strategy&
Part of the PwC network

eReadiness 2022

3rd edition

Survey Report - Extract

Customer needs and recommended actions for OEMs

July 2022

This study provides updated perspectives on the short-term development of the e-mobility business in 7 European markets

About the Study

Context

- Over the last few years, OEMs have made significant investments for the electrification of vehicles, which have not yet been fully converted into relevant revenue streams despite the share growth registered in the first half of 2022
- OEMs have continued their investment in e-mobility throughout the COVID-19 outbreak and, more recently, are facing the challenges induced by the Russia-Ukraine war – OEMs need to re-define their market approach to maximize the return on investments

Survey Goals

- PwC Strategy& has launched the **3rd edition of the eReadiness** pan-European study to capture market perspectives and help OEMs identify the most viable options to ensure short-term commercial effectiveness
- The study focuses on two different architectures of electric vehicles, Battery Electric Vehicles (BEV) and Plug-in Hybrid Vehicles (PHEV), subsequently jointly referred to as EVs, to simplify the reading
- The study took the form of a consumer research sample focusing on **7 European markets**: France, Germany, Italy, Norway, Spain, Switzerland and the United Kingdom

Sample & Methodology

- **4,600+ consumers surveyed** through a web-based tool collecting answers across the 7 markets in scope
- **Consumer research sample**: representative sample of the driving population of each market in scope
- **eReadiness index**: comprehensive index of the maturity of EV markets, of the countries in scope, built on 4 main dimensions: government incentives, infrastructure, supply and demand

Source: Strategy&

The 3rd edition of the eReadiness study presents four additional topics compared to previous years' editions

eReadiness study 3rd edition – Key new topics

What's *new!* in the 3rd edition of the eReadiness study?

1	**Enlarged scope**	• An enlargement of the scope of our assessment - *from six to seven countries* - with the inclusion of the United Kingdom
2	**eReadiness index**	• Definition of a methodology to build an eReadiness index measuring the readiness of the countries in scope across four dimensions
3	**EV charging**	• Deep-dive on the domestic EV charging infrastructure selection (reasons to buy it inc. customer journey) and on the experience in on-the-go charging
4	**EV Residual value**	• Understanding the importance of, and the consumer perception in relation to, the residual value of EVs

Source: Strategy&

Key insights from the consumer research sample

Consumers demand

- Consumers show a **strong interest in e-mobility**, with 55% of the surveyed consumers disclosing an intention to buy an EV in the next 2 years
- **EV Owners** continued the growth seen last year, reaching 6% of the panel. They are mainly **high-income, middle-aged males living in city centres** with access to private parking spaces
- **EV Prospects** (63% of the panel) have **~50% lower income** than EV Owners. Of the 6 personas identified, Dreamers, Luxurious and Tech Enthusiasts, are the 3 determined to have the greatest intention of buying an EV and **represent 40% of the demand** in the next 2 years
- **Sceptics** (31% of the panel) are **predominantly women** with a lower disposable income than prospects and **c. 10 years older than prospects**
- **Online vehicle sales** represent 10% of EV sales, yet **55% of consumers would buy their next vehicle online** driven by convenience and price transparency
- **Charging infrastructures are in demand**, with 57% of consumers buying solution bundles with the EV, and an additional 14% purchasing private charging infrastructures independently after the vehicle
- **Used EV Owners are increasing** (20% of EV Owners panel), mostly represented by less wealthy customers compared to new-EV owners

eReadiness Index – *It indicates a relative level of maturity for e-mobility*

- **Norway** stands out as the **most prepared country** for e-mobility across all dimensions (Government incentive, Infrastructure, Supply, Demand)
- **Spain and Italy registered the lowest score** mainly due to the lack of infrastructure - Spanish government adopted a generous incentive policy to promote EV adoption
- **Italy shows great intention to buy** which has not translated yet into substantial EV sales
- **France** has an **average level** of **infrastructure development** which, coupled with a higher level of incentives, could **result in a larger uptake of EVs**
- **UK** shows a **good level of consumer demand** sustained by the EV infrastructure but limited incentives for consumer EV sales
- **Switzerland** ranks second in the eReadiness index with a **high level of demand supported by solid EV infrastructure**

Source: Strategy&

Agenda

1. **Consumers viewpoint**
2. eReadiness Index
3. Recommendations on the way forward

Consumers have been grouped into 3 main clusters: EV owners, EV prospects and EV sceptics

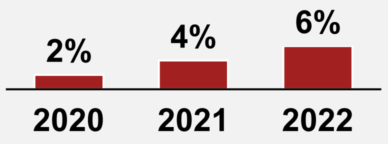
Consumer survey – Clusters and investigation areas

% ***B2C Customers Sample**: #4,607 respondents*

Description / Size | Focus area | Outcome

1 EV owners

- People who currently own an EV

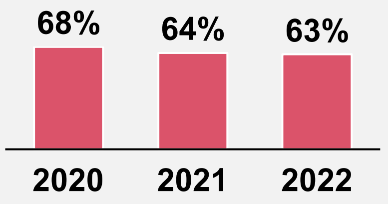


- Who are EV owners
- What has been their customer journey
- What are their usage habits

Best practices and lessons learnt to be leveraged to define EV specific customer journey

2 EV prospects

- People who have declared their intention to buy an EV in the next 5 years

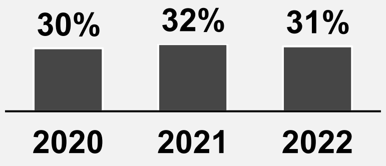


- Who are the key personas and their distinctive traits
- What is their intention to buy an EV
- What are key reasons to buy

Key customer profiles, with associated demographics and needs, to support targeting actions of OEMs

3 EV sceptics

- People who have declared their intention not to buy an EV in the next 5 years



- Who are EV sceptics and what are their distinctive traits
- Why they are sceptics and what are their main reasons for rejecting EVs

Concerns and purchasing barriers to be addressed by OEMs communication to stimulate intention to buy

Source: Strategy& analysis on feedback from B2C survey

EV owners, EV prospects, and EV sceptics display some specific traits with regard to income, mobility needs and demographics

Consumer survey – Cluster profiles

	1 EV owners	2 EV prospects	3 EV sceptics
What is your annual income?	€ 74k	€ 48k	€ 40k
How many km do you commute daily?	29 km	26 km	21 km
Do you have a private parking spot at home?	88% yes	79% yes	71% yes
What is your gender?	52% male	52% male	43% male
What is your age?	41 years	44 years	53 years
What is your family size?	3.0 people	3.0 people	2.6 people
Where do you live?	79% in urban areas	78% in urban areas	67% in urban areas

Source: Strategy& analysis on feedback from B2C survey

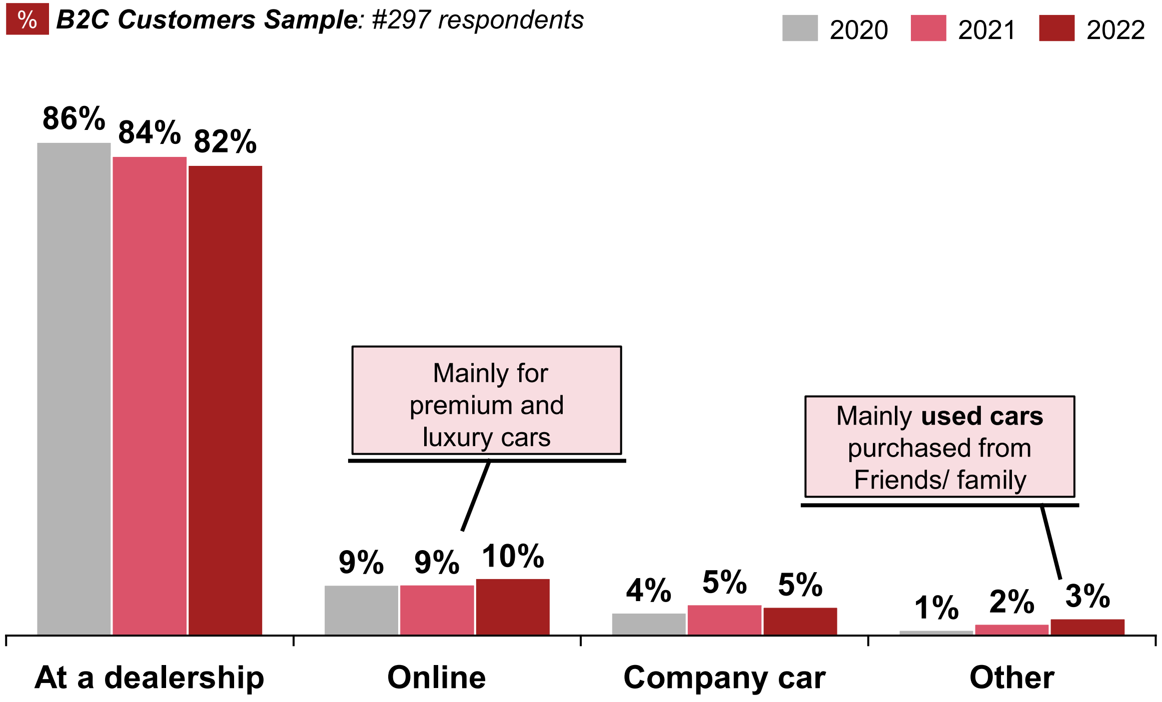
1 EV owners

The main purchase channel for EVs is via dealers, although 55% of respondents would consider buying online their next vehicle

EV purchase method

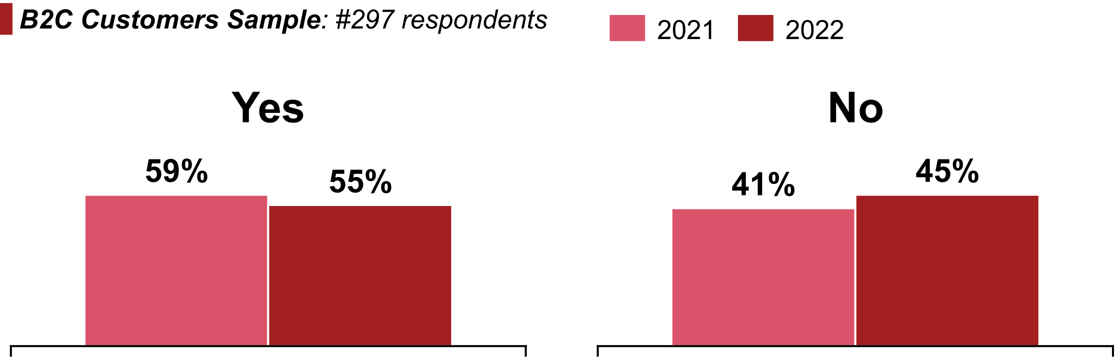
Where did you buy it?

% ***B2C Customers Sample**: #297 respondents*



Would you buy your next EV online?

% ***B2C Customers Sample**: #297 respondents*



Drivers		Barriers	
1	**Price advantage** (Higher discounts, promotions)	1	**Need to experience the car** (Touch & feel, size, etc.)
2	**Convenience** (Opening time/ days, dealership distance, etc.)	2	**Preference for face-to-face interaction with salesman**
3	**Product availability** (Stock availability with specific accessories)	3	**Limited trust in performing large transactions online**

Note: percentages may not total 100% due to rounding
Source: Strategy& analysis on feedback from B2C survey

1 EV owners

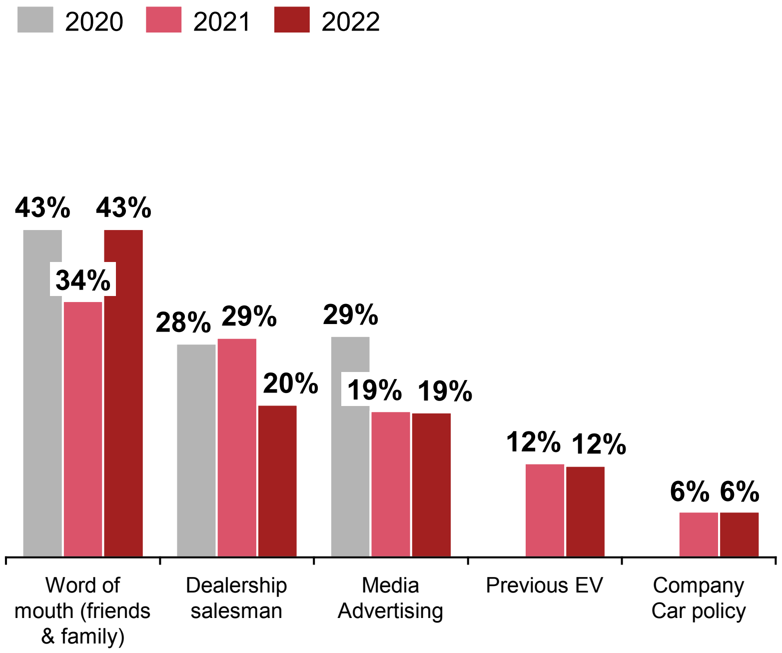
Customer satisfaction with the purchasing experience decreased with fewer customers being extremely satisfied

EV customer journey

How did you begin to consider buying an EV?

% ***B2C Customers Sample**: #297 respondents*

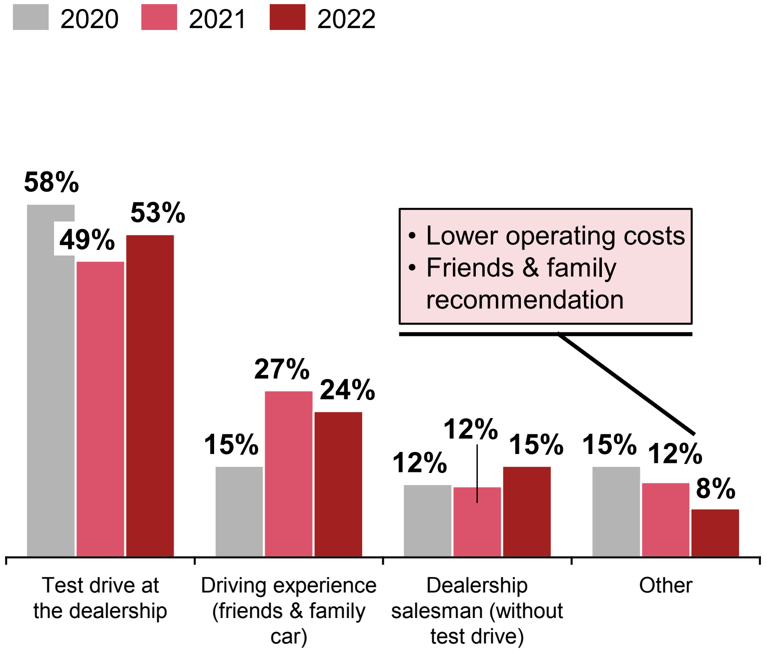
Consideration



What was the deciding factor that led you buying it?

% ***B2C Customers Sample**: #297 respondents*

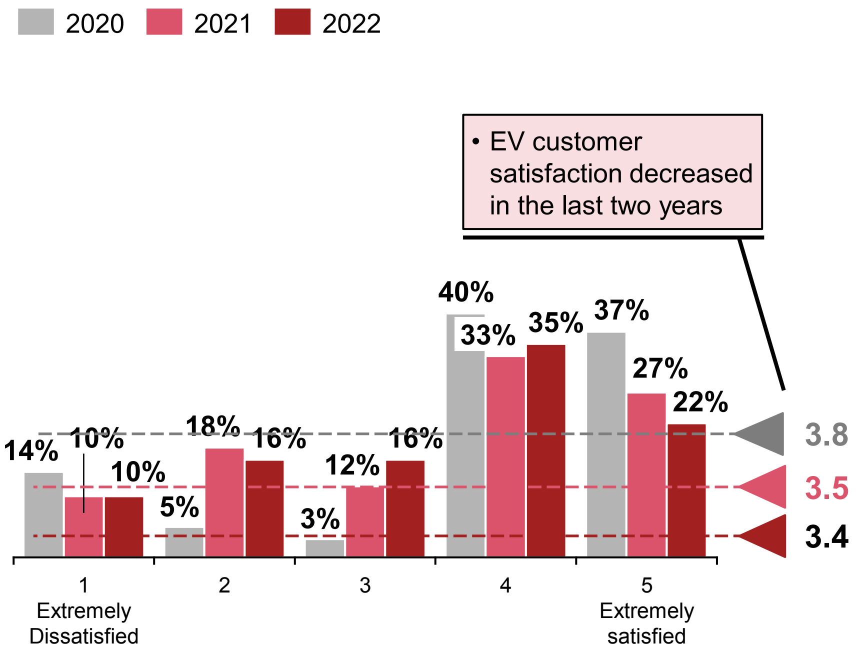
Purchase



How satisfied were you with the overall purchasing process?

% ***B2C Customers Sample**: #297 respondents*

Loyalty



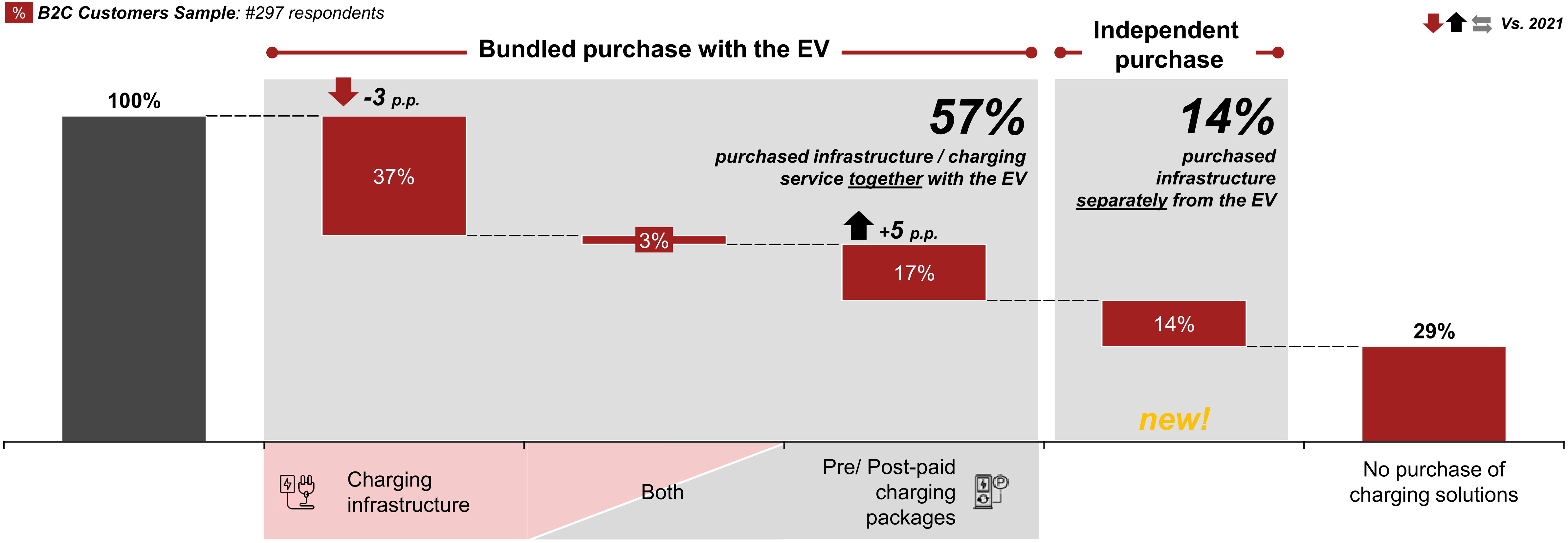
Note: percentages may not total 100% due to rounding
Source: Strategy& analysis on feedback from B2C survey

EVs and charging solutions are typically bought in a bundle, yet 14% of customers purchased it separately from the EV

EV charging infrastructure and services (1/3)

What additional charging infrastructure / services did you buy together with your EV?

% ***B2C Customers Sample**: #297 respondents*



Note: percentages may not total 100% due to rounding
Source: Strategy& analysis on feedback from B2C survey

72% of surveyed EV owners primarily charge their EV at home/ office, yet consumers relying on public charging are increasing

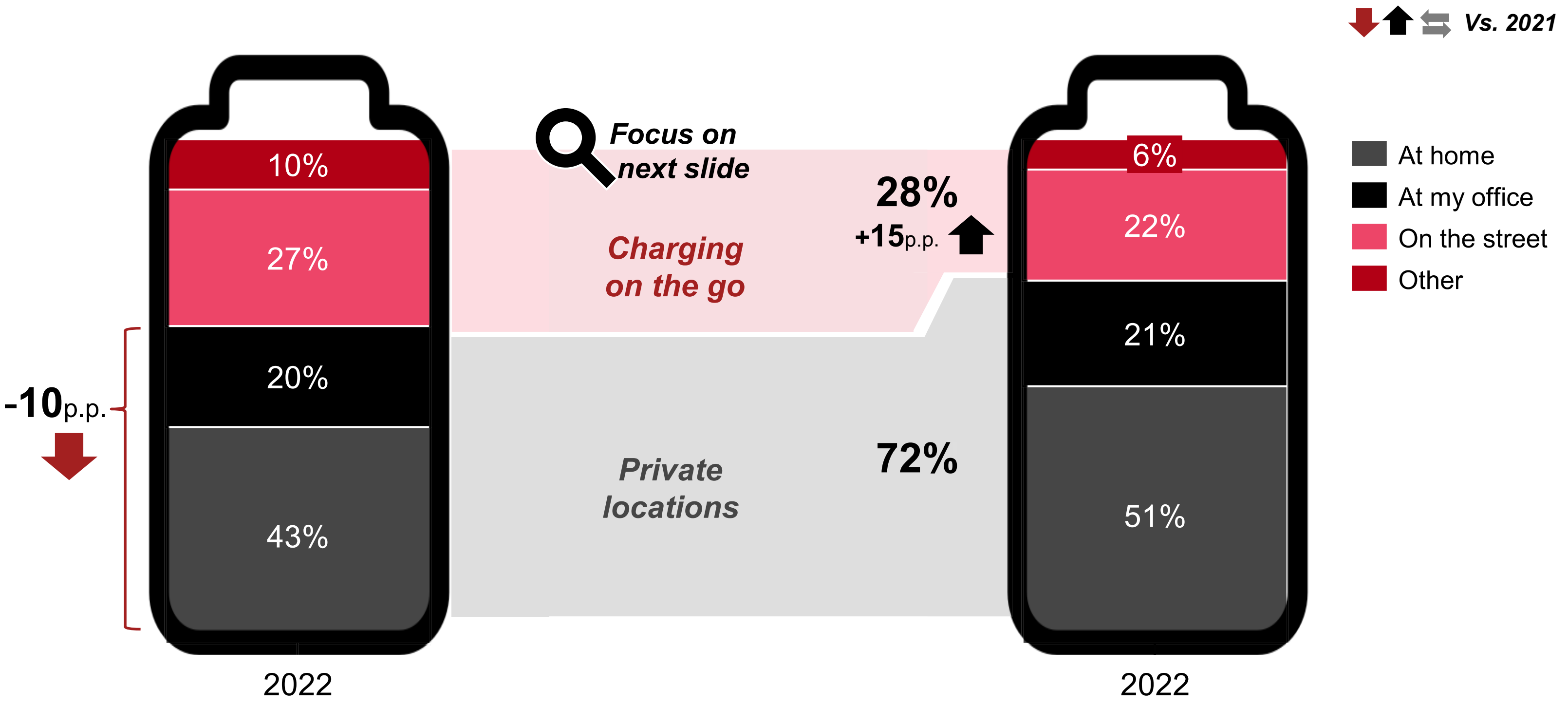
Charging habits

Where do you typically charge your EV?

*% **B2C Customers Sample**: #297 respondents*

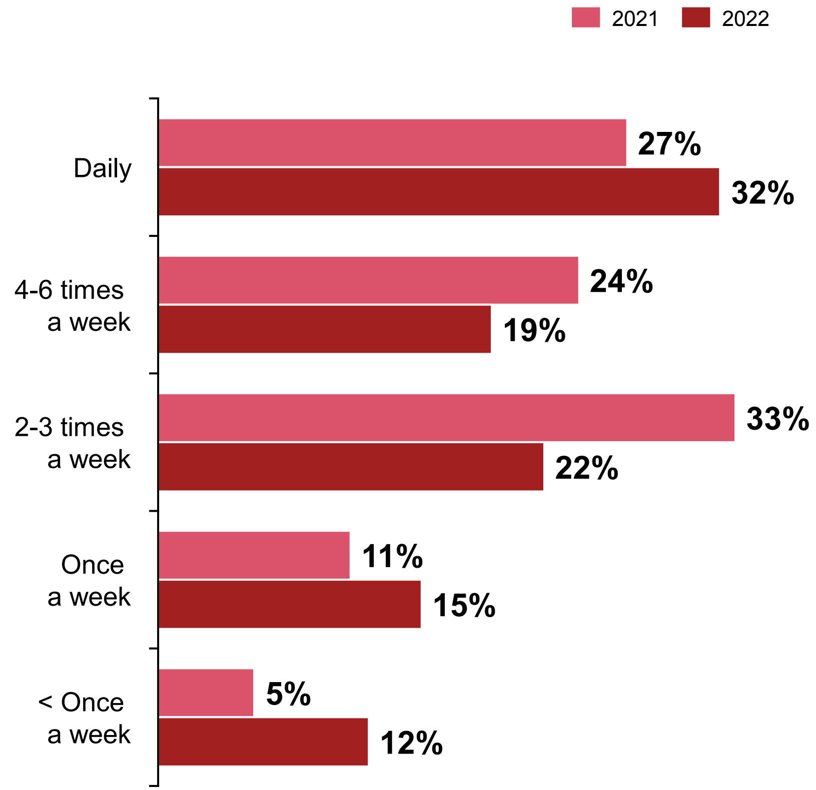
Which is the primary location where you charge your EV?

*% **B2C Customers Sample**: #297 respondents*



How often do you charge your EV?

*% **B2C Customers Sample**: #297 respondents*



Note: percentages may not total 100% due to rounding
Source: Strategy& analysis on feedback from B2C survey

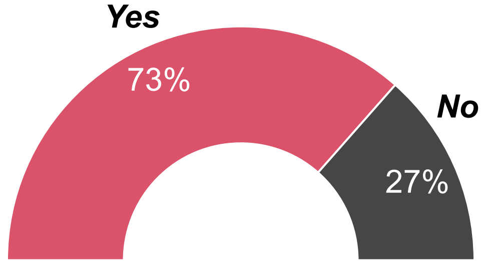
EV owners appear loyal to their charging provider and demonstrate higher satisfaction with their offering except for waiting time

Charging on the go Experience

Do you always use the same charging provider?

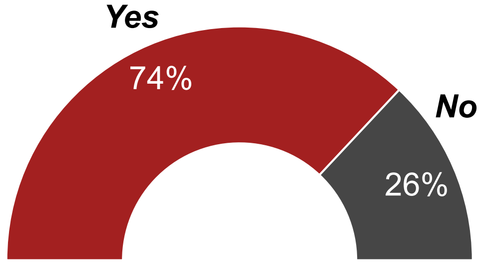
% ***B2C Customers Sample**: #130 respondents*

2021



27% of EV owners use different providers when charging on the go

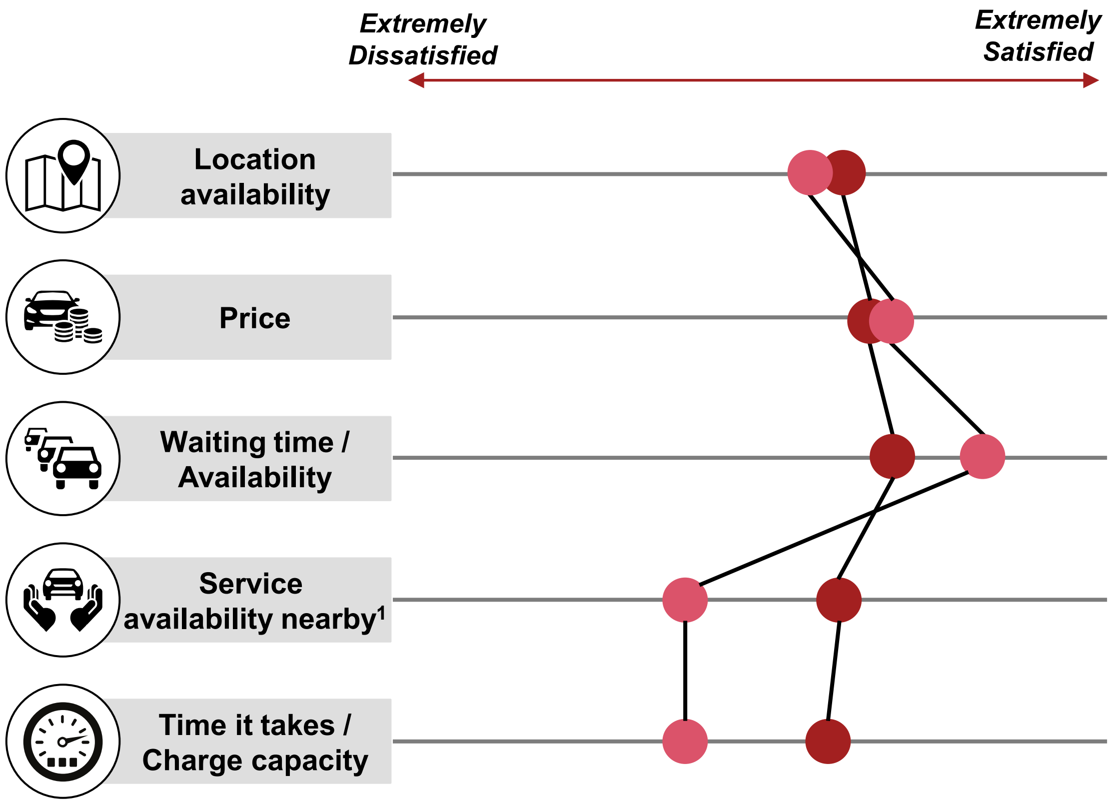
2022



26% of EV owners use different providers when charging on the go

How satisfied are you with…

% ***B2C Customers Sample**: #130 respondents*



1) Services such as restaurants, shops, vending machines and other services located nearby the charging station
Source: Strategy& analysis on feedback from B2C survey

We have identified six personas amongst future EV customers based on four behavioural dimensions

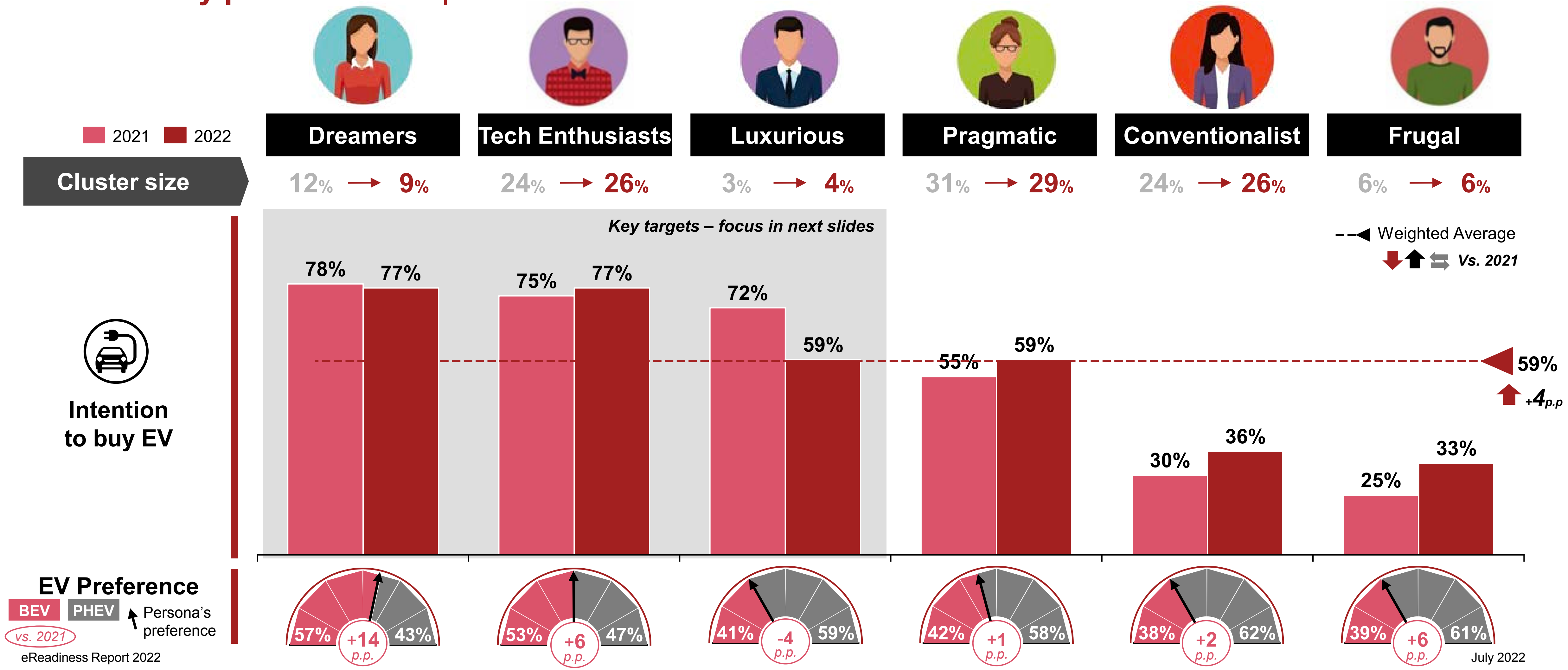
Key personas

	Dreamers	Tech Enthusiast	Luxurious	Pragmatic	Conventionalist	Frugal
Environmental Conscience	Environment and climate change are top priorities	Concerned about the environment, but not their top priority	Environment is among the lowest priorities	Environment is crucial but not worth the extra mile	Not particularly concerned about the environment	Concerned about the environment but not their top priority
Technology Confidence	Digital native, feels comfortable with technology	Early adopter, has high confidence with technology	Buys mainstream technology, but uses basic functionalities	Digital native, feels comfortable with technology	Uses basic technology once it becomes popular	Not addicted to technology, uses it to find opportunities
Price Sensitivity	Is willing to pay higher price for a good cause	Willing to pay extra to gain early access to technologies	Price is not a concern	Important but not a priority, seeks good price/quality ratio	Saving is important, but “you get what you pay for”	Price conscious, always looking for bargains
Car Usage	Doesn’t use car whenever possible	Combines the car with other means of transport	Uses car as primary transportation	Combines the car with other means of transport	Uses car as primary transportation	Minimize car usage preferring cheaper alternatives

Source: Strategy& analysis

Dreamer, Luxurious and Tech Enthusiasts consistently show the highest intention to buy in the near future

Focus on key personas – EV purchase intention



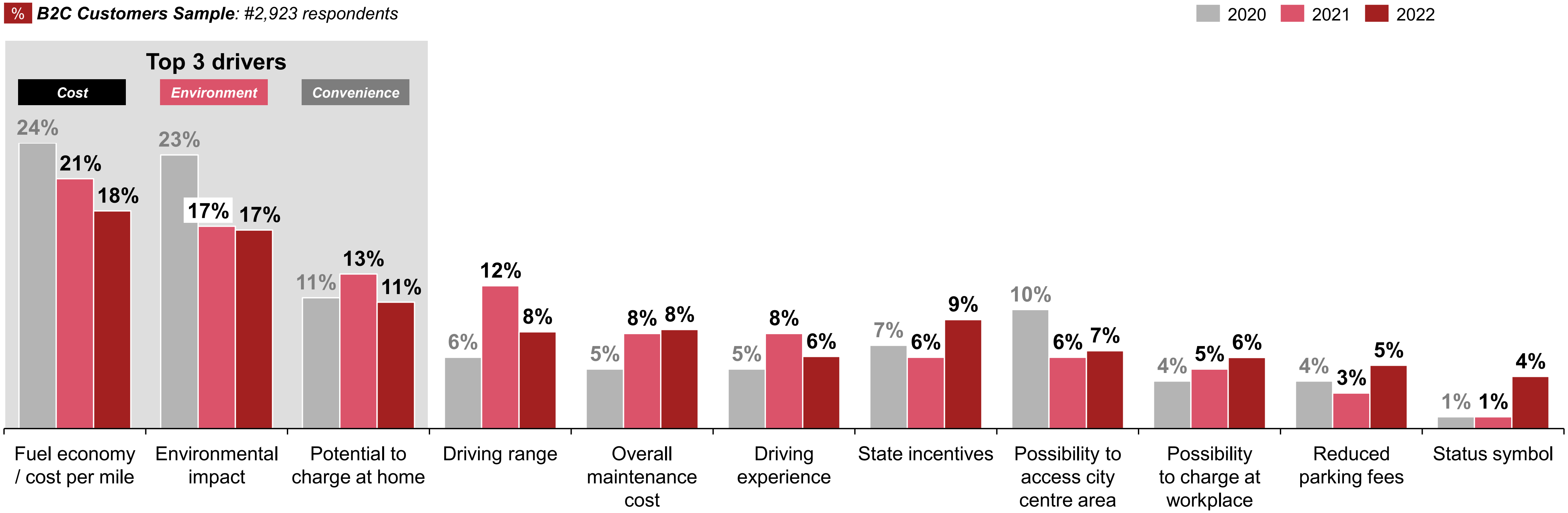
Source: Strategy& analysis on feedback from B2C survey

Key purchasing drivers are in line with last year: fuel economy, environmental impact and potential to charge at home

Purchasing drivers

What are main reasons that drive you to buy an EV?

% ***B2C Customers Sample**: #2,923 respondents*

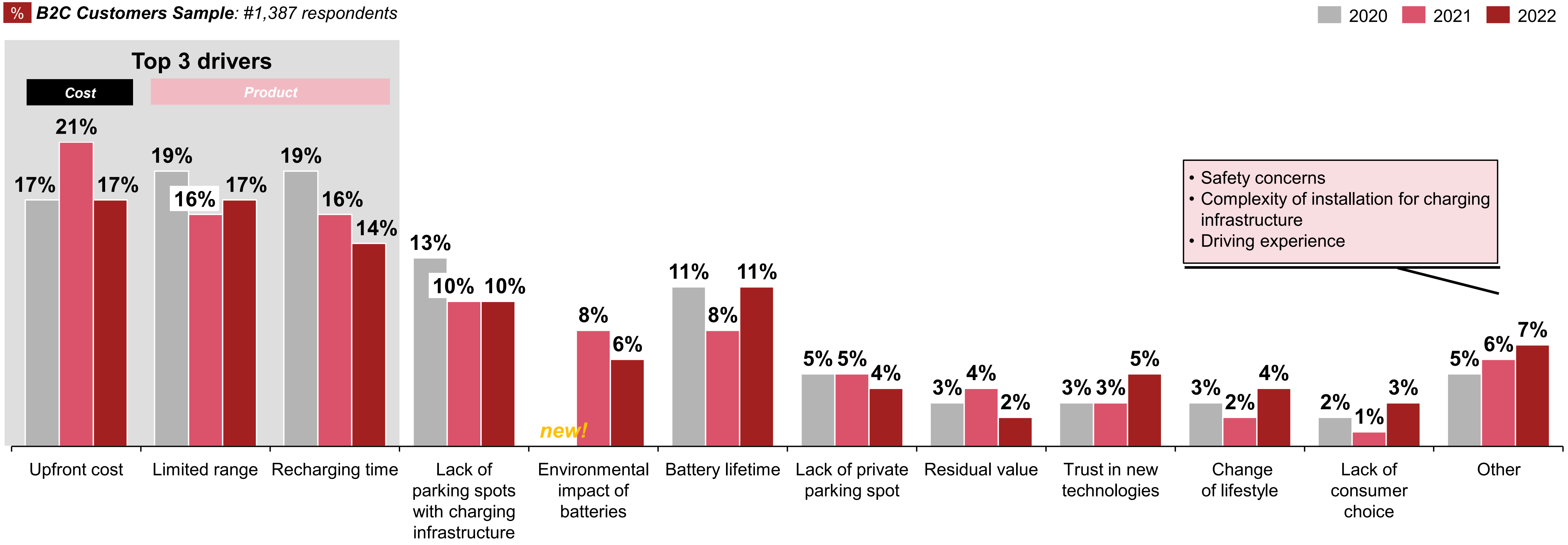


Note: percentages may not total 100% due to rounding
Source: Strategy& analysis on feedback from B2C survey

Key inhibitors to buy an EV are upfront cost, limited range and charging time

Main reasons for rejection

What are main reasons that discourage you from buying an EV?



Note: percentages may not total 100% due to rounding
Source: Strategy& analysis on feedback from B2C survey

Agenda

eReadiness index of the 7 in scope countries is built upon 14 KPIs clustered in 4 main dimensions

eReadiness index dimensions and KPIs

Government incentives

- Analysis of specific government incentives with focus on:
  - Grants (Purchase subsidies, national and local grants, scrapping bonus)
  - VAT exemption
  - Registration tax reduction
  - Annual ownership tax exemption

Infrastructure

- Availability of installed charging points per vehicle
- Penetration of public fast charging points (>150kW) on motorways
- Share of renewable energy produced by each country
- Ratio of gasoline vs. electricity cost

Supply

- Penetration of EV over total registrations
- Depreciation rate of top 4 BEV sold in each country
- Number of pure EV players present in the market

Demand

- Consumers willingness to buy an EV within the next two years
- Share of short distance (<30km per day) drivers
- Average household income by country

Norway is the most *eReady* country across all dimensions while France, Italy and Spain seem the least mature for e-mobility

eReadiness index

***Legend**:*
1 – low eReadiness
5 – high eReadiness

	Norway	Switzerland	UK	Germany	France	Italy	Spain
Government incentive	4.3	2.5	2.3	3.0	2.0	2.5	3.8
Infrastructure	5.0	3.2	2.6	2.3	2.4	1.4	1.3
Supply	4.3	2.3	2.3	2.3	2.3	2.0	2.0
Demand	4.7	4.0	3.3	3.0	2.3	3.3	2.3
eReadiness index	4.5	3.0	2.6	2.6	2.3	2.3	2.3

Source: Strategy& eReadiness Index

Agenda

We have shortlisted 4 improvement actions for OEMs to tap the full potential of the EV market in the short-run

Recommendations for OEMs

	Proposed actions	*Reasons why*
Omnichannel journey	Integrate the traditional brick-and-mortar sales journey with a seamless online and in-car experience to meet customer expectations	• 10% of customers already bought their EV online, with 55% willing to buy their next car remotely, mainly driven by convenience and cost advantage factors • A seamless omnichannel journey is becoming hygiene expectations as 50% of the demand in the next two years is made up of digital natives
Customer experience	Design and deploy EV-specific experience to make EV sales, onboarding and use more compelling - also for less tech-savvy customers – ensuring monitoring of customer feedback to identify key pain points	• EV owners' satisfaction declined by 10% in the last two years - As adoption increases, transforming the EV market into a mass market, new EV owners are less tech-savvy and expects EV-specific supports throughout the entire journey • Word of mouth is the main consideration factor for EV owners, with test-drive experience (official and/or through friends & family) being the convincing factor
Pre-Owned EV business	Enhance used EV business proposition with dedicated CPO and upskilling programs to help dealerships manage the EV 2nd hand trade in a more effective and profitable way	• 20% of EV Owners bought a pre-owned vehicle mainly through the traditional dealership channel • Dealership salesman is seen as key factor to start considering to buy a pre-owned EV with the test-drive being the most important convincing elements for pre-owned EV customers (+14p.p. vs. new EV owners)
Extended value proposition	Enrich current product and services portfolio offering EV-related solutions to address customers' demand (e.g. green energy contracts, photovoltaic panels, …)	• 10-30% of consumers purchased additional EV-related products and services within a short time frame after purchasing their EV and 14% purchased private charging infrastructure separately from the car • Few OEMs have already defined an extended value proposition including energy bundles, home solutions and additional services

Source: Strategy&

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