

## ASSESSMENT 2

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Data Exploration Reports: The traffic Accidents Across Multiple Provinces and Possible Offenders

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### ASSESSMENT 2

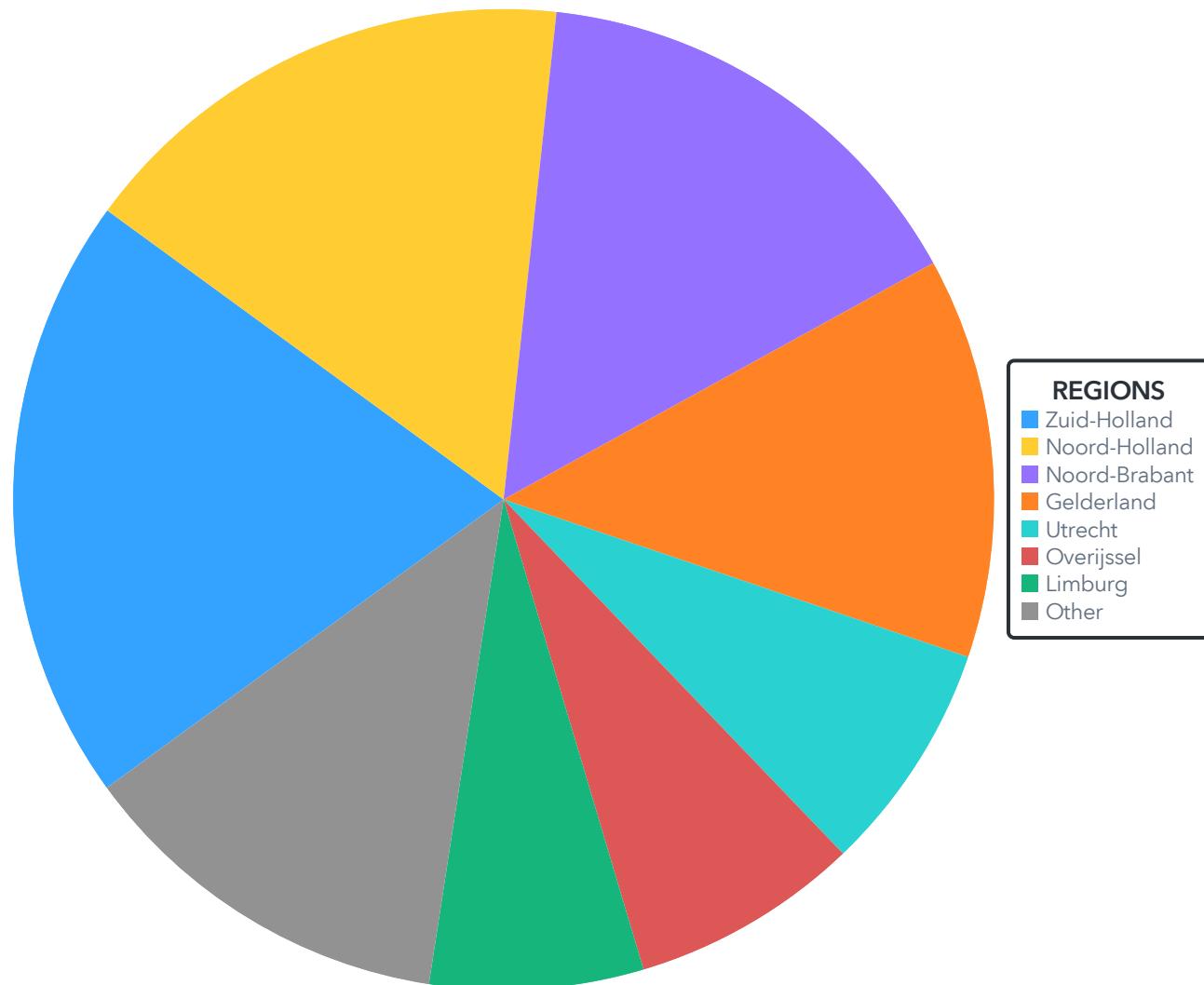
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## REGIONS NUMBER ACCIDENT

NUMBER ACCIDENTS by REGIONS



### REPORT OVERVIEW

The report examines the nature and causes of traffic accidents in different province, the objective for this report is to investigate the offenders of traffic accidents. This report can be used in making decisions by government and the department of traffic safety.

Zuid-holland has the highest record of hit and run by 551 record cases while overjessel report show lowest record of 70 hit and run.

Also, in the report there was increase in casualties for all road user type in september compared with the rest of the month, Although our visualization shows that the highest number of accident happened in November.

## CORRELATION

Number hit-and-run, Number intoxicated (liquor/drugs) by Road situation

Number hit-and-run

1000

Number intoxicated (liquor/drugs)

1000

800

800

600

600

400

400

200

200

0

0

Roundabout

Crossing 3-way

(missing)

Crossing 4-way

Bend

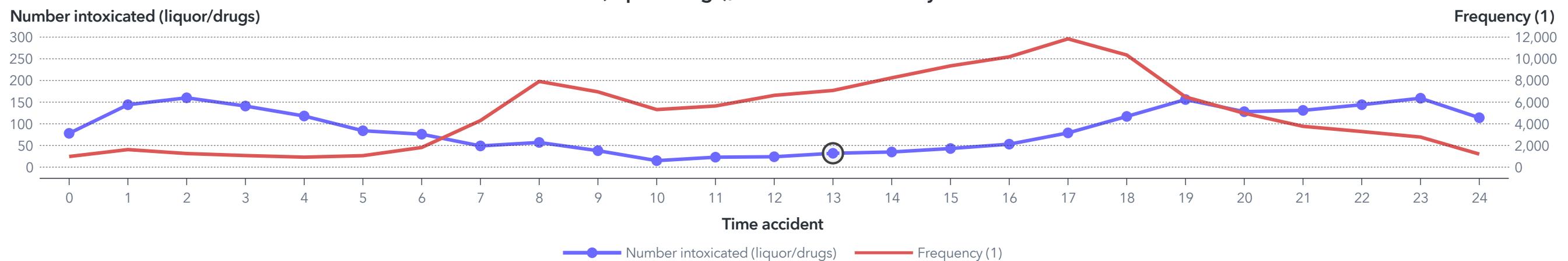
Straight road

Road situation

■ Number hit-and-run ■ Number intoxicated (liquor/drugs)

## ACCIDENT HOUR

**Number intoxicated (liquor/drugs), Number Accidents by Time accident**



**Number hit-and-run, Number Accidents by Time accident**



**NUMBER ACCIDENTS, Number casualties by Date accident**



## INTOXICATED OFFENDERS

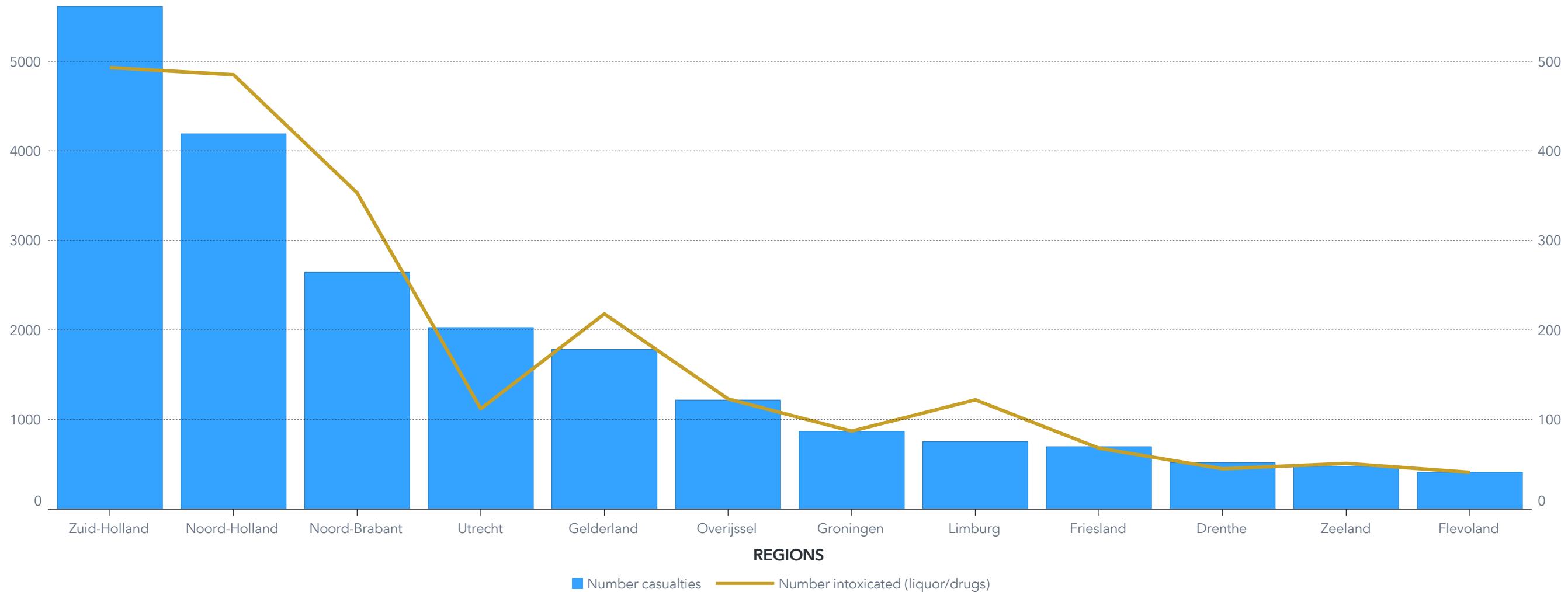
Number casualties, Number intoxicated (liquor/drugs) by REGIONS

Number casualties

6000

Number intoxicated (liquor/drugs)

600

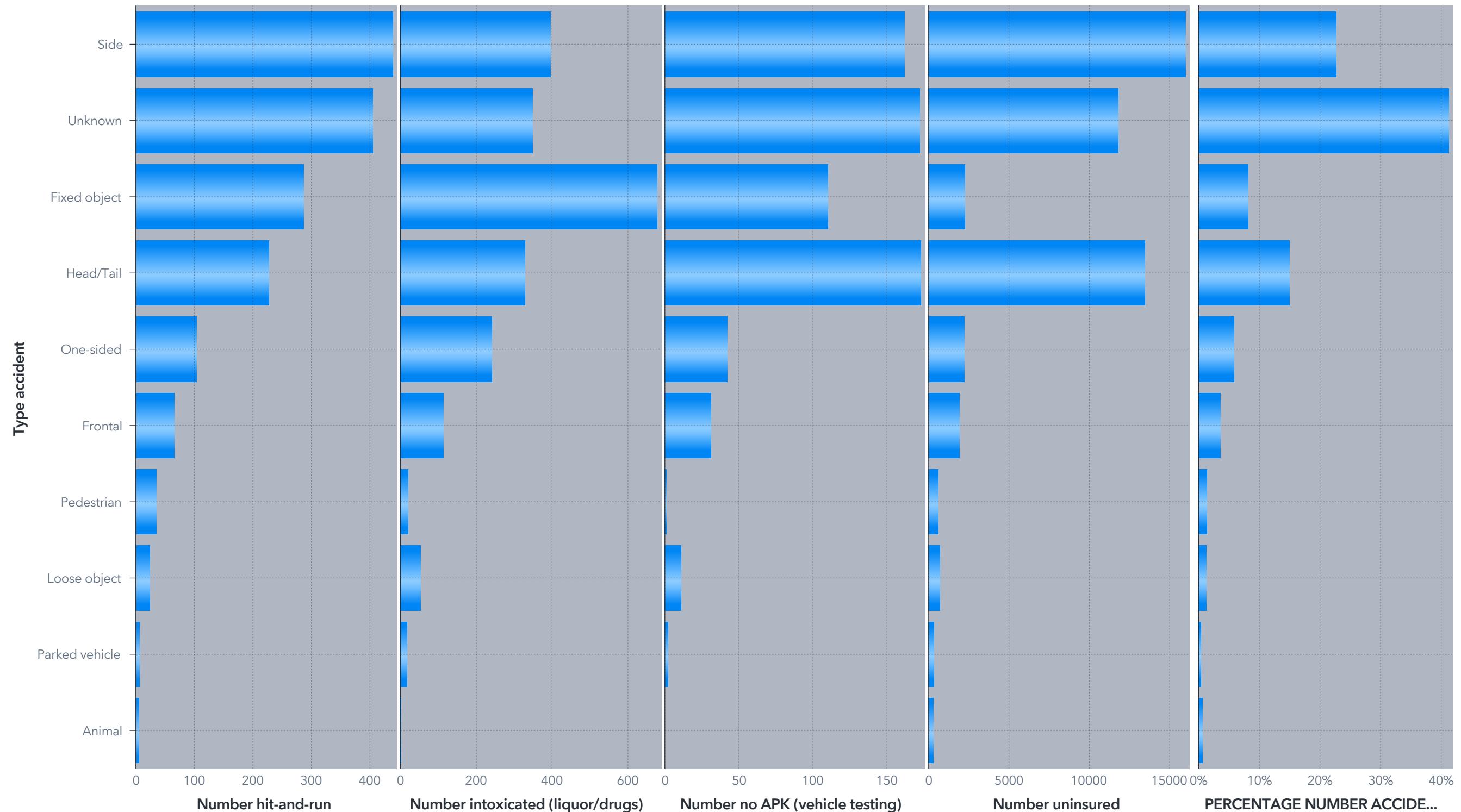


### KEY INSIGHT

The graphical visualization in this page depict the number of accident occurred by intoxicated offenders in different province, an estimated 5611 people are casualties of 493 intoxicated drivers in Zuid-holland,

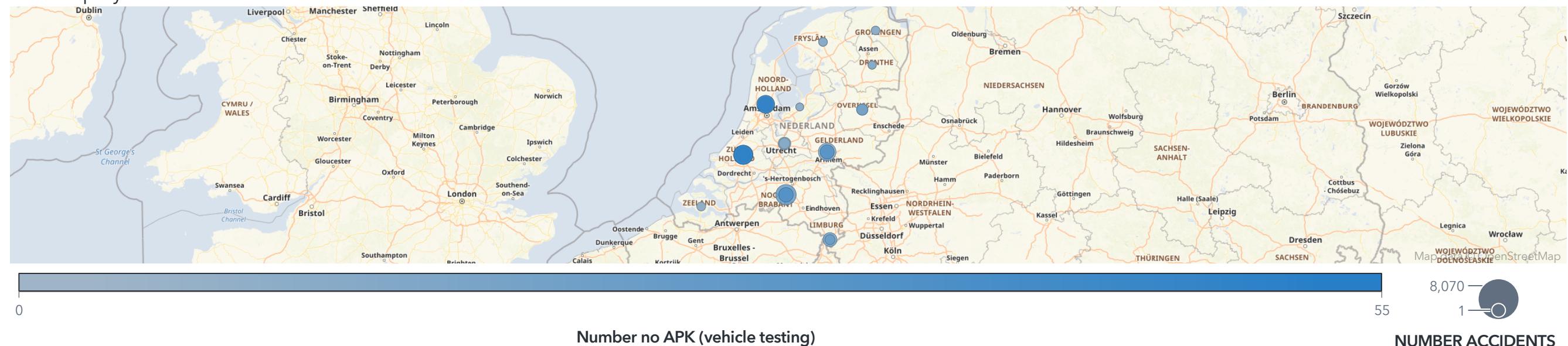
## TYPES OF ACCIDENT

Number hit-and-run, Number intoxicated (liquor/drugs), Number no APK (vehicle testing), Number uninsured, PERCENTAGE NUMBER ACCIDENTS by Type accident

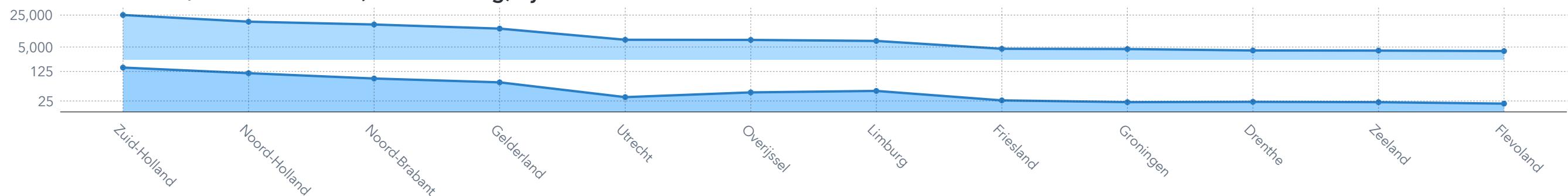


## VEHICLE TESTERS

### Geo Map by PROVINCE



### Number Accidents, Number no APK (vehicle testing) by Province



A1.2

### Weather condition (Number no APK (vehicle testing))

- D
- H
- M
- R
- S

476
1
11
98
2

A1.3

## UNINSURED

## PROVINCE GEO MAP by Number uninsured sized by NUMBER ACCIDENTS



## PROVINCE GEO MAP BY ROAD SITUATION

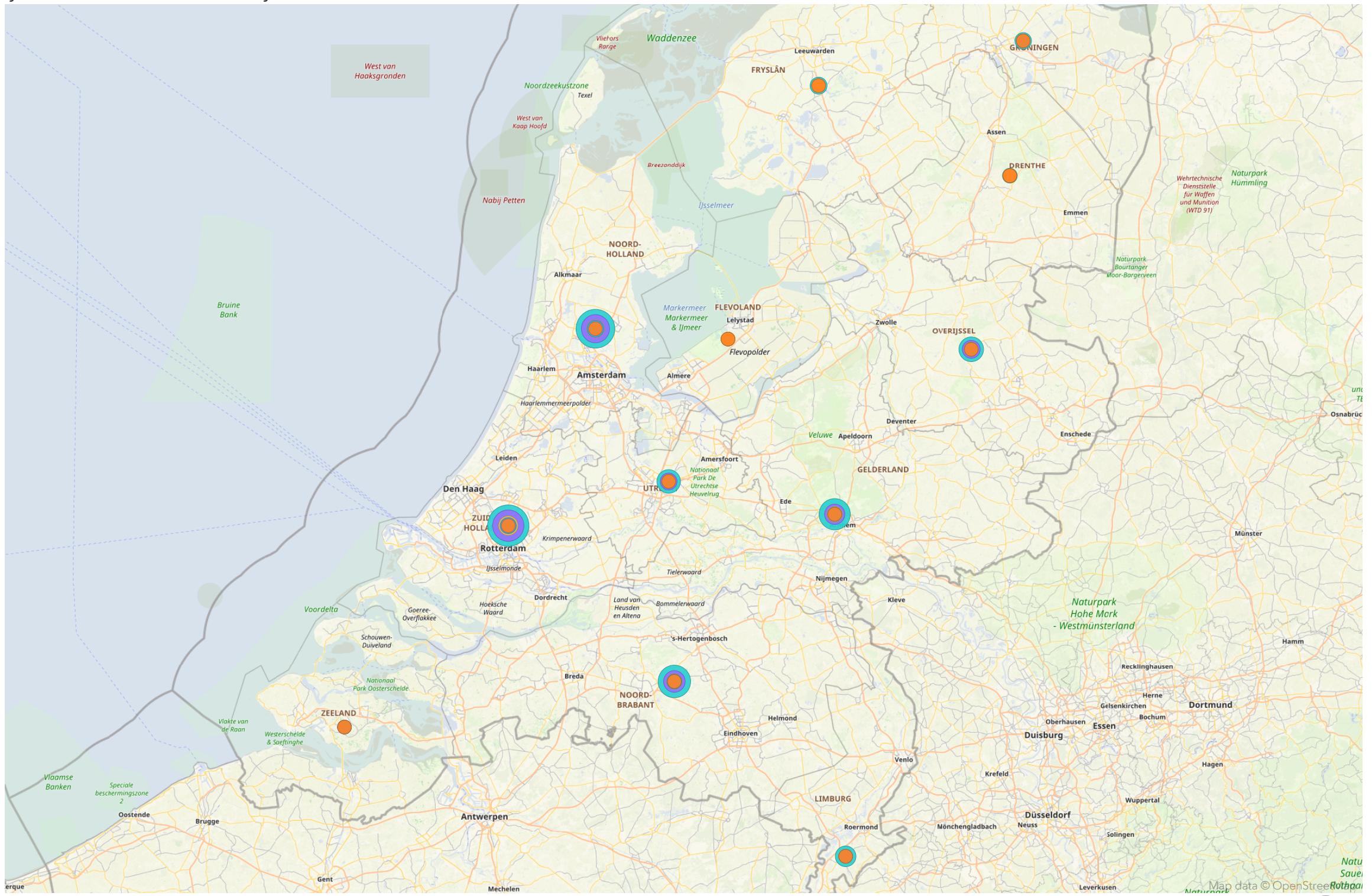
### PROVINCE GEO MAP by ROAD SITUATION sized by PERCENTAGE NUMBER ACCIDENTS

PERCENTAGE NUMBER...



#### Road situation

- Bend
- Crossing 3-way
- Crossing 4-way
- Roundabout
- Straight road



## REPORT ANALYSIS

### Overview of the Dataset

This dataset contains information on accidents that occurred in 12 various provinces, including details about offenders, accident types, casualty count and associated factors.

#### Data Source:

The information was gathered from SAS Visual Analytics over a period of 2015 - 2017 . The visualization explore the distribution of accident across different province. Zuid-Holland top the chart for province with highest occurrence of accident and offenders, we found out that hit and run , intoxicated, uninsured and and vehicle testers are the major contributors to accidents with casualties, and mostly the accident type is to the SIDE with 22.69% accident occurrence in our dataset, a large proportion of our dataset shows that 995 intoxicated drivers are major offenders on straight road accidents. Our exploration shows that the peak period of accident is 5:00pm with about 11,841 number of accidents recorded at this time, intoxicated drivers are likely to be the cause of accident during the hours of 2:00am, 7:00pm, and 11:00pm according to our report, hit and run offenders are spread across our dataset without a conversant peak time of accident.

#### Possible Reasons

- 1) Speeding Conduct: Intoxicated drivers are more likely to speed, particularly on straight roads with high visibility.
- 2)Lack of Curvature: Straight roads may encourage over speed, enhancing the risk of accidents when drivers are compromised.
- 3)Lack cognitive control: Intoxication and overjoy can impair cognitive functions, resulting in impaired decision-making and reduced safety while driving
- 4)Overconfidence: Drivers may overestimate their ability to control their vehicle due to perceived ease on straight roads and due to perception of simplicity
- 5)Law enforcement defer on road types, creating opportunity for drivers to engage in reckless behavior.

## PROPOSED SOLUTIONS

### RISK MITIGATION STRATEGIES

In high-risk provinces like Zuid-Holland policy makers should endeavour to enhance safety measures.

Recommend targeted public awareness campaigns for hit and run and intoxicated as they dominate a high volume in our datasets.

#### **Recommendations for Infrastructure and Policy:**

- A) Government should consider better road infrastructure in high-accident areas.
- B) To reduce accidents, propose policy changes or enforcement strategies.
- C) Intensify Law Enforcement: conduct more frequent and targeted law enforcement patrols on straight roads, particularly during high-risk times.
- D) Educational Enlightenment: Launch campaigns to raise awareness of the dangers in impaired driving on all types of roads, emphasising that no road type is hazard-free.
- E) Road Plan Modification: Introduce design elements such as speed bumps, signage, or other traffic calming measures to discourage speeding.
- F) Technology Advancement: Investigate the use of technology such as smart traffic light surveillance systems to detect and respond to dangerous driving behaviors.
- G) Judiciary Consequences: severe penalties should be considered for impaired driving offences to deter future offenders.
- H) Establish a data-driven predictive policing strategies to identify potential accident offenders and hotspots.

#### **Data Collection and Reporting:**

For more accurate reports law makers should participate in the community by encouraging citizens to report accidents through user-friendly platforms.

To engage the community in the data collection process create community partnerships to improve the accuracy of data pertaining to specific locations or events.

**NOTE:** Periodic analysis and reporting are recommended to identify evolving trends.

## VARIABLES

### VARIABLES USED IN THIS REPORT

REGIONS	▲ Number hit-and-run	Number intoxicated (liquor/drugs)	Number no APK (vehicle testing)
Drenthe	16	45	22
Flevoland	14	41	16
Friesland	42	68	27
Gelderland	133	218	88
Groningen	44	87	21
Limburg	78	122	59
Noord-Brabant	188	353	101
Noord-Holland	291	485	119
Overijssel	70	123	54
Utrecht	155	112	38
Zeeland	16	51	21
Zuid-Holland	551	493	138

REGIONS	▲	NUMBER ACCIDENTS	PERCENTAGE NUMBER ACCIDENTS	Number hit-and-run
Drenthe		2,847	2.28%	16
Flevoland		2,479	1.98%	14
Friesland		3,884	3.11%	42
Gelderland		16,516	13.21%	133
Groningen		3,729	2.98%	44
Limburg		8,802	7.04%	78
Noord-Brabant		19,086	15.27%	188
Noord-Holland		20,862	16.69%	291
Overijssel		9,446	7.56%	70
Utrecht		9,539	7.63%	155
Zeeland		2,765	2.21%	16
Zuid-Holland		25,037	20.03%	551

⌚ A3.2

⌚ A3.1

## Appendix

### A1.1 ASSESSMENT 2

Parameters: Parameter 1 = 56.00

#### A1.2 Number Accidents, Number no APK (vehicle testing) by Province

Filters: ( Number hit-and-run BetweenInclusive(0; 2) ) OR Number hit-and-run Missing

#### A1.3 Weather condition (Number no APK (vehicle testing))

Filters: ( Number no APK (vehicle testing) BetweenInclusive(0; 2) ) AND Number no APK (vehicle testing) NotMissing  
Road situation NotMissing  
Weather condition NotMissing

### A2.1 PROVINCE GEO MAP by ROAD SITUATION sized by PERCENTAGE NUMBER ACCIDENTS

Filters: Road situation NotMissing

#### A3.1 List table - REGIONS 1

Filters: ( Number uninsured BetweenInclusive(0; 19) ) AND Number uninsured NotMissing  
( Number no APK (vehicle testing) BetweenInclusive(0; 2) ) AND Number no APK (vehicle testing) NotMissing  
( Number intoxicated (liquor/drugs) BetweenInclusive(0; 6) ) AND Number intoxicated (liquor/drugs) NotMissing  
( Number hit-and-run BetweenInclusive(0; 2) ) AND Number hit-and-run NotMissing  
REGIONS NotMissing  
( PERCENTAGE NUMBER ACCIDENTS (Percent of Total) BetweenInclusive(0.019833; 0.200309) ) AND PERCENTAGE NUMBER ACCIDENTS (Percent of Total) NotMissing  
( NUMBER ACCIDENTS (Frequency) BetweenInclusive(2,479; 25,037) ) AND NUMBER ACCIDENTS (Frequency) NotMissing

#### A3.2 List table - REGIONS 2

Filters: ( Number hit-and-run BetweenInclusive(0; 2) ) AND Number hit-and-run NotMissing  
( Number intoxicated (liquor/drugs) BetweenInclusive(0; 6) ) AND Number intoxicated (liquor/drugs) NotMissing  
( Number uninsured BetweenInclusive(0; 19) ) AND Number uninsured NotMissing  
( Number no APK (vehicle testing) BetweenInclusive(0; 2) ) AND Number no APK (vehicle testing) NotMissing  
REGIONS NotMissing