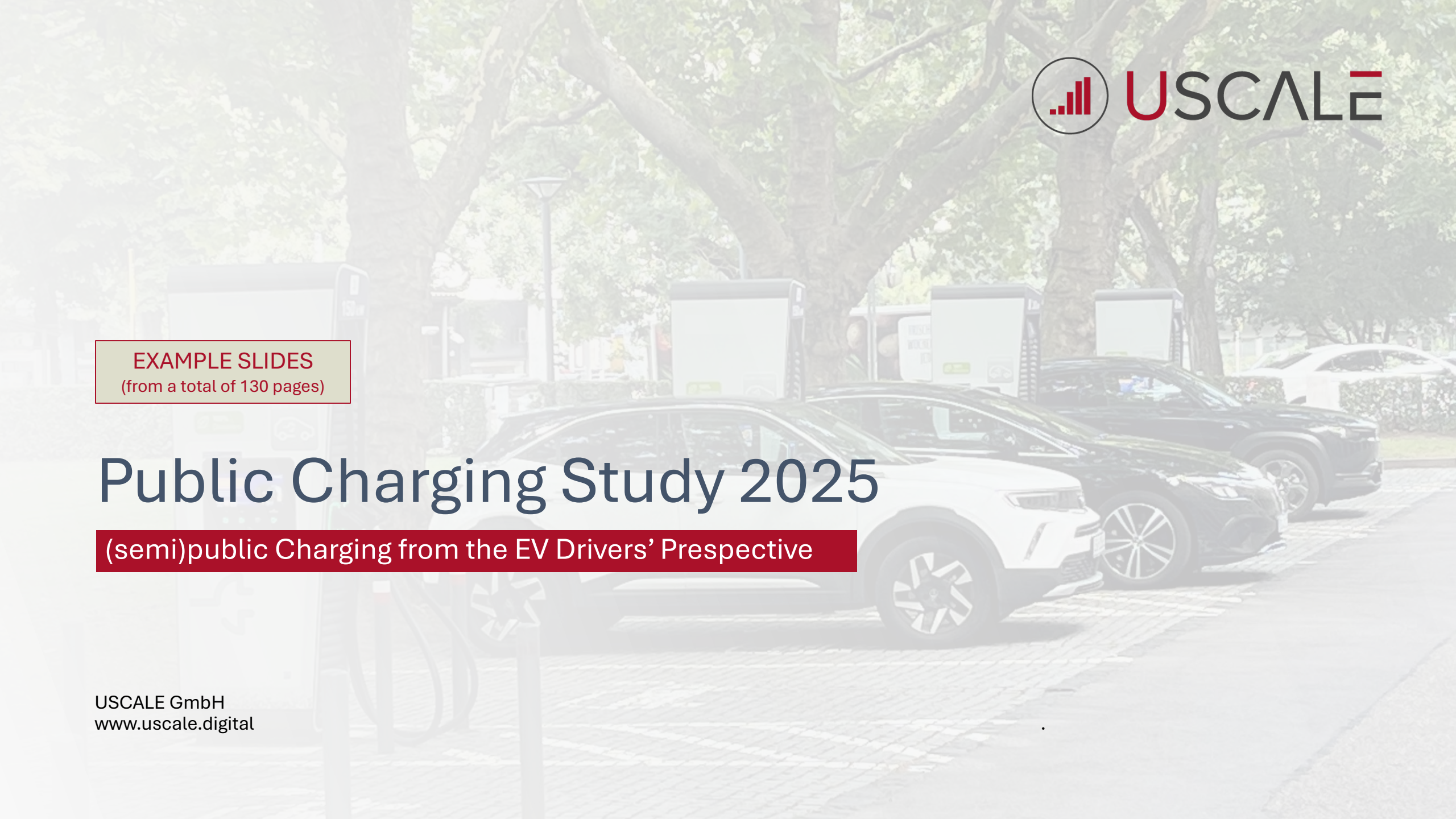


EXAMPLE SLIDES
(from a total of 130 pages)

Public Charging Study 2025

(semi)public Charging from the EV Drivers' Prespective

USCALE GmbH
www.uscale.digital

Objective

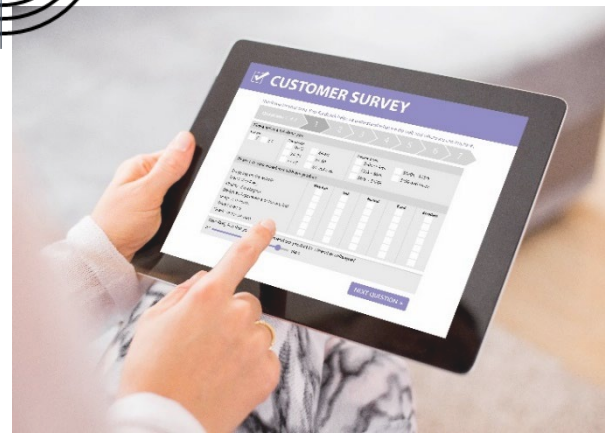
Initial situation:

- The increasing market share of EVs is driving up demand for public charging infrastructure and raising expectations of providers. It is unclear how the entry of new customer segments will change requirements.
- In order to develop and establish the right charging offerings, providers in the market need to understand the charging behaviour and preferences of users. Semi-public offerings also play an important role in this regard.

Question:

- How and where do EV drivers charge their vehicles today? What criteria do EV drivers use to decide where to charge? What influence does the charging price have?
- How is charging behaviour changing with the entry of new EV adopter segments?
- What problems do charging customers face today? What needs do they see?
- Are there differences between the target groups?

Target group



Survey:

- Target group: BEV drivers
- Survey: Online survey (CAWI)
- Country: Germany
- Recruitment: Social media, access panel
- Interview duration: 15–20 minutes
- Field phase: September/October 2025

Sample:

- Total sample: N = 2,773
  of which:
  - Batch @public: N = 1,599
  - Batch @retail: N = 1,197
  - Batch @work: N = 1,153

EV adopter segments

To identify trends, this study differentiates between two adopter segments: "pioneers" and "early adopters".

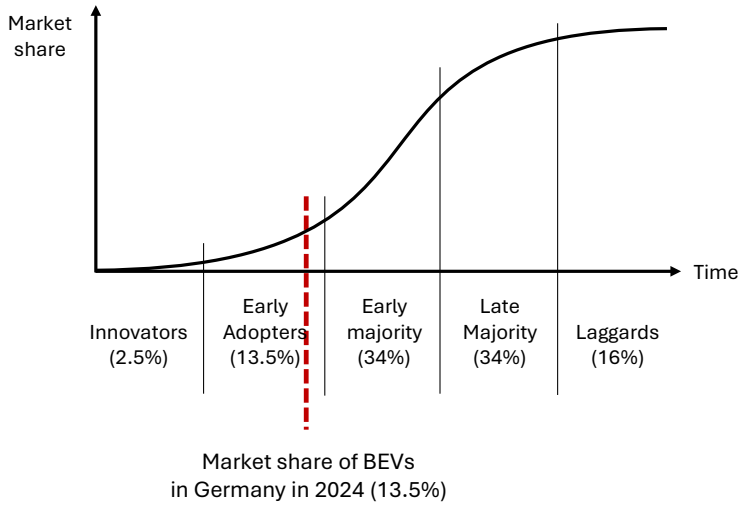
The best-known model for the ramp-up of innovations segments adopters according to the time of switchover (figure). It assumes (simplistically) that the time of switchover correlates with motivation. Criticism: Many EV enthusiasts switch over later due to the often long car ownership periods.

This study therefore segments adopters according to involvement (i.e. what is implicitly assumed in the above-mentioned Rogers segments). Operationally, the study reflects this through recruitment:

- **Pioneers (high involvement)**: recruitment via social media
- **Early adopters (lower involvement)**: recruitment via access panel

If the results of pioneers and early adopters differ, this indicates a trend.

Segments in the ramp-up of electric mobility*:



* The classification shown is based on Everett Rogers' diffusion model (LINK).

Preliminary remarks on the study design

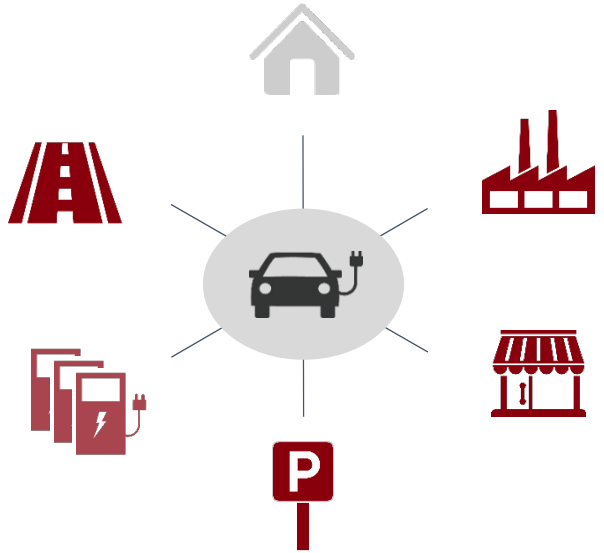
Who are the EV drivers?

This study examines the (semi-)public charging behaviour of EV drivers.

Before this document describes charging behaviour in public spaces, at work and in retail outlets, Chapter 2 provides a detailed description of the living, driving and charging behaviour of all respondents. This is based on feedback from 2,773 EV drivers surveyed.

Chapters 3, 4 and 5 then focus on EV drivers who charge at public. The data is based on the aforementioned partial samples.

Charging behaviour at home is described in detail in the home charger study.



Chapter 2: all EV drivers

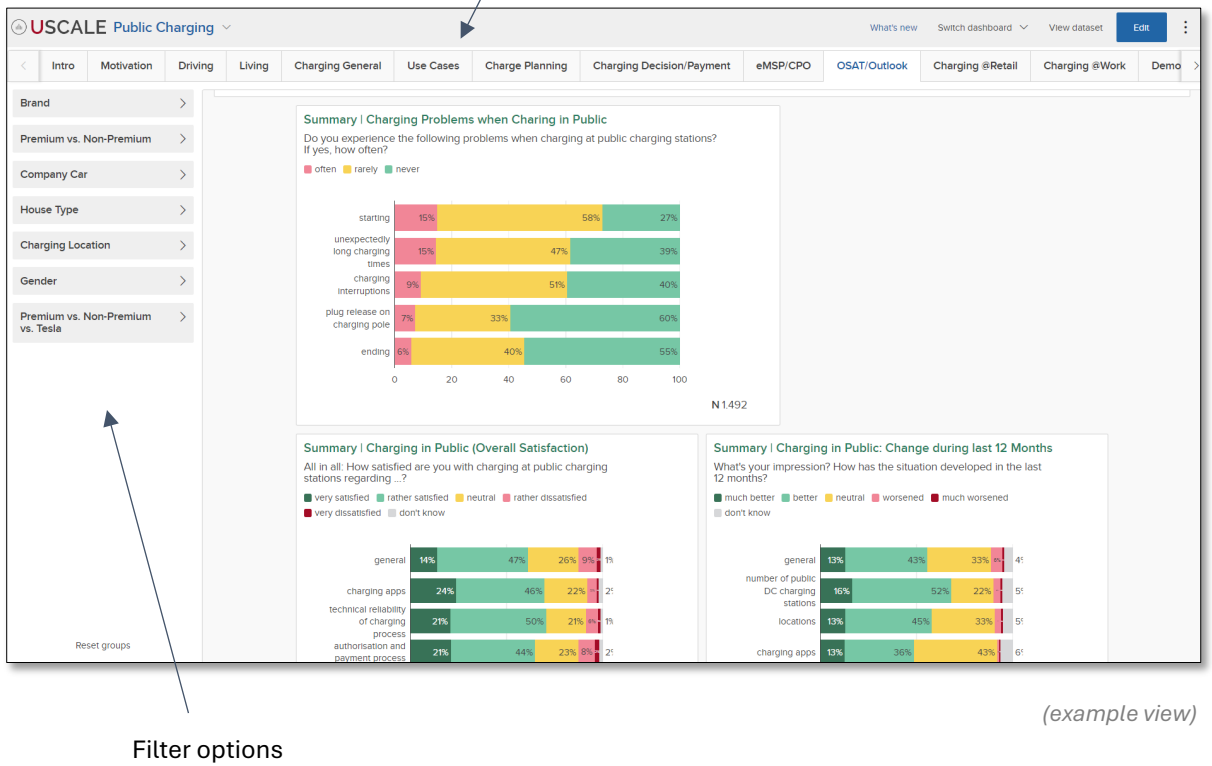
From Chapter 3 onwards: only EV drivers who charge at public, charge at retail, or charge at work

Study dashboard for your own analysis

Deep dives and brand splits

The focus studies provide a considerable breadth and depth of information.

For the public charging study, there is therefore an additional dashboard for further splits. This allows, for example, differences between specific sub-target groups and specific brands to be displayed separately.



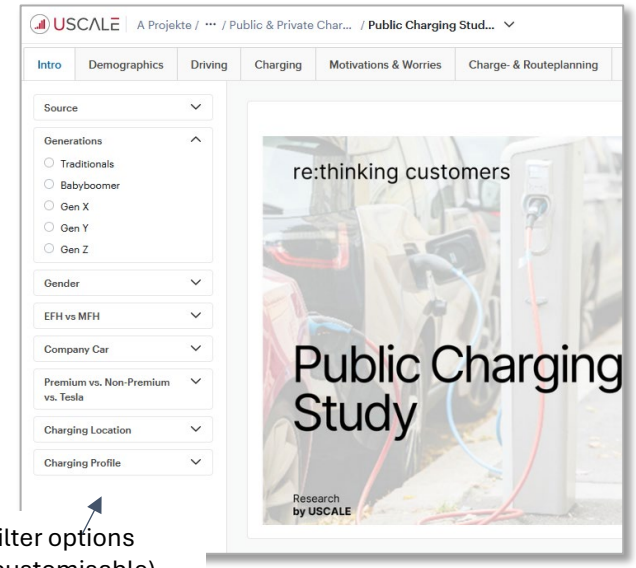
(example view)

Study dashboard for your own analysis

Analysis options in the dashboard

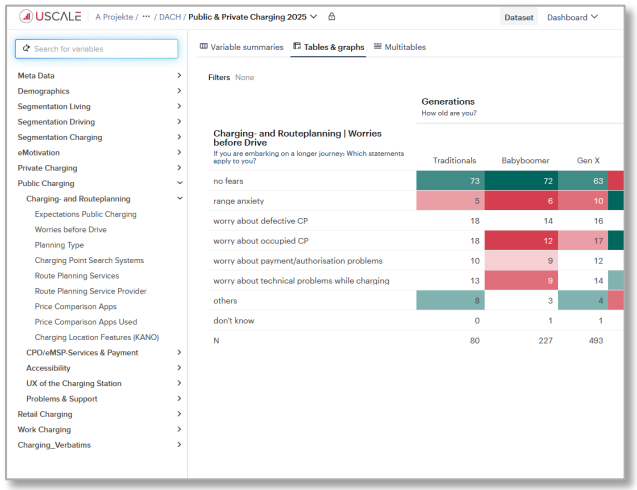
The dashboard provides access to all detailed data. It allows you to perform your own analyses and download any data splits.

Breakdown of all results by sub-target groups:



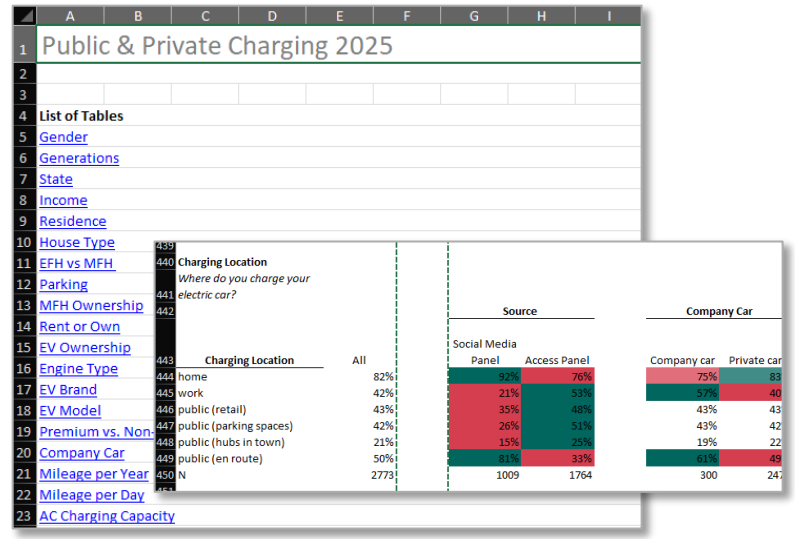
Filter options (customisable)

Correlations and statistical analyses:



Download all data as xls and ppt:

Example view



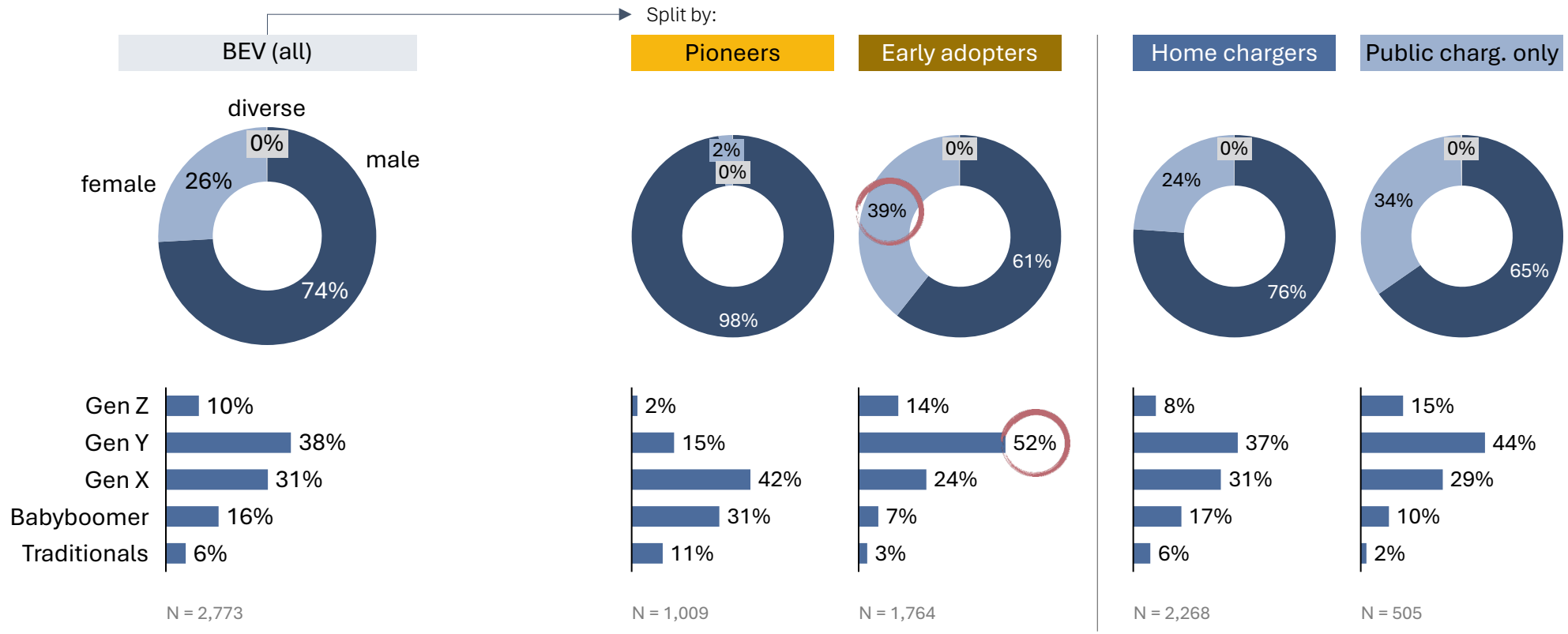
Contents

Gender & Age

The pioneers are predominantly male. The proportion of women among early adopters corresponds to the proportion of women among new car buyers.

"You are...?"

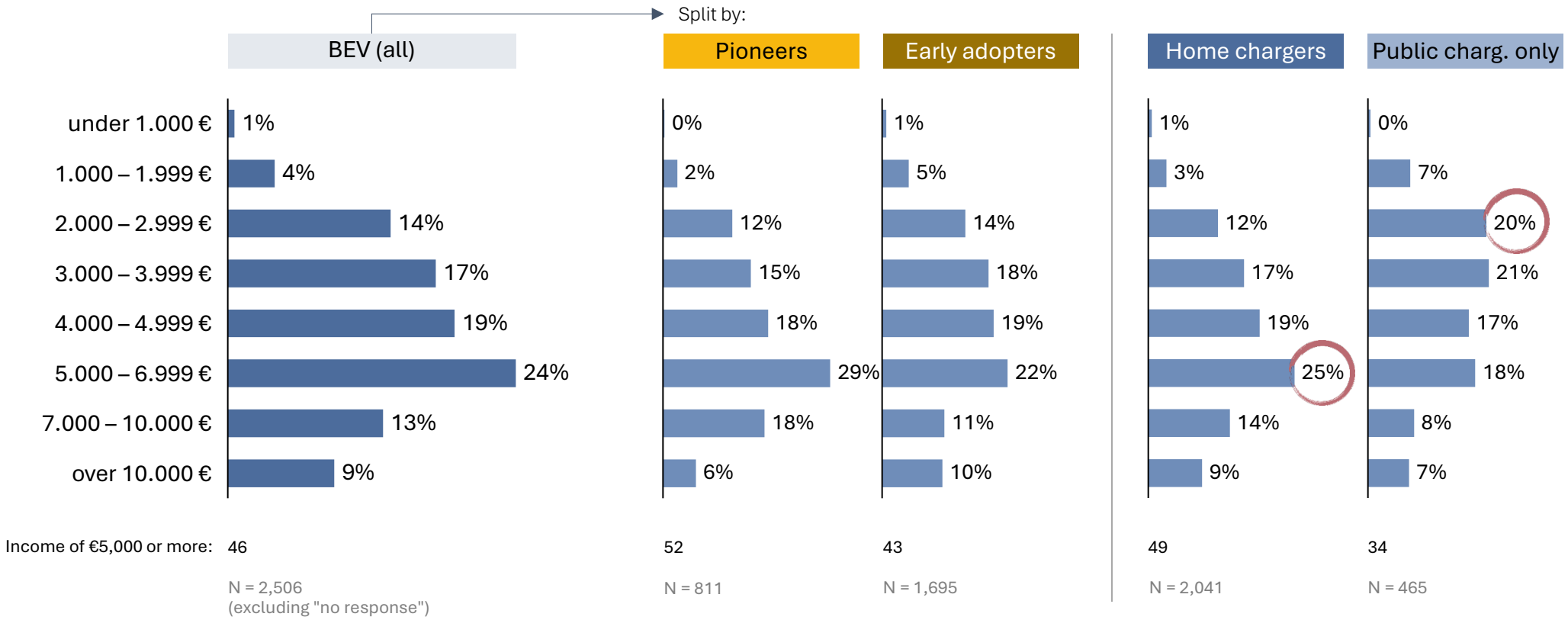
"How old are you?"



Income

46% of respondents have a net household income of €5,000 or more. Income decreases significantly with increasing EV adoption. Charging at public earn significantly less than charging at home.

"What is your monthly net household income?"



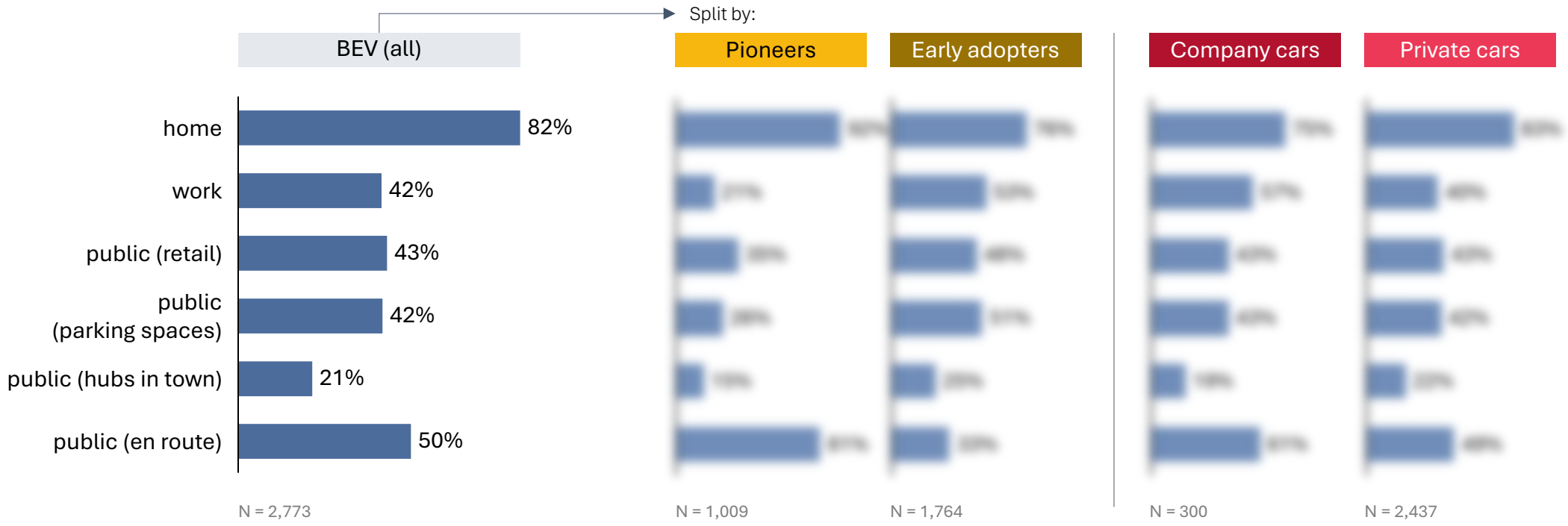
Contents

Charging locations

Charging at home remains the most common use case. Early adopters charge less frequently at home and more often at work and at all public charging locations – with the exception of motorways.

"Where do you charge your [EV]?"

(Multiple answers possible)



Contents

Use of comparison apps

Just over half of EV drivers use price comparison apps. There are more among early adopters than among pioneers. As expected, company car drivers use them less frequently.

"Do you use price comparison apps?"

Split by:

BEV (all)

N = 1,599

Pioneers

N = 598

Early adopters

N = 1,001

Company cars

N = 177

Private cars

N = 1,422

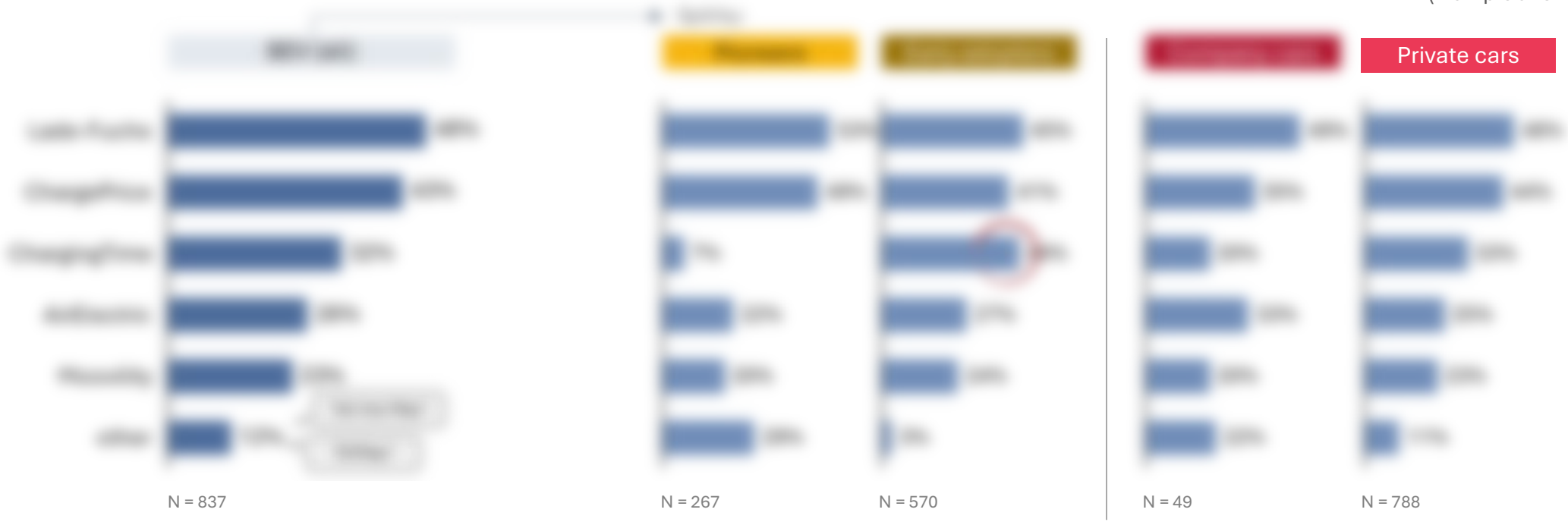
Comparison apps

Lade-Fuchs and ChargePrice are the most frequently used comparison apps. Among early adopters, ChargingTime is catching up with Lade-Fuchs.

Use of comparison apps = yes:

"Which apps do you use for price comparison?"

(Multiple answers possible)



Contents

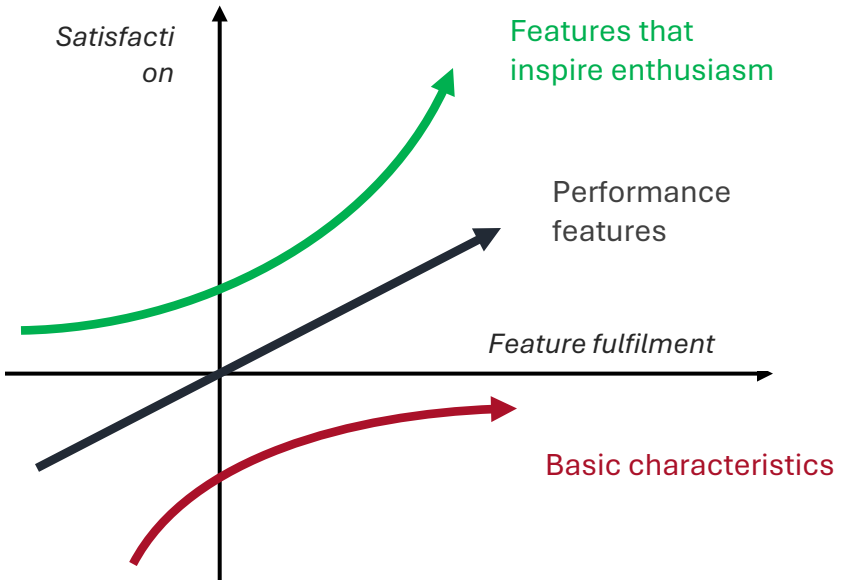
Public Charging Study 2025

Preliminary remark on KANO analysis.

The Kano model of customer satisfaction describes the relationship between the offering of certain features and the expected satisfaction. It also describes the importance of specific product features for the selection decision.

As a result, the model divides product features into five categories:

- **Basic features** (must-have features) only become apparent to the client when they are not fulfilled, and then generate high dissatisfaction.
- **Performance features** (should-be features) are known to the client and create satisfaction depending on the degree to which they are fulfilled.
- **Enthusiasm features** (nice-to-have features) are features that the client does not necessarily expect. They distinguish the product from the competition and generate enthusiasm.
- **Irrelevant features** are of no importance to the client, whether they are present or absent.
- **Rejection features** lead to dissatisfaction when present.



Important features at the charging location (1/2)

Very few respondents consider the features surveyed to be basic factors. Covered charging locations and seating are most highly valued.

"How do you feel about a charging park offering the following amenities at the charging station?"

BEV (all)

Basic factors

"I assumed that"

Performance factors

"I would like that"

Enthusiasm factors

"That would make me very happy"

N = 1,599

Contents

Preliminary remark on the conjoint method

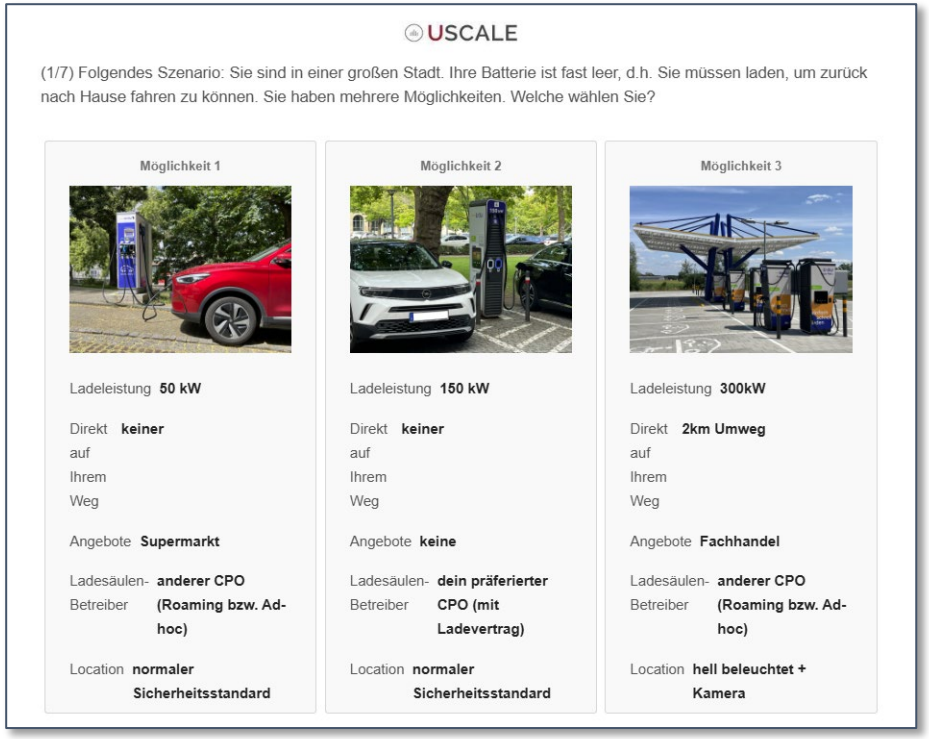
The conjoint method maps the loading decision.

For each charging decision, users weigh up several criteria against each other before making a decision.

In order to determine which criteria influence the charging decision, participants in the survey were repeatedly presented with different constellations from which they had to choose their preference.

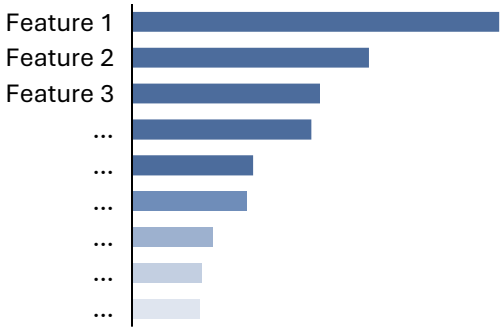
Each offering consisted of a combination of several characteristics selected by an algorithm. The survey thus yielded thousands of individual ratings, which were evaluated in a multivariate analysis.

Example



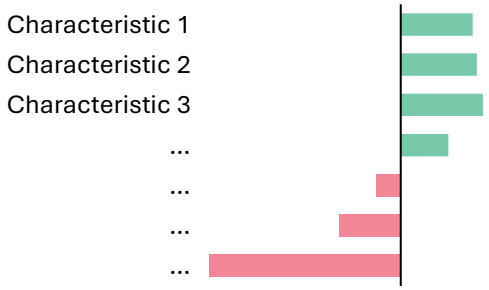
Preliminary remark on the conjoint method

Importance of characteristics



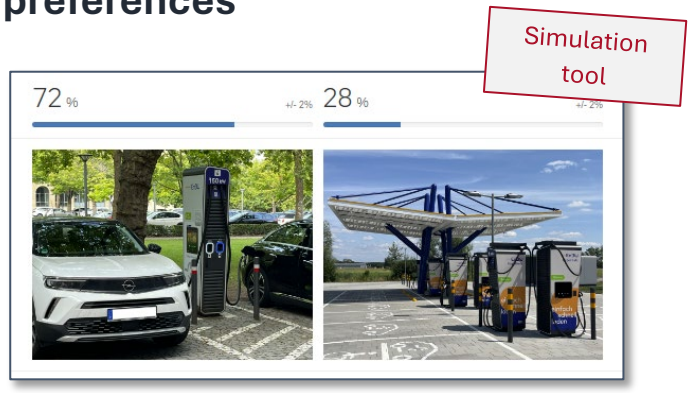
Calculation of partial utility values for each individual characteristic. The sum of all partial utility values is 100%.

Partial utility of the characteristics



Calculation of relative preferences for individual characteristics by normalising the average partial utility to the mean value of the characteristic.

Simulation of user preferences



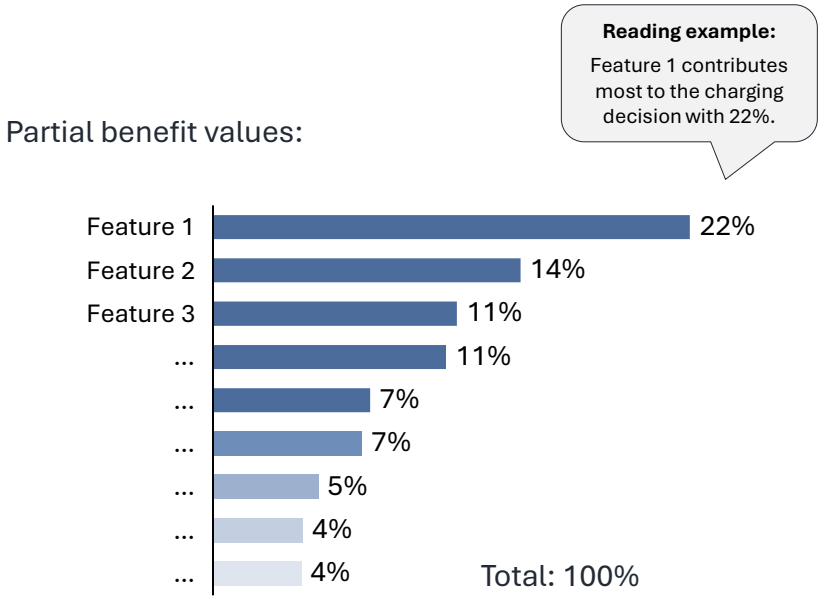
For the simulation, the market potential (using the rule of three) is estimated in comparison to its alternatives.

Preliminary remark on the conjoint method.

Calculation of the relevance of individual features based on their partial utility values.

Partial utility values indicate how much utility EV drivers attach to the individual characteristics of a charging option and how much influence these have on their purchasing decision.

Higher partial utility values indicate greater relevance.



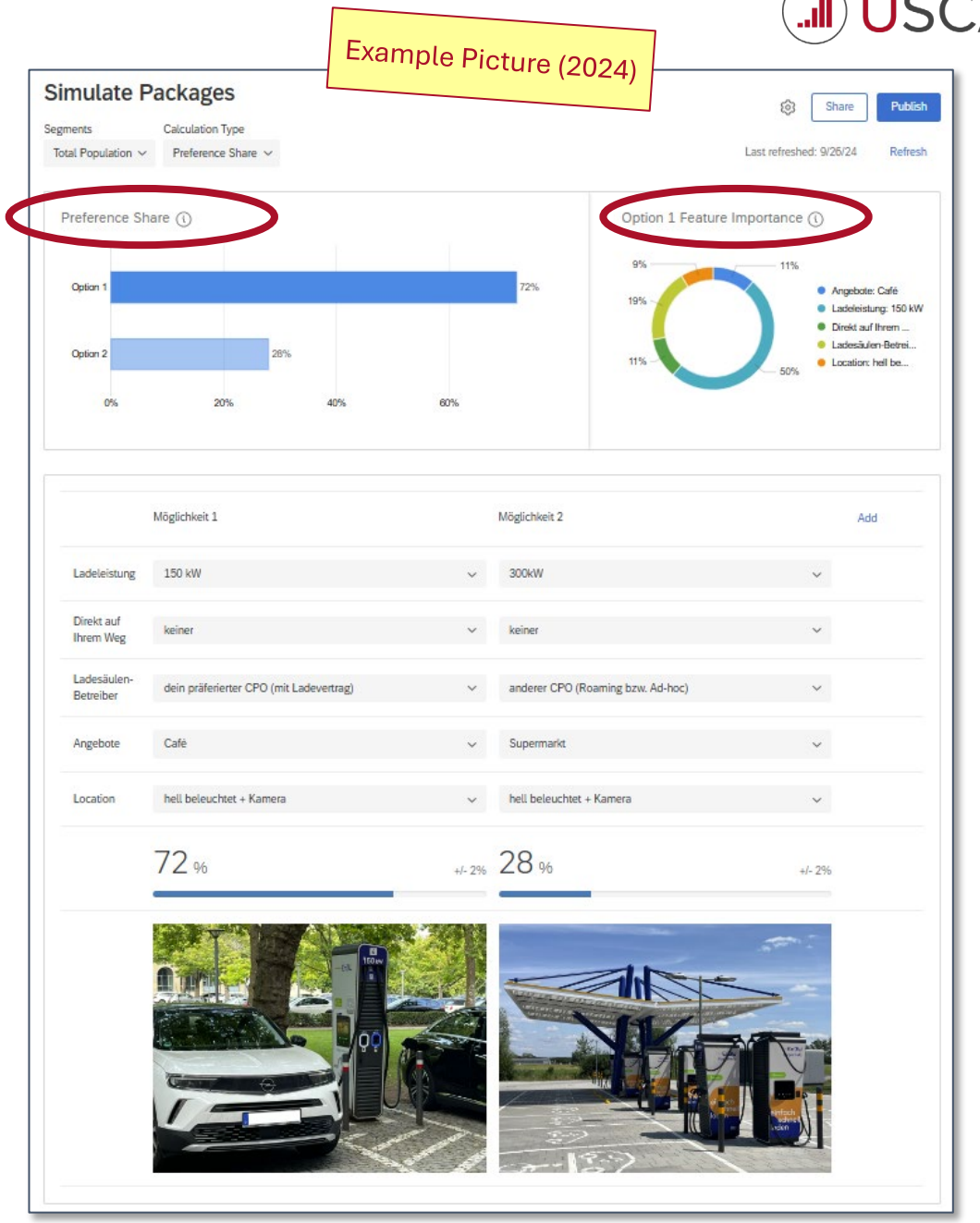
Preliminary remark on the simulator

Calculation of the market potential of various charging offers

The potential market position of a product depends on the number and attractiveness of competing offerings. The market potential of an offering can therefore only be estimated in relation to its alternatives.

Since the variety of feature combinations and target groups is infinite, the market potential is calculated in a simulation tool based on all the features queried.

LINK to the simulator (charging on route)
LINK to the simulator (charging in town)



Conjoint: Charging decision (use case “motorway”)

In the 'charging on route' use case, price and current utilisation dominate. Among early adopters, the charging price is somewhat less relevant to the decision. Surprising: the low importance of maximum charging capacity.

(calculated preference values)

Contents

UX at the charging station

Operating charging stations is no problem for almost two-thirds of users. The clarity of the displays and instructions is the most common source of difficulty. Surprisingly, pioneers consider the operation to be more difficult overall. The results show that manufacturers need to take action. Early adopters hardly differentiate.

Charging at Alpitronic HYC300 = unsure/no:

"In general:

How do you find the actual operation of the charging station itself?"

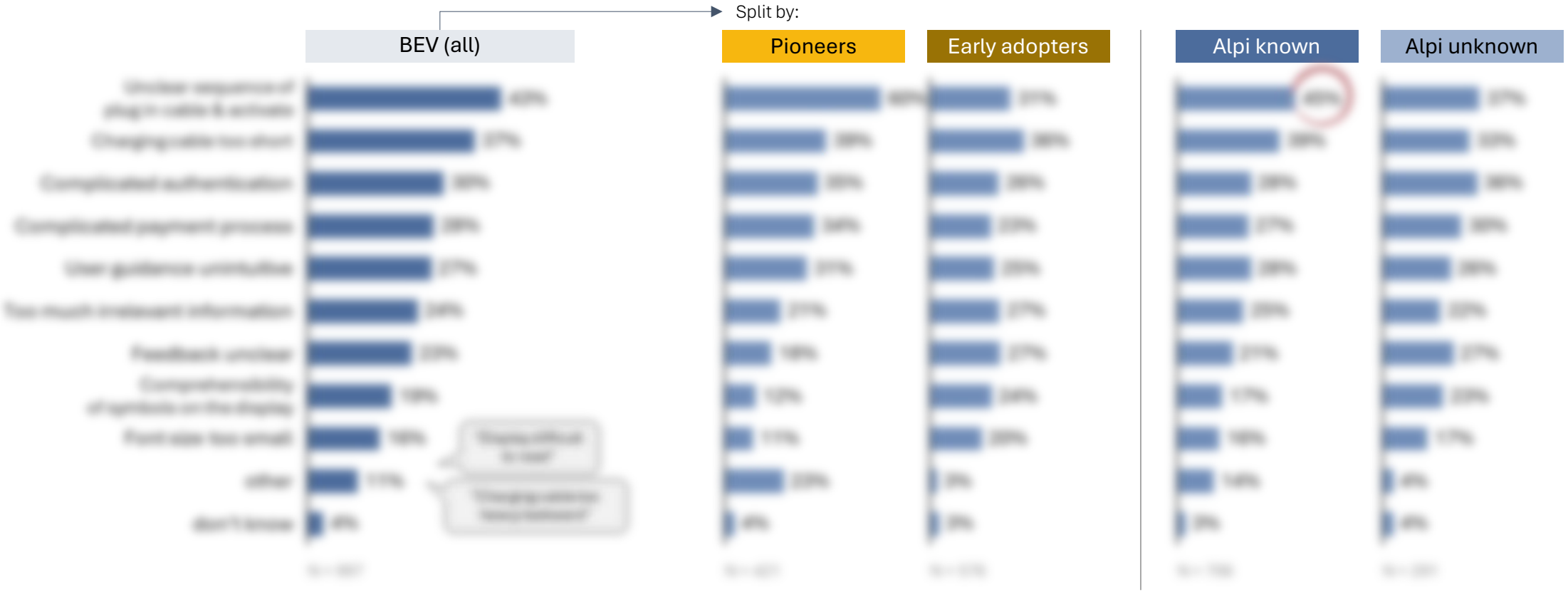
Reasons for operating difficulties

The most common reasons for operating difficulties are the unclear sequence of authentication and cable connection (especially with Alpitronic) and a charging cable that is too short. The rest of the UI also clearly needs improvement.

Operation ≠ (rather) simple:

"What specifically makes operation difficult for you?"

(Multiple answers possible)



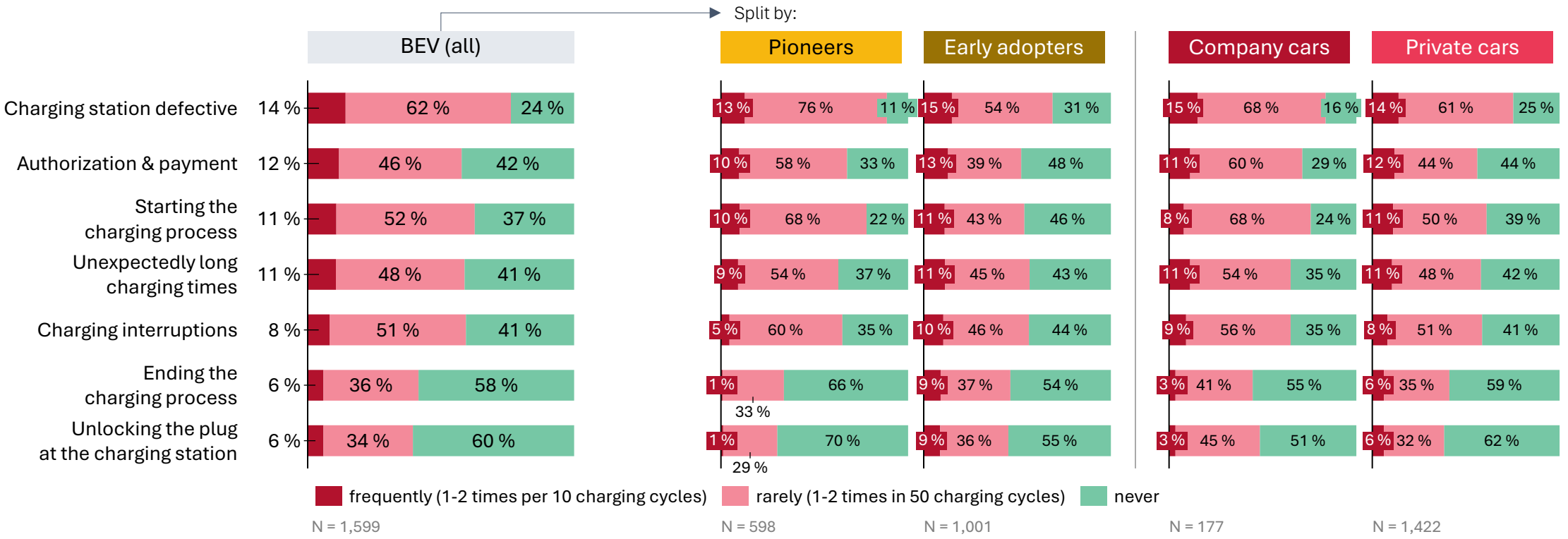
Contents

Frequency of charging problems

All subgroups experienced the problems surveyed to a high degree. The next segment reported more frequently that they had not experienced any problems. This may be due to different charging behaviour or a different perception of faults.

"Do you experience the following problems when charging at public charging stations?

If so, how often?"

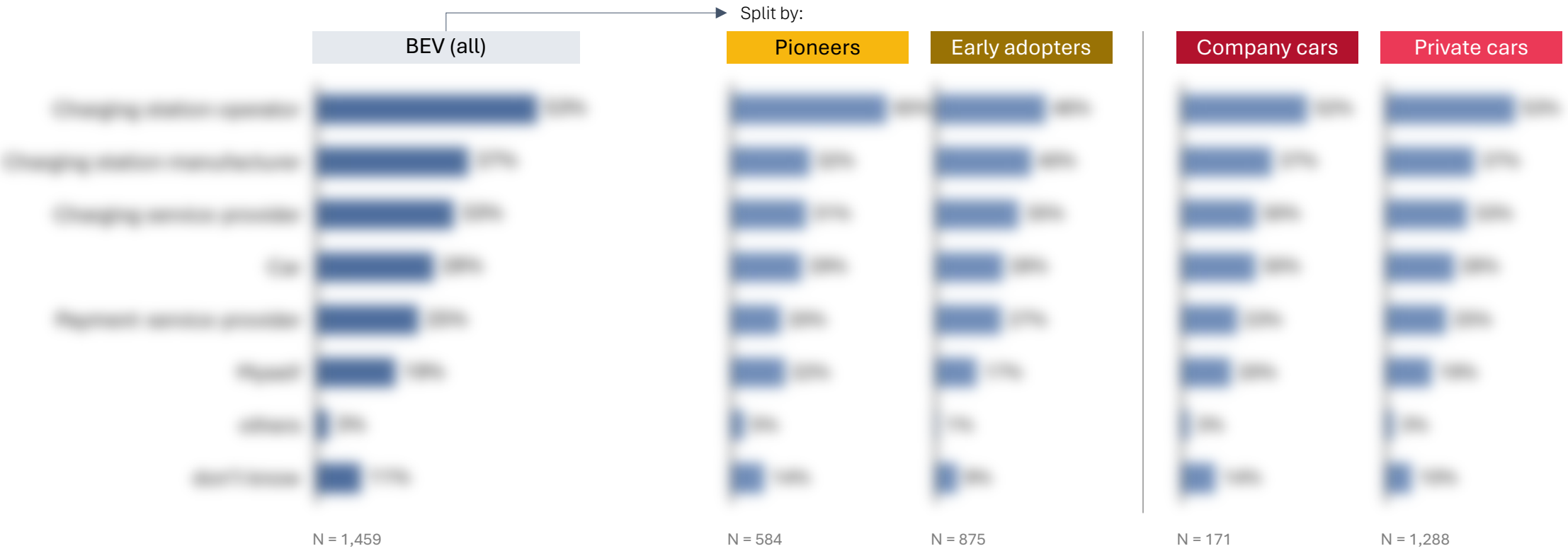


Causes of problems

Charging problem ≠ never:

"If you have a problem:
Who do you think is likely to have caused the problem?"

(Multiple answers possible)



SCALE YOUR USER
SCALE YOUR BUSINESS

Dr. Axel Sprenger

Managing Director
UScale GmbH

mail	axel.sprenger@uscale.digital
fon	+49 172-1551 820
web	www.uscale.digital
post	Silberburgstraße 112 70176 Stuttgart