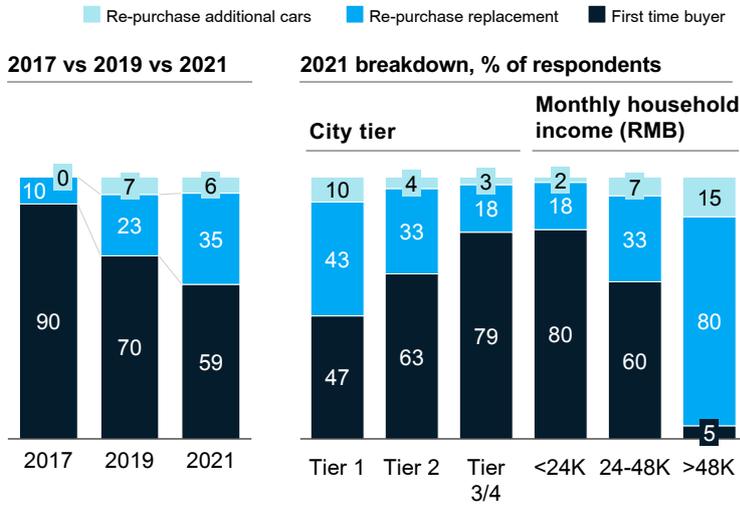
When purchasing another car, most consumers preferred to trade-up. Sixty percent of the respondents whose car price was below RMB 200,000 said that they intend to upgrade when they purchase their next car. Meanwhile, most owners whose cars were priced above RMB 200,000 preferred to stay in the same price range (Exhibit 4). To boost revenues, automakers should closely observe these trade-up movements and target the price segments most likely to attract new customers.

Exhibit 3

Demand from non-first-time buyers and trade-ups remains strong post-pandemic

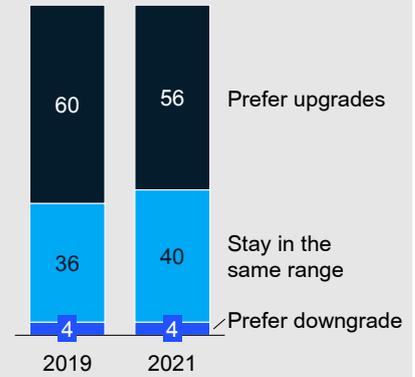
Deep dive to follow

The PV market is transforming quickly as the share of non-first-time buyers is surging



Most consumers prefer to trade up when repurchasing cars

Upgrade vs. downgrade when repurchasing, % of respondents



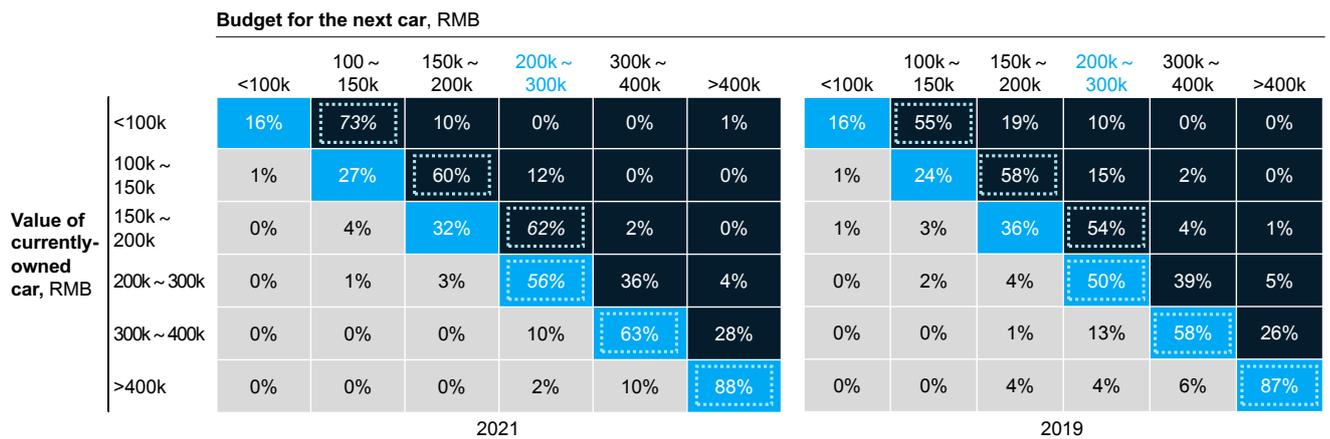
Source: 2017, 2019, 2021 McKinsey China Auto Consumer Insights

Exhibit 4

RMB 200k-300K will become the key battlefield going forward

Budget for the next car vs. value of existing car owned, % of respondents

Stay in the same range, Prefer upgrade, Prefer downgrade, Price choice of the majority for the customers



Source: 2019, 2021 McKinsey China Auto Consumer Insights

Brand loyalty declines as competition intensifies

Key insights:

- Brand loyalty is stronger among consumers in high-price segments, while consumers in low-price segments appear to be less loyal
- Multinational and JV brands still dominate the premium market, but have lost their leadership in the non-premium segments that account for larger sales volumes
- Consumers recognize several local competitors as JVs' equals, and primarily cited local players when asked about smart vehicle technologies

Market concentration continues to rise amid intense competition

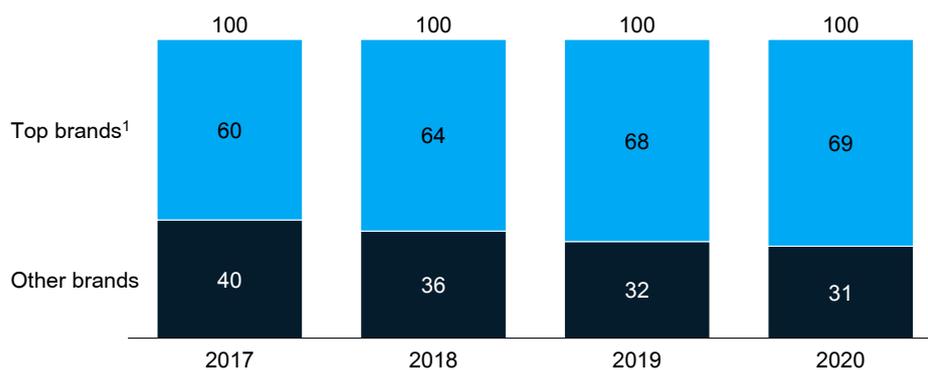
Since China's auto market growth ground to a halt and turned negative in 2018, the entrance of new auto brands into the market has spurred more intense competition. However, leaders continued to displace laggards and captured record market share.

In 2020, the top 13 sales performers shared 69 percent of the entire market volume (Exhibit 5), as long-established OEMs worked hard to hold onto their top positions.

Exhibit 5

Market concentration increased as competition intensified

China PV market concentration, % of sales



1. Criteria: 13 brands whose sales rank in the top 15 for the last 4 years

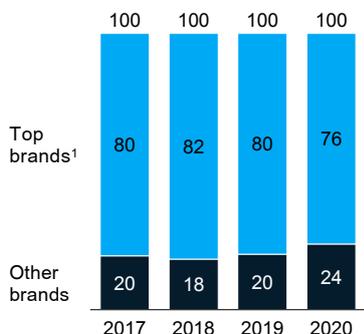
Source: China new car insurance registration database

Due to the rapid growth of a US-based premium NEV manufacturer, market concentration declined in the premium segment. However, the top five premium brands still hold close to 80 percent of market share. As for non-premium cars, the top five grew market share from 65 percent in 2017 to 79 percent in 2020, further reducing the viability of JV brands outside of the top multinational players (Exhibit 6).

Premium was the only segment that saw a decrease in market concentration

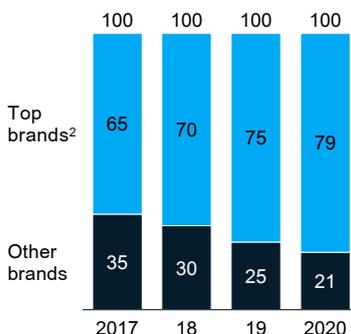
The rise of new premium NEV brands has driven down premium market concentration slightly. But the top 5 premium brands still hold close to 80% of market share

Premium market concentration, % of sales



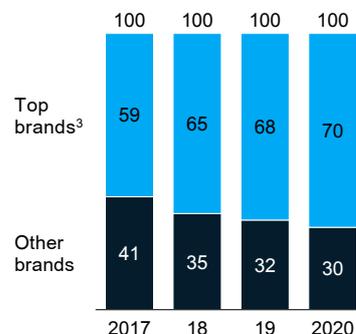
There has been an increase in concentration among non-premium JV brands with the top 5 making up 79% of total sales

Non-premium JV brands' concentration, % of sales



Nearly 70% of local non-premium brand sales come from 8 top players

Non-premium local brands' concentration, % of sales



1. Criteria: premium sales ranking in the top 5 for the last 4 consecutive years
2. Criteria: non-premium JV brand sales ranking in the top 5 for the last 4 consecutive years
3. Criteria: non-premium local brand sales ranking in the top 8 for the last 4 consecutive years

Source: China new car insurance registration database

Loyalty is proportional to prices in a fickle market

Chinese consumers' brand loyalty is slightly lower than it was in 2019. Only 27 percent of respondents said their brand of choice remained the same, in comparison with the 31 percent of respondents who said so in 2019. Interestingly, car owners' brand loyalty deepens as the price of a car rises. Forty percent of consumers who bought cars for RMB 300,000 and above say that they will choose the same brand for their next car, matching the 2019 survey result, and confirming the effectiveness of automakers' brand-building efforts. Customers in tier 3 and tier 4 cities, and those in the price range of RMB 100,000 and lower, exhibited the largest decline in loyalty. Customers' desire for trade-ups and higher-end brands, combined with limited OEM investment in brand building and the homogenization of cars, may have contributed to this shift (Exhibit 7).

Entering consumers' initial consideration set is essential

Consumers typically have an initial consideration set (ICS) of models in mind when they begin to think about buying a car. According to our research, consumers' ICS tends to comprise no more than two or three brands, and shrinks further once they learn more about the products at 4S stores. In the end, about 50 percent of final sales are from the ICS (Exhibit 8). As new entrants proliferate and incumbents launch new brands, a dazzling variety of products and offers have been introduced to the market. To beat this competition, OEMs must proactively penetrate consumers' ICS.

Importantly, the likelihood of a consumer choosing to purchase a car within their ICS appears to have decreased over the last few years; while our 2019 survey shows 62 percent of consumers did so, that number fell to 47 percent in 2021. The reason for this change could be a rise in new auto players, or an increase in the influence of social media platforms. However, even amid this decrease, nearly half of consumers ultimately chose to purchase cars that were in their ICS. This is a critical point that OEMs should not overlook.

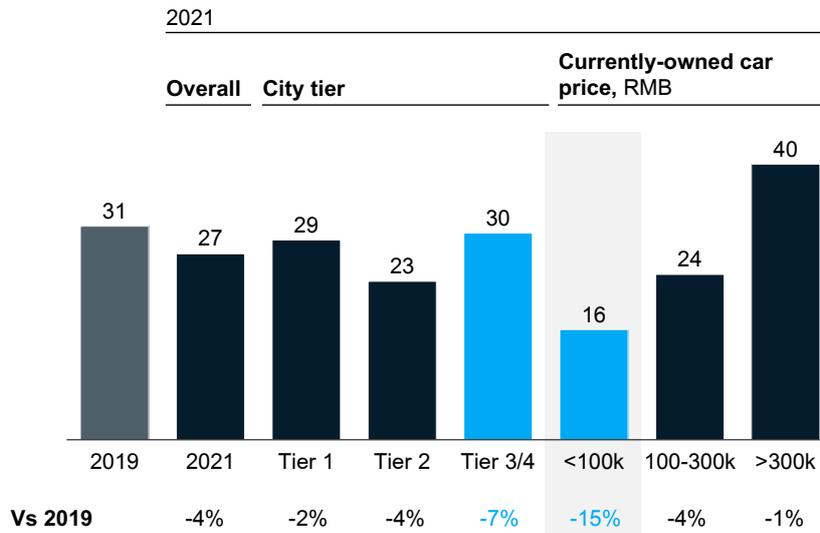
Exhibit 7

Entry segments' brand loyalty fell sharply in tier 3 and 4 cities

Overall brand loyalty decreased from 31% to 27% between 2019 and 2021

Brand loyalty, % of respondents

■ Decreased by 5% or more vs. 2019 ■ Limited changes



Potential drivers for low and reduced loyalty in <100k segment:

- Strengthening trend of trading up from entry (<100k) to mass segments (100-300k)
- Limited investment by low-price OEMs to build loyalty
- Greater variety of choices in low-price segments

Source: 2019, 2021 McKinsey China Auto Consumer Insights

Exhibit 8

Consumers have a tight Initial Consideration Set (ICS) that generates almost half of sales

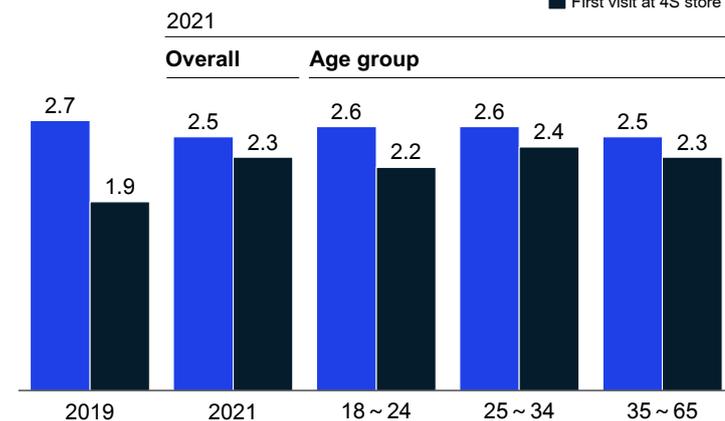
For OEMs, it is essential to get into consumers' ICS

ICS typically only comprises 2 or 3 brands

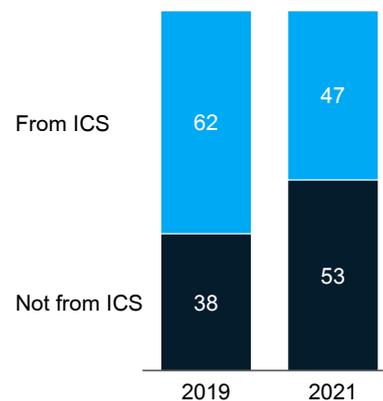
Half of final purchasing decisions are from ICS

Number of brands in ICS, # of brands

■ At idea to purchase ■ First visit at 4S store



Source of final transactions, %



Source: 2019, 2021 McKinsey China Auto Consumer Insights

Local brands have closed the gap with JVs in non-premium segments

We picked eight major vehicle attributes and asked survey participants to name any brand that they thought possessed one or more of those attributes. Our research shows that premium car owners and their non-premium counterparts focus on different attributes.

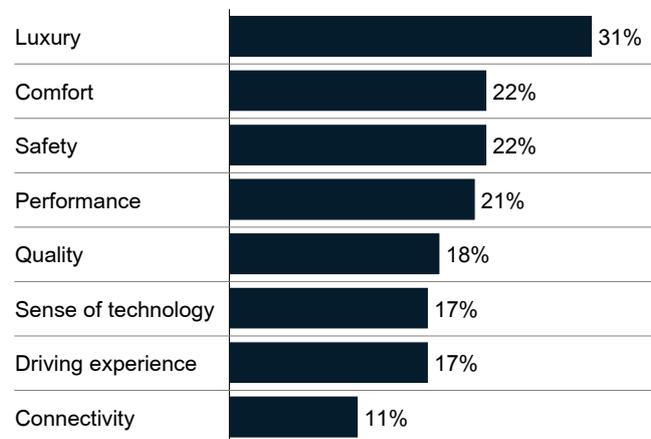
Two German brands and one Japanese brand were most frequently mentioned as premium brands, and ranked among the top five brands in at least five of the eight attributes. Another German brand fell short, while an emerging American NEV brand known for its futuristic features, as well as some luxury brands that have been diligently growing market share in China for years, also featured. Meanwhile, British and Japanese premium brands are gradually fading from the picture. And while the premium brand of a long-established state-owned automaker has managed to achieve break-through sales, its brand value needs further enhancement in order to improve recognition among consumers (Exhibit 9).

Exhibit 9

Luxury, comfort and safety are top attributes for premium brands

Two German brands and one Japanese brand received the most nominations for a position in the top five in different attributes

Consumers' perception of premium brands, % of respondents



No. of nominations in 8 key attributes for premium brands
MNC/JV vs Local brands

	MNC/JV brands	Local brands
5 times or more	3	-
4 times	4	-
1-3 times	3	-
Never in top 5	2	1

Source: 2021 McKinsey China Auto Consumer Insights

Of all the surveyed non-premium players, JV brands still received the greatest number of nominations, with three JV brands nominated more than five times. Some local brands were nominated three or four times, and eight were nominated once or twice. French and Korean JV brands, however, failed to attract any nominations (Exhibit 10).

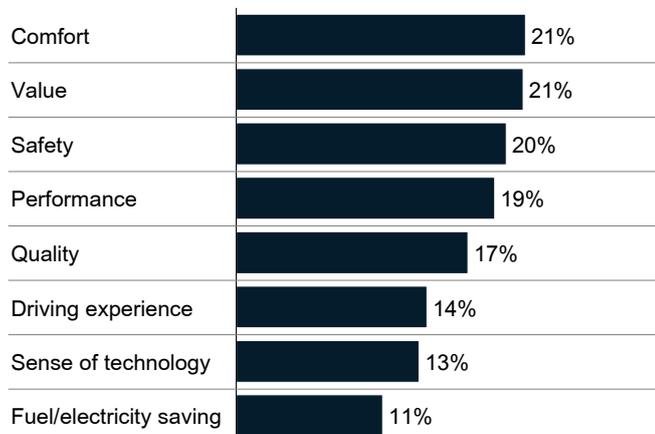
As local leaders continue to build on their strengths and break through price ceilings, they are competing directly against, and occasionally even narrowly outperforming, some second-tier JV brands. For instance, local brands hold absolute dominance when it comes to connectivity (the top five in this category are all local brands). But JV brands still enjoy a measure of superiority in safety and performance (Exhibit 11).

Exhibit 10

Comfort, value for money and safety are top attributes for non-premium brands

The gap between JV and local brands is narrowing

Consumers' brand perception of non-premium brands, % of respondents



No. of nominations in 8 key attributes for non-premium brands

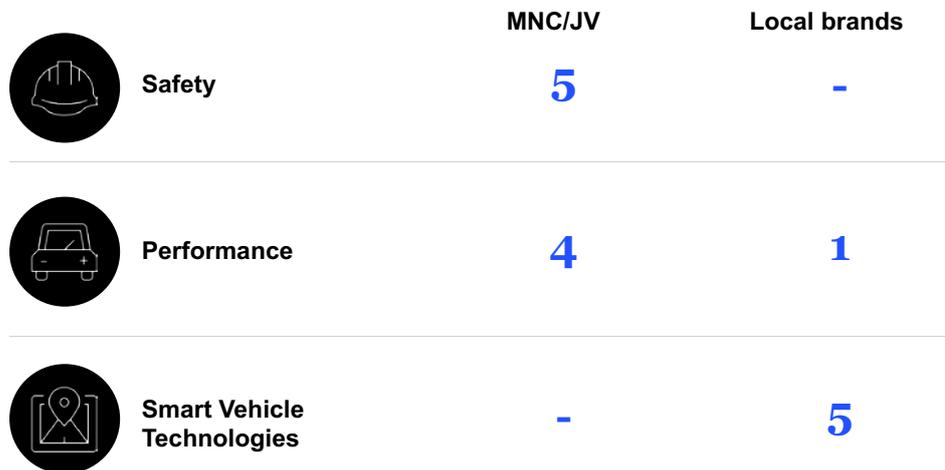
	MNC/JV brands	Local brands
5 times or more	3	-
3-4 times	2	1
1-2 times	2	8

Source: 2021 McKinsey China Auto Consumer Insights

Exhibit 11

JV brands retain top spots in safety and performance

JV brands vs local brands # of top 5 nominations in different attributes



Source: 2021 McKinsey China Auto Consumer Insights

While the battle for market share between JVs and local brands will continue, automakers that are able to precisely identify what consumers value most in a product have the best chance of winning. How to create and promote a superior brand image – and edge into consumers' ICS – will be OEMs' next focus.

Amid deep digital restructuring, omni-channel and new retail formats are vital

Key insights:

- While consumers explore various platforms and avenues to collect information, online channels are critically important
- Disconnected consumer data, and information discrepancies between online and offline channels, are key pain points for OEMs
- New retail has been widely embraced by consumers and automakers must innovate in this area to compete going forward
- Many personal car-buyers prefer to deal with OEMs directly, but OEMs are poorly prepared for those interactions

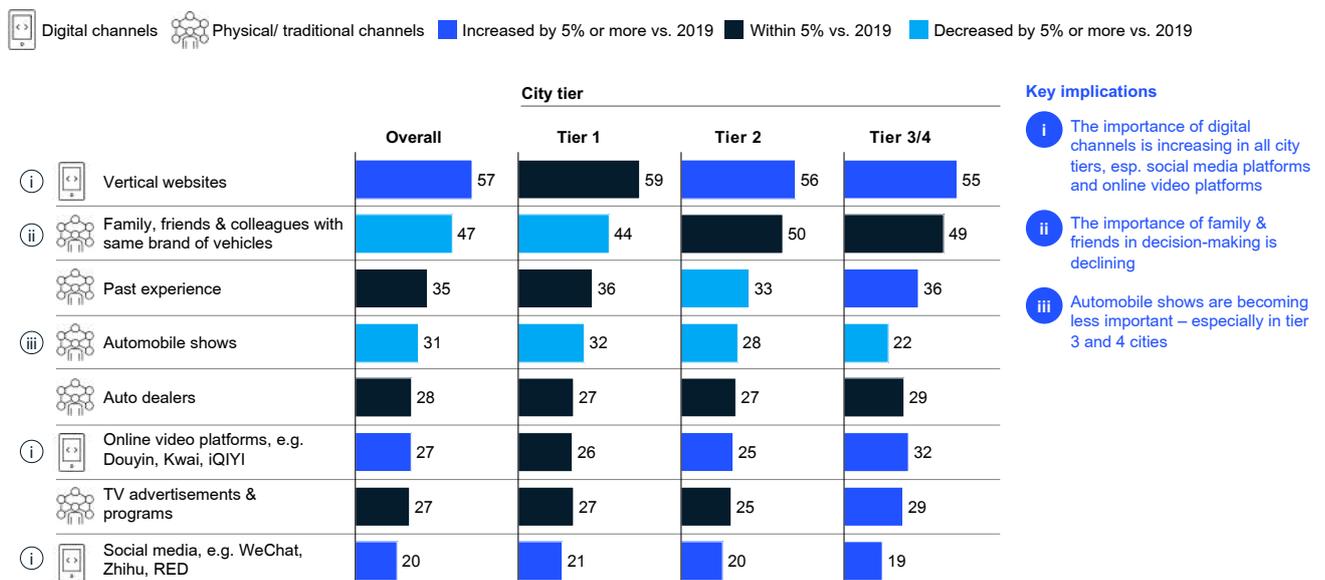
Online is replacing offline as the primary information-gathering channel in both active search and passive acquisition

While actively searching plays a decisive role when it comes to a final purchase decision, consumers usually build their ICS based on passively acquired information. That means their ICS is already crystallized before they conduct active research. As a result, finding a way into consumers' subconscious is key.

Exhibit 12

Digital touchpoints are gaining importance

Key channels for passive information acquisition (for ICS), % of respondents



Source: 2019, 2021 McKinsey China Auto Consumer Insights

Two years ago, McKinsey China Auto Consumer Insights found that friends and family were the primary source of passively acquired information. But in this year's survey, auto vertical websites are most important. This is indicative of a wider shift engendered by the pandemic; the role of digital channels, which were already critical for information-gathering purposes, increased significantly in 2020.

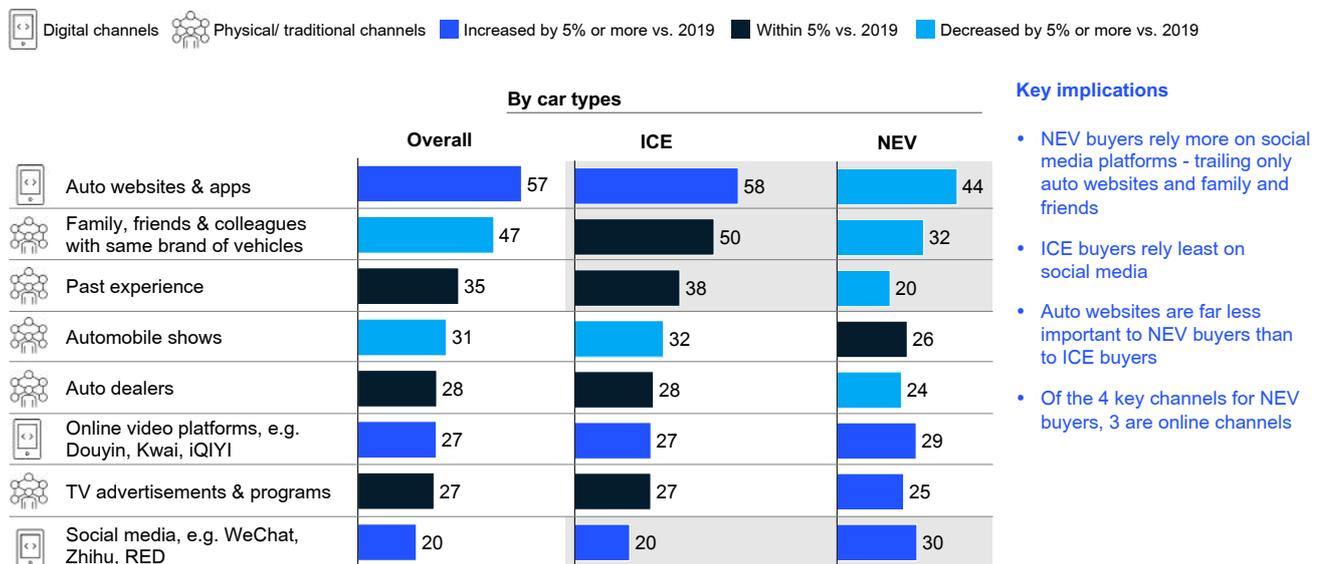
Moreover, the impact of online video platforms and social media networks is much stronger than in 2019. Fewer people are using friends and family recommendations, auto shows, and traditional offline channels as the source of their information (Exhibit 12).

NEV owners are more likely than their ICE-vehicle owning peers to use social media and video-sharing websites. Thirty percent of NEV owners said social media networks were key for passive information acquisition, while only 20 percent of ICE vehicle owners said the same. Traditional and offline channels are relatively less attractive to NEV owners, as are vertical auto websites (Exhibit 13). Apps launched by new NEV players are also competing with vertical websites for the attention of current and prospective car owners.

Exhibit 13

For NEV buyers, digital touchpoints are even more critical

Key channels for passive information acquisition (for ICS), % of respondents



Source: 2019, 2021 McKinsey China Auto Consumer Insights

When actively searching for information as part of their decision-making journey, consumers are increasingly reliant on online sources for information about brand perception, product, car appearance, price, residual value, and after-sales service. Across all information categories, consumers using online channels outnumber those using offline sources for this purpose.

Among online channels, vertical websites (e.g. www.autohome.com.cn) remain an important information source, but the popularity of other digital sources is also on the rise, spurred by the impact of the pandemic. For example, from 2019 to 2021, non-vertical sources such as video-sharing platforms expanded faster in absolute terms than vertical websites (Exhibit 14).

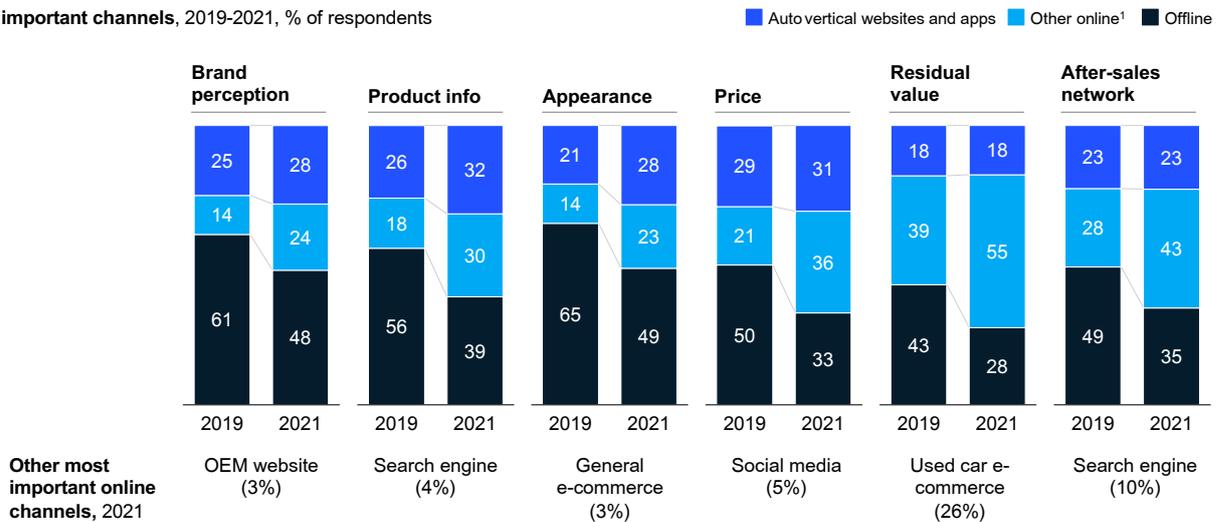
The COVID-19 pandemic has spurred the growth of online channels in China's auto market. For example, amid widespread urban lockdowns, a number of OEMs and dealers shifted to live-streaming their marketing campaigns, gaining considerable attention from consumers. One leading local player solidified its fan base by building its own app. Meanwhile, short-form video sharing platforms such as Douyin are rapidly emerging as brand marketers' preferred channel. In this increasingly diversified market, OEMs should determine the best brand promotion channels and develop a variety of information sources. In addition to using traditional vertical websites for branding, OEMs can explore new channels like private domains and short-form videos. Providing brand and product information to prospective customers in a highly targeted way that increases sales and marketing ROI (return on investment) is also a crucial concern.

Exhibit 14

Online channels have become the primary information source across all aspects, with non-vertical online channels growing the fastest

OEMs should build a comprehensive touchpoint strategy to optimize their ability to reach end customers

Most important channels, 2019-2021, % of respondents



1. Other online channels include search engines, OEM official websites, WeChat, apps, dealers' websites, e-commerce platforms of new and used cars, etc.

Source: 2019, 2021 McKinsey China Auto Consumer Insights

New service models will be the next battlefield

Our survey shows that the number of customers who favor new service models is almost the same as that of customers who prefer traditional service models. Omni-channel, or new retail, has grown from a means of generating additional value to being central to a brand's long-term development (Exhibit 15).

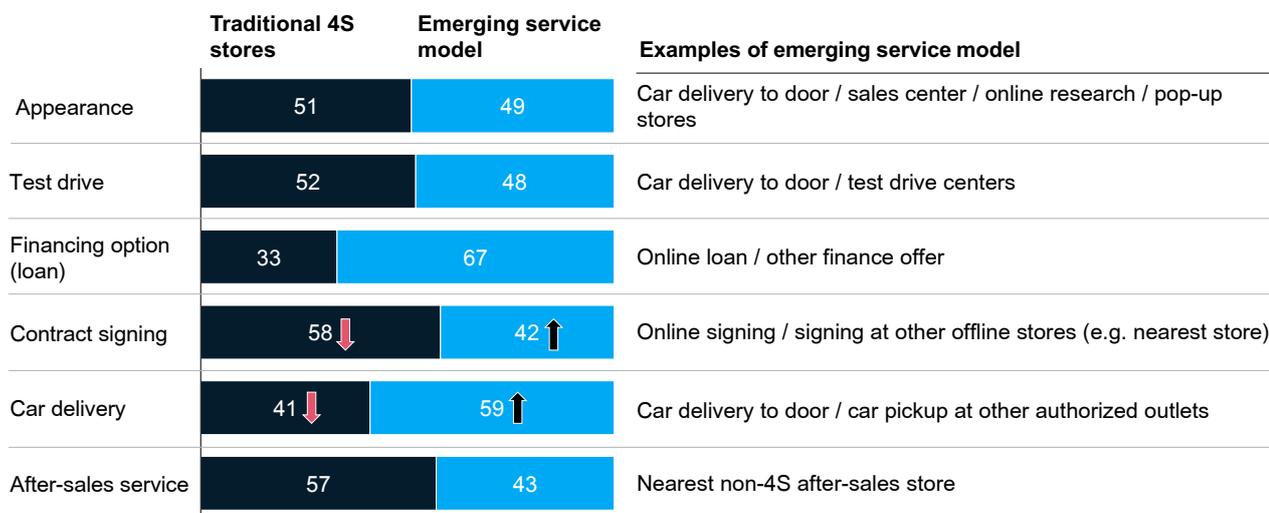
Neither new NEV players nor established car makers can afford to undervalue the power of new retail. Absent the restrictions of the dealership structure, new entrants enjoy more freedom and flexibility in piloting new retail models, such as direct distribution and O2O (online to offline). Encumbered by large dealer networks, traditional OEMs have so far adopted a more cautious approach, characterized by small-scale experiments.

Traditional players are now under pressure to devise far-reaching new retail strategies that go beyond merely launching an app or opening an online store. This demands a holistic, customer-centric approach that balances old and new, online and offline channels, and includes well-defined performance and ROI metrics. For instance, OEMs should compare ROI across different channels as they build up their sales networks. Monitoring items such as foot traffic and service quality at new assets such as car galleries and direct sales outlets, or whether an independent servicing center can optimize costs, will help OEMs judge if new retail models and services represent a smart move for their business.

Consumers welcome shift to “new retail”

Preferred channel by consumers along major offline touchpoints, % of respondents

↑ Increased by 5% pt. or more vs. 2019 ↓ Decreased by 5% pt. or more vs 2019



Source: 2019, 2021 McKinsey China Auto Consumer Insights

Consumers prefer direct interaction with OEMs

New entrants are pioneering a direct-to-customer (DTC) model that is price-transparent, service-driven, and offers flexible products, presenting a significant contrast to the traditional agency model. This is impacting consumer expectations across the market; when we asked respondents to choose between interacting directly with OEMs or third-party dealers, 25-40 percent of respondents preferred to interact directly with OEMs throughout their purchase journey (Exhibit 16).

OEMs should create more direct interaction opportunities to engage consumers

Consumers who prefer to interact directly with OEMs or third-party dealers, % of respondents



Source: 2021 McKinsey China Auto Consumer Insights

However, our research found that most OEMs fail to provide consumers with timely responses that meet their expectations – illustrating the gulf between consumer expectations for effective and personalized solutions via direct sales and the reality offered by OEMs. Bridging this gap should be a key consideration as OEMs map out future sales models.

In the NEV segment, consumers' preference for direct interactions with manufacturers is much higher, reflecting the success of the direct sales model that an American NEV manufacturer introduced to the market. These trends represent a wakeup call for traditional dealers. The dealership has long served as a major sales powerhouse for new cars, but the reality is that many dealers fall short of satisfactory service and effective communication with customers. Verbal conflicts between consumers and conventional dealers often make headline news. Auto dealers should fix these problems and strive to improve service quality, or risk accelerating consumers' migration towards direct sales.

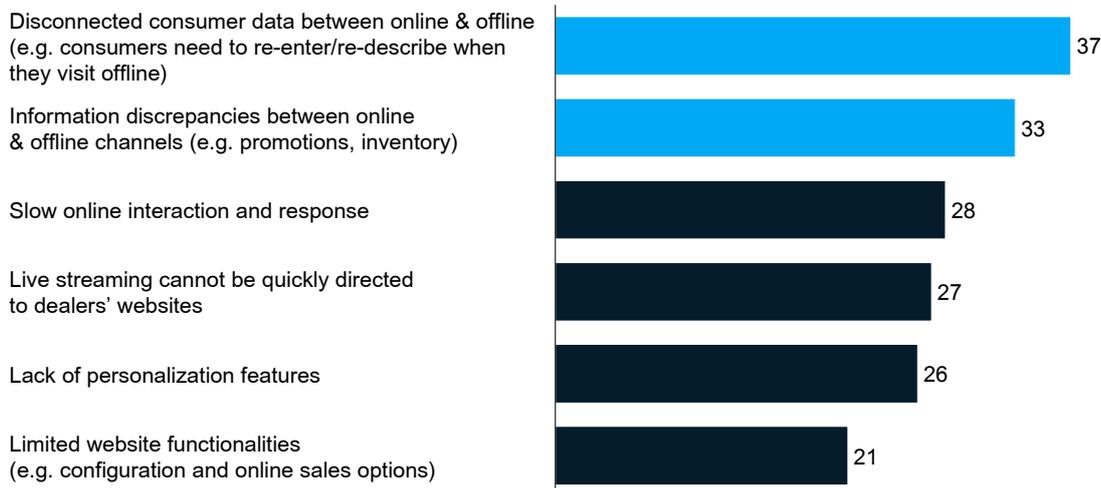
Disconnected consumer data and information discrepancies between online & offline channels are key pain points

As online channels proliferate, OEMs and dealers must act quickly to connect online and offline channels seamlessly in order to deliver a better shopping experience. Online and offline gaps, as well as information discrepancies across different channels, are the pain points most frequently reported by consumers (Exhibit 17). Removing barriers between online and offline channels, and dynamic mobilization of resources across OEMs, marketing agencies, media, and dealers, will significantly improve consumers' experience as they progress along their purchase journey.

Exhibit 17

Disconnected consumer data and information discrepancies between online & offline channels are key digital pain points

Pain points using digital touchpoints, % of respondents



Source: 2021 McKinsey China Auto Consumer Insights

OEMs should use apps to boost brand affinity

Our survey asked respondents to rank a variety of activities that boost their brand affinity. The top three results were road-tripping (47 percent), lifestyle apps (43 percent), and location-based marketing campaigns like discounts and promotions (39 percent). According to the survey, all car owners, including NEV owners, are especially interested in using lifestyle apps (Exhibit 18), because they allow car owners to develop digital communities and talk to manufacturers (including executives) directly. Apps also offer opportunities to collect data for over-the-air update technology, or OTA, and capture feedback around customer experience.

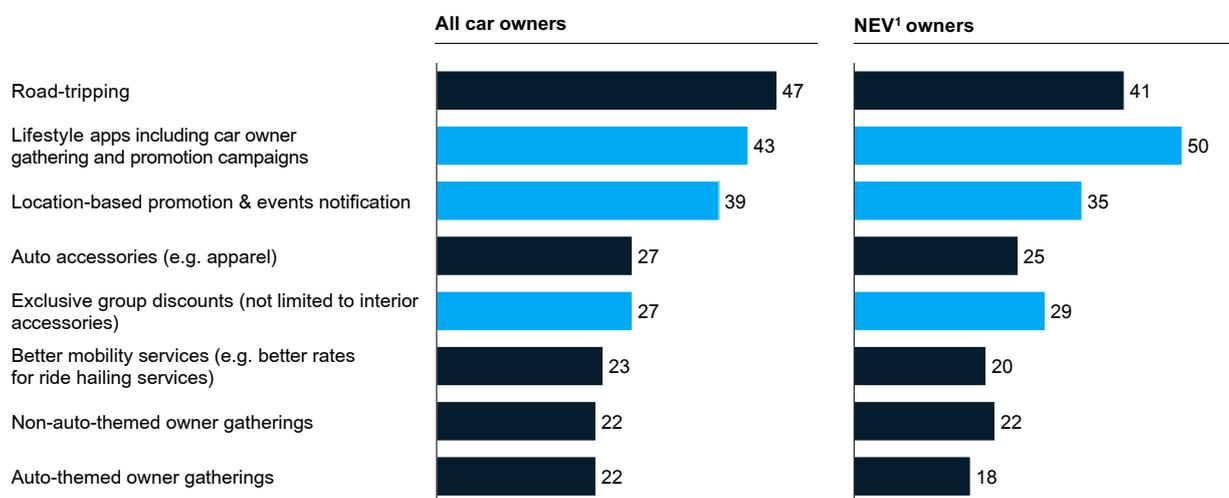
Traditional OEMs' apps, however, lag far behind in platform technology, social interface, and user feedback.

Exhibit 18

Lifestyle apps for car owners and value-added services contribute to brand affinity

Services and activities conducive to consumer affinity, % respondents

■ Product promotion/value-added services



1. Including one American and two Chinese NEV new entrants

Source: 2021 McKinsey China Auto Consumer Insights



NEVs excel as acceptance, sales, and brand stickiness increase

Key insights:

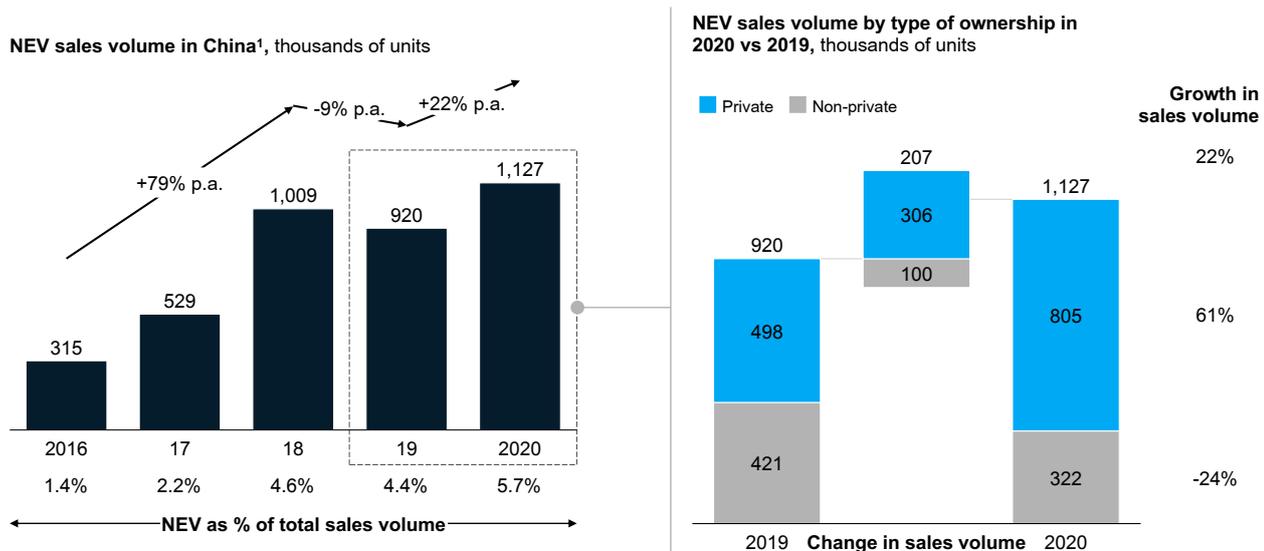
- Consumers' acceptance of NEVs increases year by year, pushing up demand for NEVs despite the wider market slump
- Brand stickiness among new NEV players has improved significantly
- Reluctant consumers are more concerned with the hassle of charging, and driving-mileage limitations, than in our previous survey

NEV sales defy the broader market downturn

In 2020, NEVs recorded impressive sales growth even as China's broader passenger vehicle market notched a third consecutive year of declining sales. The number of private NEV owners increased by 60 percent, despite further subsidy cuts, and amid shrinkage in the non-private market. Across both private and non-private sales, the NEV market grew 22 percent (Exhibit 19), helping lift the share of new energy passenger vehicles in the overall market by 6 percent.

Exhibit 19

China's NEV market recovered in 2020, with 22% YoY growth



1. Including BEV, PHEV and REEV

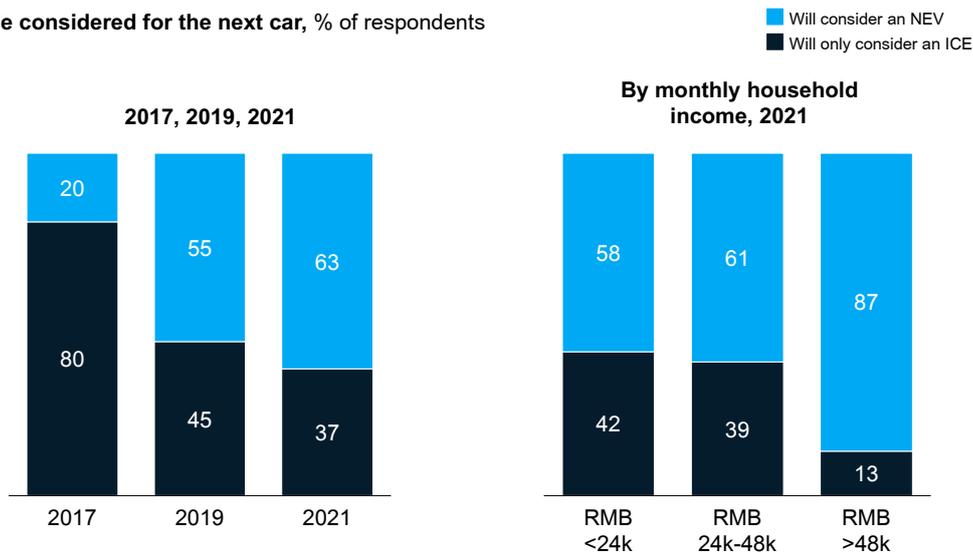
Source: China new car insurance registration database

Our study reveals that increased consumer acceptance of NEVs is a key driver of this impressive performance. From 2017 to 2021, the proportion of consumers willing to buy a new energy car climbed significantly, rising from 20 percent to 65 percent. This tendency is even stronger among high-earning households with an income of more than RMB 48,000, where nearly 90 percent are willing to buy NEVs (Exhibit 20).

Exhibit 20

Consumer acceptance of NEVs has increased significantly, esp. among high-income groups

Type of vehicle considered for the next car, % of respondents



Source: 2017, 2019, 2021 McKinsey China Auto Consumer Insights

Loyalty to new NEV brands has markedly improved

According to our survey, consumers' leading reasons for buying NEVs are environmental concern, fuel performance and being on-trend. In just two years, the number of consumers who say that they solely wish to buy NEVs has increased nearly 50 percent – an unprecedented jump. The extraordinary success of one American NEV maker, as well as new domestic players, appears to have impressed consumers and visibly increased NEV brand stickiness (Exhibit 21).

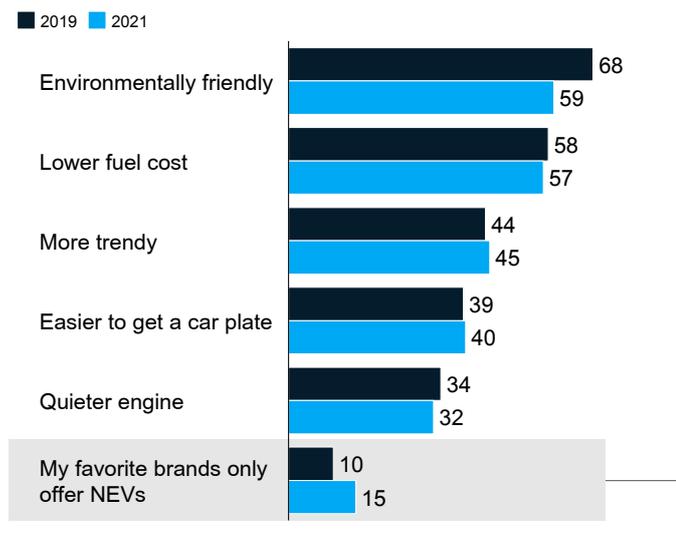
Charging and range limitations continue to stall NEV development

During in-depth survey discussions, consumers suggested that they were more concerned about driving range, the availability of charging facilities, technology maturity, and safety than ever before (Exhibit 22). News stories covering the challenges consumers face charging the vehicles, driving ranges failing to live up to marketing claims, and NEV battery fires, have fueled their concerns. Consumers continue to seek longer driving ranges, and the number who set their minimum driving range at or above 600 kilometers on a full charge is notably higher in 2021 than two years ago. Companies must work together in the long run to alleviate consumers' concerns about NEVs, while more effectively satisfying their technological needs.

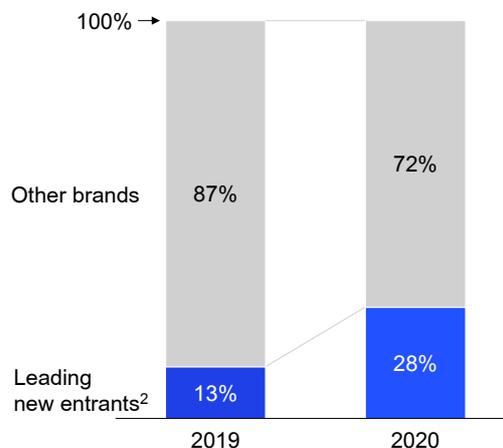
Exhibit 21

Some consumers' affinity for new NEV entrants is increasing

% of respondents



NEV market concentration¹, sales volume, %



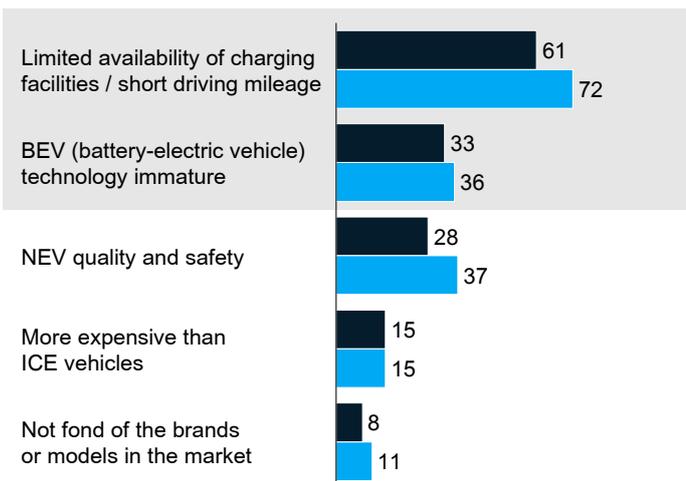
1. Including BEVs and E-REVs
 2. Include one US and 4 new local BEV brands

Source: 2019, 2021 McKinsey China Auto Consumer Insights

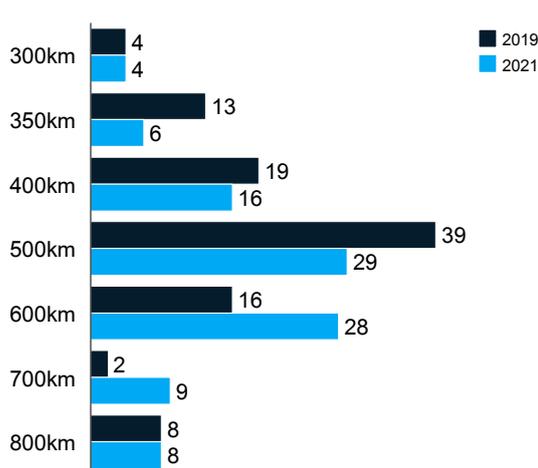
Exhibit 22

Concerns about charging facilities and driving range are the main factors preventing consumers from choosing NEVs

Reasons not to buy NEV,
% of respondents



Expected driving range per charge,
% of respondents



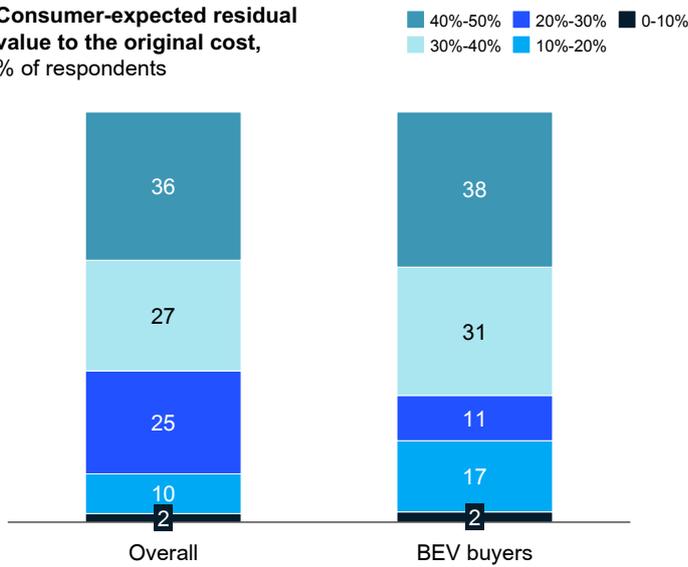
Source: 2019, 2021 McKinsey China Auto Consumer Insights

Residual value is another persistent constraint on NEV industry growth. Our survey shows consumers' expected NEV residual value is inching closer to that of ICE vehicles (Exhibit 23). Interestingly, improvements in NEV technology are expected to narrow the residual value gap between NEVs and ICE vehicles in the near future.

Exhibit 23

Close to 70% of BEV owners hope their car's residual value is 30%-50% of the original cost five years after purchase

Consumer-expected residual value to the original cost, % of respondents



The residual value gap between ICE vehicles and NEVs results from **consumers' concerns about battery quality and durability and the fast iteration of new energy technology.**

The advancement of NEV technology and improvement in battery performance are slowing down, which will narrow the residual value gap accordingly.

Source: 2021 McKinsey China Auto Consumer Insights

OEMs can capitalize on demand for new technology

Key insights:

- The appeal to consumers of ADAS (advanced driver-assistance systems), connectivity and autonomous driving is growing; but consumers' willingness to pay varies for different features
- Consumers are willing to pay for over-the-air update technology, or OTA, and autonomous driving; OTA will be a consistent revenue stream for OEMs

Smart vehicle technology can enable OEMs to thrive

Given the diversity of consumer demands, OEMs should avoid lumping smart vehicle configurations together indiscriminately. By first listening to consumers, OEMs can offer configurations that customers are interested in and willing to pay for. ADAS, connectivity and autonomous driving emerge as key features, and are important to more than 80 percent of our respondents. However, only 10-40 percent of consumers are willing to pay for them (Exhibit 24).

Exhibit 24

A majority of consumers note the importance of smart vehicle features, and 10%-40% are willing to pay for them

Autonomous driving features have the highest perceived value

		% of consumers think it is important	% of consumers willing to pay	Amount willing to pay per feature, RMB	Top features
ADAS (L2)		88%	10%-35%	2200 - 4100	Collision avoidance / pre-collision system Adaptive cruise control (ACC) Lane keeping assist system
Connectivity		87%	10%-40%	1700 - 2800	In-car payment After-sales services e.g. on board diagnostics, maintenance reservation Voice recognition and vehicle-human interaction
Autonomous driving (L2.5/3)		80%	15%-30%	3800 - 4900	Autonomous parking after driver leaves Autonomous distance-keeping in traffic jams Autonomous driving on expressways

Source: 2021 McKinsey China Auto Consumer Insights

Consumers think that ADAS, or L2 autonomous driving, is more important than advanced autonomous driving (L2.5/3), and are more willing to pay for it. That said, consumers are willing to pay a higher price for autonomous driving features. In our 2019 survey, 25 percent of consumers believed that autonomous driving was too implausible to consider – but this year, that number has fallen to 20 percent. As time goes on, it is likely that more consumers will include autonomous driving in their next purchasing decision.

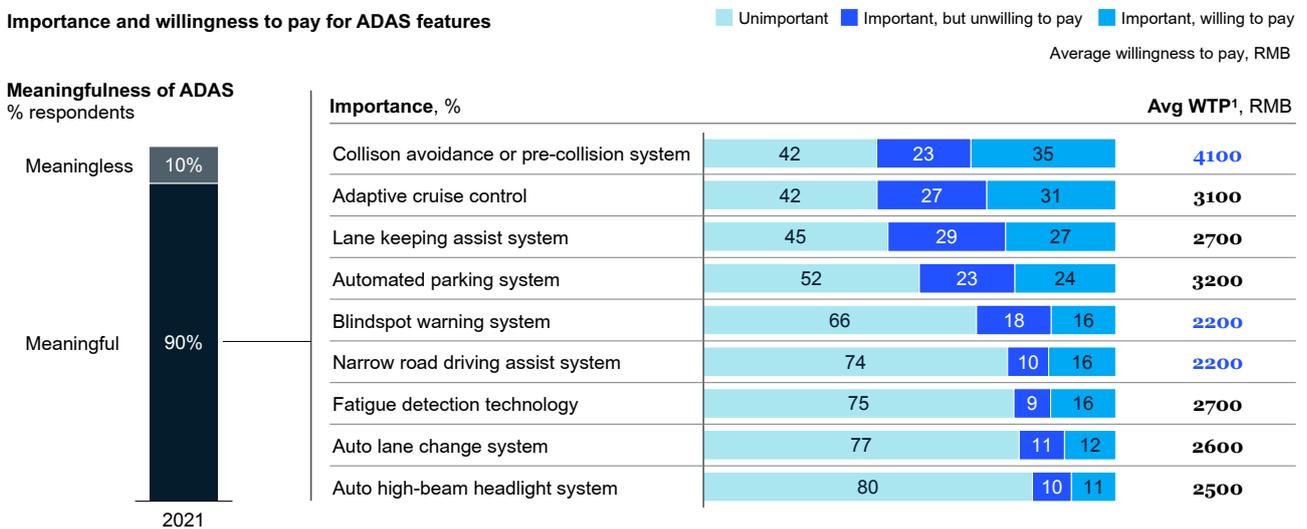
As for ADAS, the features that consumers believe to be important and are willing to pay for include collision avoidance, adaptive cruise control, and lane-keeping assistance systems, among others (Exhibit 25). This exhibit, along with the following related exhibits, shows consumers' preferences for different configurations, and should not be misinterpreted as consumers' willingness to buy all these configurations at the given price on the chart.

Exhibit 25

Within ADAS, consumers are most willing to pay – and pay the most – for collision avoidance or pre-collision systems

Followed by adaptive cruise control and lane keeping

Importance and willingness to pay for ADAS features



1. Willingness to pay; excludes respondents unwilling to pay

Source: 2021 McKinsey China Auto Consumer Insights

Of the connectivity features discussed, consumers most value in-car payment, after-sales service, and voice recognition, and are willing to pay for them, demonstrating support for features that improve efficiency and convenience (Exhibit 26). Consumers' willingness to pay is relatively low for items like advanced navigation and mobile remote control, while the cost of these features is relatively high. OEMs may consider embedding these features in their premium products, or attracting interested customers by pre-installing the hardware, and allowing its activation OTA.

When it comes to autonomous driving, the features that consumers rank highest in importance and willingness-to-pay are autonomous parking, autonomous distance-keeping in traffic jams, and autonomous driving on expressways (Exhibit 27). The latter has received a great deal of media attention since it was first introduced, and consumer interest and willingness to pay may rise as a result.

Within connectivity, consumers are most willing to pay – and pay the most – for in-car payment

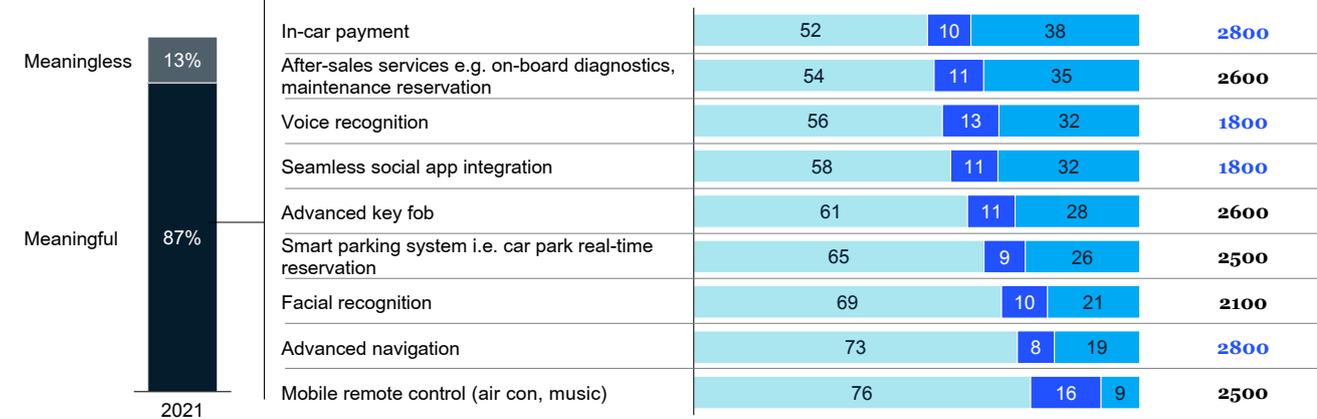
Followed by digital after-sales service

Importance and willingness to pay for connectivity features

Unimportant Important, but unwilling to pay Important, willing to pay

Average willingness to pay, RMB

Meaningfulness of connectivity, %



1. Willingness to pay; excludes respondents unwilling to pay

Source: 2021 McKinsey China Auto Consumer Insights

Within autonomous driving, autonomous parking and autonomous distance-keeping in traffic jams are consumers' top choices

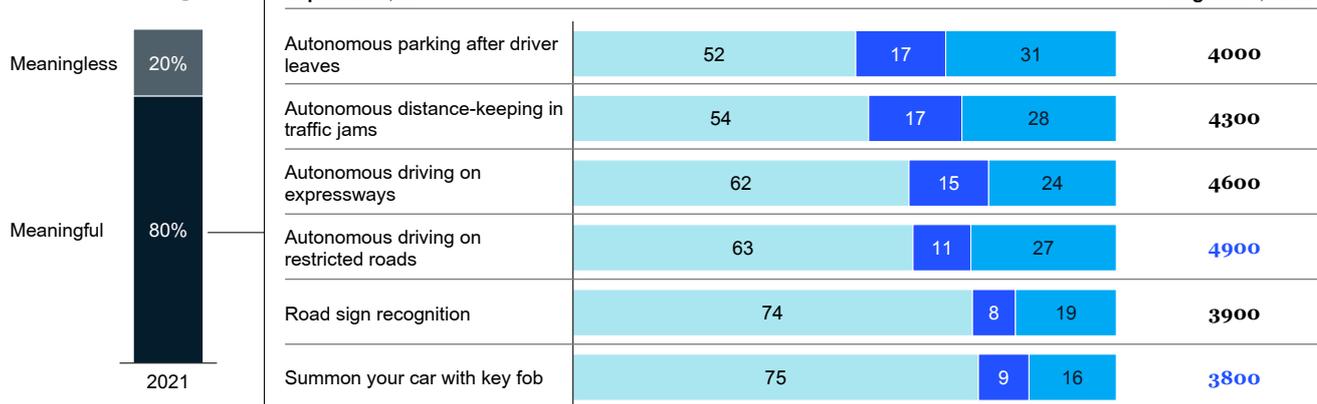
Autonomous driving on restricted roads has the highest perceived value

Importance of and willingness to pay for autonomous driving features

Unimportant Important, but unwilling to pay Important, willing to pay

Average willingness to pay, RMB

Meaningfulness of autonomous driving, %



1. Willingness to pay; excludes respondents unwilling to pay

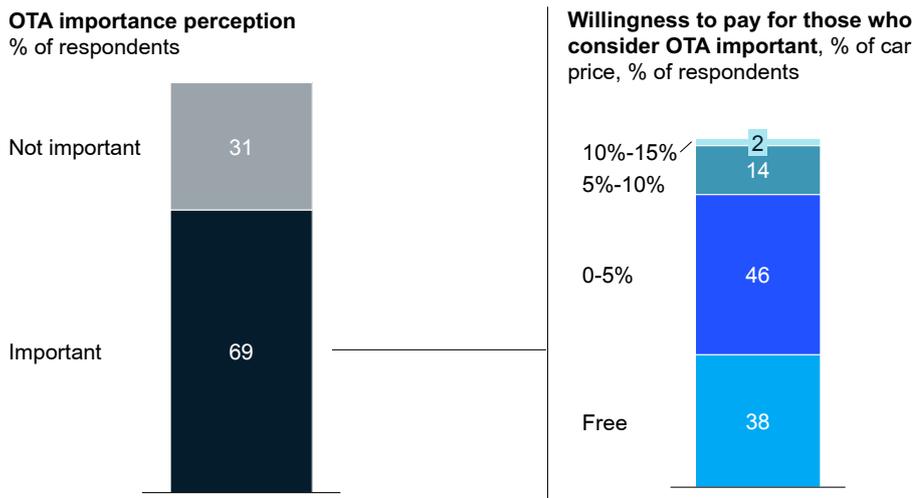
Source: 2021 McKinsey China Auto Consumer Insights

OTA is a potential revenue stream

While it is important for OEMs to understand which features consumers are willing to pay for so they can optimize their initial product configuration accordingly, it is also critical to provide OTA services. According to our survey, 69 percent of respondents think that OTA is an important way to upgrade vehicles without changes to hardware, and 62 percent of those are willing to pay for it (Exhibit 28). In our view, the numbers are high enough for OEMs to consider developing OTA as a new revenue stream.

Exhibit 28

OTA is critical, with ~50% of consumers willing to pay for it



Source: 2021 McKinsey China Auto Consumer Insights

A closer look reveals that customers are especially willing to pay for upgrading autonomous features via OTA services. Consumers also prefer OTA upgrades for the powertrain, braking system, and battery management, as well as ADAS updates (e.g. adaptive cruise control). If properly utilized, OTA can offer a sustainable revenue stream for OEMs, elevate car owner experience and satisfaction, and lift brand image (Exhibit 29). Cultivation of consumer habits will also be critical for OTA revenue at scale. Automakers could offer free OTA updates and upgrades around functions that consumers value, but are unwilling to spend money on. Once consumers have become accustomed to using OTA services, automakers could consider charging consumers for the use of functions that they are willing to purchase (e.g. the powertrain, braking system, ADAS, or autonomous driving), which will generate consistent revenue down the line.

Consumers are willing to pay more for OTA autonomous driving and battery management systems

OTA importance perception, % of respondents	Willingness to pay for OTA features, % of respondents						
	Desire but do not want to pay	RMB 1-999	RMB 1000-1999	RMB 2000-3999	RMB 4000-5999	RMB >6000	
Powertrain and braking	31	15	40	21	11	5	7
ADAS	29	23	28	26	7	5	11
Voice interaction	28	32	24	23	6	6	6
Autonomous driving	27	14	21	26	9	10	20
On-board system	26	28	29	14	11	5	12
Battery management	26	24	25	24	8	5	13
Map	25	49	27	8	6	5	5

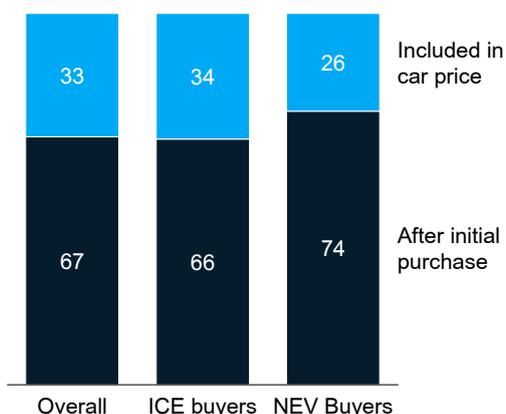
Source: 2021 McKinsey China Auto Consumer Insights

In the survey, 67 percent of respondents claimed that they will think about purchasing an autonomous feature after the initial purchase, indicating that autonomous features may be a potential generator of additional revenue. Respondents did not show a particular preference for a payment method. Monthly subscriptions, one-off payments, and pay-per-use options each garnered the support of one-third of respondents. Based on their individual characteristics, automakers can design payment options that best suit their target consumer groups (Exhibit 30).

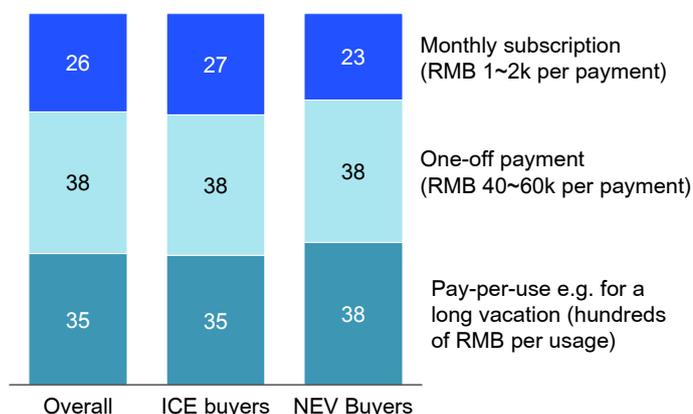
60-70% of consumers are open to paying for autonomous driving after initial car purchase

Autonomous driving may represent an additional revenue stream for OEMs

Preferred payment method for autonomous driving, % of respondents



Preferred non-initial car purchase payment options, % of respondents



Source: 2021 McKinsey China Auto Consumer Insights

Shifting auto needs demand innovative business models

Key insights:

- As a result of the COVID-19 pandemic, consumers increasingly value the safety of a private vehicle and the protection that it provides against contact with the public, but are also more open to a variety of options for vehicle ownership, including via leasing

The pandemic reinforced private vehicles as the safest mobility solution

COVID-19 changed people's choices around mobility. Our survey shows that convenience is still the main reason for buying a car, but the importance of safety is ranked higher than before; 57 percent of respondents from the 2021 survey view safety as an important feature, versus 48 percent in 2019. Probing more deeply, over one-third of consumers said that owning a car helps protect them from public health hazards, indicating that respondents believe traveling in a private vehicle may reduce the risk of exposure to COVID-19 or other contagious diseases (Exhibit 31).

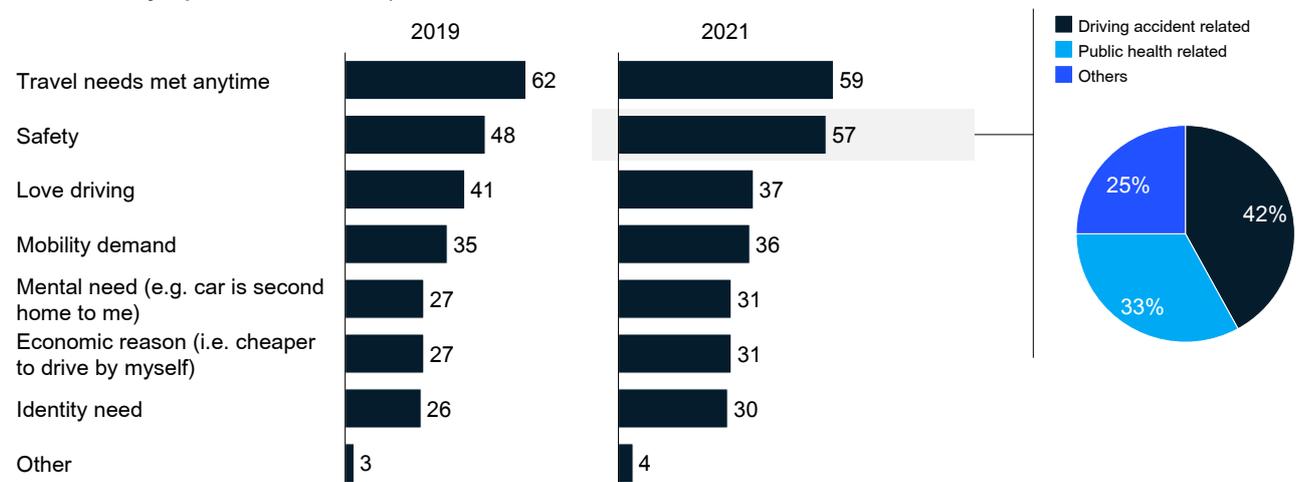
Exhibit 31

Consumers value safety of private cars more than ever

Public health concerns arise as an important factor for private car purchases post-COVID

Despite a vast array of mobility options, consumers still value private cars

Reason to buy a private car, % of respondents



Source: World Bank; 2019, 2021 McKinsey China Auto Consumer Insights

Consumers want flexible private car access and ownership

Aside from purchasing, consumers can access private cars via long-term rentals or leases, options that have been around for a while, but are more popular today than they were even a year ago. Fifty-two percent of respondents are willing to consider a three-year leasing model, and 57 percent are willing to consider a one-year car lease. In particular, consumers whose monthly household income is above RMB 48,000 are most interested in driving rentals. As a result, increasing leasing market share may offer a new frontier for OEMs (Exhibit 32).

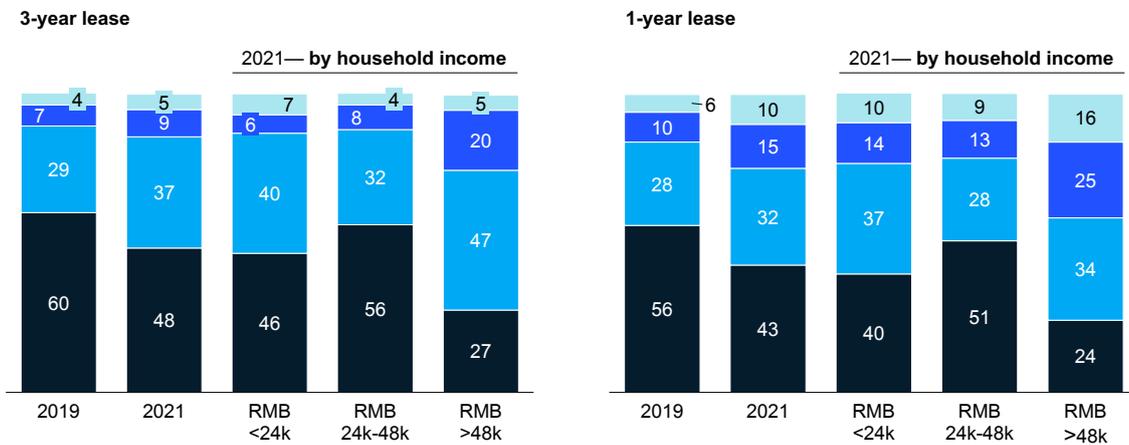
Exhibit 32

About 55% of consumers are open to more flexible options for car ownership

High-income consumers are especially interested

Yearly car rental cost that consumers agree to pay, % of respondents

30% or above of the budget of next car
25% of the budget of next car
20% of the budget of next car
No, I would buy my own car



Source: 2019, 2021 McKinsey China Auto Consumer Report

Conclusion: Implications for auto OEMs

At the beginning of 2020, the COVID-19 outbreak decimated China's auto industry. In the latter half of the year, the market experienced a strong recovery, alongside vigorous growth in the NEV sector as new entrants made waves in the capital market. In order to secure a strong foothold in this fiercely competitive auto market going forward, auto OEMs should champion customer-centric principles and apply them to every aspect of the value chain, from products and customer management to omni-channel marketing and business model innovation. In particular, OEMs should consider:

Creating a differentiated strategy centered on customer experience: China's established auto supply chain and ecosystem is expected to drive homogenization in the mass passenger vehicle segment for the foreseeable future. As consumers who are buying additional family vehicles tend to repurchase or upgrade their cars, OEMs need to design distinctive customer experiences based on a vehicle's entire lifecycle. Unique features and top-of-the-line performance will be key to gaining an advantage over competitors.

For sweet spots like the RMB 200,000-300,000 price range, high-end manufacturers need to find an equilibrium between lowering price and preserving the brand premium, while also seeking to develop a more impressive offering in the entry-level premium segment.

Repositioning brands for the modern consumer: Younger consumers' perceptions of auto brands differ significantly from those of older generations, thanks to electrification and smart vehicle features. OEM partners – especially legacy JVs – must evolve in accordance with these shifts. This is a pivotal moment for JVs to decide whether they will endure in an era of automation, connectivity, electrification, and smart mobility (ACES) technologies.

Developing omni-channel marketing and customer operations: Consumers are curious and excited about new retail opportunities, and interested in engaging directly with OEMs. The industry should respond by improving customer operations, creating more innovative service models, or refining existing dealership networks to provide holistic and improved service solutions throughout the customer lifecycle, from pre-purchase to trading-up. While boosting profits and investing to enhance brand recognition, OEMs should closely monitor cost optimization and ROI.

Experimenting with innovative business models: Many customers increasingly view vehicles as "smartphones on wheels", while OTA and vehicle connectivity offer OEMs the chance to experiment with new revenue models. OEMs should stay ahead of the curve by designing appropriate technology applications and go-to-market strategies. That means investing in features and configurations that truly make a difference and address consumer pain points, even as they develop pricing plans that boost customer satisfaction and revenue. Meanwhile, MaaS is an increasingly popular concept, and OEMs should innovate accordingly.

About the McKinsey Auto Consumer Insights Survey 2021

The report is based on an extensive survey of China's auto consumers.

- The survey started in the fourth quarter of 2020, and ended in the first quarter of 2021
- We interviewed 2,396 people both online and offline, covering 19 major cities from the first tier to the fourth tier across North China, Northeast China, East China, South-central China, Southwest China, and Northwest China
- Survey questions addressed major touchpoints along the purchasing journey, including brand and channel preferences, pricing, product preferences, brand loyalty, smart car technology preferences, and after-sales behavior

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