



DETERMINING AND MEETING THE NEED FOR PARKING-RELATED SERVICES — MARKET ANALYSES AND SERVICES DESIGN

ANTJE FRICKE (NFF), 16 DECEMBER 2020



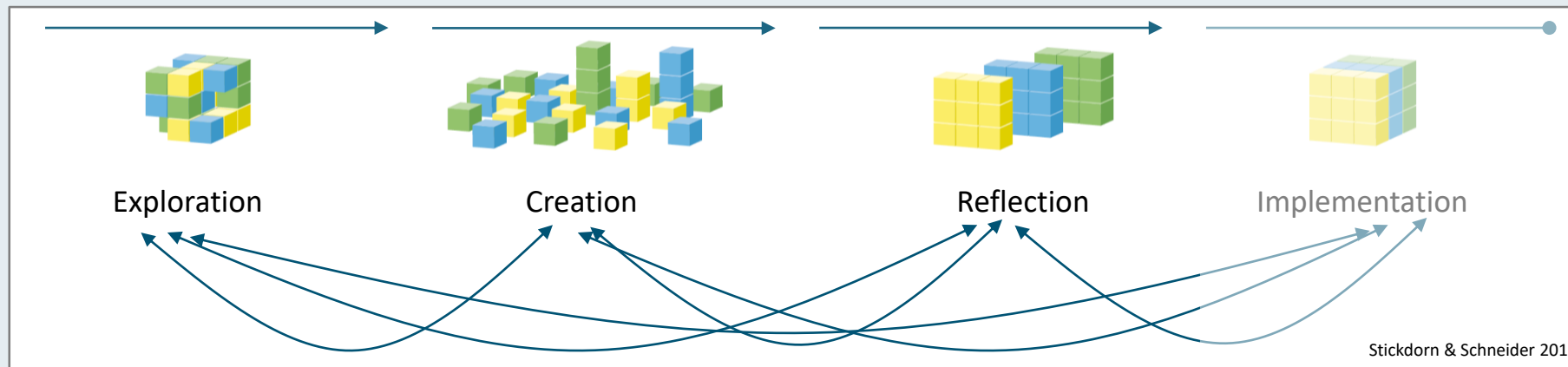
Objective

Evaluating the **customer needs** for the use cases that in a prior step were assessed to be **technical feasible** while at the same time being **attractive for potential customers**

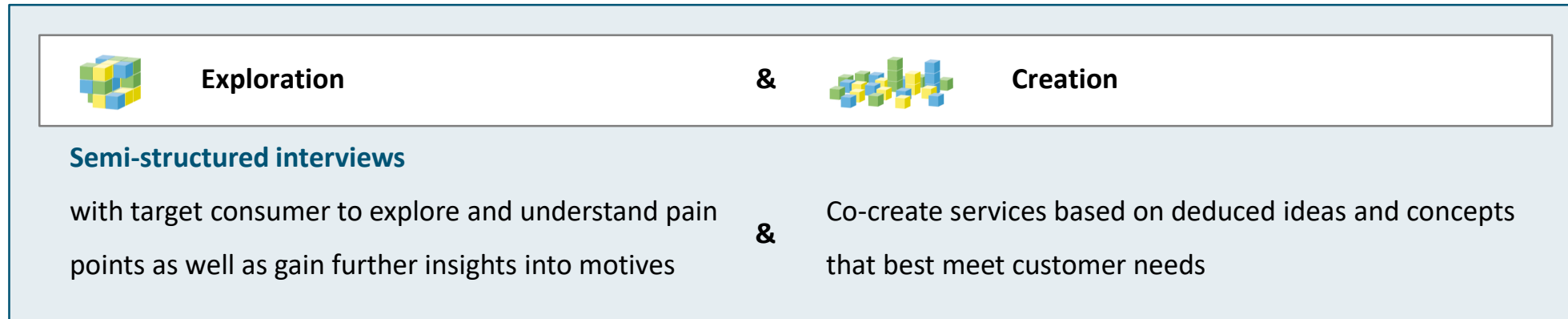
Approach




Services Design:

- To make services and their design tangible
- To integrate the customer into the service process and design a (more than) satisfactory customer experience



TO EXPLORE CUSTOMER NEEDS AND CREATE SERVICE, INTERVIEWS WERE CONDUCTED.



Use case		N	Mean age	Note	Mean length
1 Self-check-in		8	26,8 years	All interview partners drive and park in urban areas subject to payment often	34,3 minutes
2 AVP		20	39,1 years	Most interview partners are experienced with driving assistance systems	25,7 minutes
3 AVP incl. charging		5	41,6 years	All interview partners are experienced with electronic vehicles	32,8 minutes

Analysis

1

Qualitative content analysis – deductive

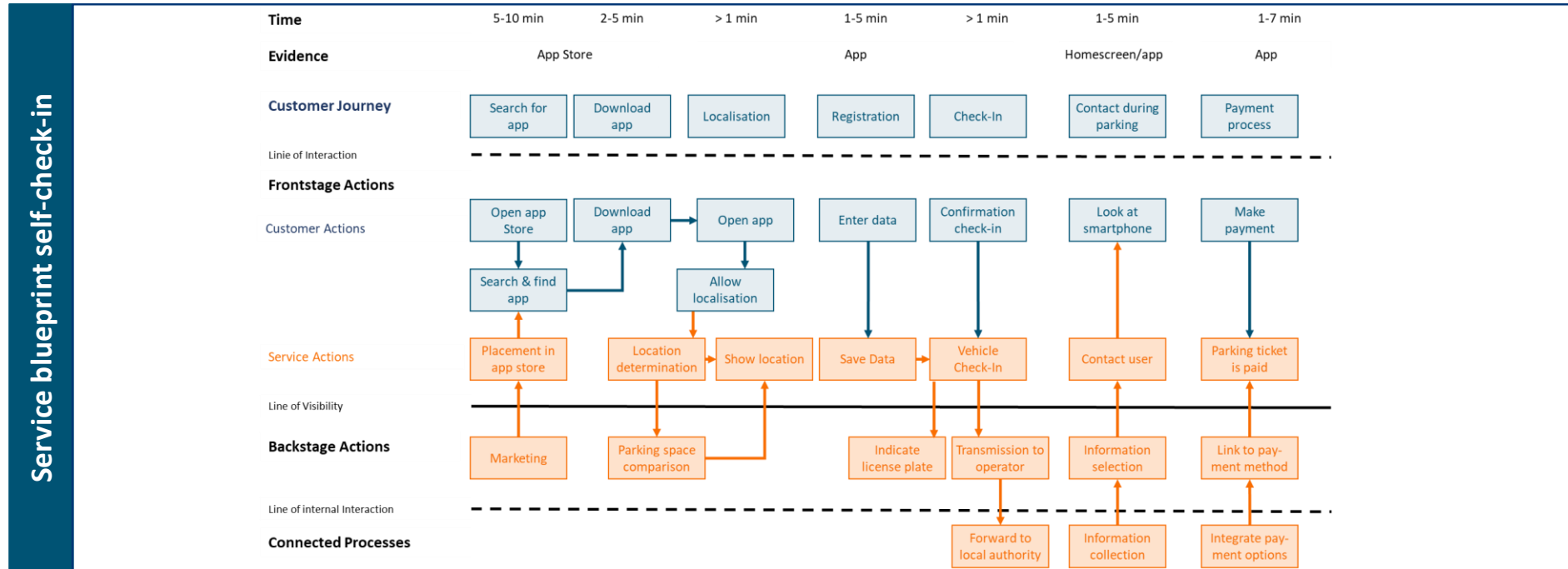
Focusing on positive/negative attitude regarding the status quo as well as touchpoints in the customer journey of the proposed service

2

Qualitative content analysis – inductive

Detailed, inductive QCA within the categories

Mayring 2015





Reflection

Design and programming of a **scenario-based quantitative online study** to survey consumer evaluation

Survey structure

Query of **psychographic** and **sociodemographic** variables



Questions on the respondents' **mobility behaviour** of interest to the project scope



Presentation of the hypothetical **services**






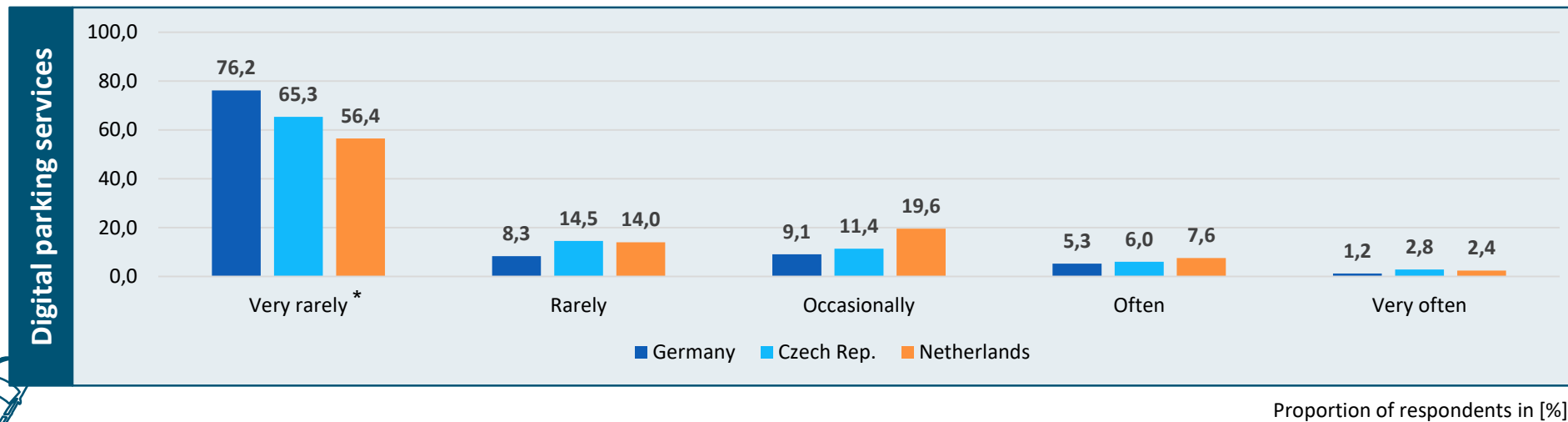
Assessment of **behavioural intentions** as well as other **psychological variables**



Willingness-to-pay: Gabor-Granger-approach

THE STUDY BASES A SAMPLE OF GERMANY, THE CZECH REPUBLIC, AND THE NETHERLANDS.

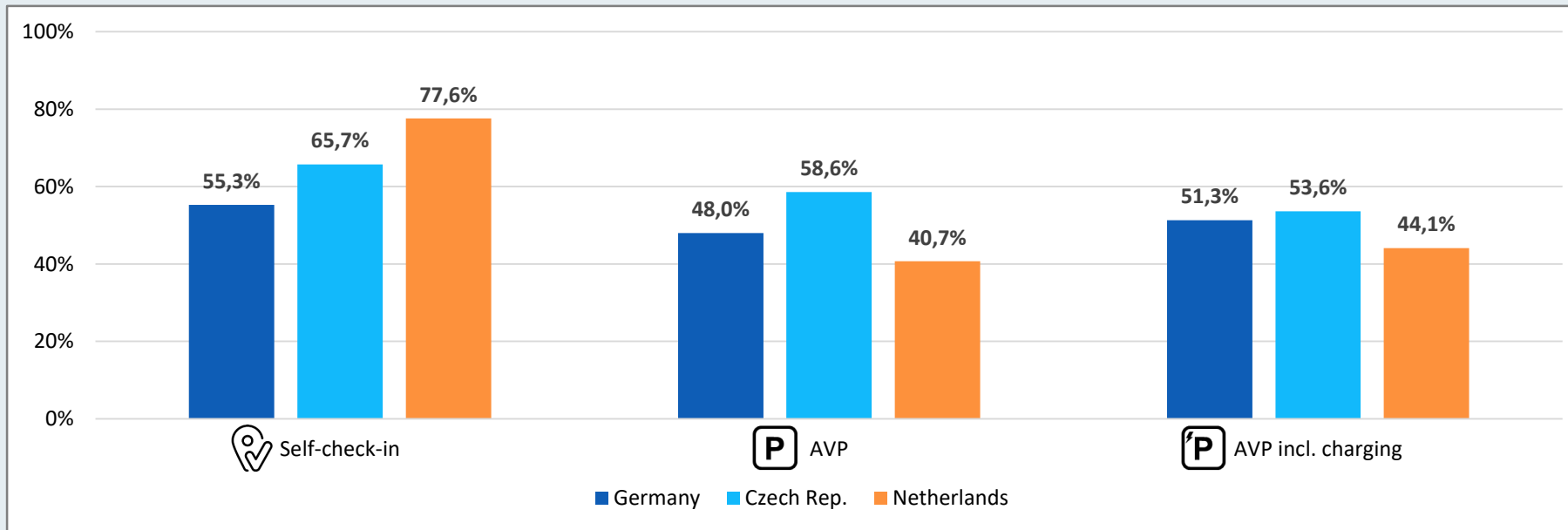
	 Germany	 Czech Republic	 Netherlands
How	Nationwide		
When	1-5 October 2020	1-6 October 2020	1-7 October 2020
Ø Duration	624 seconds (~ 10,4 minutes)	661 seconds (~ 11,0 minutes)	532 seconds (~ 8,9 minutes)
Size	N = 495	N = 614	N = 450
Ø Age	M = 47,6 years (SD = 13,859)	M = 41,8 years (SD = 15,404)	M = 45,6 years (SD = 14,845)
Gender	49,5 % ♂, 50,3 % ♀, 0,2 % ♂♀	55,0 % ♂, 46,7 % ♀, 0,3 % ♂♀	50,0 % ♂, 49,8 % ♀, 0,2 % ♂♀



- *
 • Very rarely (one to three times a year)
 • Rarely (every two to three months)
 • Occasionally (one to three times per month)
 • Often (about once a week)
 • Very often (several times a week)

USAGE INTENTION IN ALL COUNTRIES IS HIGHEST FOR THE SELF-CHECK-IN.

Approval rating



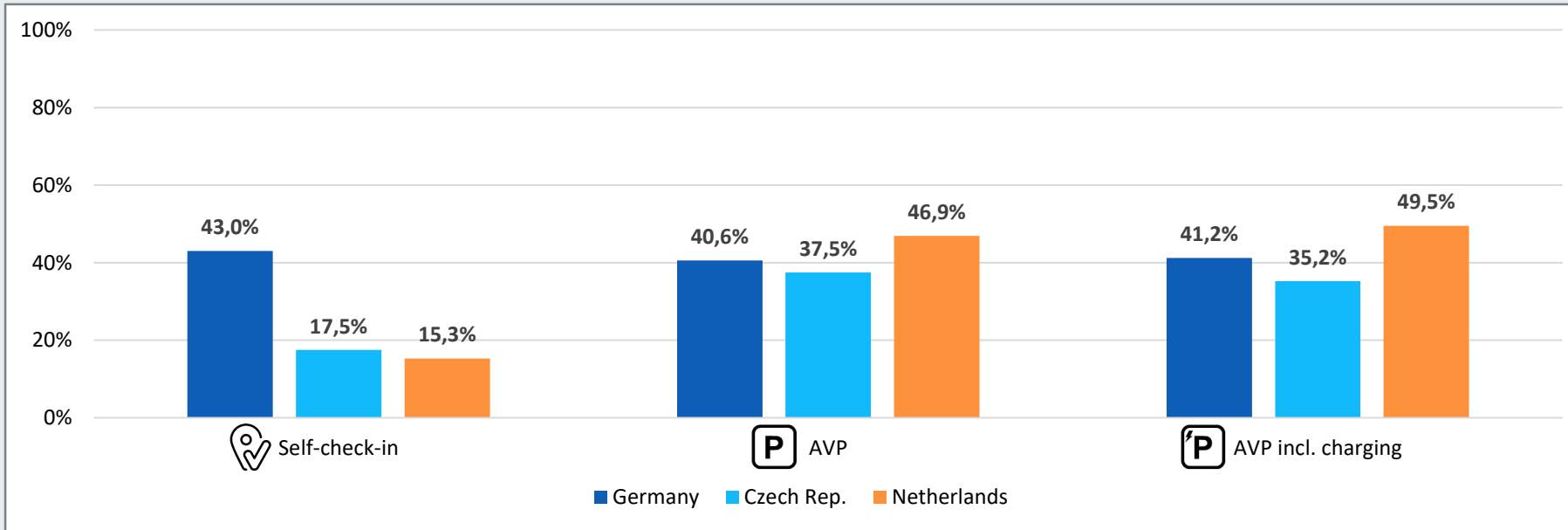
- The majority of respondents intends to use the self-check-in .
- Usage intention over all use cases is highest for the Czech respondents.
- Usage intention is lowest for the AVP service incl. charging, with the approval rating amounting to just under half of the respondents.

N	Germany	Czech Rep.	Netherlands
1	94	137	85
2	202	244	177
3	199	233	188

The approval rating is expressed through the top box score.
The top box score displays the share of respondents in [%] who agree with a given matter.

THE RISK IS PERCEIVED TO BE HIGHER FOR THE AVP SERVICES THAN FOR THE SELF-CHECK-IN.

Approval rating



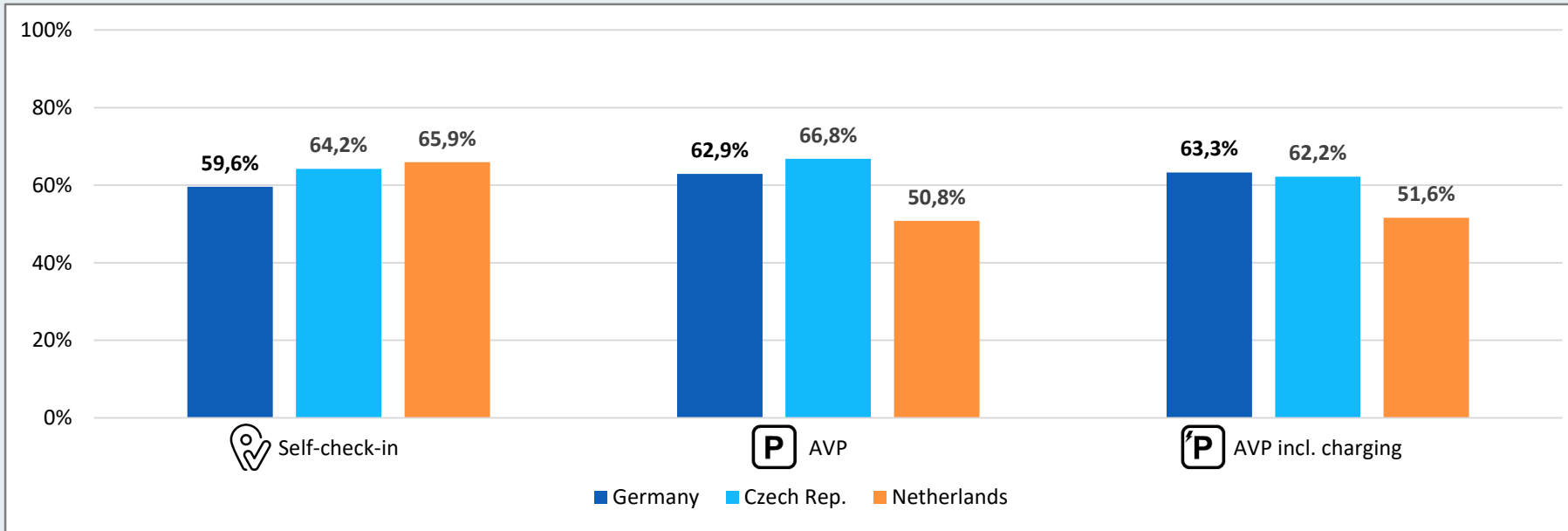
- The self-check-in is perceived to be the least risky of the proposed parking-related services – especially by Czech and Dutch respondents.
- Overall, the AVP services (with / without charging) are assessed to be riskier.
- Perceived risk is highest for Dutch respondents.

N	Germany	Czech Rep.	Netherlands
1	94	137	85
2	202	244	177
3	199	233	188

The approval rating is expressed through the top box score.
The top box score displays the share of respondents in [%] who agree with a given matter.

ALL USE CASES ARE PERCEIVED AS RATHER CONVENIENT.

Approval rating



- Two thirds of the German and Czech respondents assess the use cases to be convenient.
- The AVP service is perceived the least convenient by the Dutch respondents.

N			
1	94	137	85
2	202	244	177
3	199	233	188

The approval rating is expressed through the top box score.
The top box score displays the share of respondents in [%] who agree with a given matter.

Gabor-Granger-approach

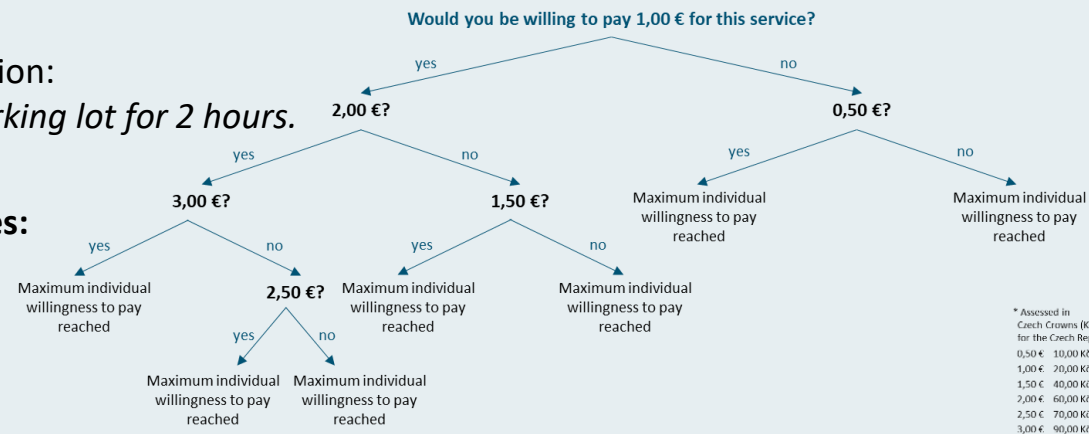
- The Gabor-Granger-approach is a method to **measure the willingness to pay** in the context of customer surveys.
- Consumers are asked to indicate their willingness to buy **at different price points**.
- It is assumed that this querying will reveal the price point at which the consumer will no longer be interested in buying the product.
- Consumers respond with a **“buy-not-buy”** response to each presented price.



Gabor & Granger 1977

Application to USP

- Respondents receive the following instruction:
*Imagine parking in the aforementioned parking lot for 2 hours.
For this you pay 2 Euro.*
- The following prices serve as **starting values**:
1,00 Euro* for use case 1 (self-check-in)
3,00 Euro for use case 2(AVP)
5,00 Euro for use case 3(AVP incl. charging)



* Assessed in Czech Crowns (Kč) for the Czech Rep.
0,50 € 10,00 Kč
1,00 € 20,00 Kč
1,50 € 40,00 Kč
2,00 € 60,00 Kč
2,50 € 70,00 Kč
3,00 € 90,00 Kč

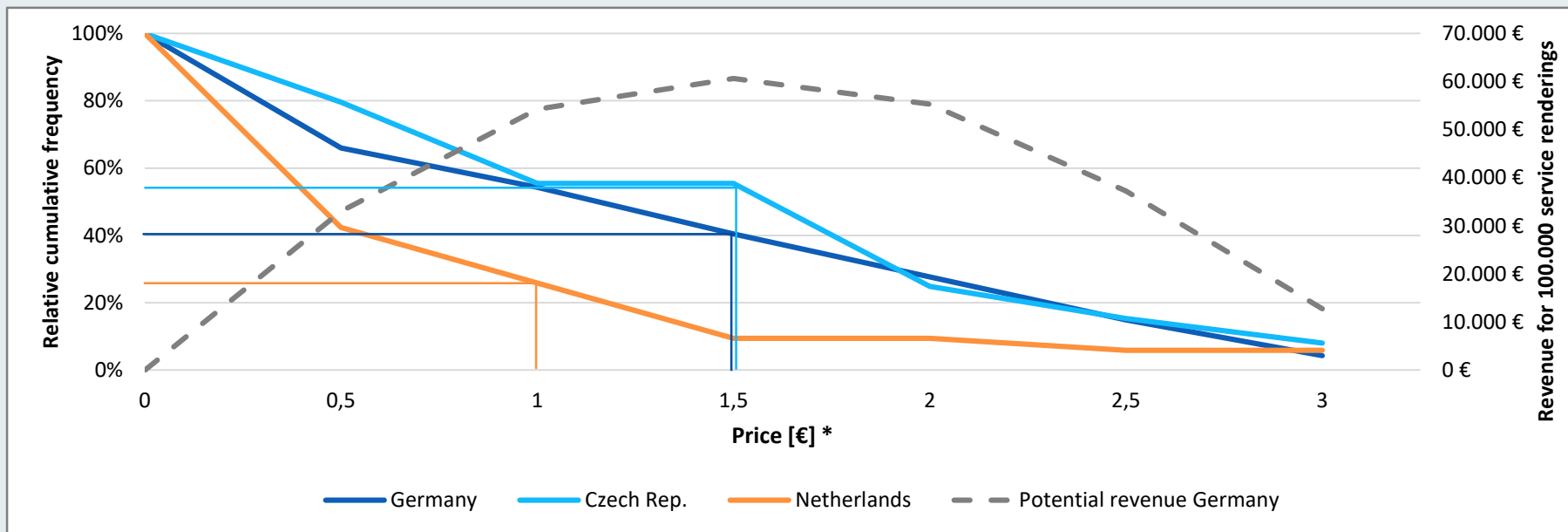
* Assessed in Czech Crowns (Kč) for the Czech Rep.
1,00 € 20,00 Kč
3,00 € 90,00 Kč
5,00 € 130,00 Kč



AS DIGITAL PARKING SERVICES ARE ALREADY MORE WIDESPREAD IN THE NETHERLANDS, THE WILLINGNESS TO PAY IS LOWER THERE.



Use case 1: self-check-in



- At the starting price of 1,00 Euro a **market share** of around 55 % can be achieved in the Czech Republic, whereas the share in the Netherlands amounts to 25 %.
- The highest **turnover** in the different countries can be achieved at the following prices: 1,50 Euro in Germany / 1,50 Euro in the Czech Republic / 1,00 Euro in the Netherlands.
- Example: A price of 1,50 Euro in the German market would lead to a **revenue** of around 61.000 Euro for 100.000 service renderings.

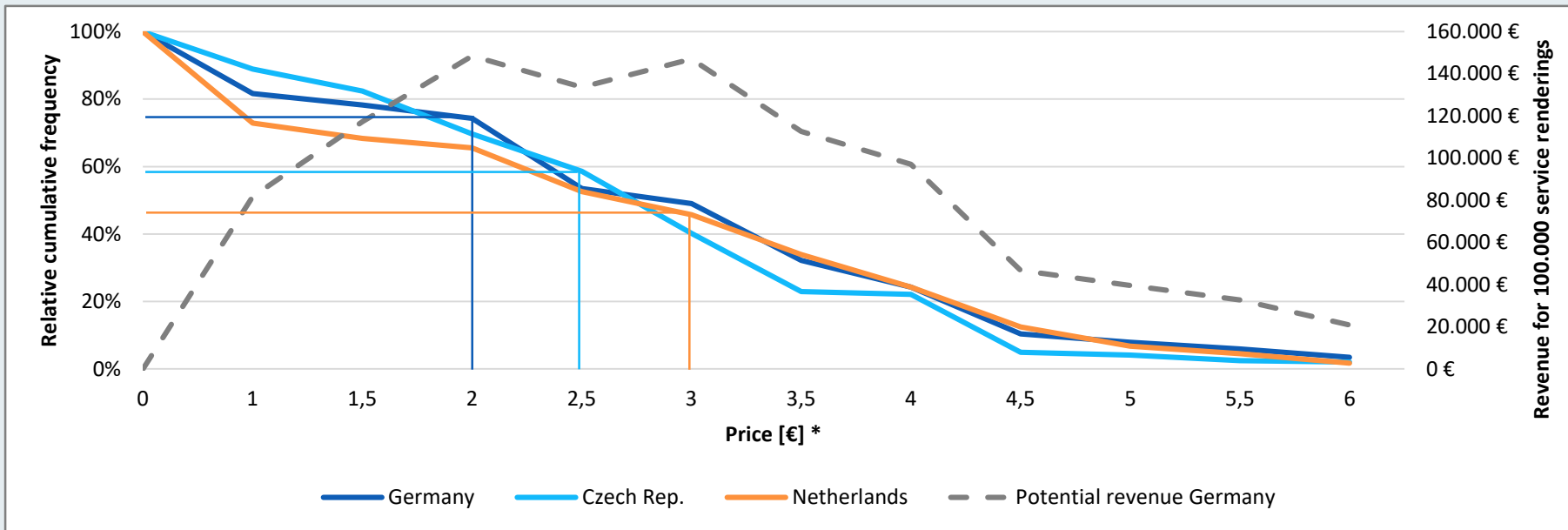
* Assessed in Czech Crowns (Kč) for the Czech Rep.

0,50 €	10,00 Kč
1,00 €	20,00 Kč
1,50 €	40,00 Kč
2,00 €	60,00 Kč
2,50 €	70,00 Kč
3,00 €	90,00 Kč

N = 94

N = 137

N = 85



* Assessed in Czech Crowns (Kč) for the Czech Rep.

1,00 €	20,00 Kč
1,50 €	40,00 Kč
2,00 €	60,00 Kč
2,50 €	70,00 Kč
3,00 €	90,00 Kč
3,50 €	95,00 Kč
4,00 €	100,00 Kč
4,50 €	120,00 Kč
5,00 €	130,00 Kč
5,50 €	140,00 Kč
6,00 €	150,00 Kč

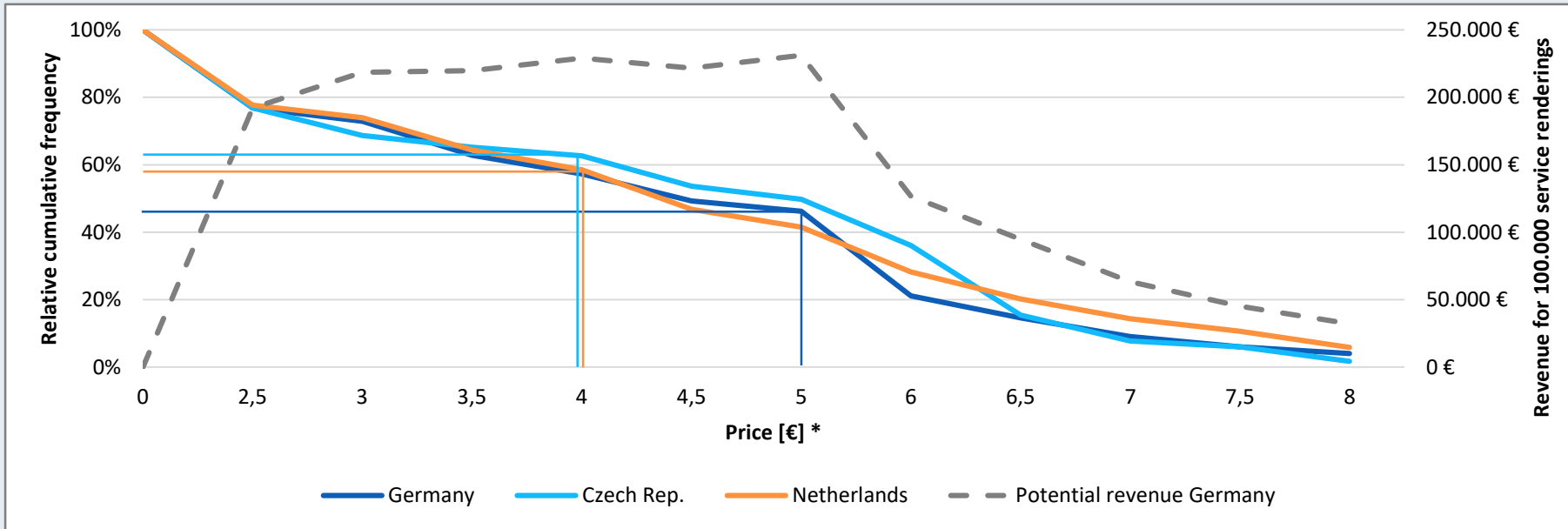
- The **market share** would amount to 40 to 49 % for the starting price of 3,00 Euro for the AVP service.
- The highest **turnover** for the AVP service can be achieved at the following prices: 2,00 Euro in Germany / 2,50 Euro in the Czech Republic / 3,00 Euro in the Netherlands
- The provision of 100.000 AVP services at the aforementioned turnover price would result in **revenues** of around 150.000 Euro in Germany and the Czech Republic and of around 140.000 Euro in the Netherlands.

N = 202
 N = 244
 N = 177

P A SKIMMING STRATEGY MIGHT MAKE SENSE AS THE MAXIMUM TURNOVER IS ACHIEVED WITH RELATIVELY HIGH PRICES.



Use case 3: AVP incl. charging



* Assessed in Czech Crowns (Kč) for the Czech Rep.

2,50 €	70,00 Kč
3,00 €	90,00 Kč
3,50 €	95,00 Kč
4,00 €	100,00 Kč
4,50 €	120,00 Kč
5,00 €	130,00 Kč
6,00 €	150,00 Kč
6,50 €	170,00 Kč
7,00 €	190,00 Kč
7,50 €	200,00 Kč
8,00 €	220,00 Kč

- At the starting price of 5,00 Euro for the AVP service incl. charging a **market share** of 40 to 50 % can be achieved in the three examined countries.
- The highest **turnover** in the different countries can be achieved at the following prices: 5,00 Euro in Germany / 4,00 Euro in the Czech Republic / 4,00 Euro in the Netherlands
- For Germany, this would lead to a **revenue** of around 230.000 Euro for 100.000 service provisions.

Germany N = 199

Czech Rep. N = 233

Netherlands N = 188

- **Intentions to use** the proposed parking-related services of self-check-in and AVP (incl. charging) tend to be **positive**.
- The **majority** of respondents in the countries Germany, Czech Republic, and the Netherlands indicate that they **would use the self-check-in**.
- Overall, behavioural intentions are **especially positive in the Czech Republic**.
- Behavioural intentions are in general a little **less positive** for the **AVP services**. This is not far to seek as they are perceived to be **riskier** and respondents show **less trust** in them.
- Nevertheless, the **majority of respondents of all countries appreciate the convenience** of the evaluated parking-related services.
- **Market shares of 40 to 50 %** can be achieved at the assumed starting prices of 1,00 / 3,00 / 5,00* Euro.
- **Highest turnover** can in some cases be achieved at a **higher price**. A **skimming strategy** might make sense.


* Assessed in
Czech Crowns (Kč)
for the Czech Rep.
1,00 € 20,00 Kč
3,00 € 90,00 Kč
5,00 € 130,00 Kč


THANK YOU FOR YOUR ATTENTION!


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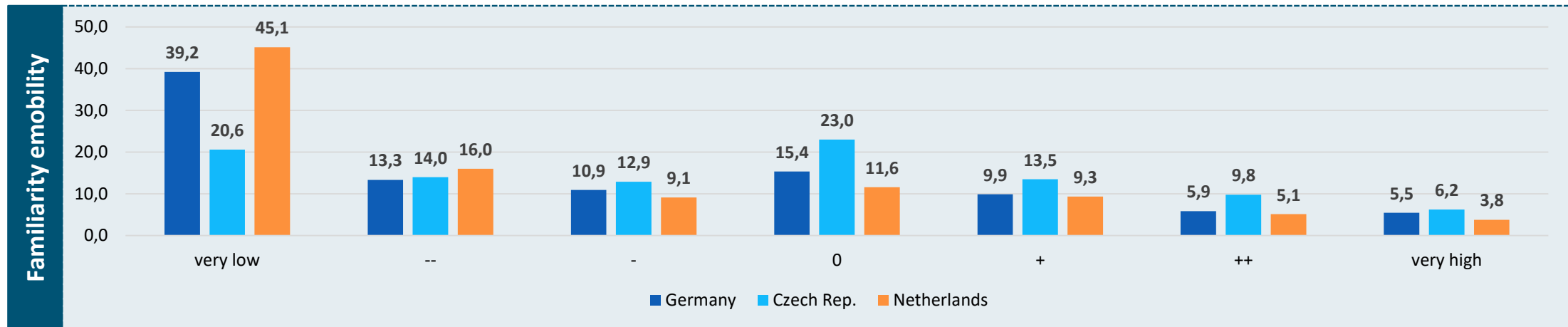
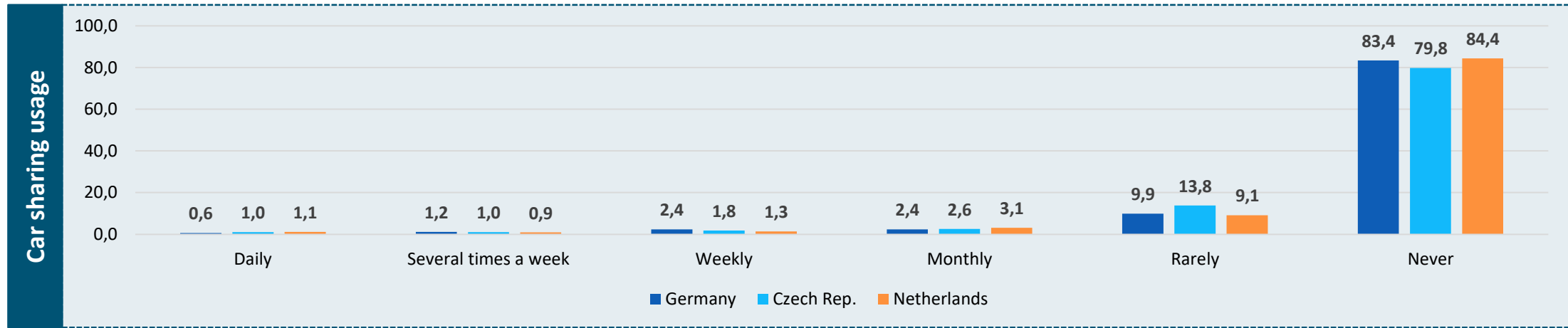
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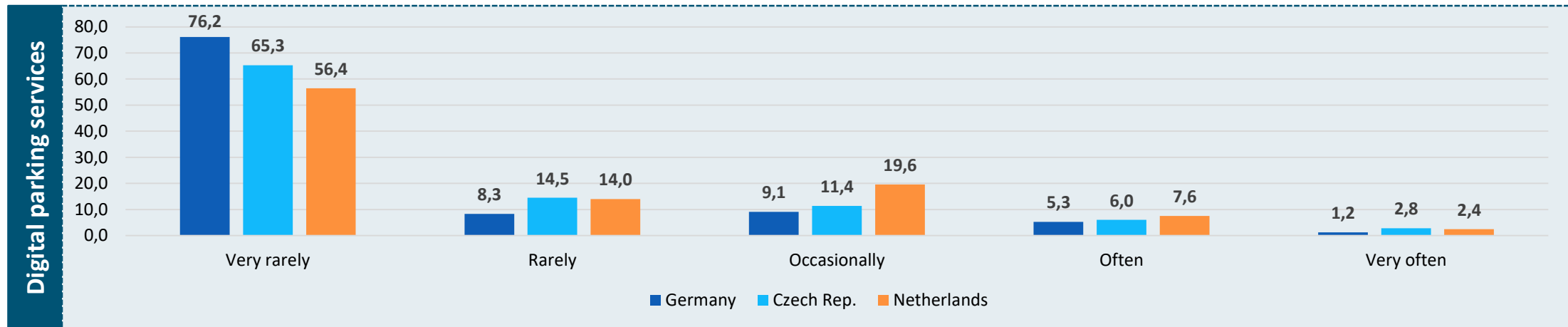
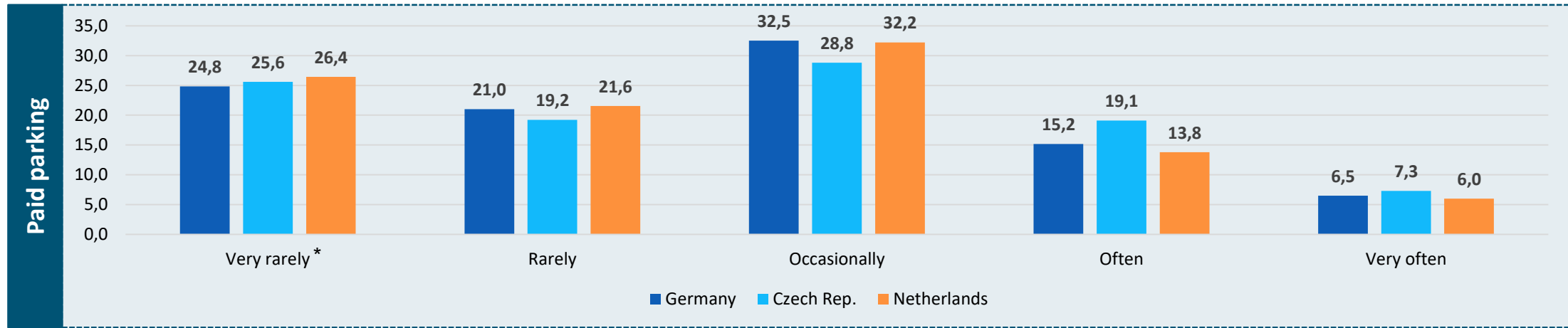
THE MAJORITY NEVER USES CAR SHARING AND FAMILIARITY WITH ELECTROMOBILITY IS LOW.



N = 495
 N = 614
 N = 450

Proportion of respondents in [%]

MOST RESPONDENTS USE PAID PARKING AT LEAST OCCASIONALLY. USAGE FREQUENCY OF DIGITAL PARKING SERVICES VARIES.



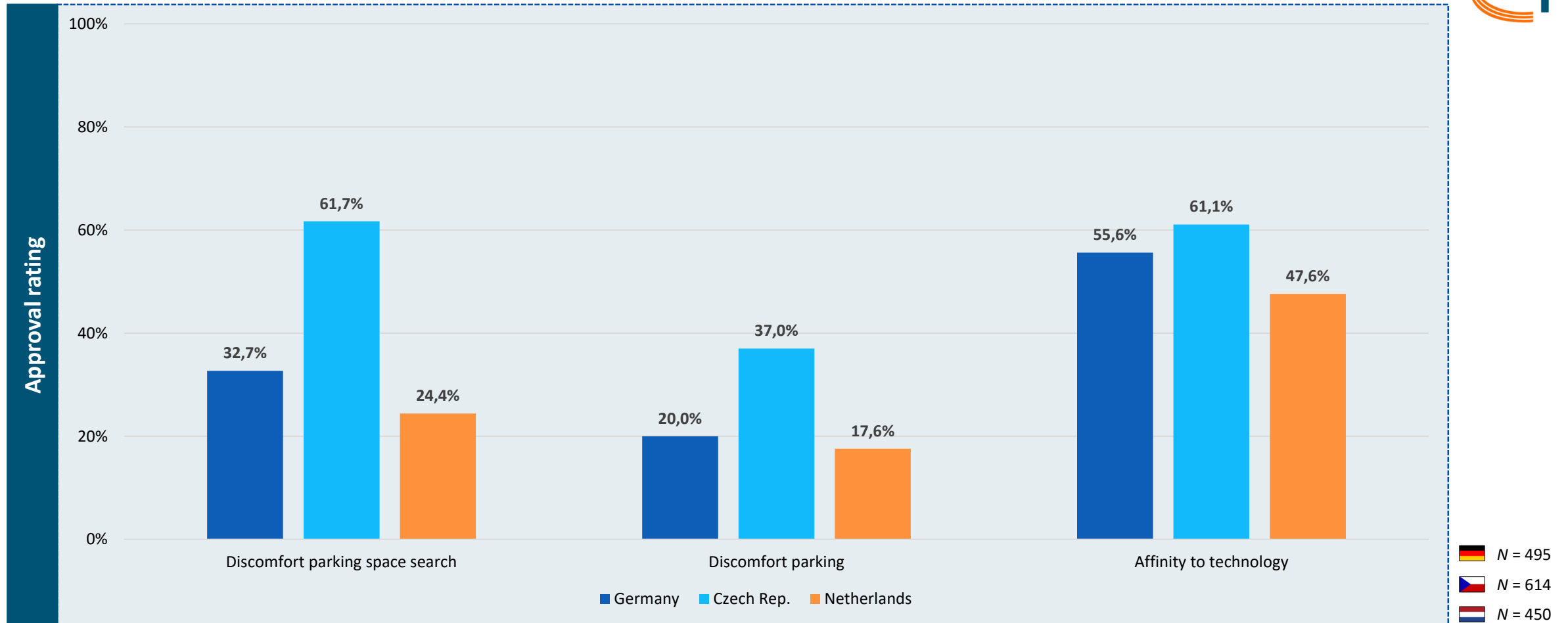
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Proportion of respondents in [%]

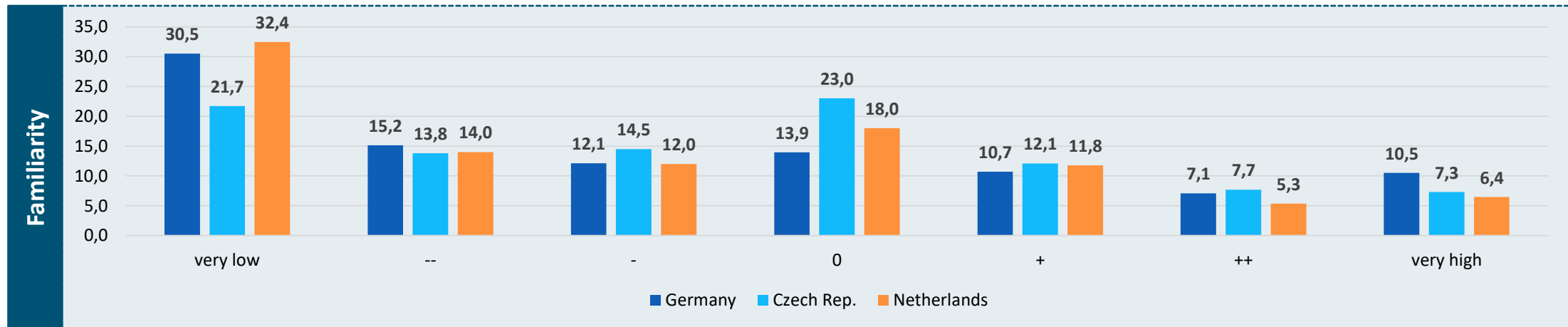
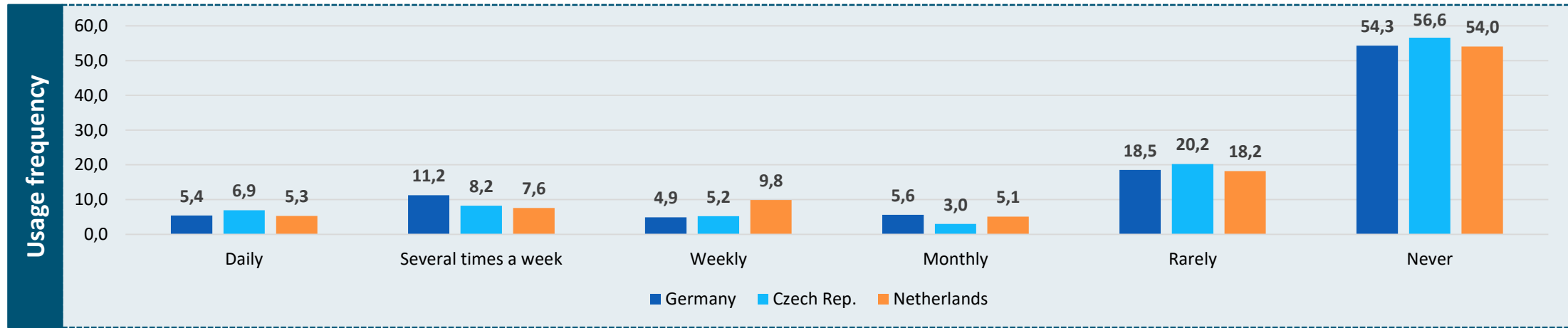
- *
 • Very rarely (one to three times a year)
 • Rarely (every two to three months)
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 • Often (about once a week)
 • Very often (several times a week)



CZECH RESPONDENTS INDICATE HIGH LEVELS OF DISCOMFORT REGARDING PARKING (SEARCH). THE RESPONDENTS ARE RATHER TECH-SAVVY.



A THIRD OF THE RESPONDENTS ARE FAMILIAR ADVANCED PARKING ASSISTANCE SYSTEMS, BUT HALF NEVER USE THEM.



N = 495
 N = 614
 N = 450

Proportion of respondents in [%]

THE REASONS WHY PEOPLE DON'T USE ADVANCED PARKING ASSISTANCE SYSTEMS ARE MANIFOLD.



Reasons & their number of mentions

Reasons	Number of mentions		
Own car does not have them	155	257	137
... yet	9	/	3
... but use them in other cars (company, rental car etc.)	16	12	10
Able to park well without them	19	13	17
Prefer to park without them / to trust their instincts / enjoy parking	9	4	/
Park faster without them	5	4	4
Do not need them (often)	19	23	16
Do not drive often / are mostly passengers	11	20	27
Not interested in using them / do not see the benefit	5	4	/
Installation is too expensive	2	2	4
Do not have a car / driver's licence	9	19	9
Only use them in certain situations (tight space, when driving backwards)	9	/	1
Not accustomed to them / forget they have them	3	/	
Not familiar / do not know how to use them / too complicated	17	3	10
Do not trust technology	6	8	7
Do not want to surrender control	1	2	2
Able to manually park in spaces the advanced parking assistance systems would not be	1	1	/
Do not know	/	5	15
Do not want to use them	/	5	/
Systems are not technically advanced enough / cause trouble	/	2	1
Able to manually park in spaces the advanced parking assistance systems would not be	/	1	/



Answers to the following open question (multiple answers possible):
*You indicated that you rarely or never use advanced parking assistance systems.
 Please briefly explain why.*