Rotterdam University of Applied Science – Pressure Cooker 2024

November 2024 – initial analysis

(the analysis available in this document was done in about 3 hrs – as a sort of benchmark for what to expect from students in a full day

Robbert Janssen – DMI-ecosysteem

On November 6th 2024, about 90 students did on-street observations and interviews about loading and unloading observations in the city of Rotterdam
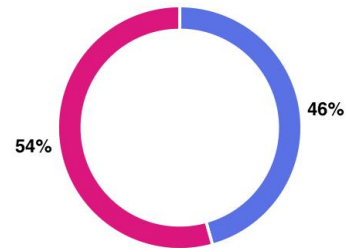
# In total 451 observations or interviews have taken place

Almost equally divided between interviews and observations

2. **Method** type

- ● Street Interview + Observation   206
- ● Observation only   245

54%

46%

Street interviews + observation took significantly longer than observations alone – by a margin of about 5-6 minutes

2. **Method** type

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Time Taken Comparison for Street Interview + Observation vs Observation Only

Observation Only

Street Interview + Observation

Time Taken (minutes)
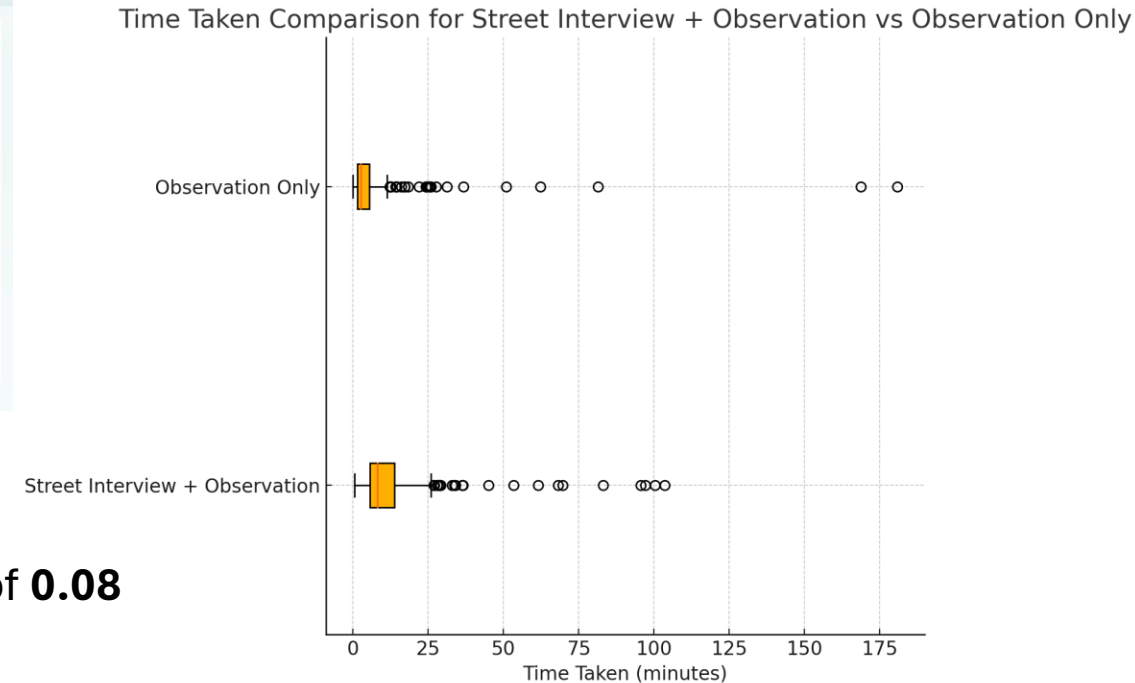
Some interesting outliers:

- **Shortest Response**: Recorded on row 214, with a duration of **0.08 minutes**. This was an "Observation only" by **Team 7** in the area **Noord (Jacob Catstraat 83A)**, observing **building and construction materials** delivered by a **tractor**.

- **Longest Response**: Recorded on row 397, with a duration of **180.83 minutes**. This was also an "Observation only" by **Team 5** in the area **Noord (Bergweg 91)**, observing **building and construction materials** delivered by a **van (bestelbus)**.

Statistic	Street Interview + Observation	Observation Only
Min	0.57	0.08
Q1	5.68	1.58
Median	8.17	2.67
Q3	13.85	5.55
Max	103.57	180.83
Mean	13.71	6.84

T-Test Results:
T-statistic = 4.22
P-value = 0.00003

Typically drivers need to do median 8 deliveries per day
oftentimes they do between 3 and 14 deliveries per day

3. **How many deliveries** in the city do you need to do on average per day (in a single shift)?   Meer details

187
Antwoorden

Meest recente antwoorden
"15"
...

18 respondenten (10%) antwoordden 1 op deze vraag.

maitainence and installation   Dovydas
delivery a week   27   12   10   1   15   100   stops   250   times   15/16
approx in one route   17   Een   5   8   keer sochtends
loading garbage

5-Number Summary for Average Deliveries per Day (Numerical Only)
Q3: 15 Mean: 14.28
Median: 8.0
Q1: 3.0
1
Min: 0.0
Max: 250.0

0   50   100   150   200   250
Number of Deliveries

The high delivery counts (up to 250) among the outliers correspond to different types of products and services:

- **Parcels, mail**: Several high-delivery entries, including the maximum of **250 deliveries** by **Team 16**.
- **Garbage/recycling (consumer, businesses)**: Several entries involve deliveries related to waste collection and recycling.
- **Food products**: Some outliers include deliveries of **food products** intended for restaurants or supermarkets.
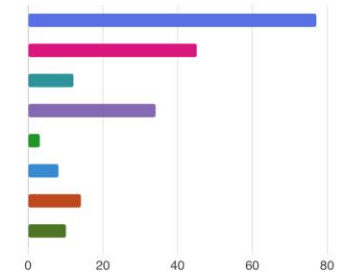
Dedicated loading/ unloading zones are used most frequently

4. Where do you **typically** park your vehicle for loading and unloading?   Meer details

Dedicated loading/ unloading zone (spot)	77
General public parking zone (spot)	45
Double parking (parking parallel to a vehicle already parked at the curb)	12
Partly on the roadway, partly on the sidewalk	34
In private parking	3
In a public square	8
On the sidewalk / bike path	14
Andere	10

5. Where did you park your vehicle for the **last (previous)** loading and unloading action that you did?   Meer details

|	
Dedicated loading/ unloading zone (spot)	81
General public parking zone (spot)	36
Double park	11
Partly on the roadway, partly on the sidewalk	35
In private parking	5
In a public square	10
On the sidewalk / bike path	22
Andere	2
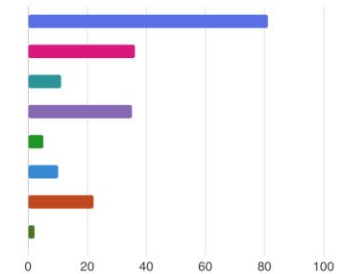
About 3 out of 4 interviewees were aware that a zero-emission zone is coming in 2025

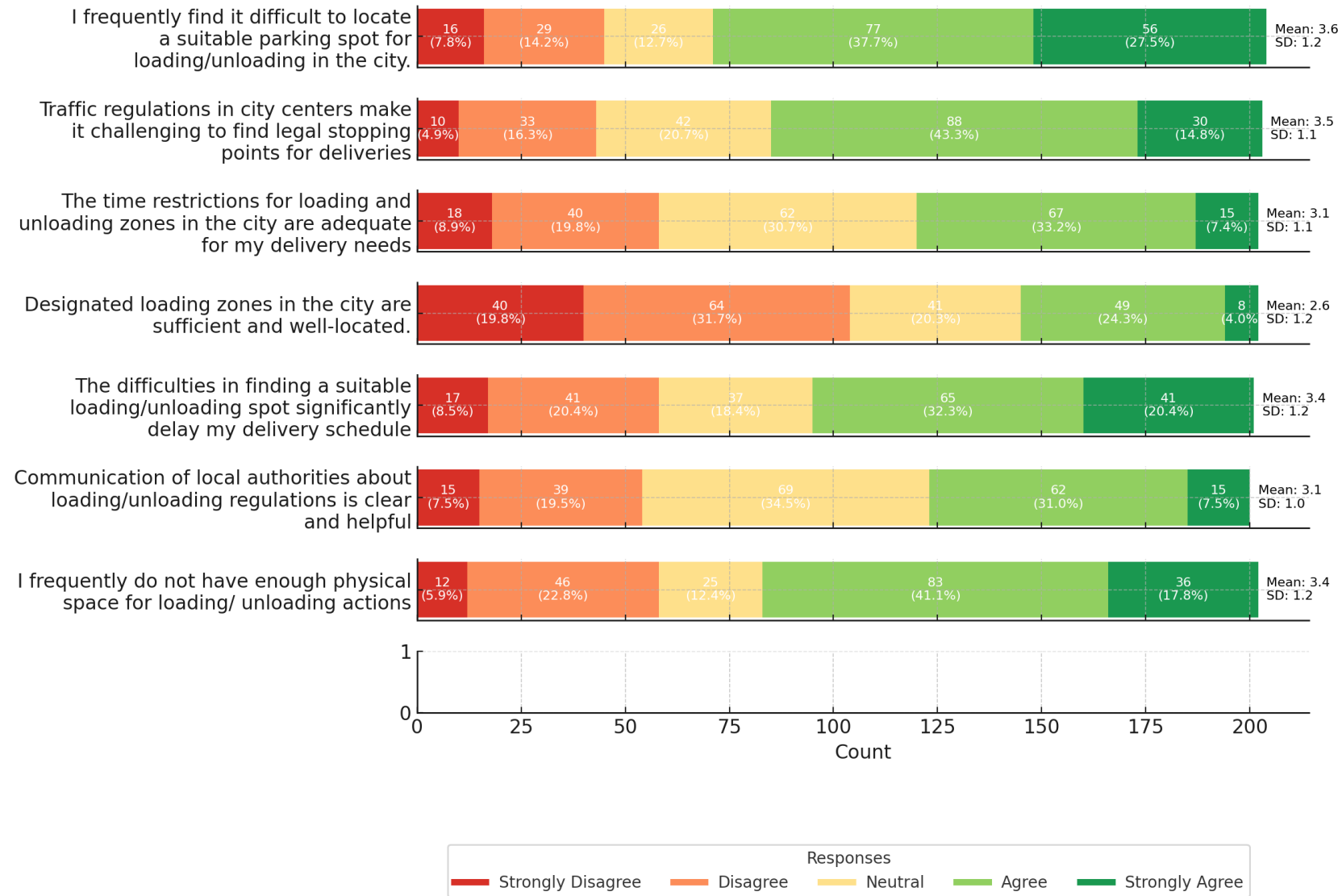6. Are you **aware** that there will be a **Zero Emission Zone** here in Rotterdam from 1 January 2025?

|		
● Yes	152	
● No	48	
● Andere	4	
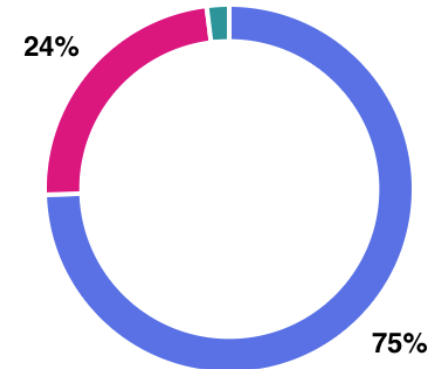
24%

75%

Observations and interviews were spread over the city of Rotterdam

10. What is the **area/ borough** for observation? Meer details

1 Historisch Delfshaven (Spanjaardstraat, Schans, Schiedamseweg)	23	
2 Delfshaven (Nieuwe Binnenweg 187-326, 's-Gravendijkwal 125)	68	
3 Noord (Bergweg 91)	46	
4 Noord (Jacob Catstraat 83A)	46	
5 Noord (Zwart Janstraat, Zaagmolenstraat)	47	
6 CS Kwartier & Centrum (Kruiskade 10-26, Kruissingel)	50	
7 CS Kwartier & Centrum (Coolsingel)	37	
8 Kop van Zuid (Laan op Zuid, Posthumalaan)	68	
9 Prins Alexander (Rietdekkerstraat, Griendwerkstraat, Spinet)	29	
Andere	22	
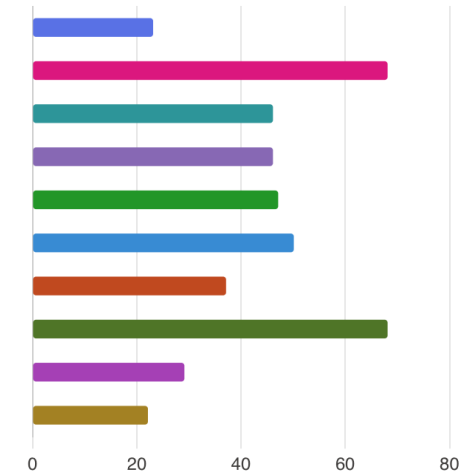
Food stuff and facility logistics were the biggest sectors in the observations/ interviews

12. What kinds of **products/ services** are being delivered?

|		
● Building and construction materials	54	
● Food stuff products (restaurants, supermarkets, wholesale, home deliveries)	158	
● General cargo (retailers)	54	
● Facilities, supplies, maintenance, service operations	109	
● Parcels, mail	22	
● Garbage / recycling (consumer, businesses)	30	
● Andere	12	
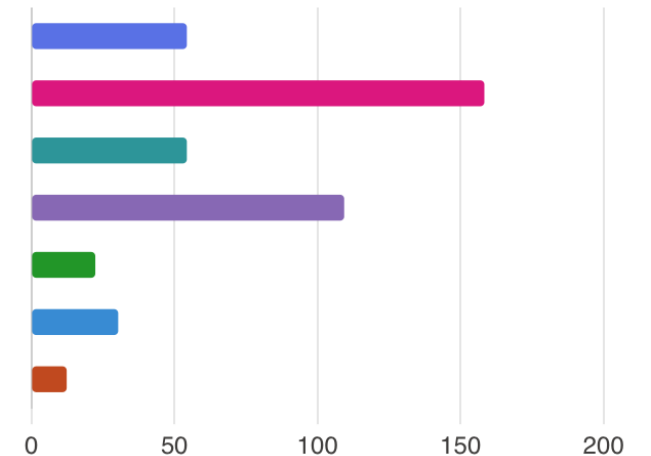
Vans were the most observed vehicles, yet there was a significant sample of boxtrucks and trucks with semi-trailers

13. What **kind of vehicle** is used for the delivery?
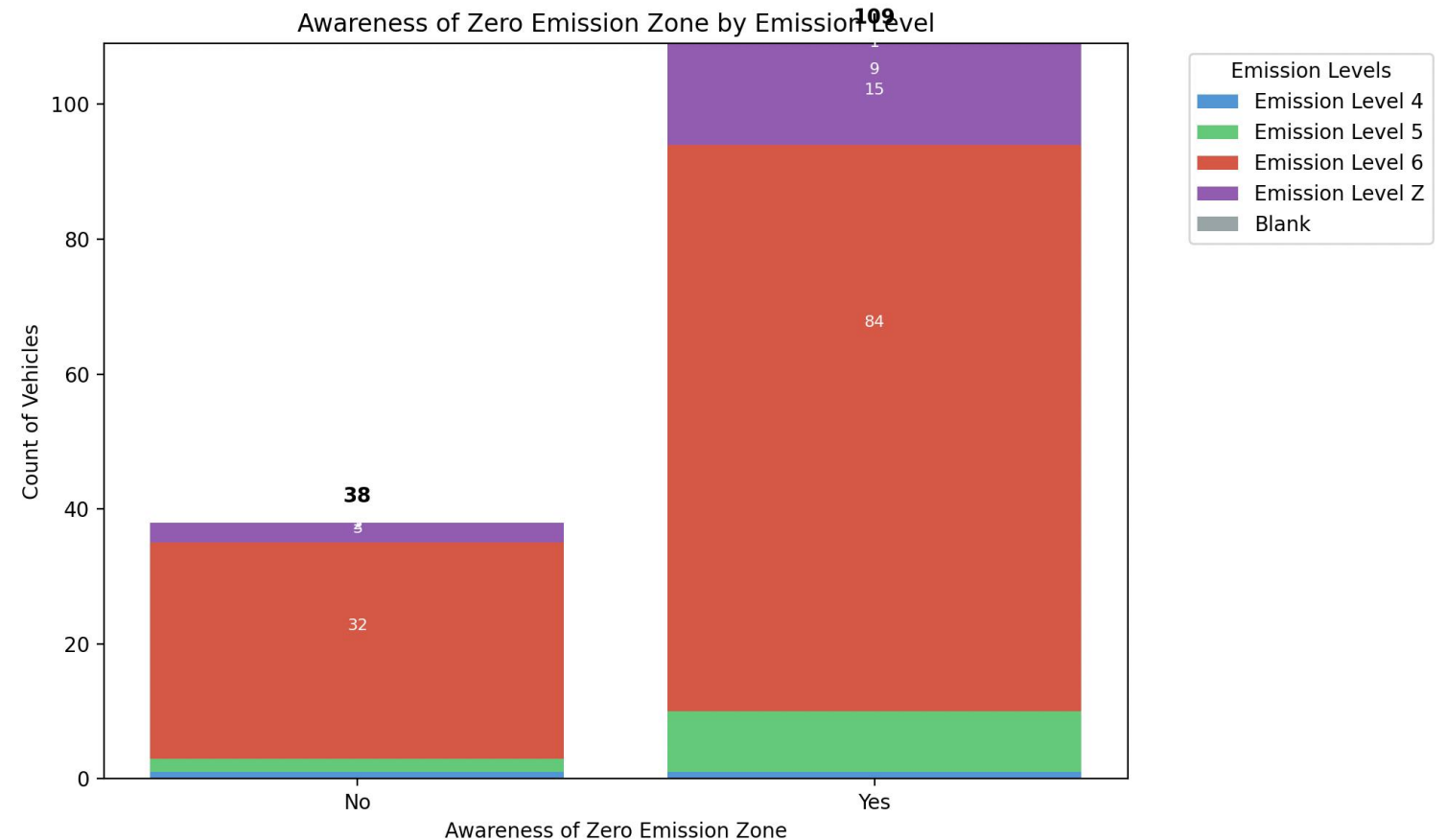
Vehicle	Count
Van (bestelbus)	220
Boxtruck (vrachtwagen/ bakwagen)	140
Truck + semitrailer (trekker+oplegger)	75
Passenger car	4
Cargo bike	1
Scooter / moped	0
Bicycle / e-bike	1
Andere	4
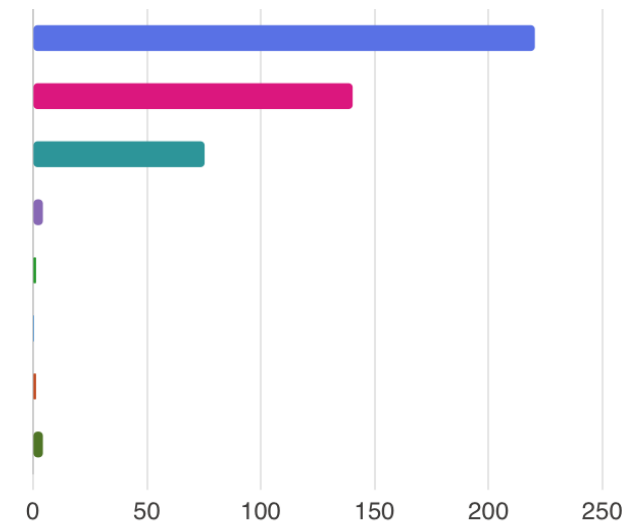
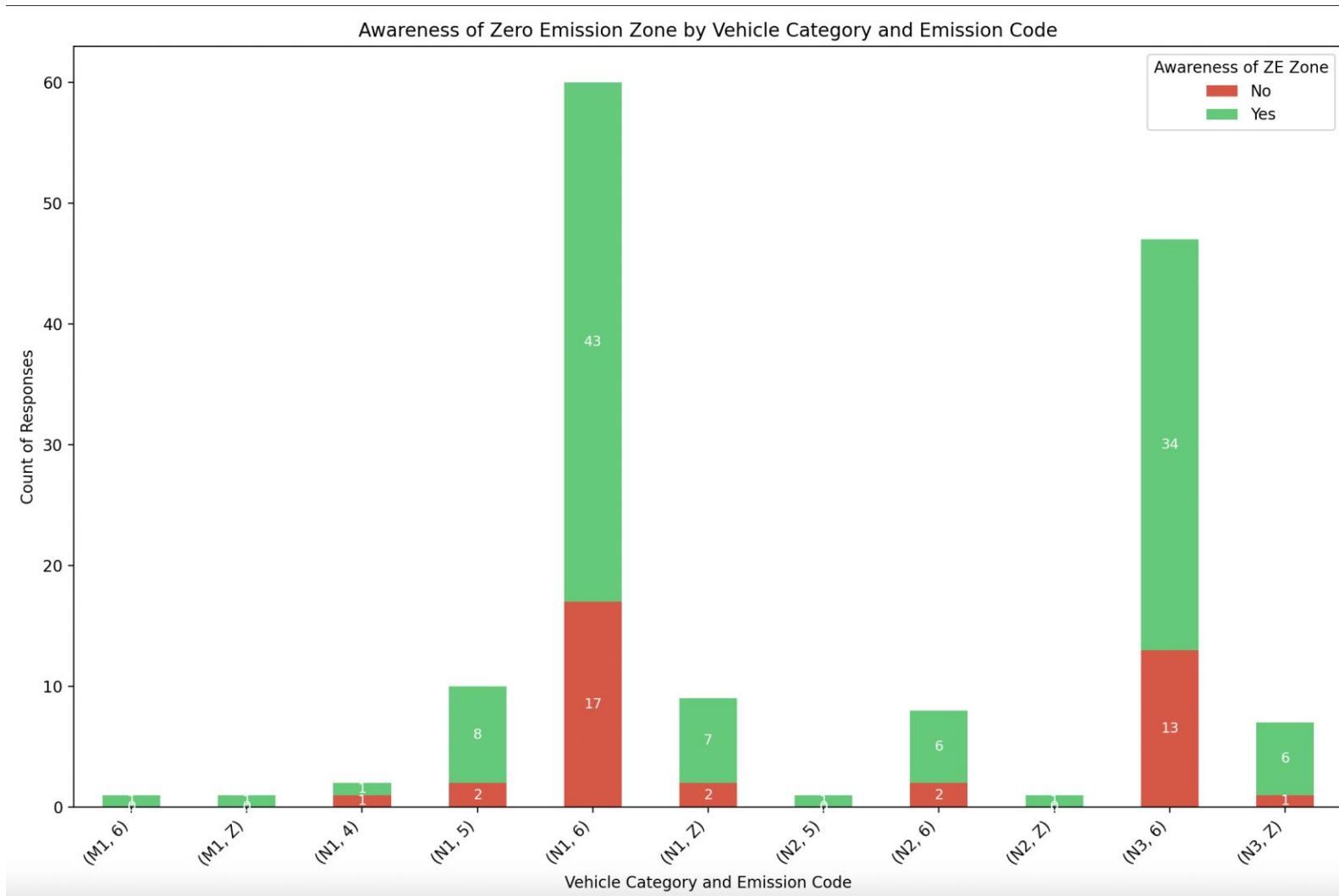# Based on combining the license plates with the RDW open data, the following vehicle analyses have been made
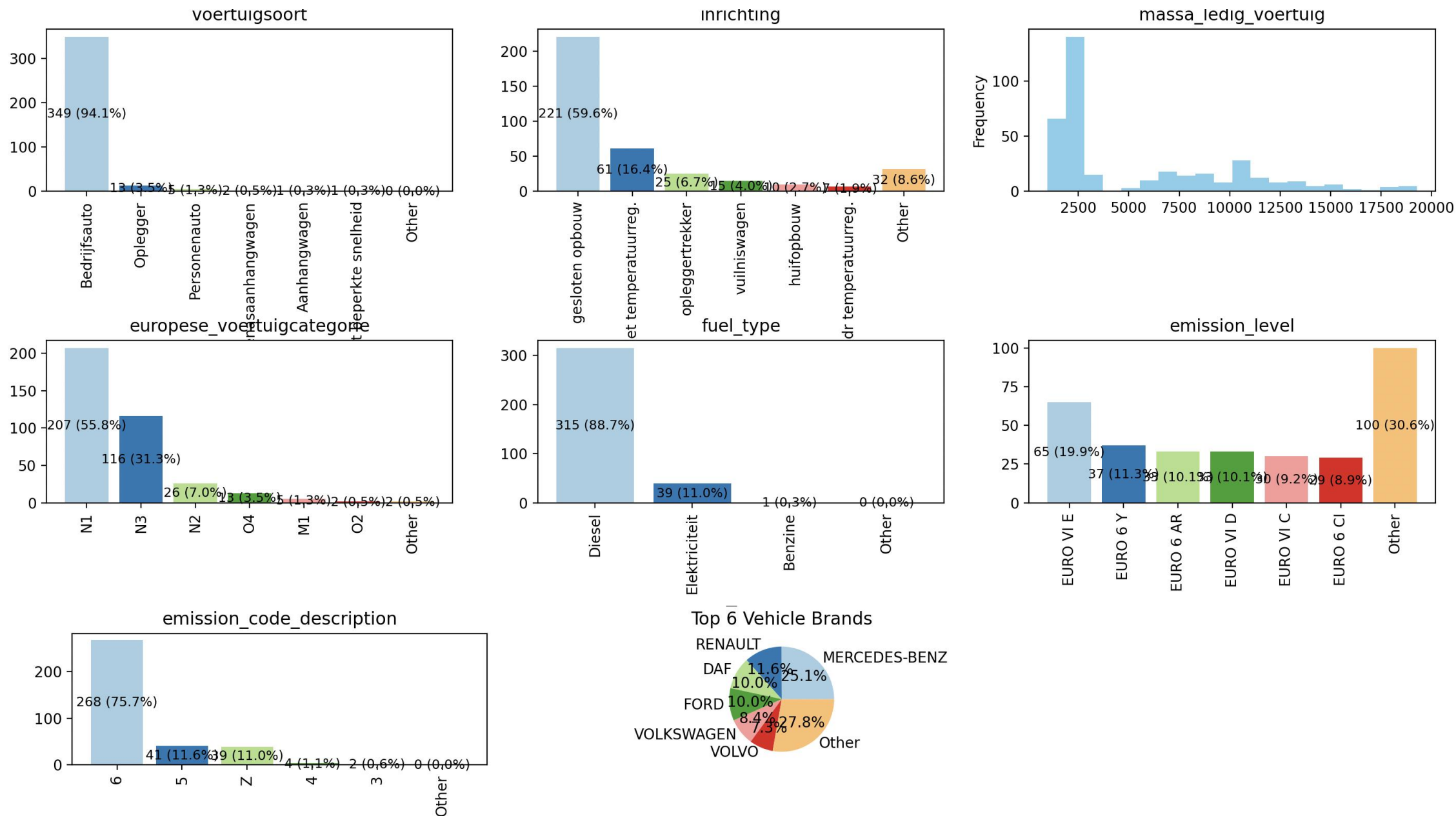
People with emission class 6 were most unaware about the upcoming ZE-zone – as this was the largest class

Awareness of Zero Emission Zone by Emission Level

Count of Vehicles

Emission Levels
Emission Level 4
Emission Level 5
Emission Level 6
Emission Level Z
Blank

Awareness of Zero Emission Zone

Awareness of Zero Emission Zone by Vehicle Category and Emission Code

General awareness of ZE-zones was quite high

And there was no (statistically) significant difference between owners of various types of vehicles (based on vehicle category and emission class)
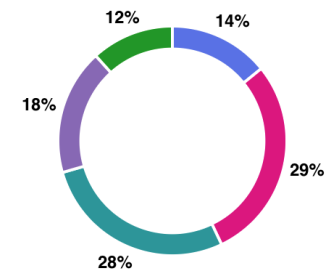
Total stopping time varied widely

(note: I didn't cross-check whether stopping time is as long as the observation time)

15. What is the total stopping time?   Meer details

- 0-5 min   63
- 5-15 min   128
- 15-30 min   123
- 30-60 min   79
- > 60 min   52

12%   14%

18%

29%

28%

Above all – thanks for the students for their hard work!

Over 450 total observations and interviews were made

1. **Team** number

Meer details

Team	Value
Team 1	0
Team 2	0
Team 3	38
Team 4	43
Team 5	34
Team 6	0
Team 7	41
Team 8	17
Team 9	18
Team 10	33
Team 11	27
Team 12	36
Team 13	0
Team 14	28
Team 15	44
Team 16	25
Team 17	27
Team 18	21
Team 19A	3
Team 19B	14
Andere	2
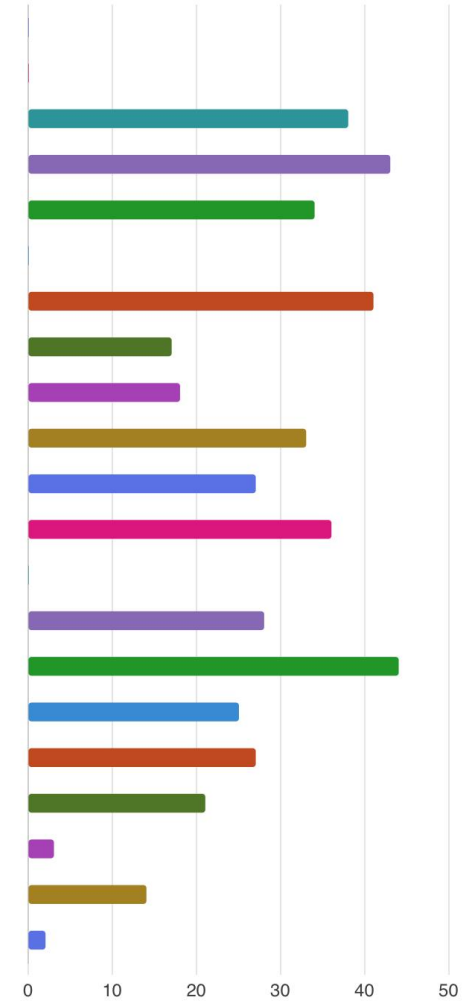
On average – teams recorded 27 observations or interviews

Mean and median were about 27 records

Shout-out to Team 15 for 44(!) records 🚀

1. **Team** number   Meer details

Team	Count
Team 1	0
Team 2	0
Team 3	38
Team 4	43
Team 5	34
Team 6	0
Team 7	41
Team 8	17
Team 9	18
Team 10	33
Team 11	27
Team 12	36
Team 13	0
Team 14	28
Team 15	44
Team 16	25
Team 17	27
Team 18	21
Team 19A	3
Team 19B	14
Andere	2
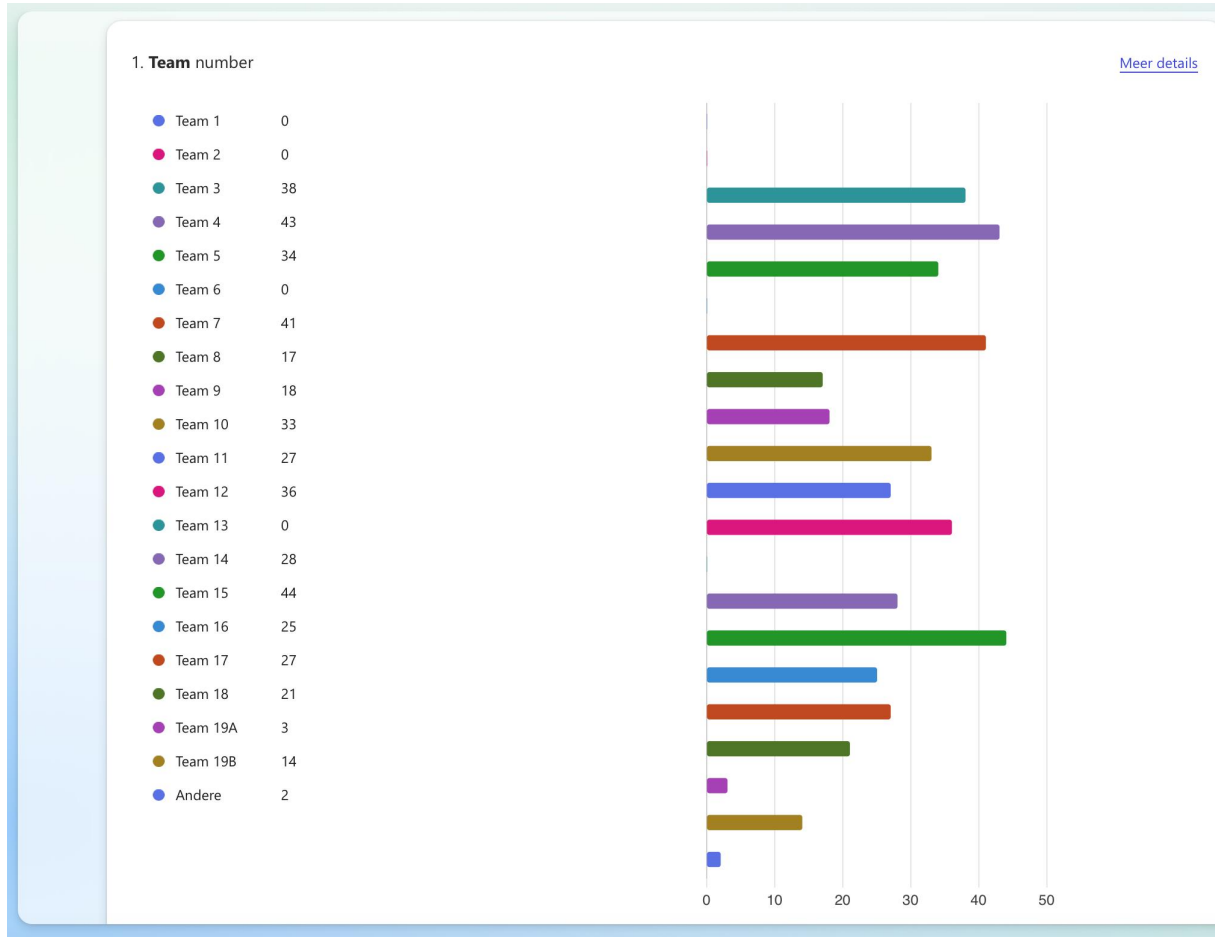
5-Number Summary and Mean for Interviews and Observations per Team

Min: 1.0   Q1: 18.0   Median: 27.0   Q3: 36.0   Max: 44.0

Mean: 26.47

Count