



Excerpt
(Full report: ca. 90 pages)

Charging Persona Study 2024

Market Segmentation for the eMobility Market

USCALE GmbH
www.uscale.digital

Objective

Initial situation:

- Driving behaviour, living situation and individual preferences influence charging and purchasing behaviour. As the market share of electric cars increases, EV drivers are becoming more diverse. New market segments are emerging.
- At the same time, the supply side is growing and competition for charging technology is increasing. Suppliers therefore need to know their target groups precisely and address them specifically in order to be successful in this competitive environment.

Questions:

- How can charging behaviour be segmented given the large number of individual use cases?
- What attitudes towards mobility, brands, etc. do EV drivers have?
- What charging personas are emerging for the German market? What do providers of charging solutions and charging services need to focus on?
- How can the target groups be reached, which kind of messages and channels will be successful?



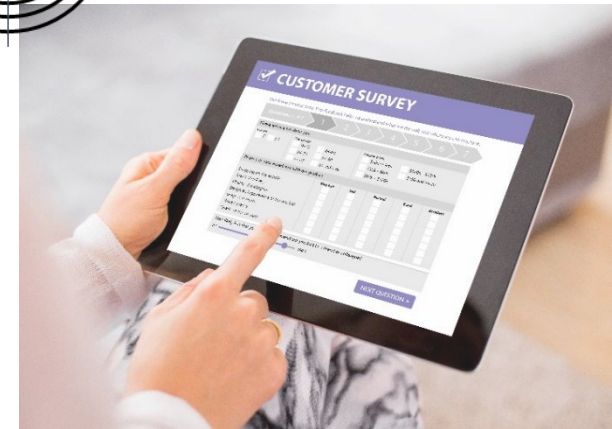
Target group

Survey:

- Target group: BEV drivers
- Survey: Online survey (CAWI)
- Country: Germany
- Recruitment: Social media, access panel *
- Length of interview: 15 - 20 min
- Field work: March/April 2024

Sample:

- Total sample: N = 1,223
of which:
 - Social media panel: N = 503
 - Access panel: N = 720



* The majority of participants from the **social media panel** are early EV adopters and more tech-savvy people.

Respondents from the **access panels** are generally less tech-savvy and bought an EV later. They belong to the segment of the early majority.

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Challenge

Unknown composition of the EV market.

The eMobility market is still strongly characterised by innovators and early adopters. With a market share below 20%, the share of the early majority is still low.

The distribution of possible clusters heavily depends on the type of recruitment. Therefore, the sizes of the clusters found can only be estimated.

The focus of this persona study is therefore on the description of the various charging profiles and personas in the market.



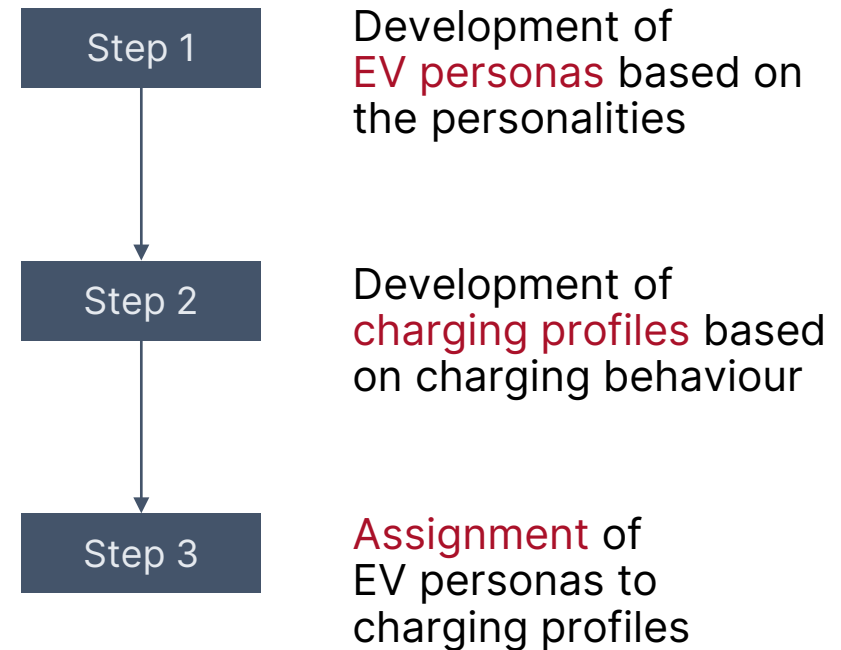
Early EV drivers:

Mainly middle-aged men with high incomes and a keen interest in technology and the environment dominated the market for a long time.

Approach

Multi-step procedure for the development of charging personas

The differences in charging behaviour and between the personas are large. However, all personas can be found in all charging profiles. In this study, charging profiles and personas are therefore determined separately and merged thereafter.

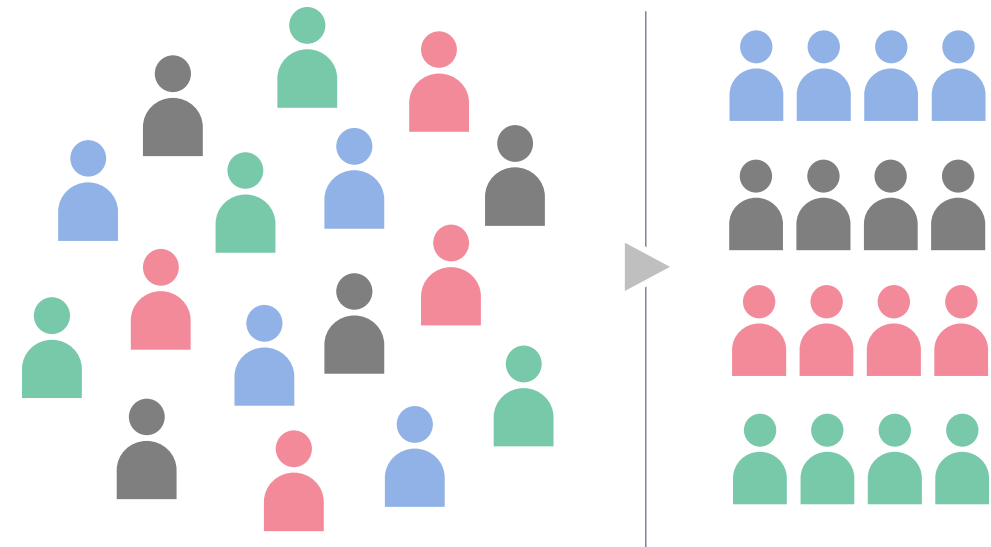


Approach

Step 1: Determination of EV personas

In the first step, the persona study asked EV drivers about their values, attitudes and behaviour on aspects related to eMobility.

A K-modes clustering of 45 categorical variables was carried out for the persona development. The Golden Questions for determining the charging profiles (see next page) were not used for the persona clustering.



Approach

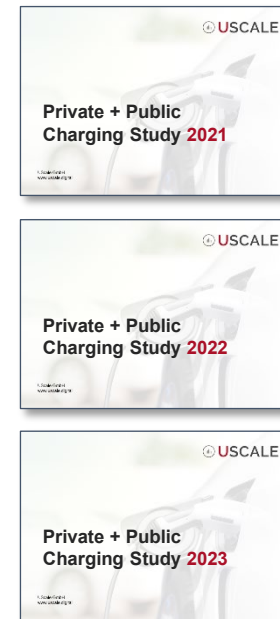
Step 2: Determination of charging profiles

Extensive analyses were carried out over several years from the USCALE charging studies, in which three relevant factors were identified: Living, Driving, Charging.

Seven "Golden Questions" were formed using this. The charging profiles were determined using the data set of USCALE's 2023 charging studies with N = 3075 by K-mode clustering of all categorical variables.

This clustering was applied to the data set of the persona study.

Repeated factor analyses and cluster analyses of the charging studies 2021 to 2023:



Derivation of the seven relevant Golden Questions for three factors:

1. **LIVING:** Type of house, size of lcity
2. **DRIVING:** km per weekday, km per year
3. **CHARGING:** Charging locations, charging occasions, charging frequency

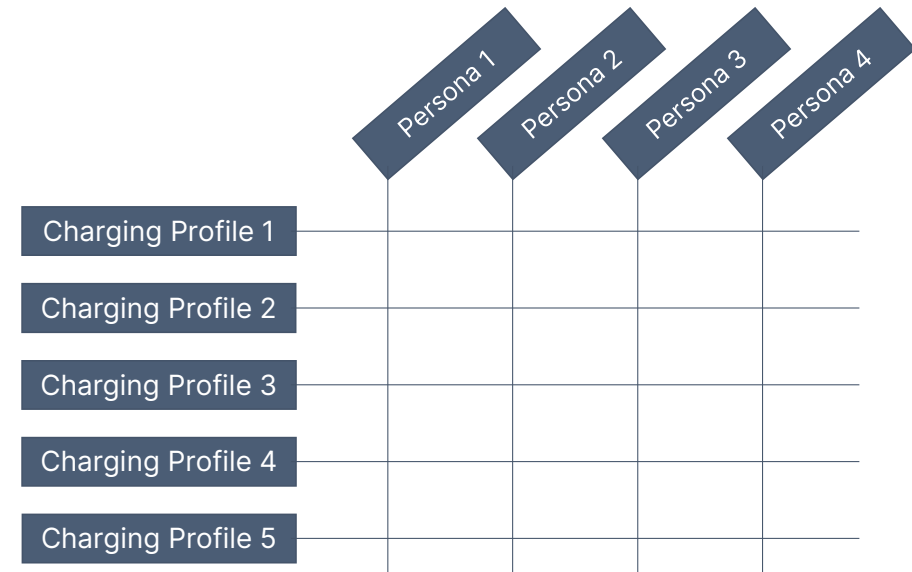
Approach

Step 3: Merging of profiles and personas.

The charging behaviour is strongly dependent on the living situation and driving behaviour and less on the persona.

In order to be able to use the personas for the development of products and services, they are mapped with the charging profiles.

Determination of the persona shares within the charging profiles



Utilisation of the study

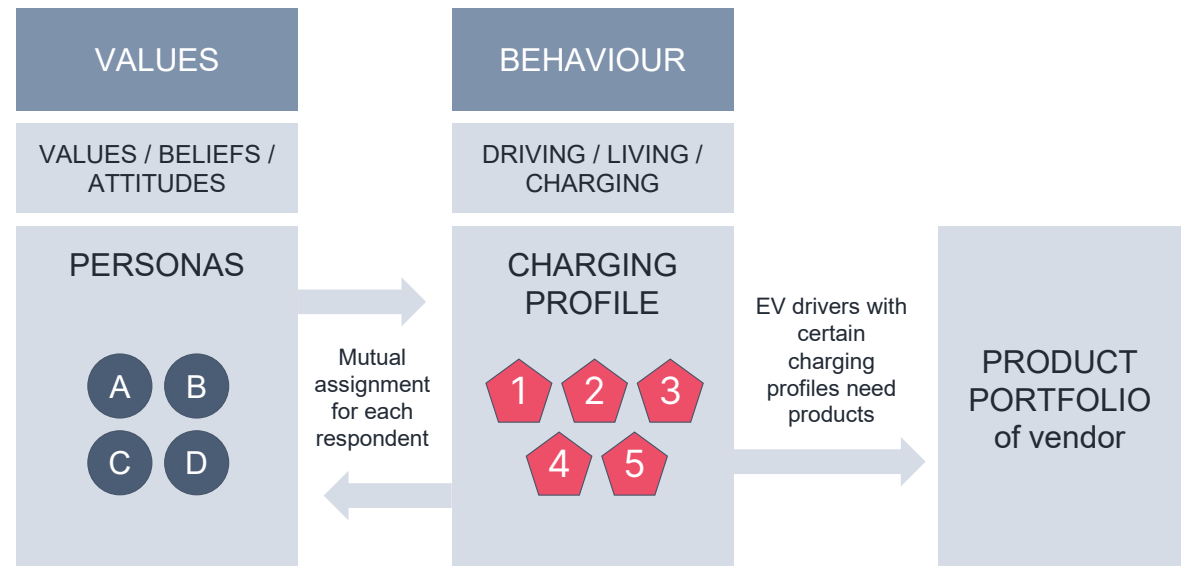
Target group definition for providers in the eMobility ecosystem

The personas and charging profiles describe the behaviour of today's EV drivers.

From this, it can be deduced which products the target group is open to.

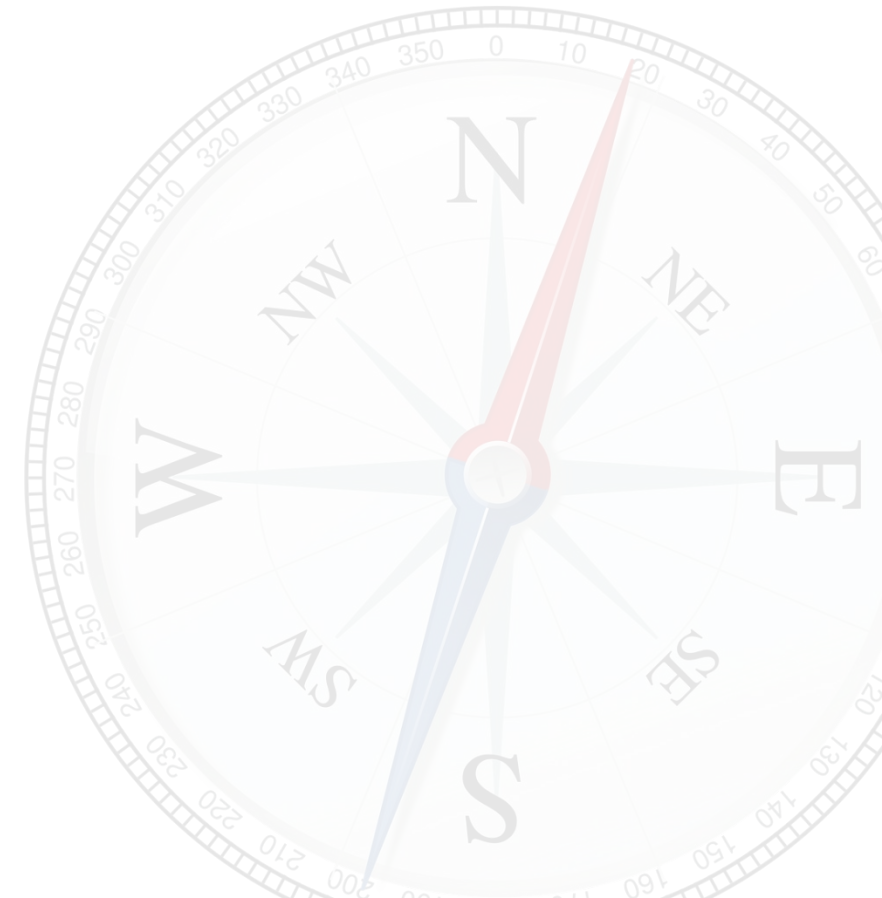
Moreover, the relevant target groups can be identified for existing products and offers.

Utilisation of the study:



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 - 1. Presentation of the charging profiles
 - 2. Driving, living, shopping
- (5) Correlation between personas and charging profiles



EV Personas

Overview

Eco-orientated
Techies

Thorsten



Status-conscious
conservatives

Andreas



Progressive
Performer

Sebastian



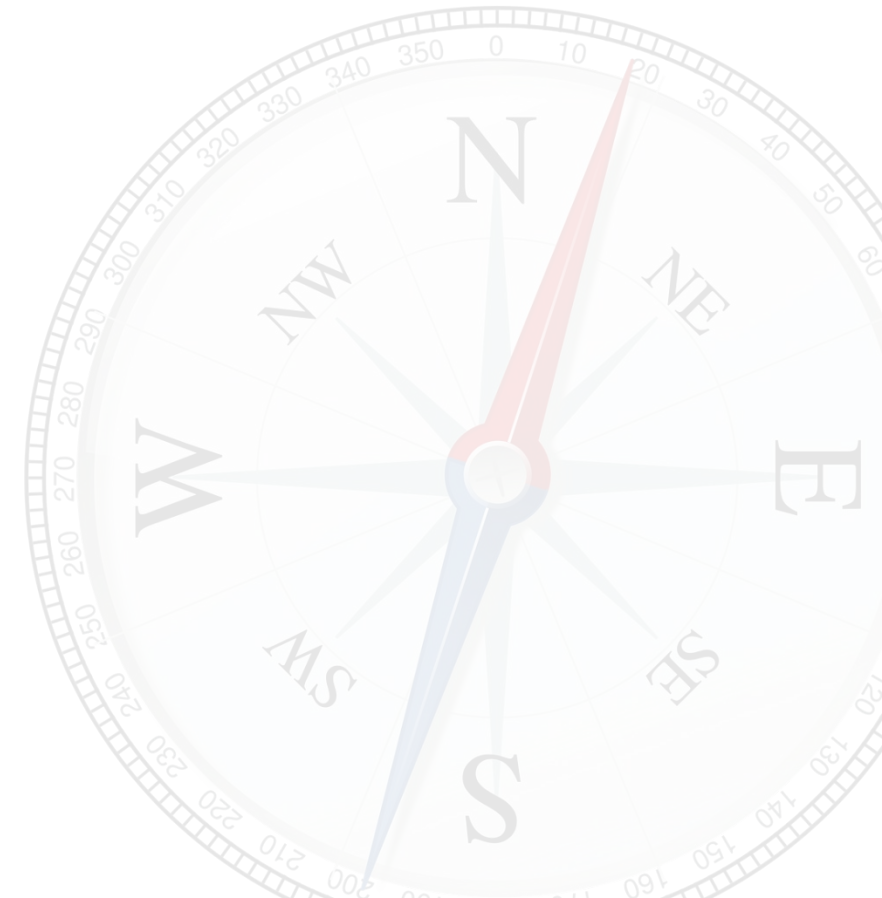
Thrifty
Pragmatist

Anna



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Preliminary remarks on the method

Simplified illustrations.

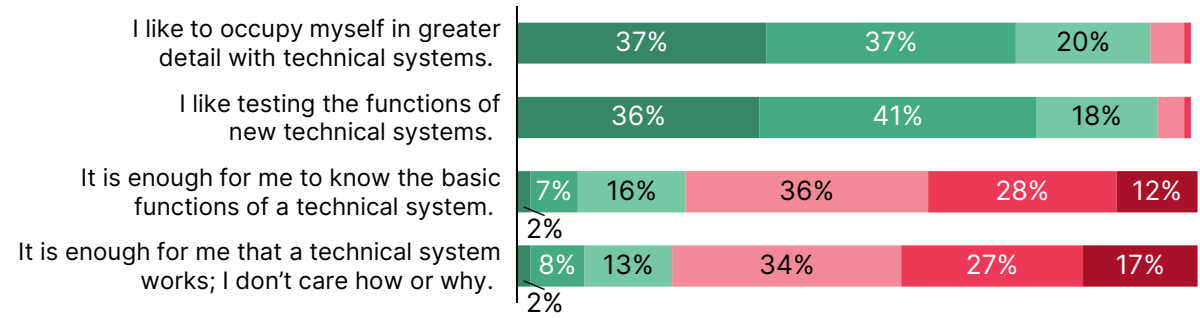
A large proportion of the characteristics surveyed were measured using a 5-point scale. All scale values were used for the clustering.

In order to emphasise the differences in the segments in the following illustrations, only the values for "strongly agree" were used in each case. The dashboard accompanying the study shows all values.

The delta values describe the difference between these values and the average of all respondents.

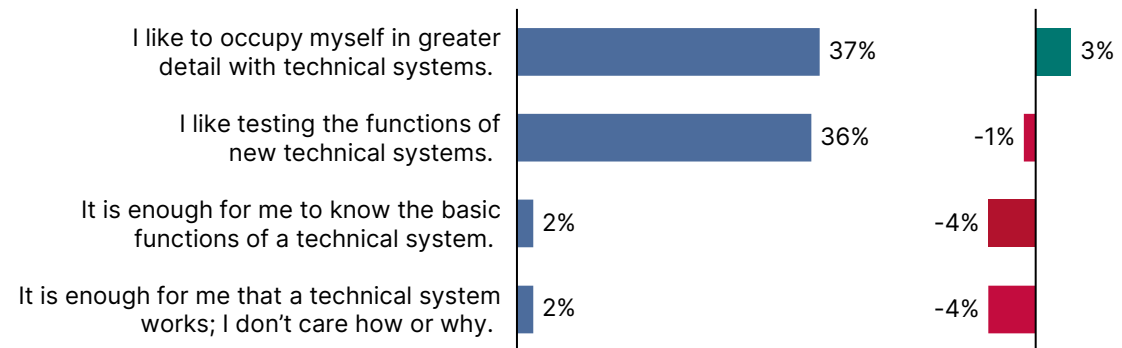
Technical affinity

Example



only share "fully agree"

Delta to average across all segments



Persona 1: Eco-orientated Techies (demographics)

Full version: 11 Slides per persona

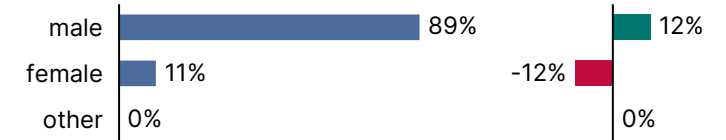
CHARGING PERSONA STUDIE

Eco-orientated Techies

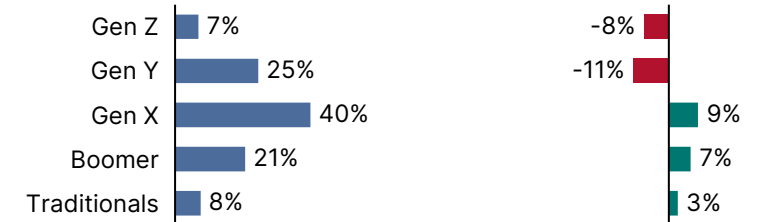


- Eco-orientated techies are highly motivated EV drivers. They value innovation, driving pleasure, ecological and cost benefits.
- They are interested in technical performance and digital capabilities. They have little interest in individualisation, maintenance and personal services.
- Their trust in experts is high, their trust in car dealers is low.
- They tend to read regional newspapers and many expert journals. Relevant topics are education, politics and science.

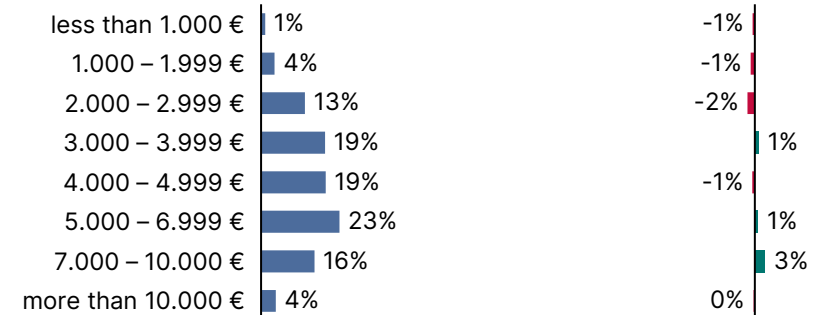
Gender



Age



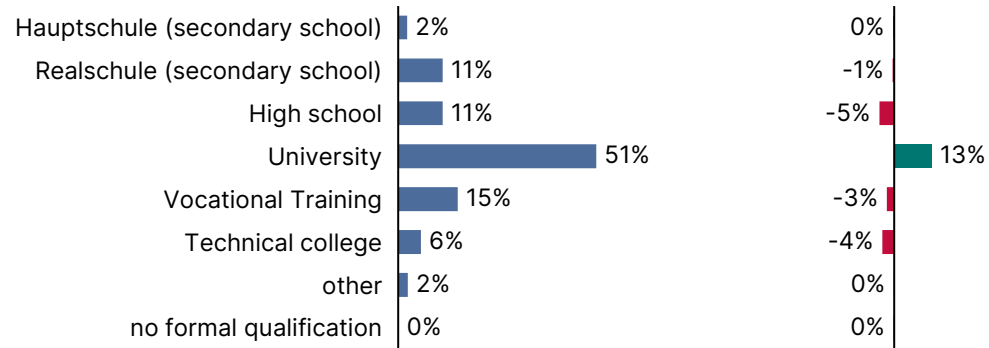
Income



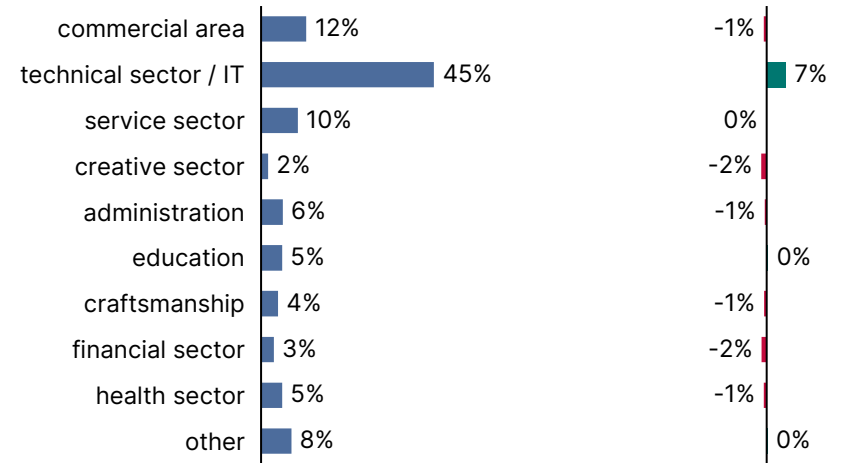
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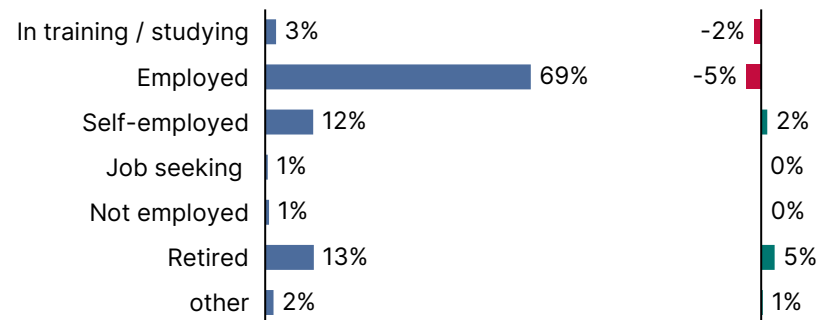
Level of education



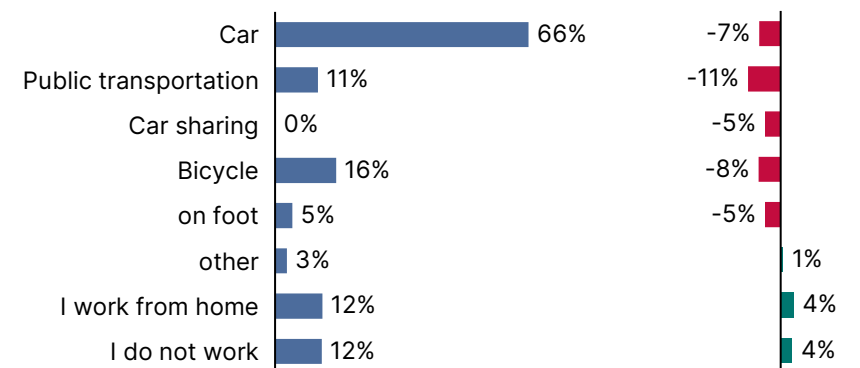
Field of activity



Employment relationship



Commuting to work

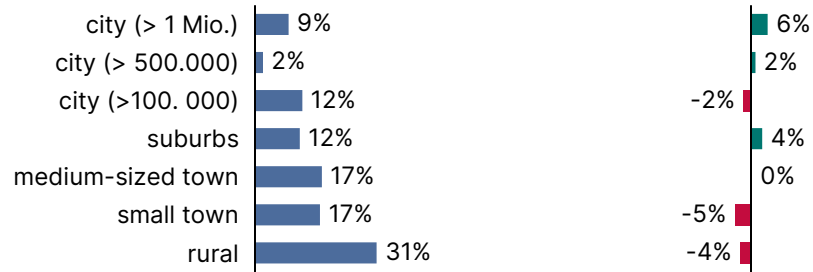


Persona 1: Eco-orientated Techies (living situation)

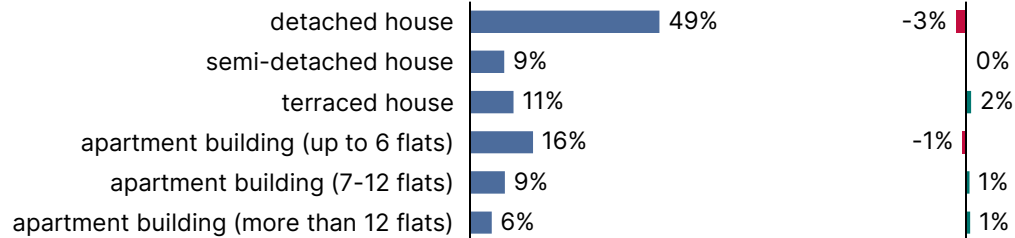
Full version: 11 Slides per persona

CHARGING PERSONA STUDIE

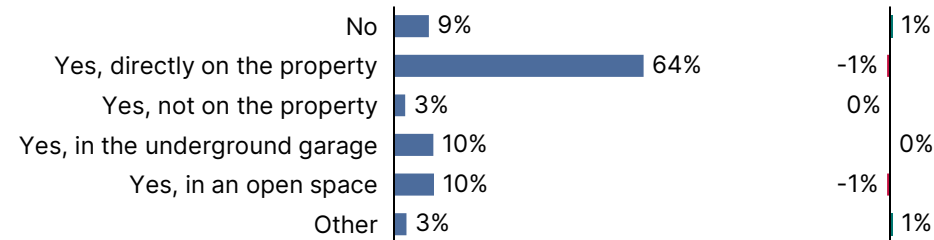
Place of residence



Residential house

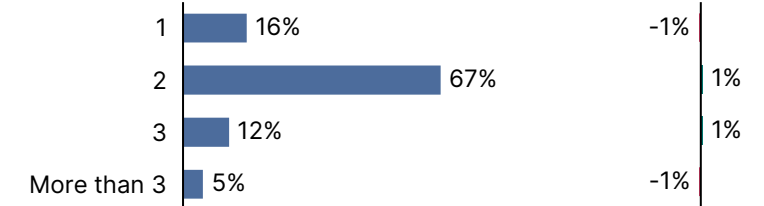


Parking

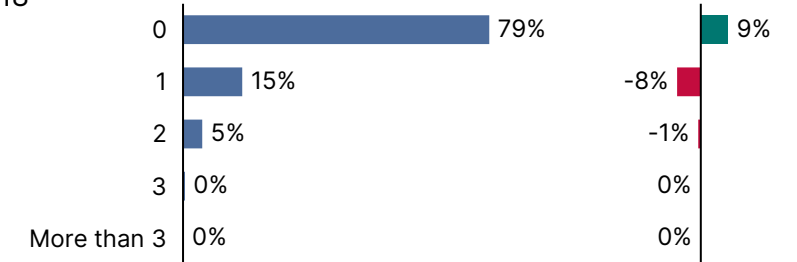


Number of people in the household

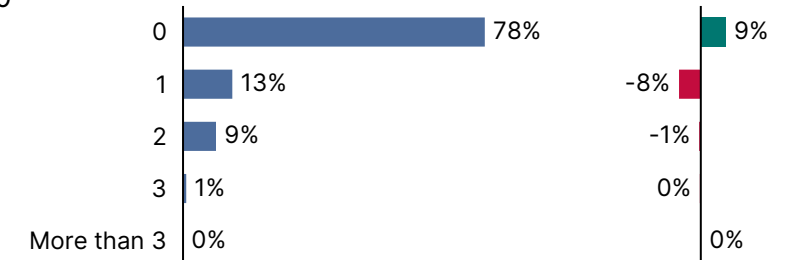
Adults



Children 10-18



Children < 10

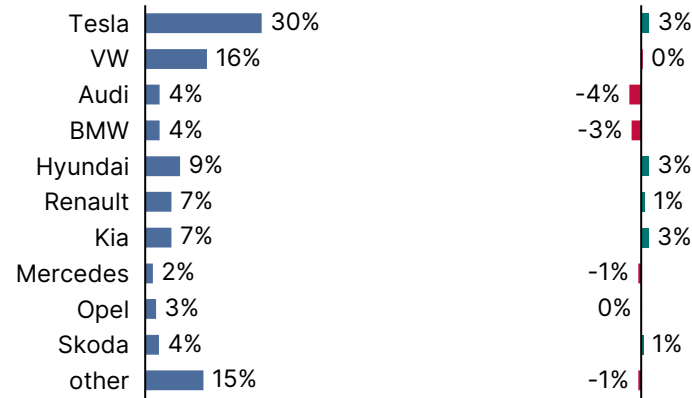


Persona 1: Eco-orientated Techies (vehicle and driving behaviour)

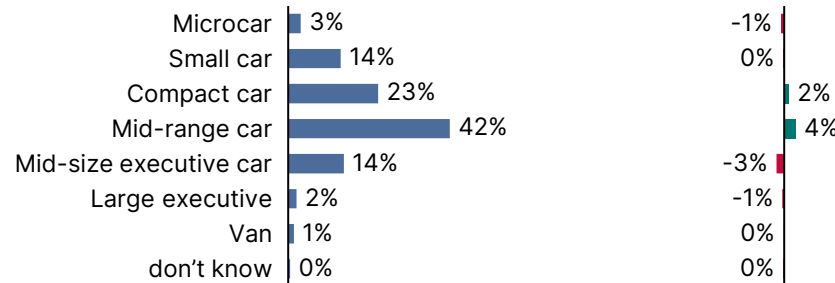
Full version: 11 Slides per persona

CHARGING PERSONA STUDIE

Brand driven



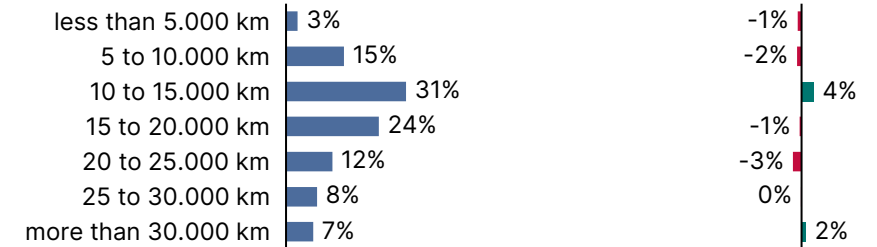
Segment



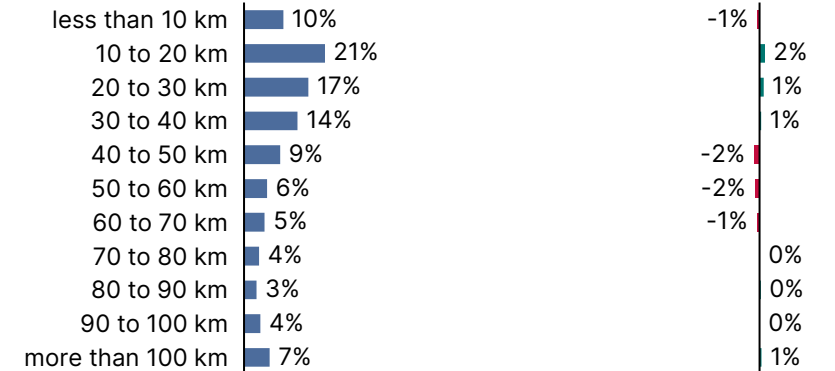
Ownership



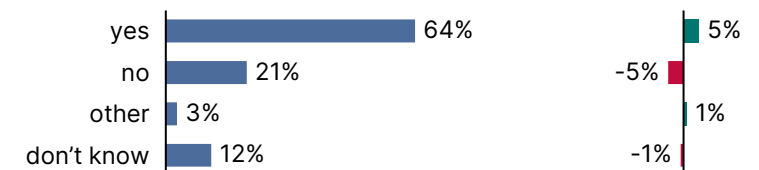
Mileage per year



Mileage per day



Holidays with EV

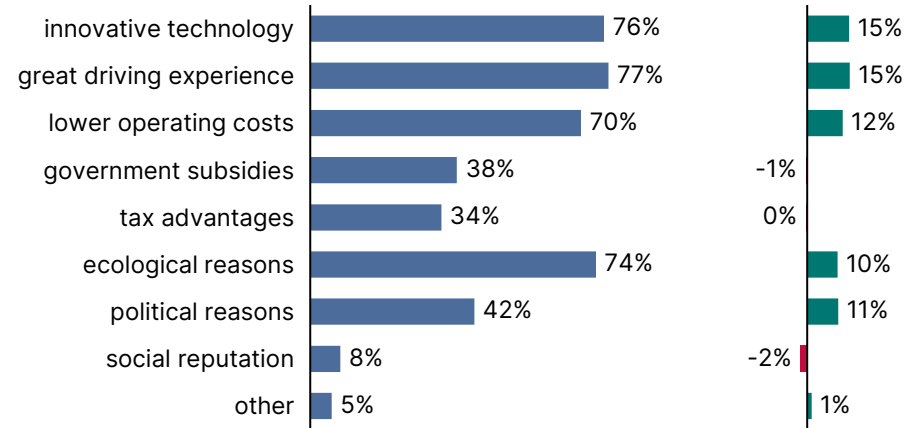


Persona 1: Eco-orientated Techies (vehicle purchase)

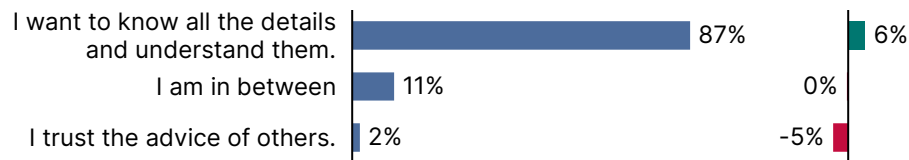
Full version: 11 Slides per persona

CHARGING PERSONA STUDIE

EV Motivation



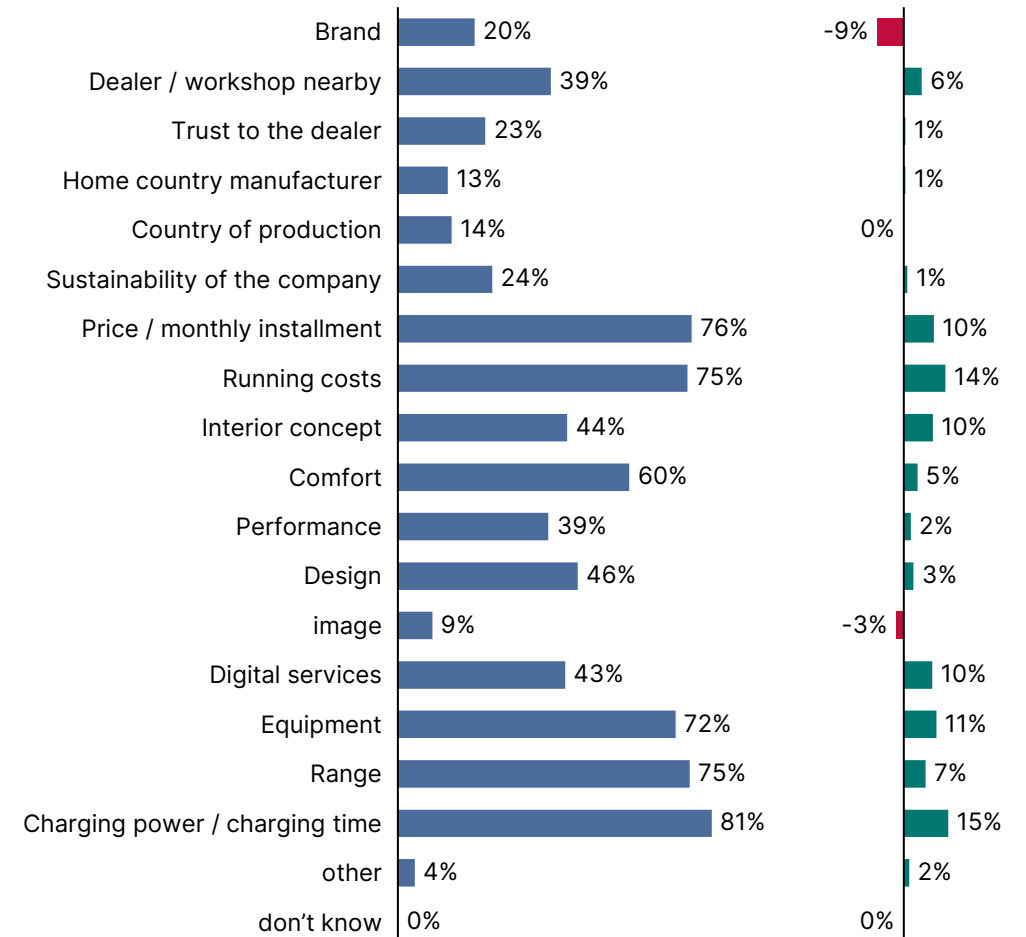
Information type



Interest in used cars



Important aspects of vehicle purchase



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Charging profiles

Overview

There are 5 charging profiles based on driving, living and charging behaviour.

CHARGING PERSONA STUDIE

Homebodies	Commuter	Flexible	Long Driver	Metropolitans
<ul style="list-style-type: none"> – Driving little per day and year – Rural living in a single-family home – Charging only when required 				
40%				



The cluster sizes depend heavily on recruitment. The proportions shown are therefore only estimates.

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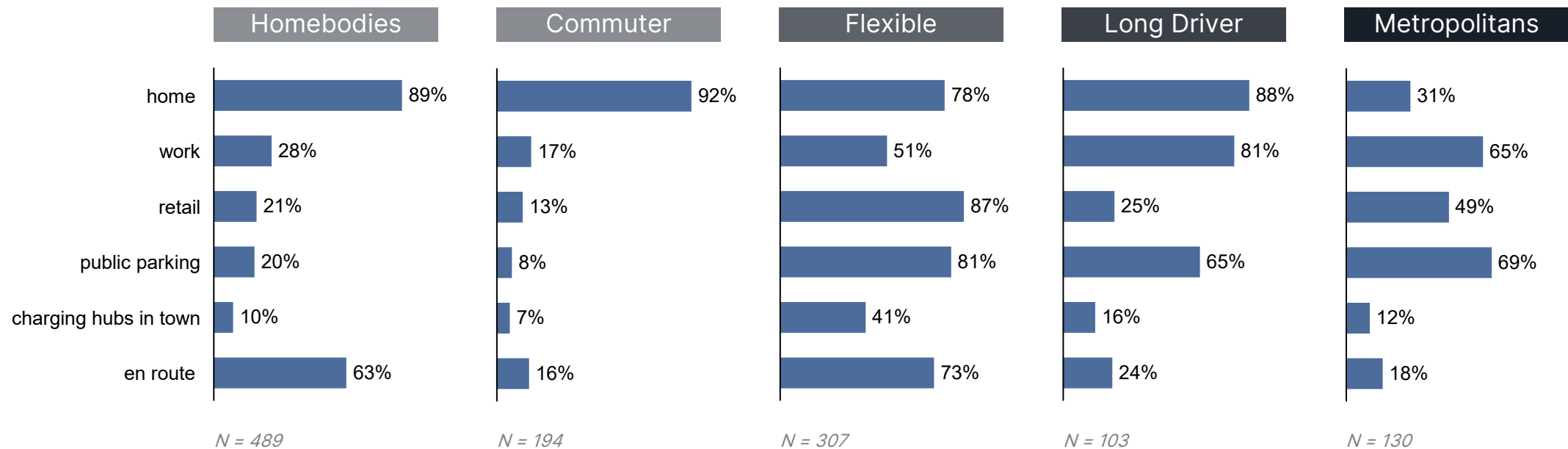


Charging profiles

Charging Locations

Homebodies and commuter mainly charge at home. The other segments also frequently use other charging locations.

"Where do you charge your [make + model]?"





SCALE YOUR USER
SCALE YOUR BUSINESS

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