Excerpt
(Total length of the
study: 98 pages)

Decision-making process driving current

Data instead of opinions: Personas for provider selection of driving current at home

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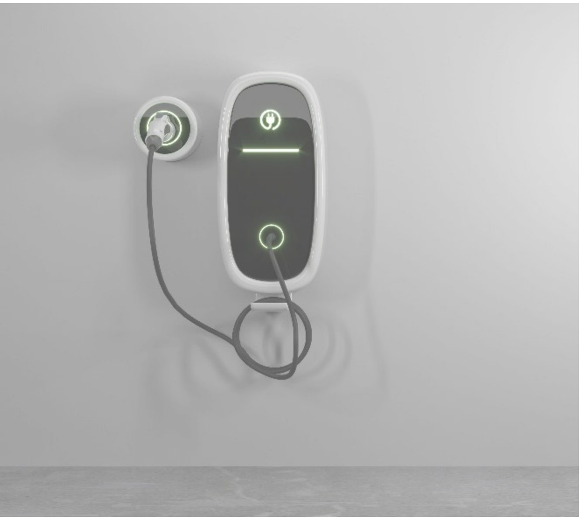
Decision-making process driving current

Initial situation



Initial situation

- So far, offers for e-car drivers have mostly focused on technical equipment for charging at home and driving current offers for public charging.
- The market for driving current at home is still largely in the hands of the often regional suppliers.

Objective

- Relevant decision situations and criteria for selection of driving current supplier.
- Identifying optimal driving current offer for e-car shoppers and owners.
- Criteria for optimally addressing individual target customer segments.

Decision-making process driving current

Challenges for domestic electricity suppliers

Numerous touchpoints in the info process

- Generally high demand for information on the part of the customer. Interaction with a large number of different providers.

Dynamic competition

- Large number of established and new players in the electricity market with a strong connection to eMobility.
- 95% of all home chargers also charge publicly and conclude several eMSP contracts for this purpose - high risk for regional suppliers.

Moments of Truth during use

- Critical moment, e.g. in the case of annual billing with high additional payment of household electricity for home chargers.

Sample

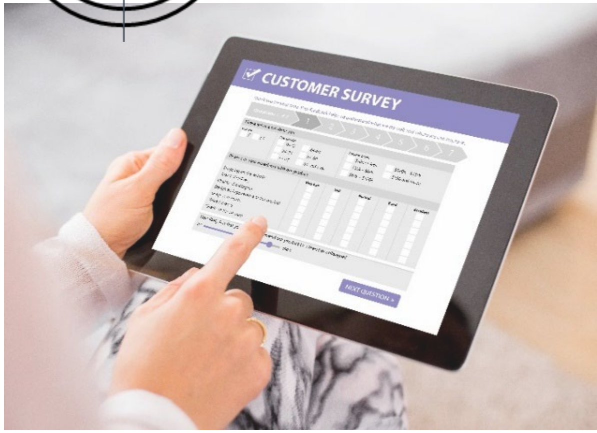
Target group

Sample:

- Total sample: N = 2,424
  of it:
    - e-car owners: N = 2,163
    - People interested in e-cars: N = 261
- Sub-sample for analysis of sales: N = 1,512
  (Criterion: e-car owners with charging possibility at home)

Survey:

- Survey: online
- Countries: German-speaking countries (DACH)
- Recruitment: Social Media
- Interview duration: 15 - 20 min
- Implementation: September 2021



Decision-making process driving current

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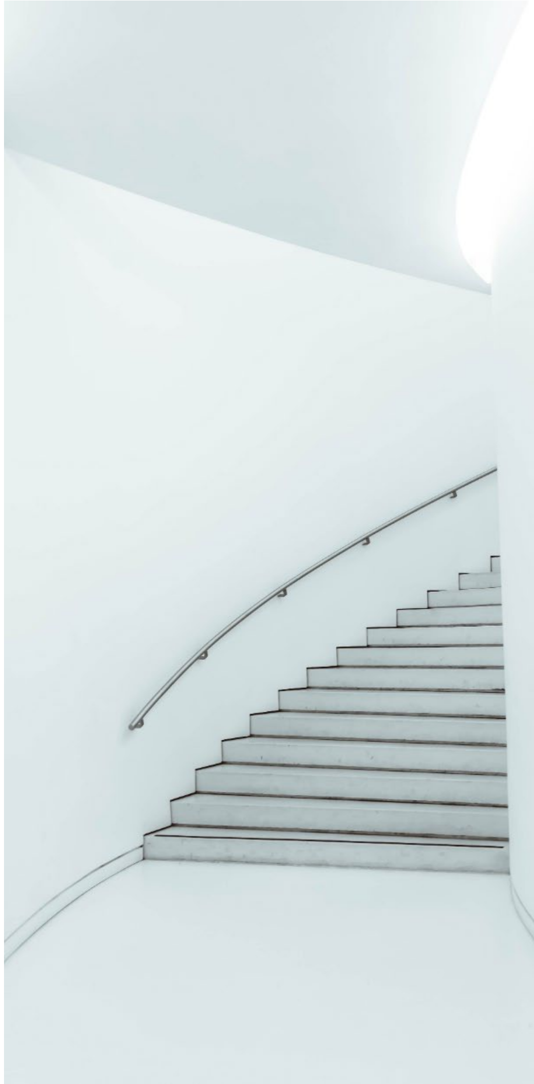
▶ (1) Management summary

(2) Sample

(3) Results across the entire sample
  1. Driving behaviour and housing situation
  2. Charging behaviour and habits
  3. Decision criteria for driving current providers for charging at home

(4) Persona-building
  1. User segmentation (persona formation)
  2. Persona profiles



Decision-making process driving current

Management summary

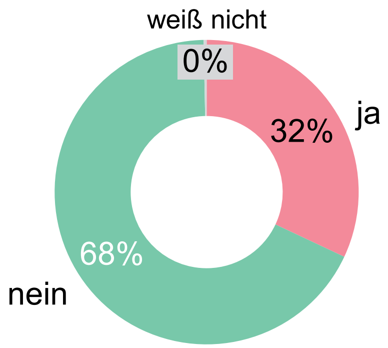
1

Every third person changes their electricity supplier.

One third of e-car buyers with home charging change their electricity provider in connection with the purchase of the car.

The market ramp-up of eMobility offers great opportunities for new providers in the eMobility ecosystem and thus becomes a risk for energy suppliers.

Change of electricity supplier:



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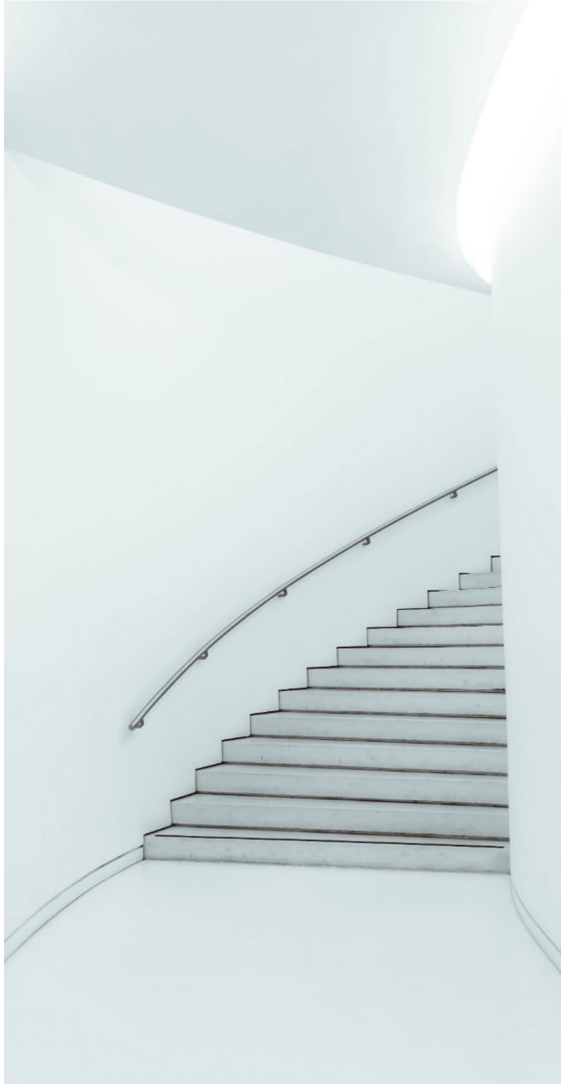


Sample

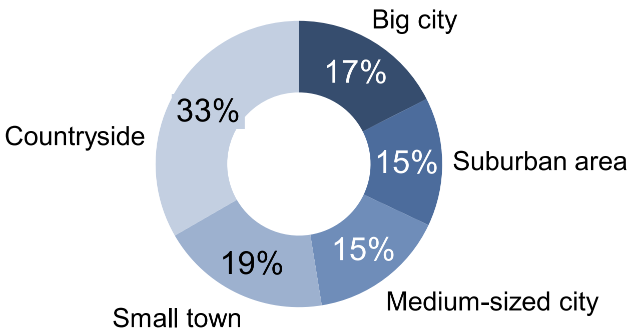
Place of residence and educational attainment

Every third e-car driver from the countryside.
50% academics.

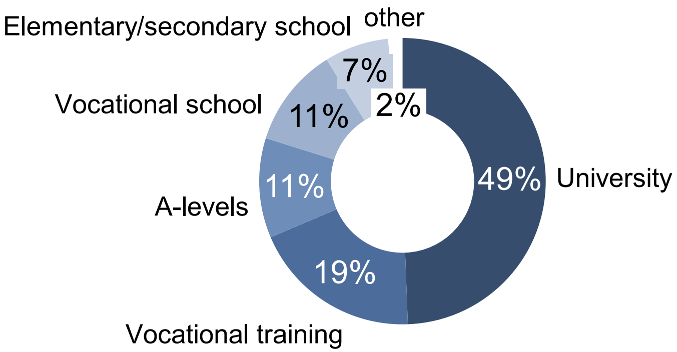
Respondents from rural areas are equally represented in the study as e-car drivers from large cities and their surrounding areas.

About half of the respondents have a university degree. This means that the highest level of educational attainment of the respondents is significantly higher than the average for Germany as a whole (approx. 21% with a university degree*).

"How do you live?"



"What is your highest educational qualification?"



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* Institute for Employment Research of the Federal Employment Agency, 2017

Sample

Occupation and net household income

[illegible]

[illegible]

[illegible]

"What is your professional position?"

"What is your monthly household net income?"

[illegible]

Sample

Motives for eMobility

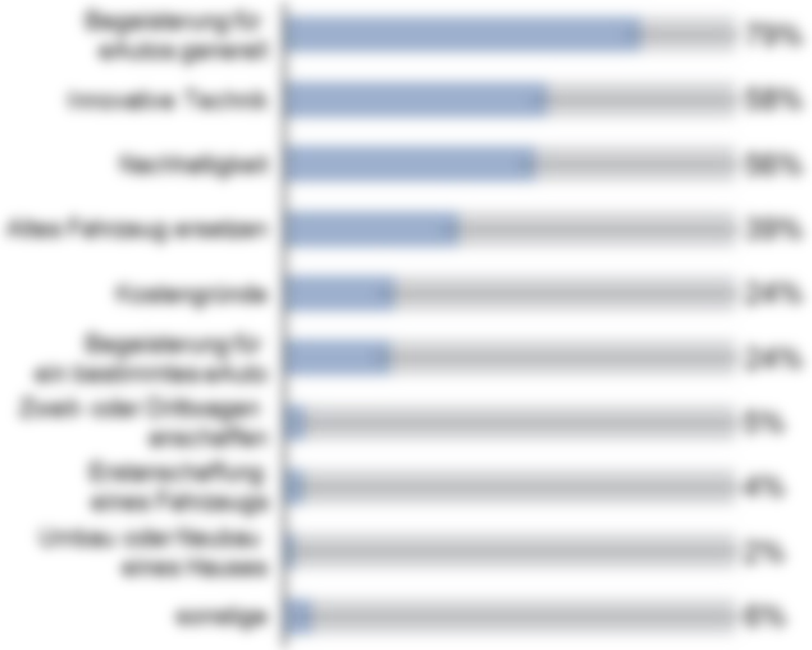
Begeisterung für Technologie und Nachhaltigkeitsaspekte

Noch immer dominieren die Begeisterung für die eMobilität und Nachhaltigkeitsmotive die Liste der Kaufgründe aktueller eAuto-Käufer:innen.

Diese Motive beschreiben typisches Innovatoren- und Early Adopter Verhalten.

Zum Vergleich:
Auch 2019 spielte die Begeisterung für Innovation und Technologie bei den eAuto-Käufer:innen mit 78% eine wichtige Rolle. Die ökologischen Motive lagen 2019 noch bei 78% und sind also leicht zurückgegangen.

"What was the main reason for you to get involved with eCars? (Multiple answers possible)"



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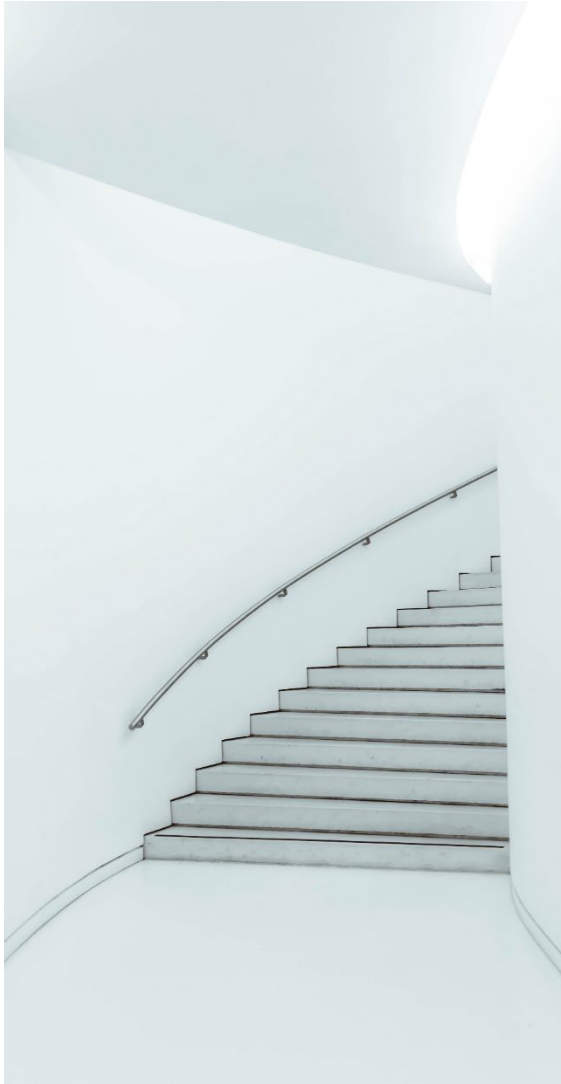


Descriptive analysis

Preliminary remark

Do user groups differ in all aspects of behaviour?

The characteristics of e-car drivers and the criteria for choosing an electricity supplier differ significantly in some criteria and not at all in others.

The following descriptive analysis shows the results for all e-car drivers who participated in the study. Characteristics in which there are differences for user segments are marked.

Questions for providers:

- We drive and charge the e-car drivers?
- Which criteria are relevant for the choice of driving current provider and driving current tariff?

Driving behaviour and housing situation

Driving performance

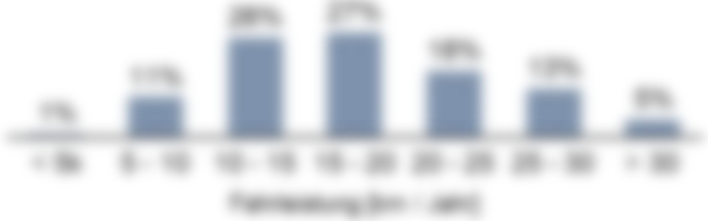
eAutos mit überdurchschnittlichen Fahrleistungen.

Mehr als 60% der eAuto-Fahrer:innen fahren mehr als 15.000 km pro Jahr. Damit liegen die durchschnittlichen jährlichen Fahrleistungen über denen von Verbrennerfahrzeugen (ca. 13.700 km / Jahr*).

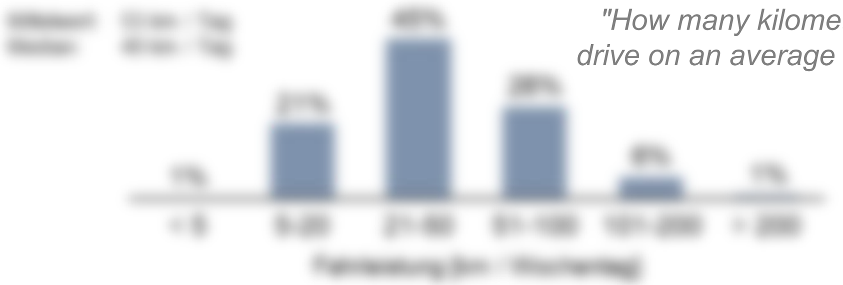
Im Durchschnitt fahren die Befragten 53 km pro Tag.

Nur 40% fahren mindestens einmal im Monat eine Strecken, auf der sie zwischenladen müssen.

"Approximately how many kilometres do you drive your [make + model] per year?"

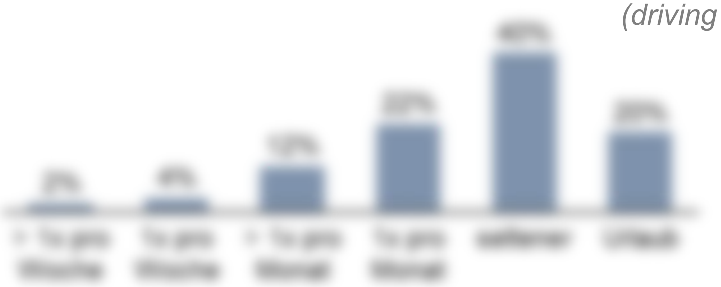


"How many kilometres do you drive on an average weekday?"



"How often do you drive long distances where you have to charge your e-car?

(driving distance > range)



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* DAT Report 2021 [illegible]

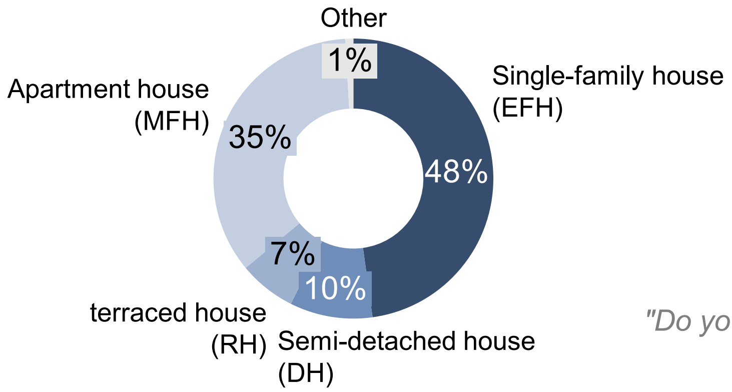
Driving behaviour and housing situation

Housing situation and parking

Two thirds live in their own house.

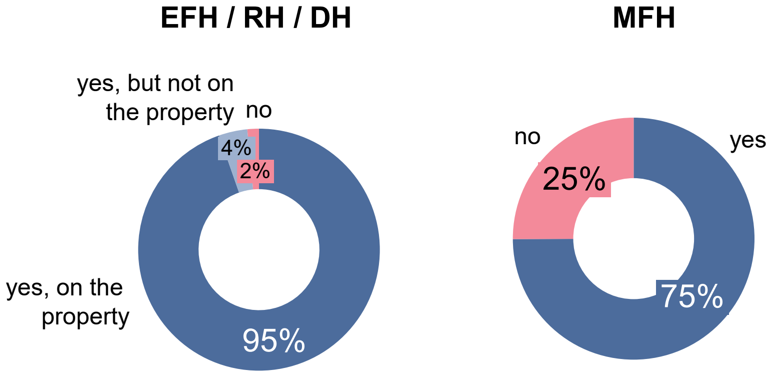
Around half of the respondents live in a single-family house, a good third in an apartment building. One in six lives in a semi-detached or terraced house.

Across all respondents, 90% have their own (garage) parking space.



"What is your housing situation?"

"Do you have your own garage / parking space?"



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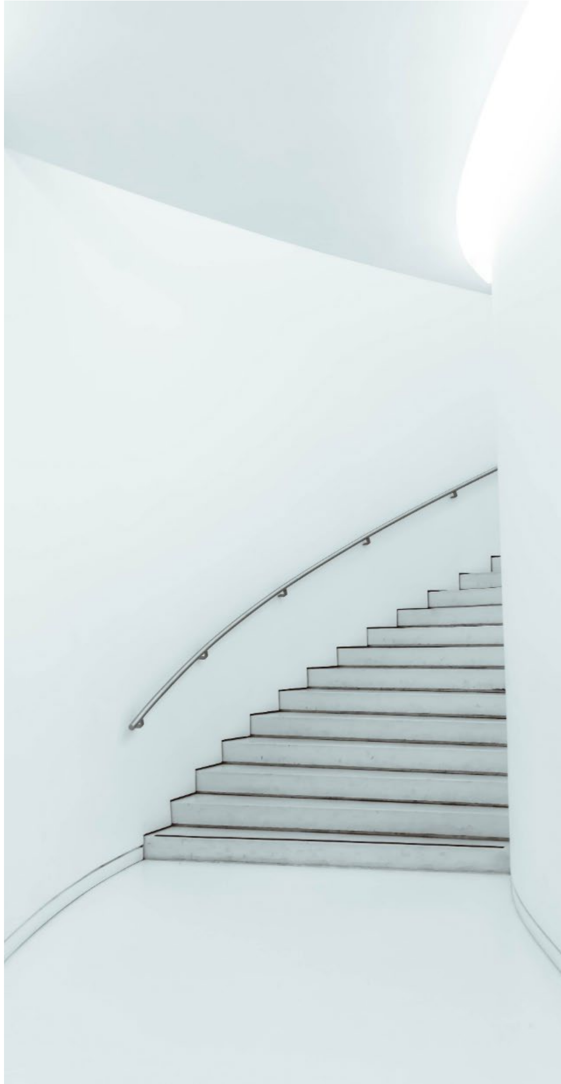


Charging behaviour and habits

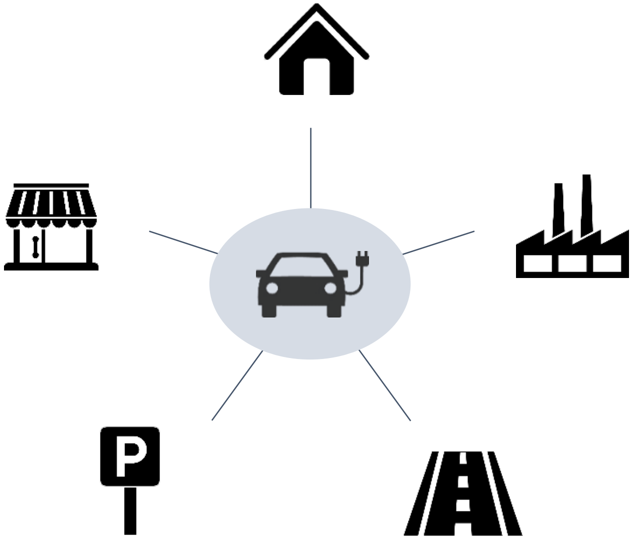
Preliminary remark

Why is knowledge about charging behaviour important?

In the public discussion it is often assumed that e-car drivers mainly charge at home. The rest is divided between employers and charging at motorways. These assumptions are no longer tenable.

Questions for eMSP:

- Where do which e-car drivers charge? Where do your own customers charge?
- Which cooperations are necessary to be represented at the relevant charging locations?



Charging behaviour and habits

Charging options*

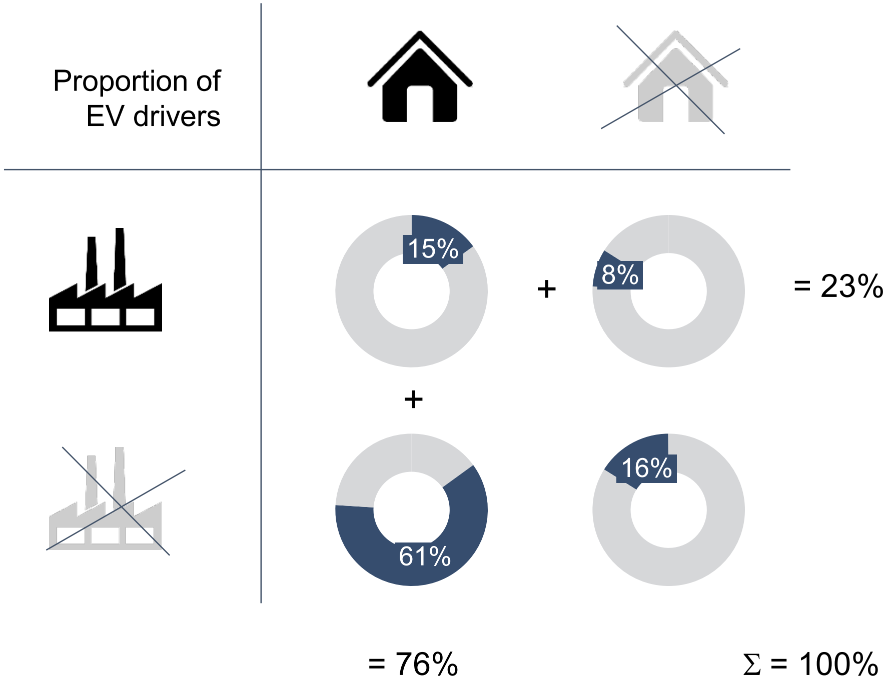
76% with a charging option at home.

Three quarters of the respondents have a charging option at home. Among them 15% with an additional charging offer at the employer.

23% have an option to charge at the employer.

16% of e-car drivers are completely dependent on the public charging infrastructure.

Proportion of respondents with charging facilities at home and / or at the employer:



* This question is asked in several UScale surveys. For the sake of a larger sample, responses from several surveys were combined for this analysis.

Charging behaviour and habits

Loading locations*

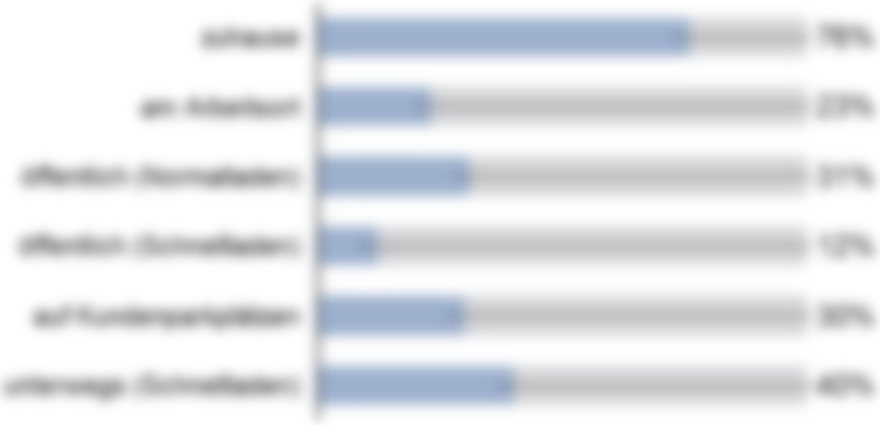
(Halb-)Öffentliche Ladeangebote sind ein wichtiger Bestandteil im Lade-Ökosystem.

Drei Viertel der Befragten können zuhause laden und knapp ein Viertel hat eine Lademöglichkeit beim Arbeitgeber.

In der Gesamtheit der Befragten (inkl. Zuhause- und Arbeitgeberlader) laden im Durchschnitt 31% an öffentlichen AC-Ladesäulen.

Die Befragten nennen durchschnittlich 2,1 Ladeorte, an denen sie üblicherweise laden.

"Where do you usually load your [brand]?"



[illegible]

23% der Befragten laden (auch) am Arbeitsort

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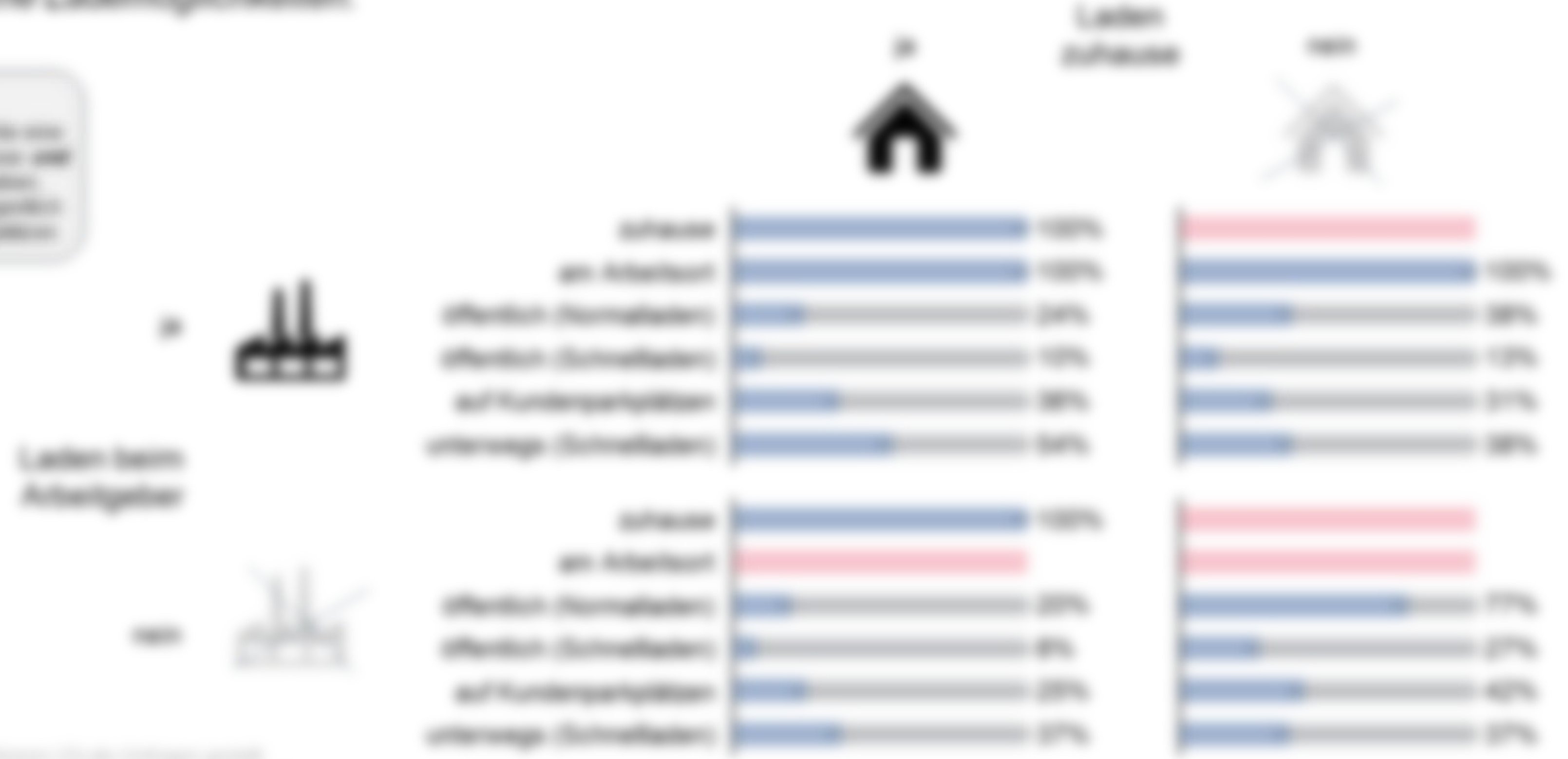
* [illegible]

Charging behaviour and habits

Loading locations

"Where do you usually load your [brand]?"

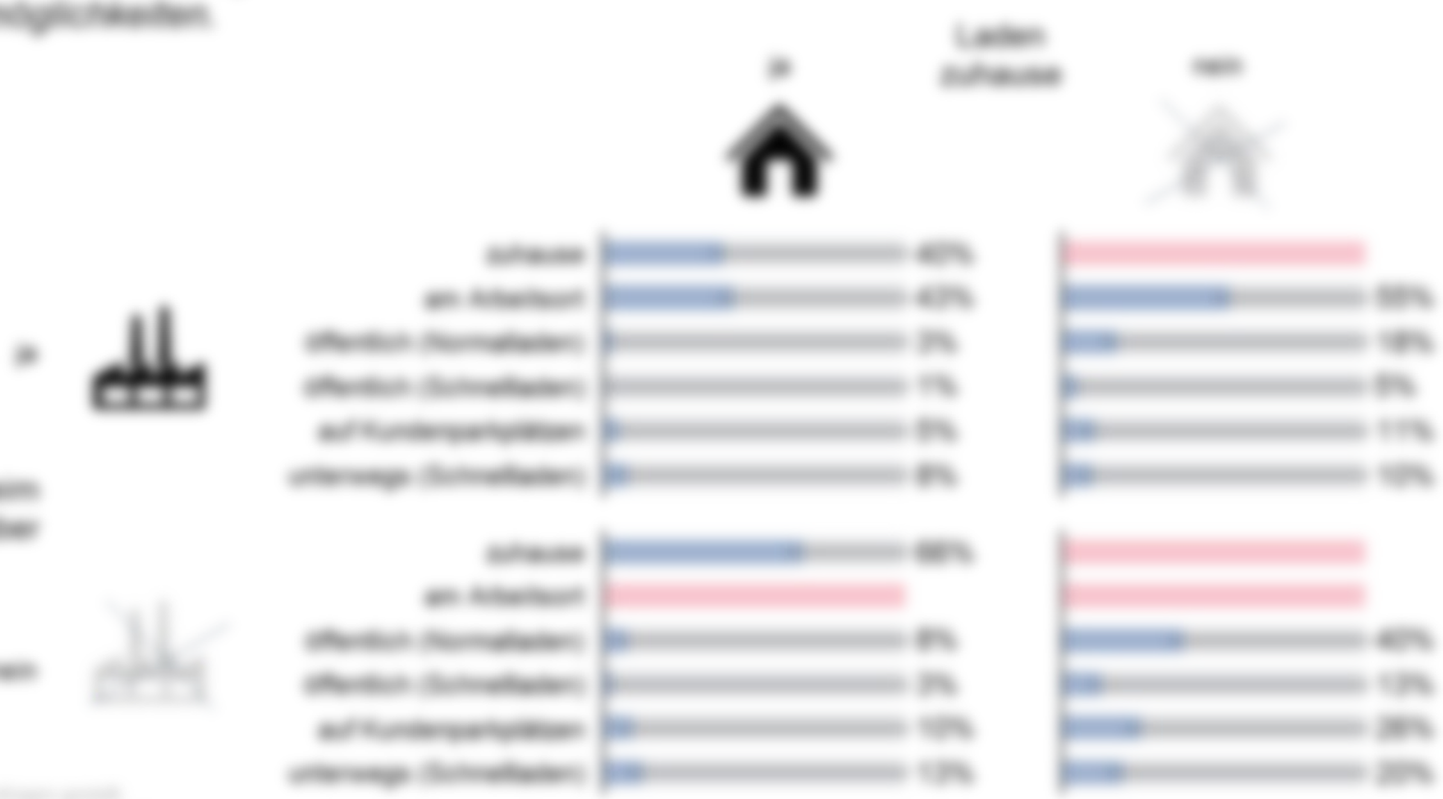


Charging behaviour and habits

Energy quantities per charging location

"Approximately what proportion of your annual charging power do you charge where?"

[illegible]



[illegible]

Charging behaviour and habits

Charging occasions*

Pragmatisches Ladeverhalten.

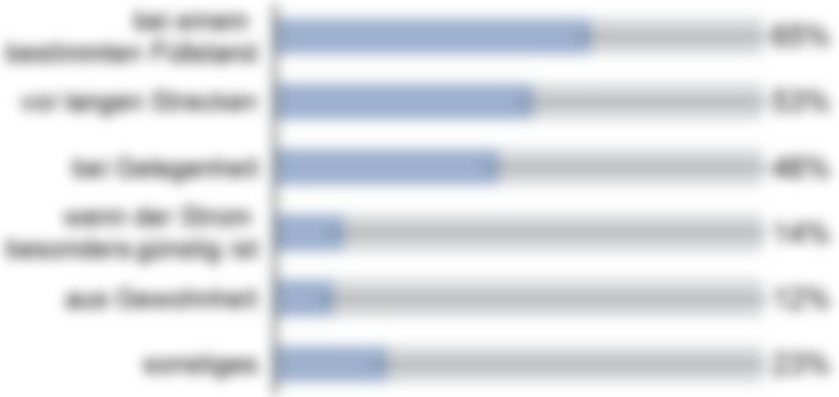
Es überrascht nicht, dass in eAuto-Fahrer:innen vor längeren Fahrten oder bei Unterschreiten eines bestimmten Batteriefüllstands (SoC) laden.

Überraschend dagegen ist, dass auch 48% der Befragten zufällige Gelegenheiten zum Laden nutzen, selbst wenn der SoC noch kein Laden erforderlich machen würde.

Nur wenige laden bei einem SoC unter 10%. Die Mehrheit der Befragten lädt bei einem Füllstand zwischen um die 30%.

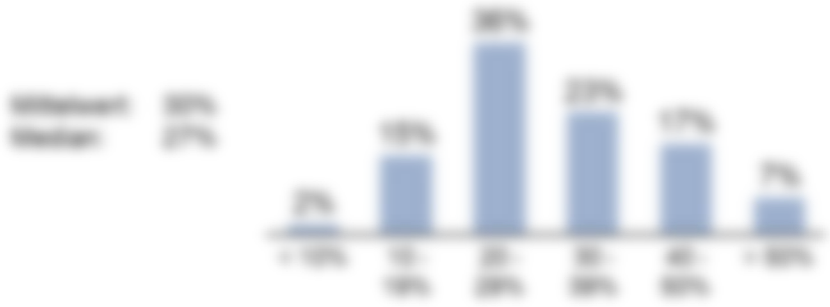
"When do you usually load your [badge]?"

(Multiple answers possible)



for charging at a certain level:

"At what battery level do you usually charge?"



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Charging behaviour and habits

Charging technology at home: expansion requests

[illegible]

Do you plan to further expand your charging technology at home? = yes

[illegible]

[illegible]

[illegible]

Charging behaviour and habits

Charging requirements

Hohe Bereitschaft zu adaptivem Verhalten.

eAuto-Fahrer:innen zeigen sich flexibel. Der Wunsch, möglichst regelmäßig, z.B. täglich zu laden, Laden ist gering. Auch der Anspruch, immer volle Leistung zu erhalten, ist nur bei einem Viertel vorhanden.

Zwei Drittel sind bereit, ihre Ladewünsche bei Engpässen anzupassen, solange das eAuto in der Früh zuverlässig geladen ist und der Preis stimmt.

"How would you rate the following statements when charging at home?"

möglichst viel Strom aus eigener PV-Anlage
eAuto optimal in EMS integrieren
am System möglichst viel selbst einstellen
möglichst günstig laden
in der Früh zuverlässig vollgeladen
passe Ladewünsche bei Engpässen gerne an
volle Leistung - sofort und immer
möglichst regelmäßig Laden
trifft gar nicht zu
trifft eher nicht zu
teils teils
trifft eher zu
trifft vollständig zu

Charging behaviour and habits

Loading fears

"How would you rate the following statements?"

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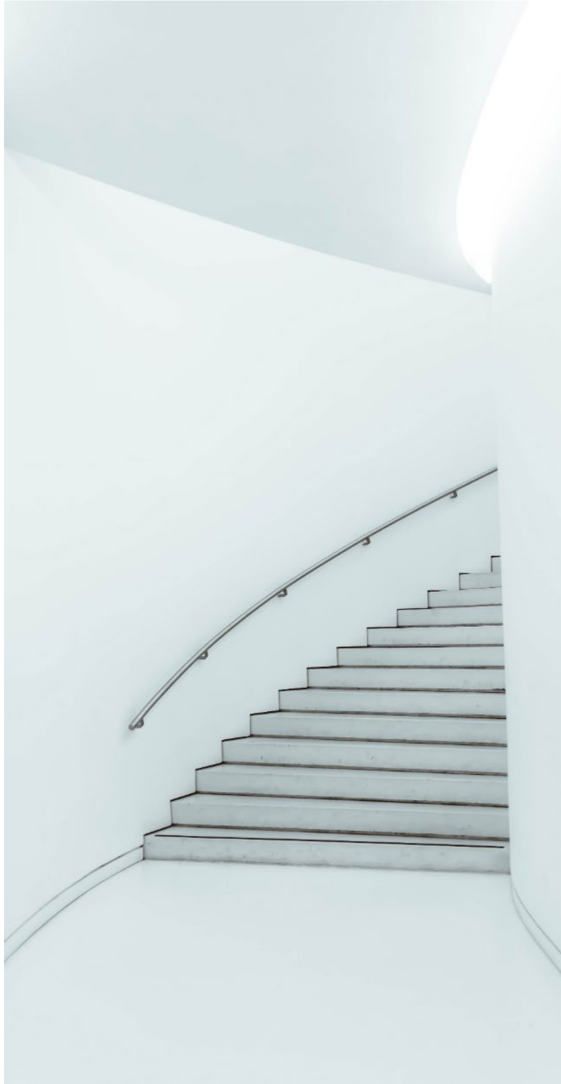


Choice of electricity supplier

Preliminary remark

How heterogeneous are the identified customer segments and what do they have in common?

The persona groups were formed based on their statistically significant differences in terms of their criteria when choosing their electricity tariff and supplier.

The results presented below have been summarised across all segments.

Characteristics with significant differences between the personas are marked.

Selection of electricity suppliers

Change of electricity supplier

Change of supplier usually directly when buying a car.

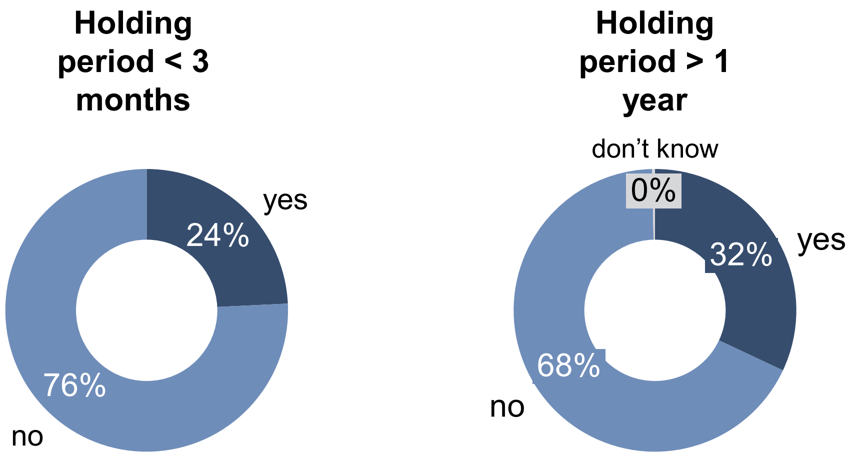
"Have you changed your electricity supplier in connection with charging at home?"

One year after buying the e-car, around one third have switched electricity providers.

Shortly after taking delivery of their e-car, a quarter have already changed their electricity supplier.

When e-car drivers change their electricity supplier in connection with the switch to an e-car, they do so in close temporal connection with the purchase of the e-car.

⚠ For different personas, there are significant differences to the change of supplier. For more information, see the chapter "Personas".



Selection of electricity suppliers

Change of electricity supplier

[illegible]

[illegible]

[illegible]

Holding period e-car > 1.5 years and change = yes

"When did you first consider taking out a separate electricity contract for charging electricity?"

Selection of electricity suppliers

Change of electricity supplier (reasons)

[illegible]

[illegible]

[illegible]

Change = yes

"Why did you change your electricity supplier?"

Selection of electricity suppliers

Criteria for choice of provider

" To your electricity supplier for charging power at home:

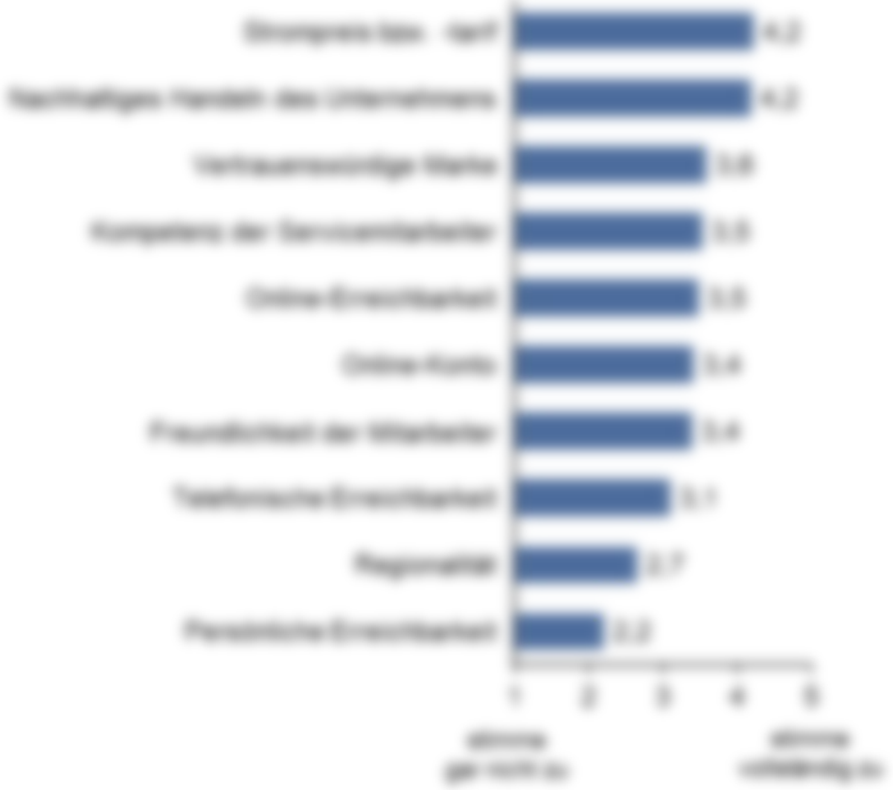
How important are the following criteria to you when choosing your provider?"

Preis und Nachhaltigkeit vorne.

Über alle Befragten liegt das Kriterien-Duo aus Preis und Nachhaltigkeit vorne.

Als wichtigster Kanal zur Kontaktaufnahme hat die Online-Kommunikation den telefonischen und persönlichen Kontakt abgelöst.

⚠ Für verschiedene Personas ergeben sich signifikante Unterschiede bei der Bedeutung der Kriterien für die Wahl. Hierzu siehe Kapitel ‚Personas'.



Selection of electricity suppliers

Criteria for tariff selection

" To your electricity supplier for charging power at home:

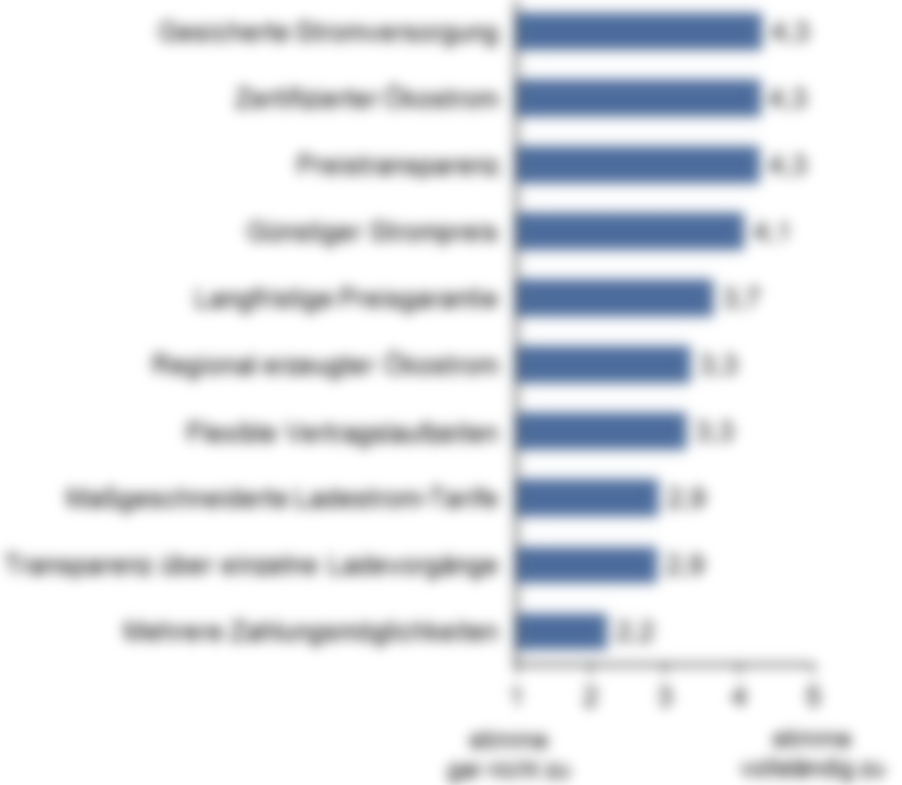
How important are the following criteria to you when choosing your Home and charging electricity tariff at home?"

Ökostrom und Preis vorne.

Über alle Befragten liegt das Kriterien-Trio aus Sicherheit, Ökostrom und Preis (-transparenz) vorne.

Alle übrigen Kriterien fallen dagegen deutlich zurück.

⚠ Für verschiedene Personas ergeben sich signifikante Unterschiede bei der Bedeutung der Kriterien für die Tarifwahl. Hierzu siehe Kapitel ‚Personas'.



Selection of electricity suppliers

Trust in electricity suppliers

[illegible]

"What is or would be your level of trust in the following electricity providers?"

[illegible]

[illegible]

[illegible]

[illegible]

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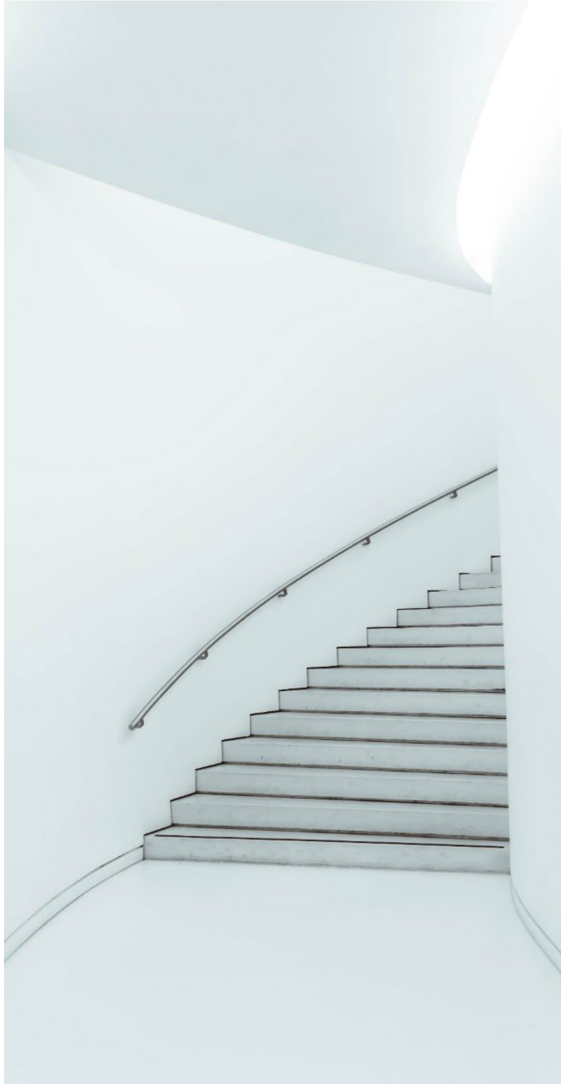


User segmentation (persona formation)

Preliminary remark

Why should customers be segmented, i.e. grouped together?

The characteristics of e-car drivers and the criteria for choosing an electricity supplier differ significantly in some criteria and not at all in others.

For the providers to be as successful as possible, the differences must be understood and the different user groups must be addressed with their own offers.

Questions for providers:

- Which user groups can be distinguished? How did they differ?
- With which messages do the different groups have to be addressed?

User segmentation (persona formation)

Methodology: Factor and cluster analysis

Three steps to a persona.

Variable analysis

Presentation of the survey results for each variable

Variable 1
Variable 2
Variable 3
...

Variable n

Basis of analysis:
Scaled user ratings

Factor analysis

Reduction of variables to a few with high "discriminatory power".

- Factor 1 (e.g. variable 1.3)
- Factor 2 (e.g. variable 2)
- Factor 3 (e.g. variable 4,5,6)
- Factor 4 (e.g. variable 7, 8)
- Factor 5 (e.g. variable 10)

Basis of analysis:
Correlations of the variables

Cluster analysis

Formation of groups of people with similar response behaviour

- Cluster 1 Persona 1
- Cluster 2 Persona 2
- Cluster 3 Persona 3
- Cluster 4 Persona 4

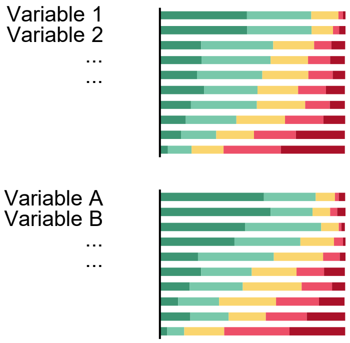
Basis of analysis:
Significant differences

User segmentation (persona formation)

Methodology: Factor and cluster analysis

Preparation of the results

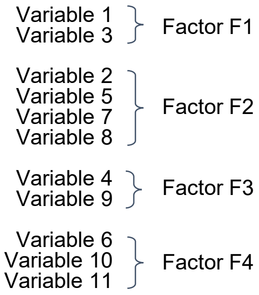
Descriptive user ratings



Descriptive analysis of all criteria.

Which are the same for all segments, i.e. personas? For which ones are there significant differences?

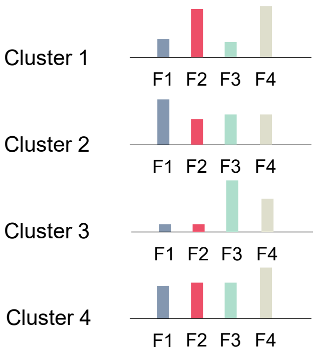
Factor formation



Variable 1, Variable 3 → Factor F1
Variable 2, Variable 5, Variable 7, Variable 8 → Factor F2
Variable 4, Variable 9 → Factor F3
Variable 6, Variable 10, Variable 11 → Factor F4

How can variables be summarised in terms of content? Which "umbrella terms" (= factors) can be derived?

Clustering

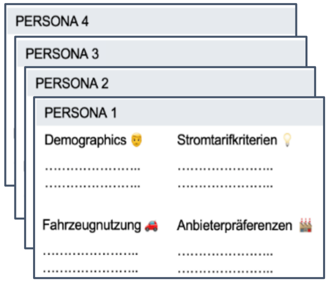


Which respondents have similar ratings for the factors?

What do the respondents have in common? Where do the respondent groups differ?

Which personas can be derived?

Persona interpretation



PERSONA 4
PERSONA 3
PERSONA 2
PERSONA 1
Demographics
Stromtarifkriterien
Fahrzeugnutzung
Anbieterpräferenzen

In which market characteristics do the personas differ (descriptive analysis according to personas)?

How does their behaviour differ?

User segmentation (persona formation)

Possible supply dimensions

The 5 personas essentially differ in the criteria of aspiration, regionality and price.

Regionality **Price**

Claim

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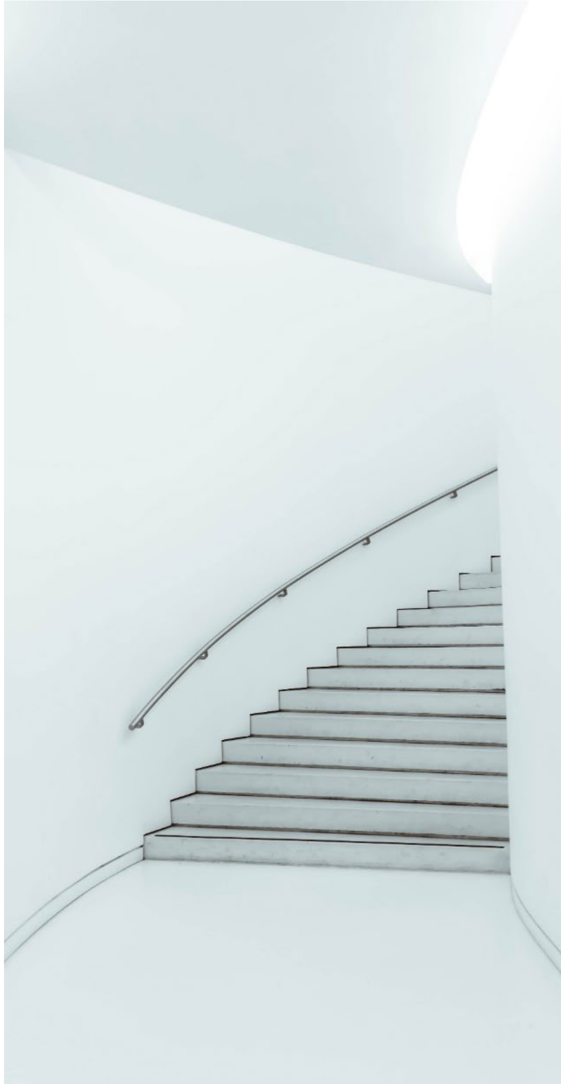
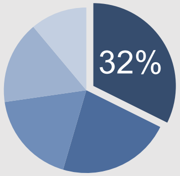
1. User segmentation (persona formation)
2. Persona profiles:
    - Global demander
    - Local demander
    - Local ecos
    - Global ecos
    - Price-conscious



Persona Profile Global Demander

Socio-Demographics

1 **Global Demander***



(N = 489)

Housing situation

Occupation

Net household income (in €)

* Age and gender show no differences to the other segments.

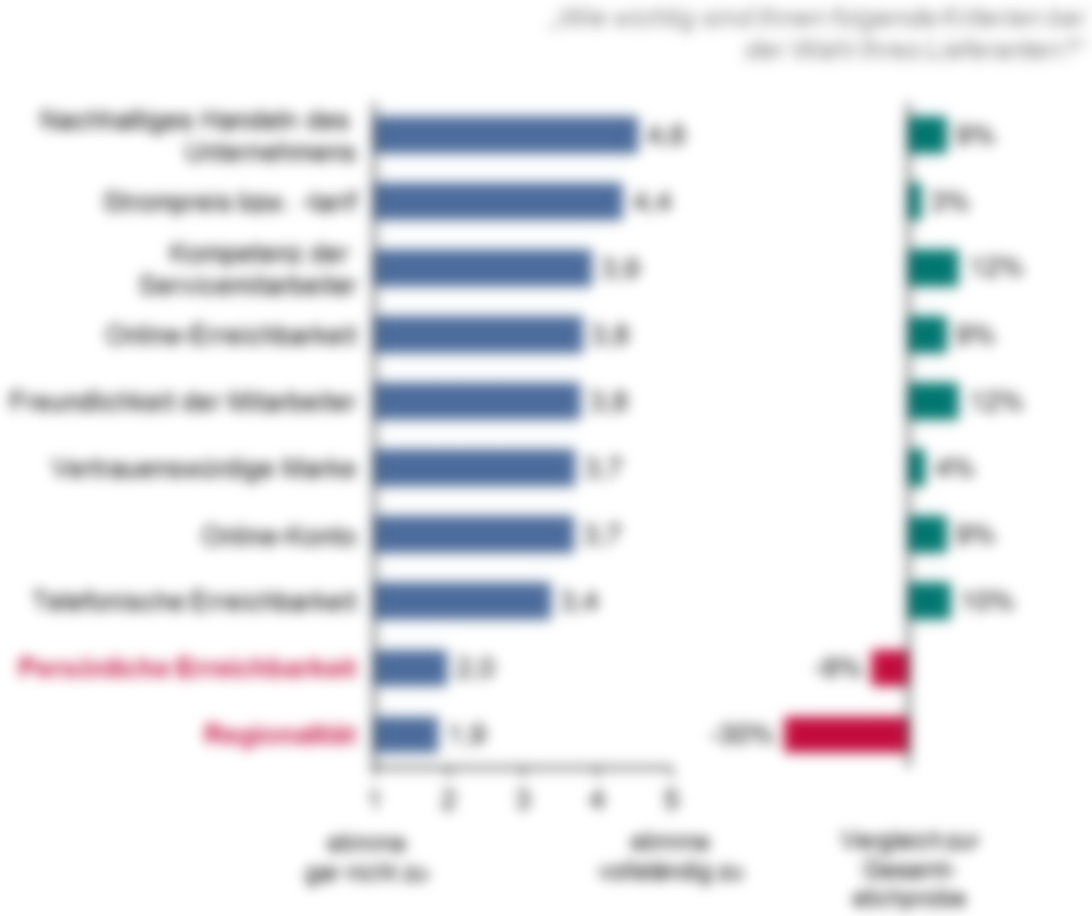
Persona Profile Global Demander

Electricity suppliers: Criteria

Hoher Anspruch an (fast) alle Kriterien.

Die Globalen Demander zeigen sich in den meisten Kriterien anspruchsvoller als der Durchschnitt.

Einzig auf Regionalität und die persönlichen Erreichbarkeit der Service-Mitarbeiter legen sie weniger Wert.

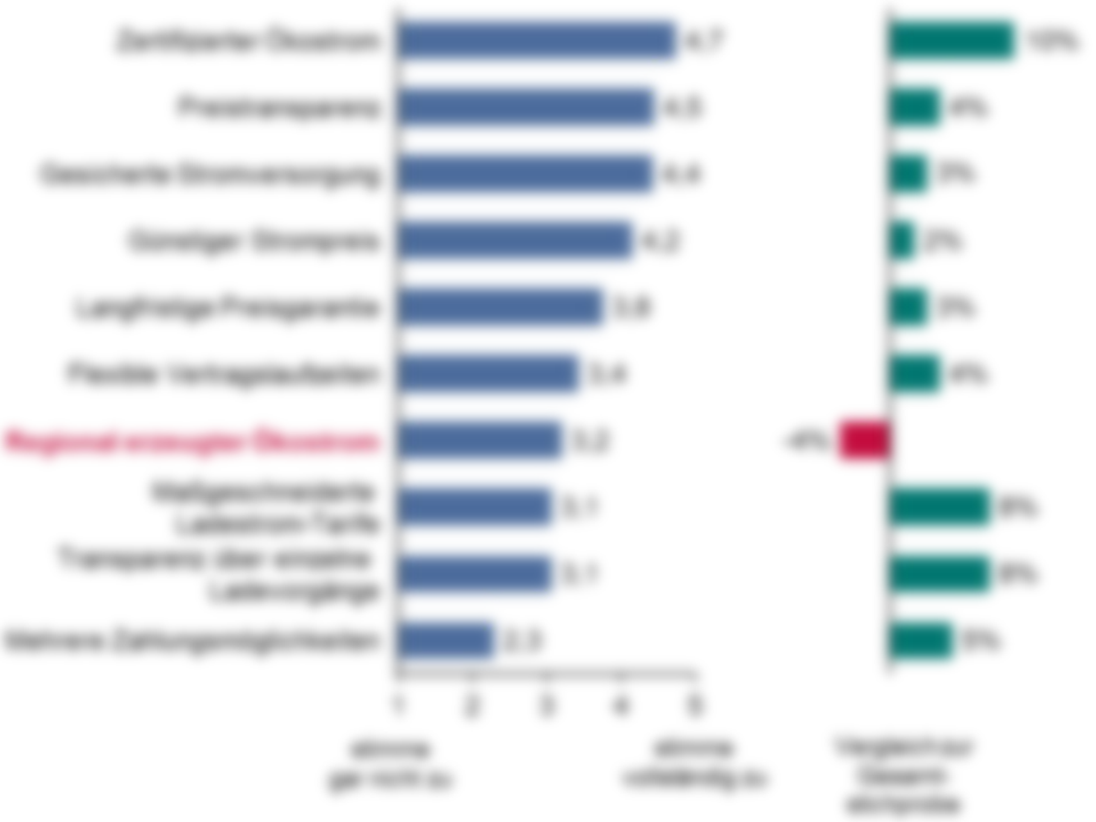


Persona Profile Global Demander

Choice of tariff: Criteria

Hoher Anspruch an (fast) alle Kriterien.

Auch bei der Auswahl des passenden Tarifs messen die Globalen Demander mit Ausnahme der Regionalität allen Kriterien höhere Bedeutung bei als der Durchschnitt aller Befragten.



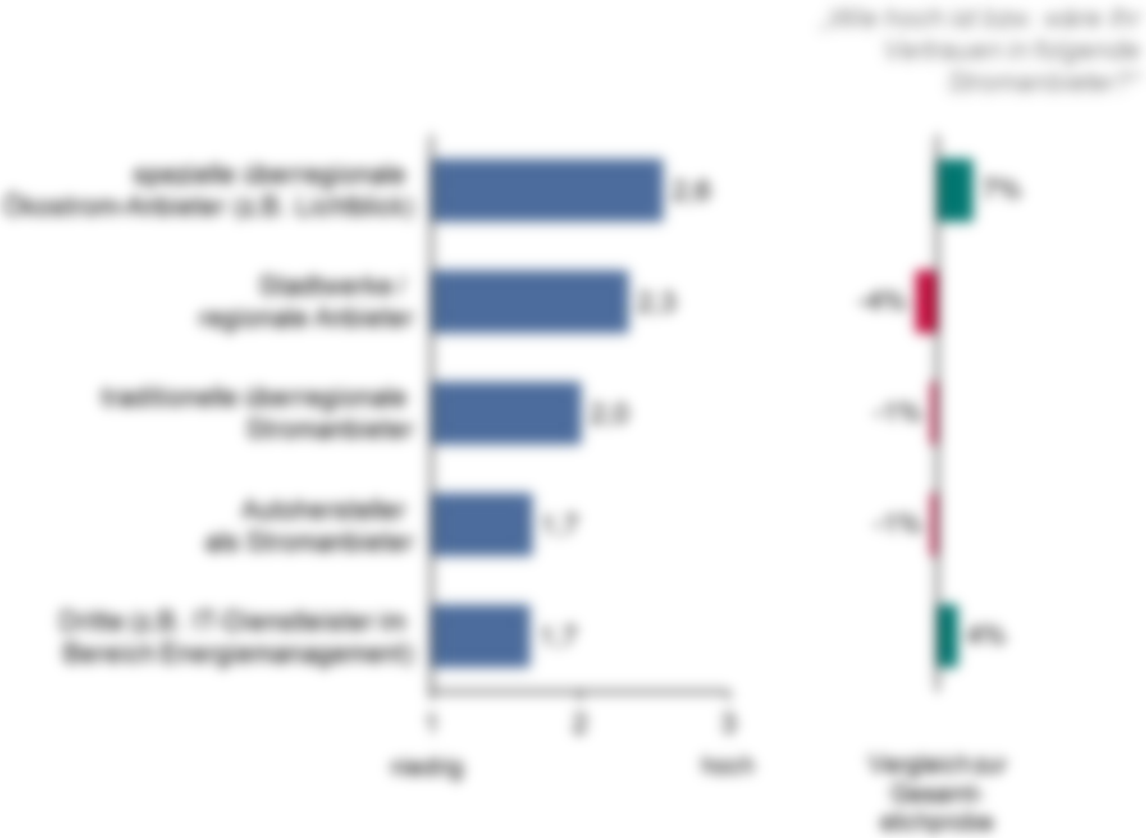
Persona Profile Global Demander

Trust in charging power providers

Präferenz für Spezialanbieter: Offenheit für Dritte.

Erwartungsgemäß ist das Vertrauen in regionale Anbieter geringer als beim Durchschnitt.

Höheres Vertrauen besteht in spezielle Anbieter und Dritte.



USCALE

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About UScale

- UScale advises car manufacturers, energy suppliers and service providers on the customer-oriented design of offers and the development of KPI systems for customer perception.
- UScale's work is based on customer insights studies on all aspects of eMobility and an evaluation procedure for the acceptance of digital services from the customer's point of view.

- UScale is the only provider of a panel specialised in eMobility with over 5,000 panellists in German-speaking countries.
- UScale makes the customer perspective tangible for managers, engineers and IT'ers.
- UScale has extensive industry knowledge of the eMobility ecosystem.
- UScale combines extensive experience with the challenges of corporates with the agility of a start-up.