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EXAMPLE SLIDES
(from a total of 130 pages)

Charging Payment Study 2026

Paying at the Charging Station from the User's Perspective

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Objective

Initial situation:

— There are over 1,000 eMSP and CPO offerings in Germany. This leads to fierce competition in a rapidly growing market.

— At the same time, the offering of payment methods and means of payment at public charging stations is growing. This leads to high costs for CPOs, without it being clear which methods and means are really in demand among EV drivers.

Question

— Which authorisation and payment methods do EV drivers use or would they like to use? Which criteria influence the choice of payment method and means of payment?

— Is there a connection between the desired payment method and willingness to pay, or price elasticity? How flexible is behaviour? How can EV drivers be persuaded to switch?

— What are the expectations regarding receipt generation and invoicing?

— What are the differences between different target groups?

Target group

Survey:

—	Target group:	BEV drivers who charge at public
—	Survey:	Online survey (CAWI)
—	Country:	Germany
—	Recruitment:	Social media, access panel
—	Length of interview:	15 min
—	Field phase:	November 2025

Sample

—	Total sample:	N = 1,510
	of which:	
—	Social media panel:	N = 508
—	Access panel:	N = 1,002

Split by EV adopter segments

The study differentiates between three adopter segments in order to identify trends.

Background to segmentation:

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

— This study therefore distinguishes between when respondents registered their first own EV. This results in three segments:

EV Pioneers	EV Regulars	EV Newbies
> 3 years experience	2 to 3 years of experience	< 2 years experience
(N = 526)	(N = 413)	(N = 571)

If the results differ, this indicates a trend.

Segments in the ramp-up of electric mobility*:

Market share

Innovators (2.5%) — Early Adopters (13.5%) — Early majority (34%) — Late Majority (34%) — Laggards (16%)

Time

Market share of BEVs in Germany in 2025 (approx. 18%)
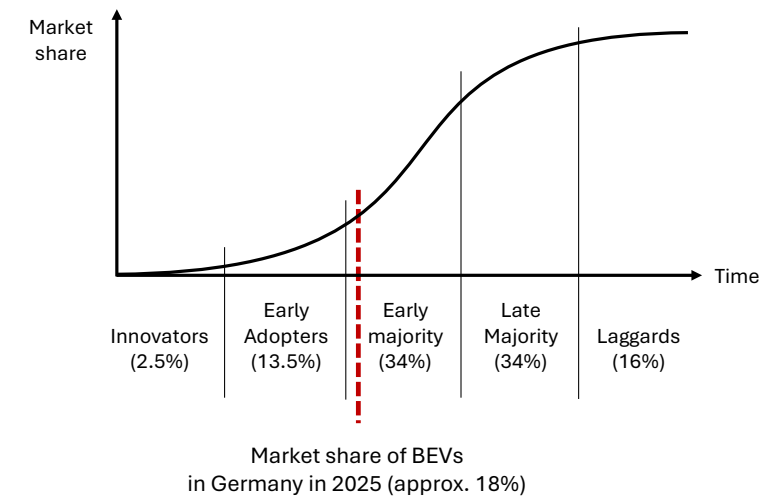
* The classification shown is based on Everett Rogers' diffusion model (LINK).

Split by preferred payment method

The second characteristic that proves significant for segmentation is the preferred payment method.

Background to segmentation:

— The payment methods actually used at public charging stations do not reflect actual payment preferences.

— Reasons:
  — The payment methods currently offered at public charging stations do not consistently meet the expectations of EV drivers.
  — Not all payment methods are available at all charging stations.
  — EV drivers actively use multiple payment methods.

— This study therefore distinguishes between preferred payment methods.

Preferred payment methods:

Payment method	Percentage
Plug & Charge / AutoCharge	40%
Direct payment w/o registration	29%
Charging app	17%
Charging card	13%

N = 1,510
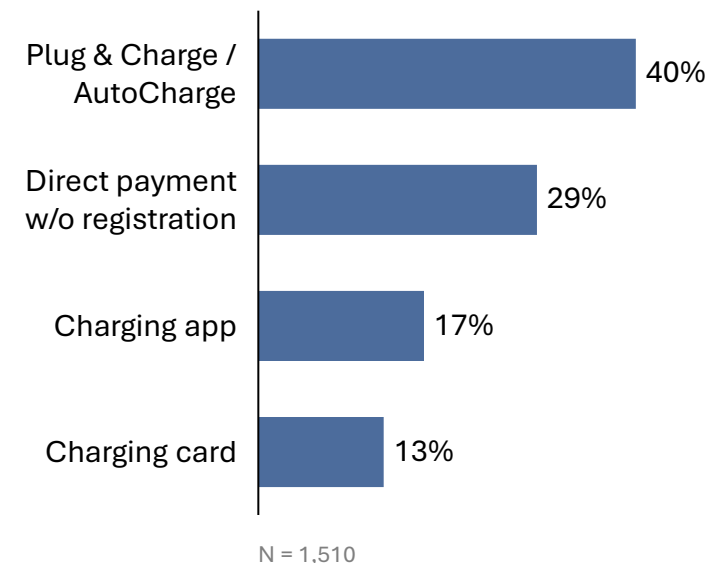
Study dashboard for your own analysis

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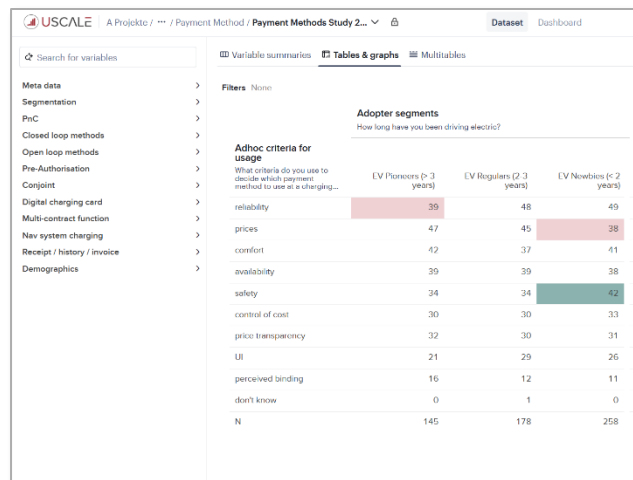
The dashboard provides access to all detailed data. It allows you to perform your own analyses and download any data splits.

Breakdown of all results by sub-target groups:
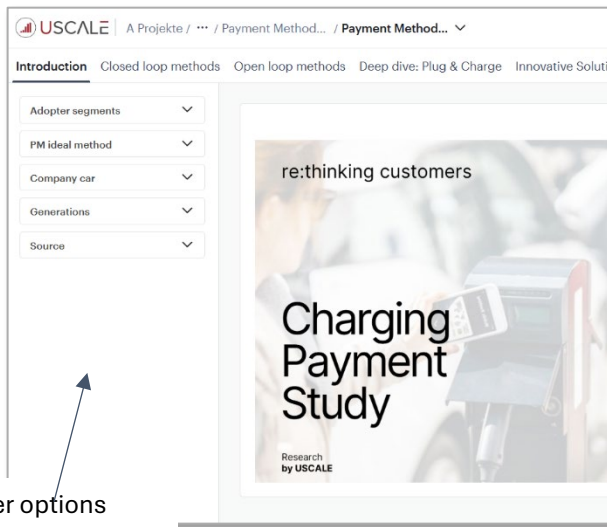
Filter options (customisable)
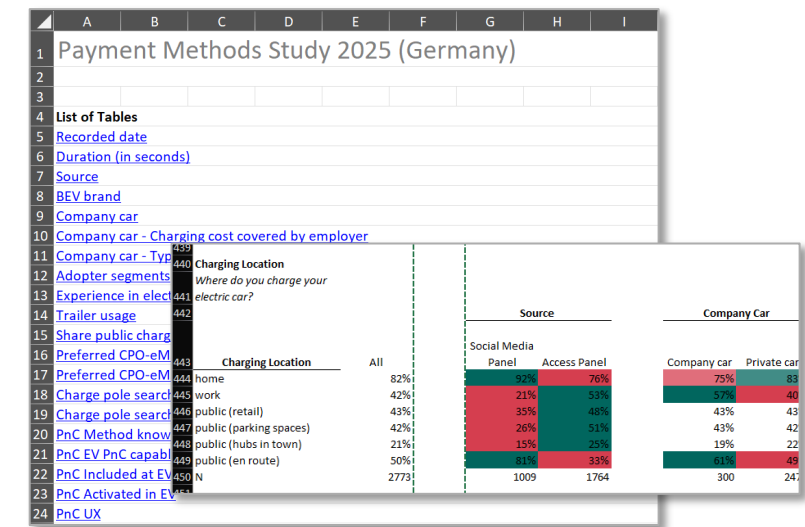
Correlations and statistical analyses:

Download all data as xls and ppt:

Example
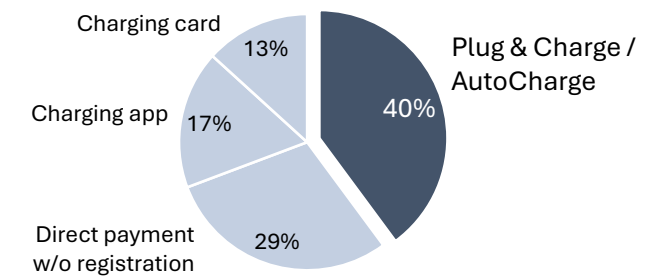
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Management Summary

Management Summary

1 **The Plug & Charge Persona**

Characteristics:
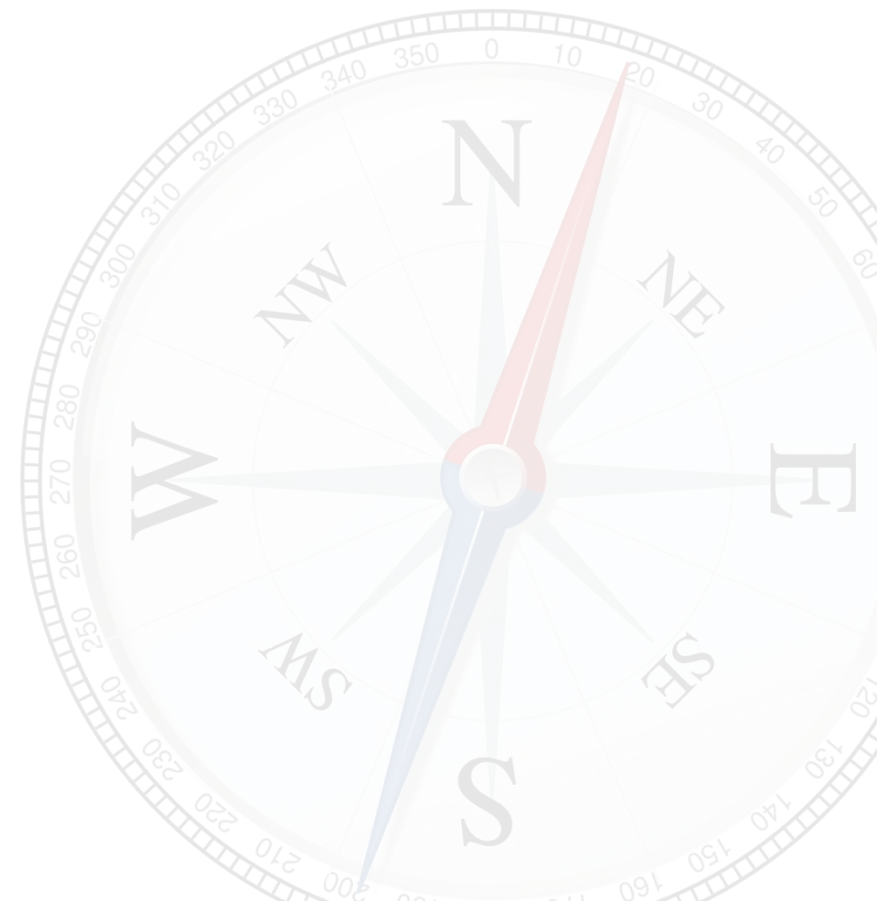The 'Plug & Charge preferred' persona...

- is more often* male, of average age, more likely to earn a high income, more likely to live in a large city

- more often drives a company car and more often drives a Tesla

- more often searches for charging stations using the vehicle's navigation system than an app

- generally uses a digital wallet more often than a physical card when paying in retail stores and pays more often with Apple Pay or Google Pay when shopping online, uses bonus programmes less often

- Appreciates the low price and reliability of PnC

- use other payment methods in addition to PnC in the following order: charging app – charging card – direct payment

Plug & Charge / AutoCharge — 40%
Direct payment w/o registration — 29%
Charging app — 17%
Charging card — 13%

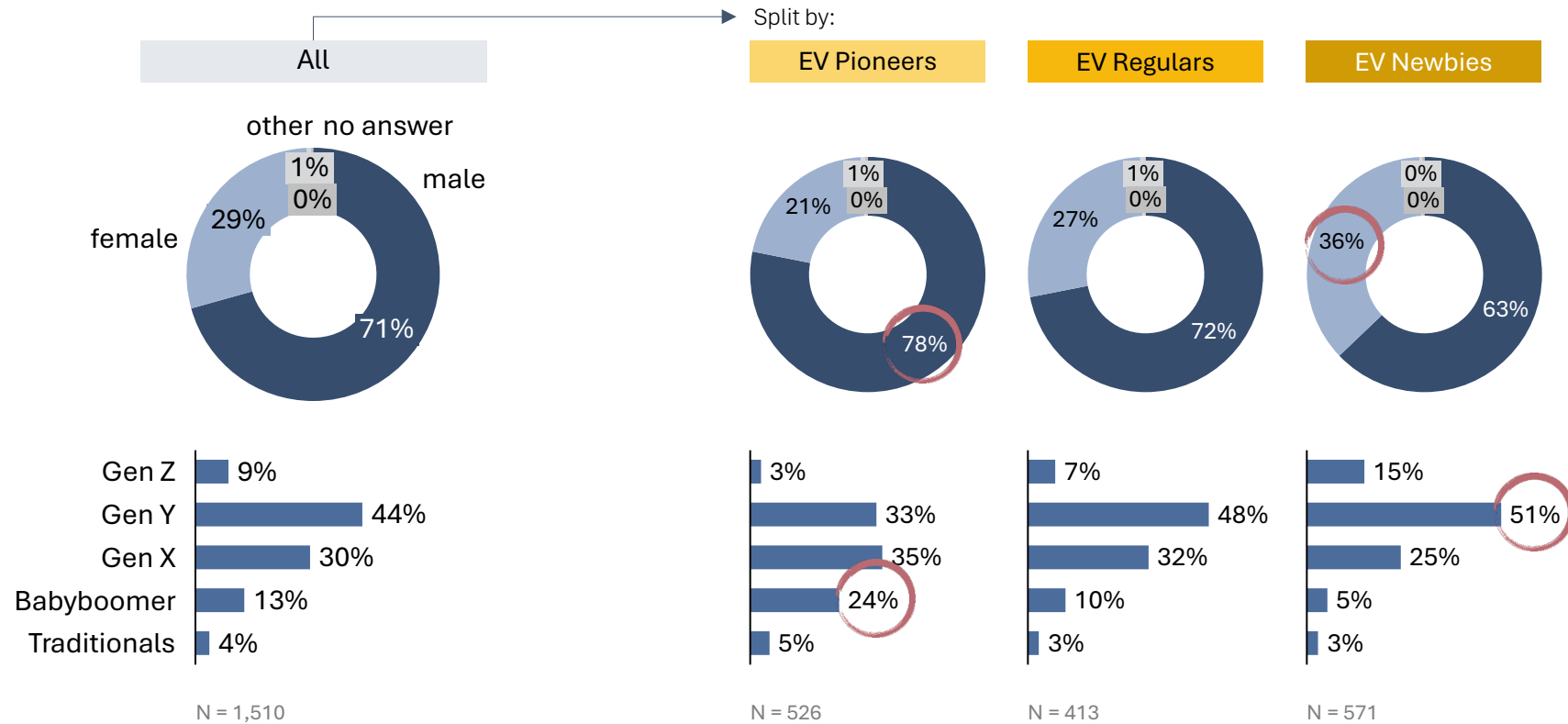* i.e. more often / less often than the average of the EV drivers surveyed

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Gender and age

The pioneers of e-mobility are more often men from the baby boomer generation.
Among the newbies, there is an above-average number of women from Gen Y.

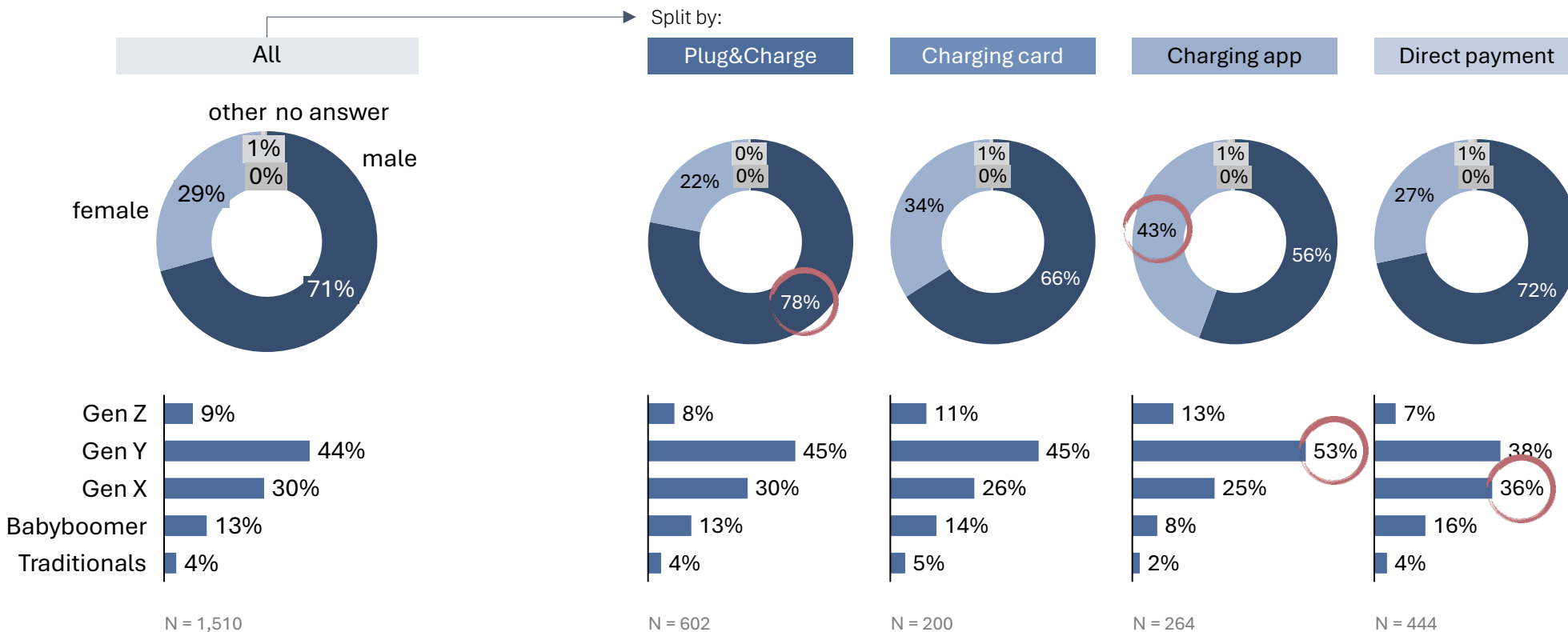"You are...?"

"How old are you?"

Split by:

| All | EV Pioneers | EV Regulars | EV Newbies |

other no answer

male

female

All
- 1%
- 0%
- 29%
- 71%

EV Pioneers
- 1%
- 0%
- 21%
- 78%

EV Regulars
- 1%
- 0%
- 27%
- 72%

EV Newbies
- 0%
- 0%
- 36%
- 63%

	All	EV Pioneers	EV Regulars	EV Newbies
Gen Z	9%	3%	7%	15%
Gen Y	44%	33%	48%	51%
Gen X	30%	35%	32%	25%
Babyboomer	13%	24%	10%	5%
Traditionals	4%	5%	3%	3%

N = 1,510   N = 526   N = 413   N = 571

Gender and age

Fans of the charging card are significantly more likely to be women from Gen Y, while fans of direct payment are more likely to belong to Gen X or the baby boomers. Fans of PnC are more likely to be men.
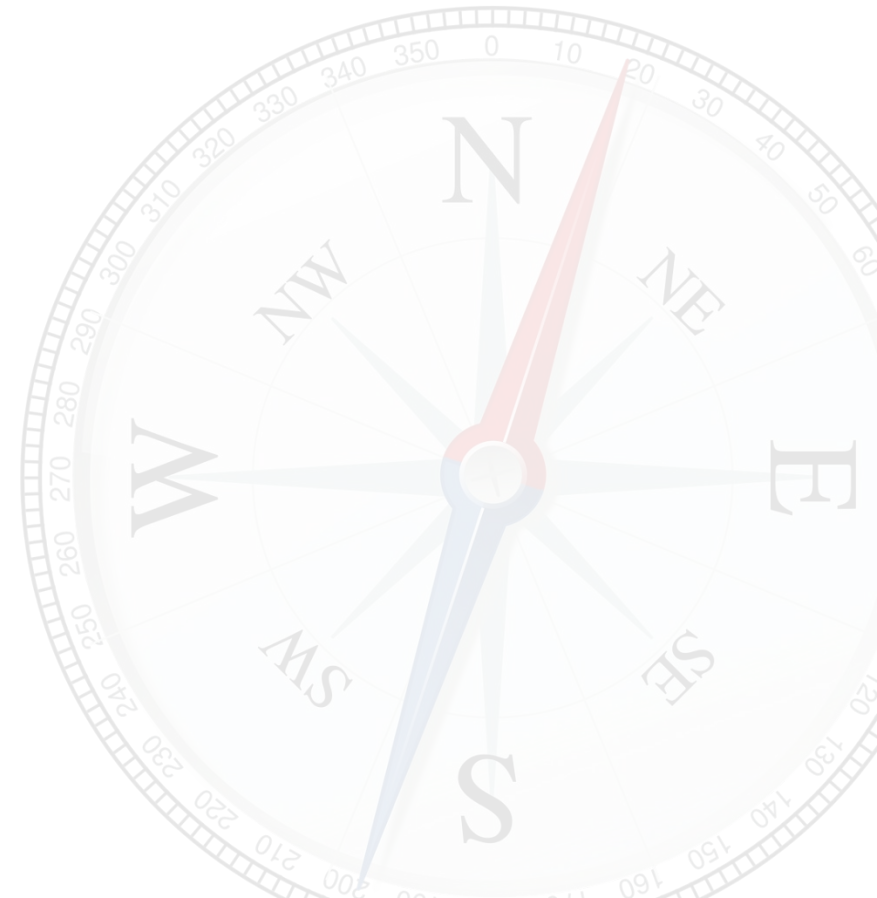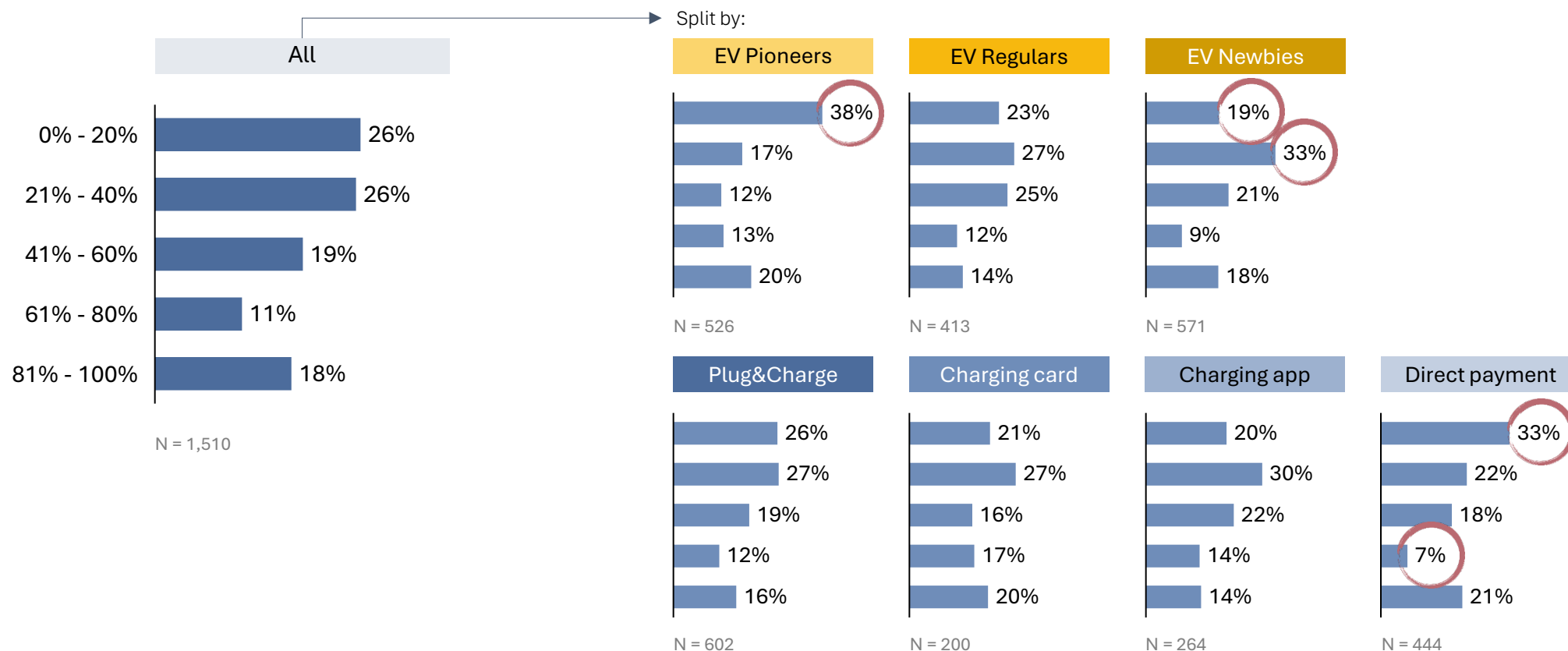
"You are...?"

"How old are you?"

Split by:

| All | Plug&Charge | Charging card | Charging app | Direct payment |

All (donut)
- male: 71%
- female: 29%
- other: 0%
- no answer: 1%

Plug&Charge (donut)
- 78%
- 22%
- 0%
- 0%

Charging card (donut)
- 66%
- 34%
- 1%
- 0%

Charging app (donut)
- 56%
- 43%
- 1%
- 0%

Direct payment (donut)
- 72%
- 27%
- 1%
- 0%

All (age bars)
- Gen Z: 9%
- Gen Y: 44%
- Gen X: 30%
- Babyboomer: 13%
- Traditionals: 4%

Plug&Charge (age bars)
- Gen Z: 8%
- Gen Y: 45%
- Gen X: 30%
- Babyboomer: 13%
- Traditionals: 4%

Charging card (age bars)
- Gen Z: 11%
- Gen Y: 45%
- Gen X: 26%
- Babyboomer: 14%
- Traditionals: 5%

Charging app (age bars)
- Gen Z: 13%
- Gen Y: 53%
- Gen X: 25%
- Babyboomer: 8%
- Traditionals: 2%

Direct payment (age bars)
- Gen Z: 7%
- Gen Y: 38%
- Gen X: 36%
- Babyboomer: 16%
- Traditionals: 4%

N = 1,510 N = 602 N = 200 N = 264 N = 444
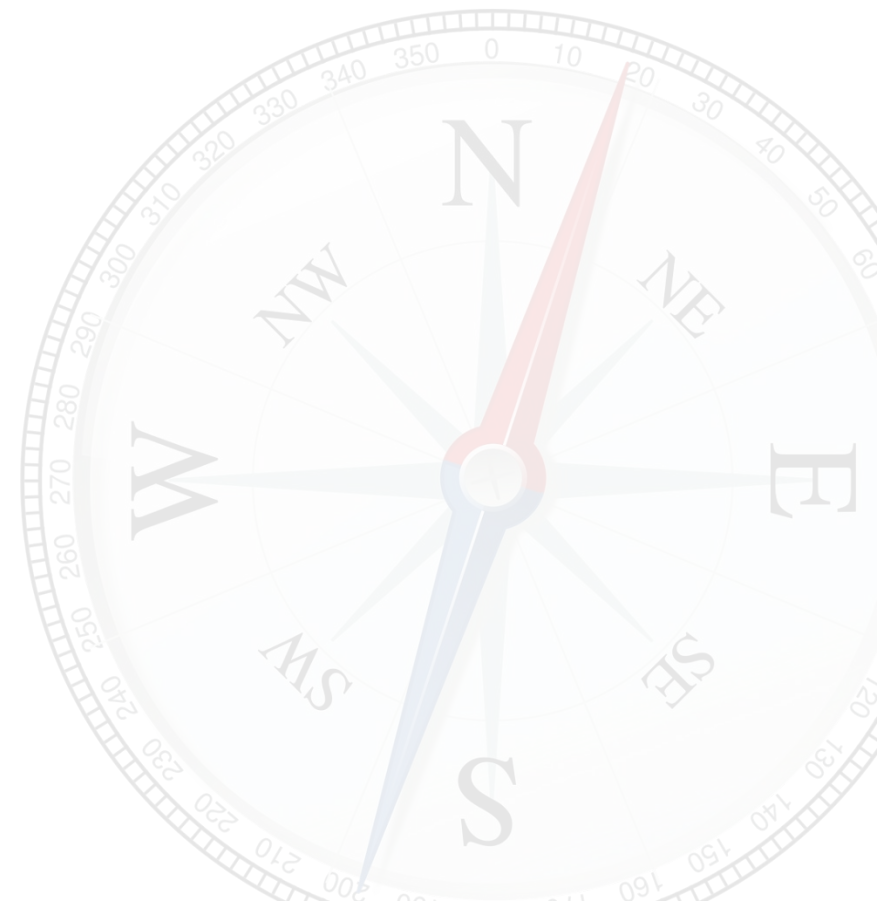
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Charging routine

Pioneers rarely charge at public, while newbies charge 21 to 40% of the time. Friends of direct payment rarely charge at public.

"What percentage of your charging sessions are public?"

(Not counting charging at work)

Charging Payment Study 2025

Split by:

All

0% - 20%	26%
21% - 40%	26%
41% - 60%	19%
61% - 80%	11%
81% - 100%	18%

N = 1,510

EV Pioneers

- 38%
- 17%
- 12%
- 13%
- 20%

N = 526

EV Regulars

- 23%
- 27%
- 25%
- 12%
- 14%

N = 413

EV Newbies

- 19%
- 33%
- 21%
- 9%
- 18%

N = 571

Plug&Charge

- 26%
- 27%
- 19%
- 12%
- 16%

N = 602

Charging card

- 21%
- 27%
- 16%
- 17%
- 20%

N = 200

Charging app

- 20%
- 30%
- 22%
- 14%
- 14%

N = 264

Direct payment

- 33%
- 22%
- 18%
- 7%
- 21%

N = 444

Contents

In retail: preferred direct payment method

"In general:
When you pay with your credit or debit card **in retail stores** or **restaurants** today, which payment method do you prefer?"

Contents

Overall rating of payment at charging stations

Perception of closed-loop payment methods

"In general:
What do you think of the
following payment methods?"

Evaluation comparison

"How would you rate the
payment method
[payment method]
in detail?"

Criteria for choosing a payment method

"In general:
What criteria do you use to decide which payment method to use at a charging station?

Please select the **three most important criteria** for you."

(Multiple answers possible, max. 3)
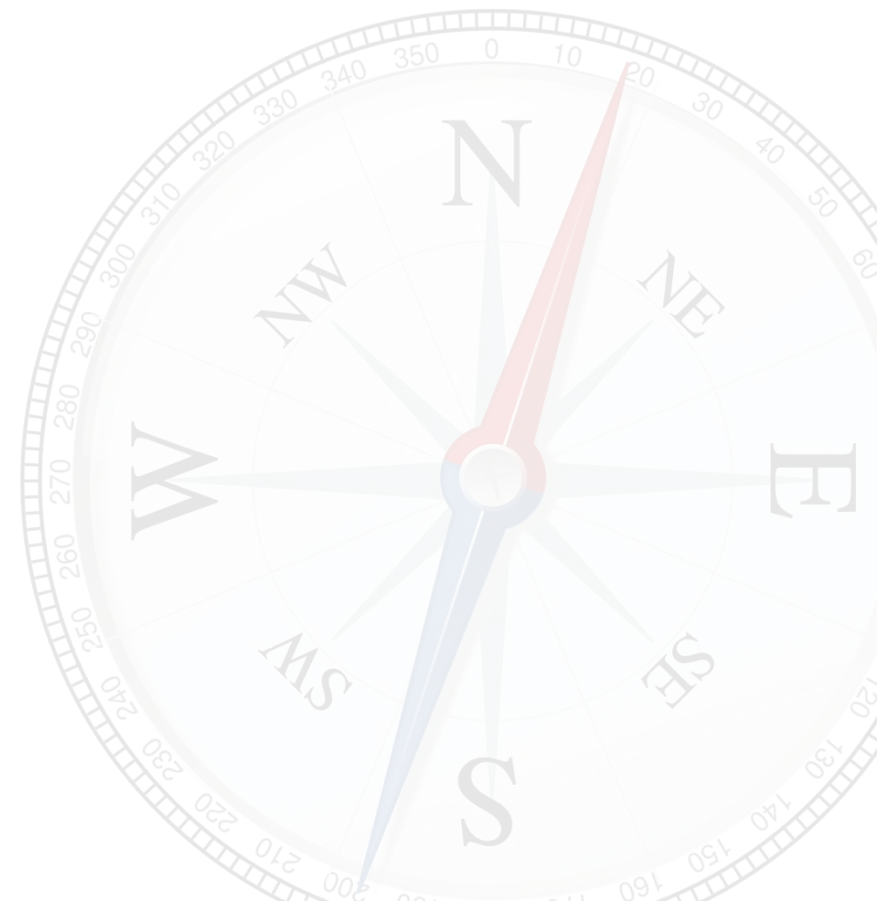
Split by:

| All | Plug&Charge | Charging card | Charging app | Direct payment |

Contents

Conjoint analysis
(Introduction to the method)

The conjoint method maps the choice of payment method.

When choosing the right payment method, users weigh up several criteria before making a decision.

In order to determine which criteria influence the payment method, 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 that were compiled by an algorithm. The survey thus provided thousands of individual evaluations, which were analysed using multivariate analysis.

Example illustration

Conjoint analysis
(Exemplary results)

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Simulation of user preferences

Example

Importance of characteristics

Feature 1
Feature 2
Feature 3
...
...
...
...
...
...

Partial benefit of characteristics

Ausprägung 1
Ausprägung 2
Ausprägung 3
...
...
...
...

For the simulation, the market potential (using the rule of three) is estimated in comparison to its alternatives.
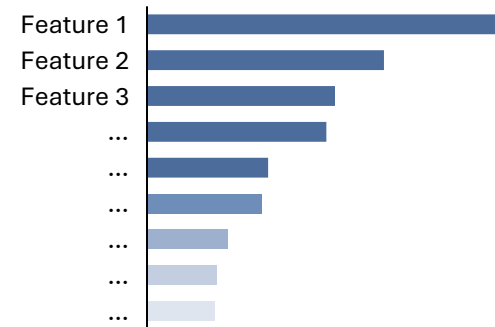
Calculation of partial utility values for each individual feature. The sum of all partial utility values is 100%.

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

Conjoint analysis
(Instructions for the simulation tool*)

Calculation of the market potential of different payment methods.

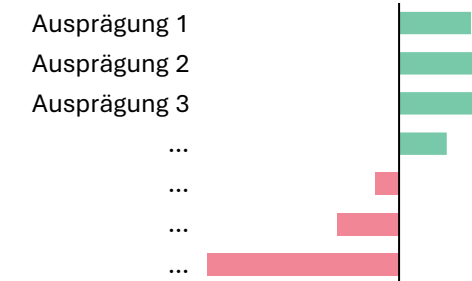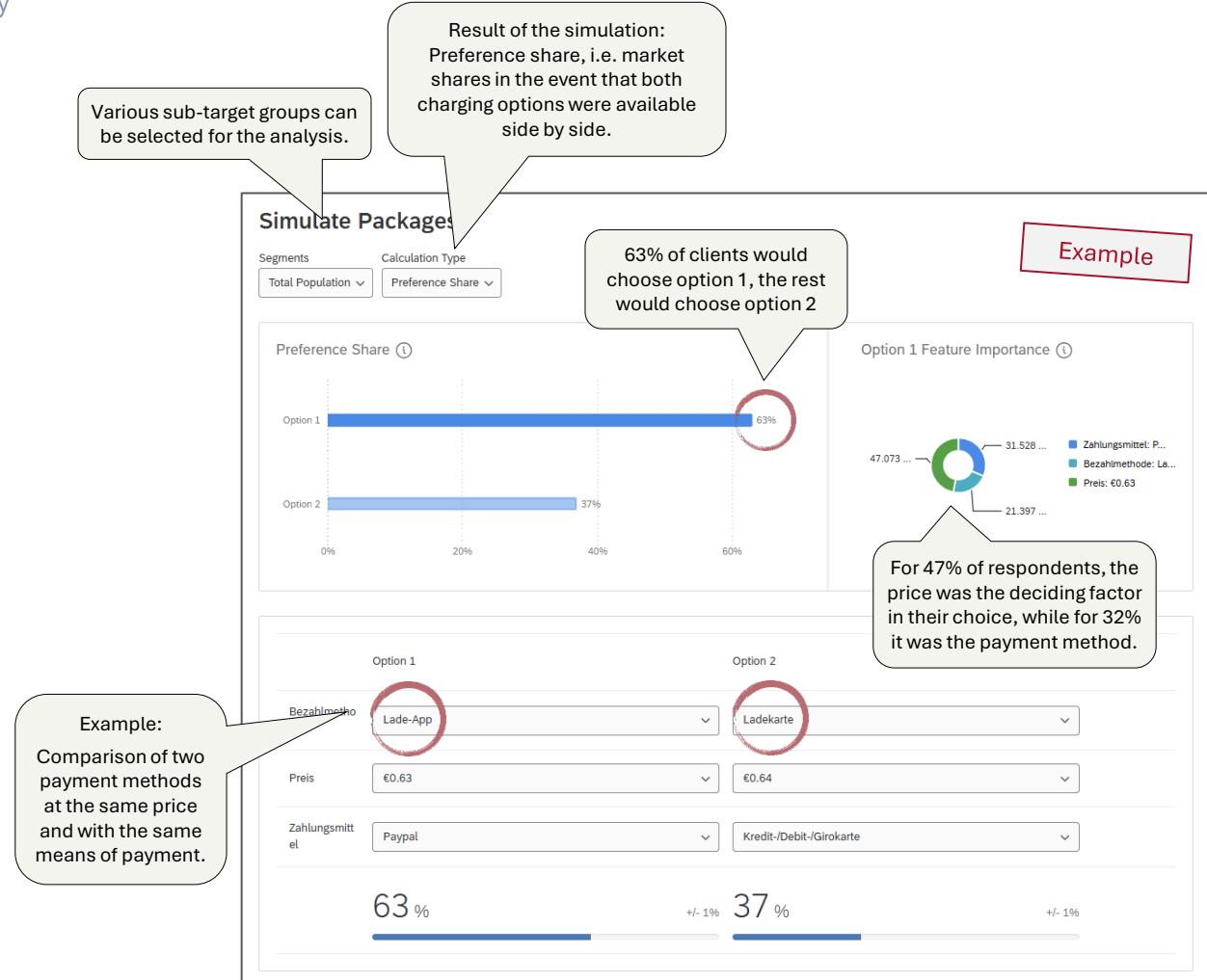The potential market position of a product depends on the variety and attractiveness of competing offerings. The market potential of an offering can therefore <u>only</u> be estimated <u>in relation to its alternatives.</u>

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

LINK to the simulator tool

Various sub-target groups can be selected for the analysis.

Result of the simulation: Preference share, i.e. market shares in the event that both charging options were available side by side.

63% of clients would choose option 1, the rest would choose option 2

For 47% of respondents, the price was the deciding factor in their choice, while for 32% it was the payment method.

Example: Comparison of two payment methods at the same price and with the same means of payment.

*   The simulation tool will be available until at least December 2026.

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SCALE YOUR USER
SCALE YOUR BUSINESS

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