

Report 1

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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY FOR A REPORT ON ACCIDENT OFFENDERS IN NETHERLANDS

This report primarily focuses on providing a concise record of accident culprits in Netherlands . It exposes traffic related incidents and the repercussion for offenders that are involved in the accident . It basically explores patterns, profile of the culprits , reasons that contribute to the offenses ,and the insights spotted that would help avert the situation .

FINDINGS

- 165,000 road users were involved in 83,151 accidents in the Netherlands in 2016, this accidents resulted to 20,261 injuries and fatality is 516. It was deduced the Utrecht recorded the largest ratio of casualty . Zuid-Holland recorded the most accident(18,160).
- Number of intoxicated people is 2108 , drivers that are uninsured are got involved in incidents are 49518, there are some cases of hit and run cases (1598) . offenders related accident were more prevalent in urban areas like Zuid-Holland and Noord Holland . 69000 incidents occurred in dry conditions which basically indicates that most of the accident was not caused by severe weather condition but probably as a result of over speeding and carelessness of drivers . 12000 accidents occurred in wet conditions with side crashes most common.
- Findings showed that the most increased number of accident occurred on Fridays (20262 ACCIDENTS , 3355 CASUALTIES) with seasonal trends indicating that accidents peaked in may (10,336 accidents and 2056 casualties). Morning between 8-9am and evening between 4-5pm were the risk times and main causes were exhaustion , distractions of customers as well as traffic scenes.

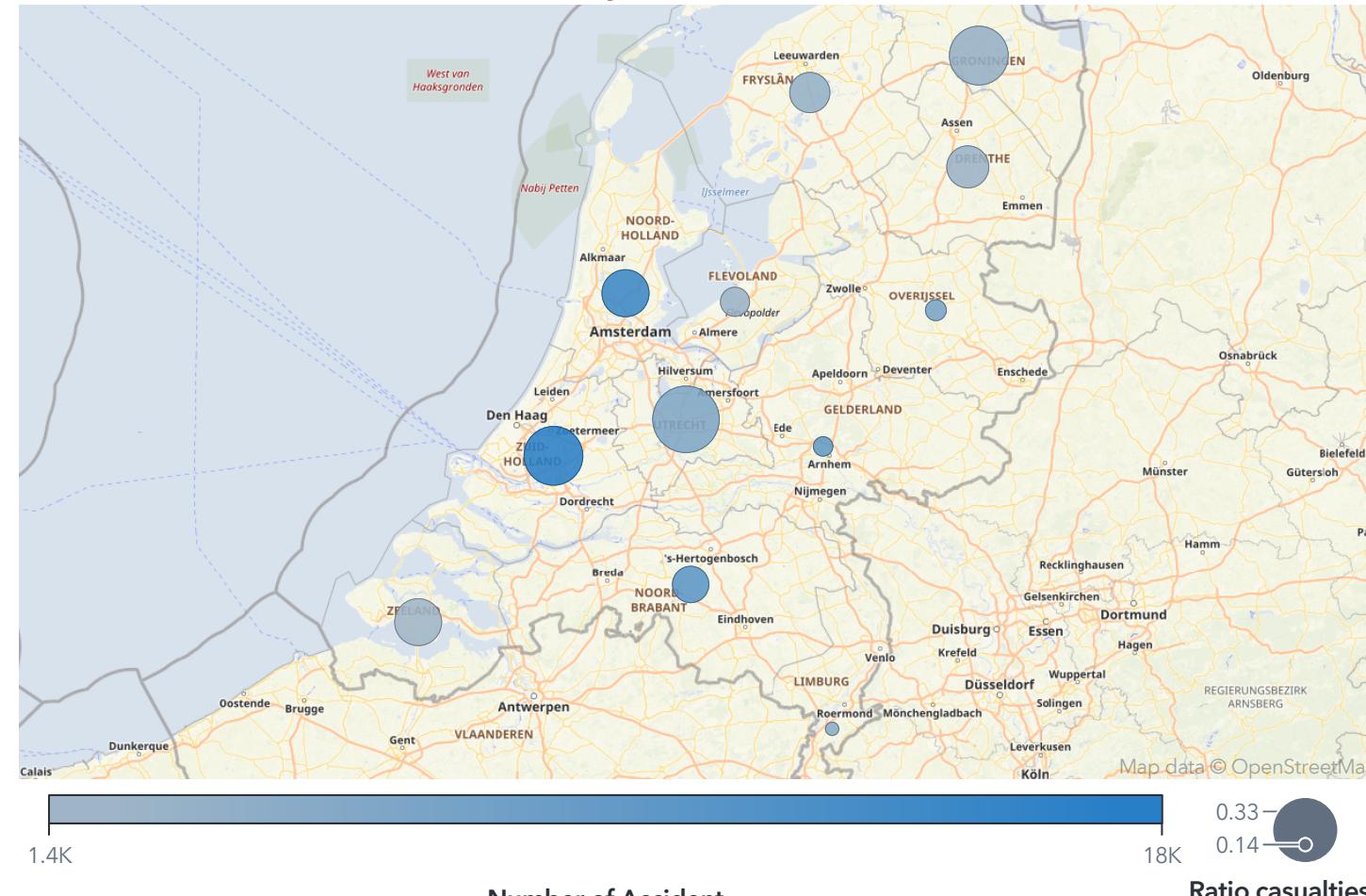
where(Q1)

Throughout a year , The populace of Netherlands experienced 83,151 traffic accidents involving approximately 165,000 road users, resulting in 20,261 casualties and 516 fatalities. Zuid-Holland recorded the highest number of accidents at 18,160, Noord-Holland was the next in line , while Zeeland recorded the lowest at 1,441. However Zuid-Holland and Noord-Holland dominating in accident numbers, provinces like Utrecht and Groningen had the highest casualty ratios, showing more fatal accidents. The pattern is visibly shown in the map, where Zuid-Holland and Noord-Holland tends to be popular for their accident counts, but the darker hues in provinces like Groningen and Utrecht highlight higher casualty ratios, making them distinct in terms of accident severity.

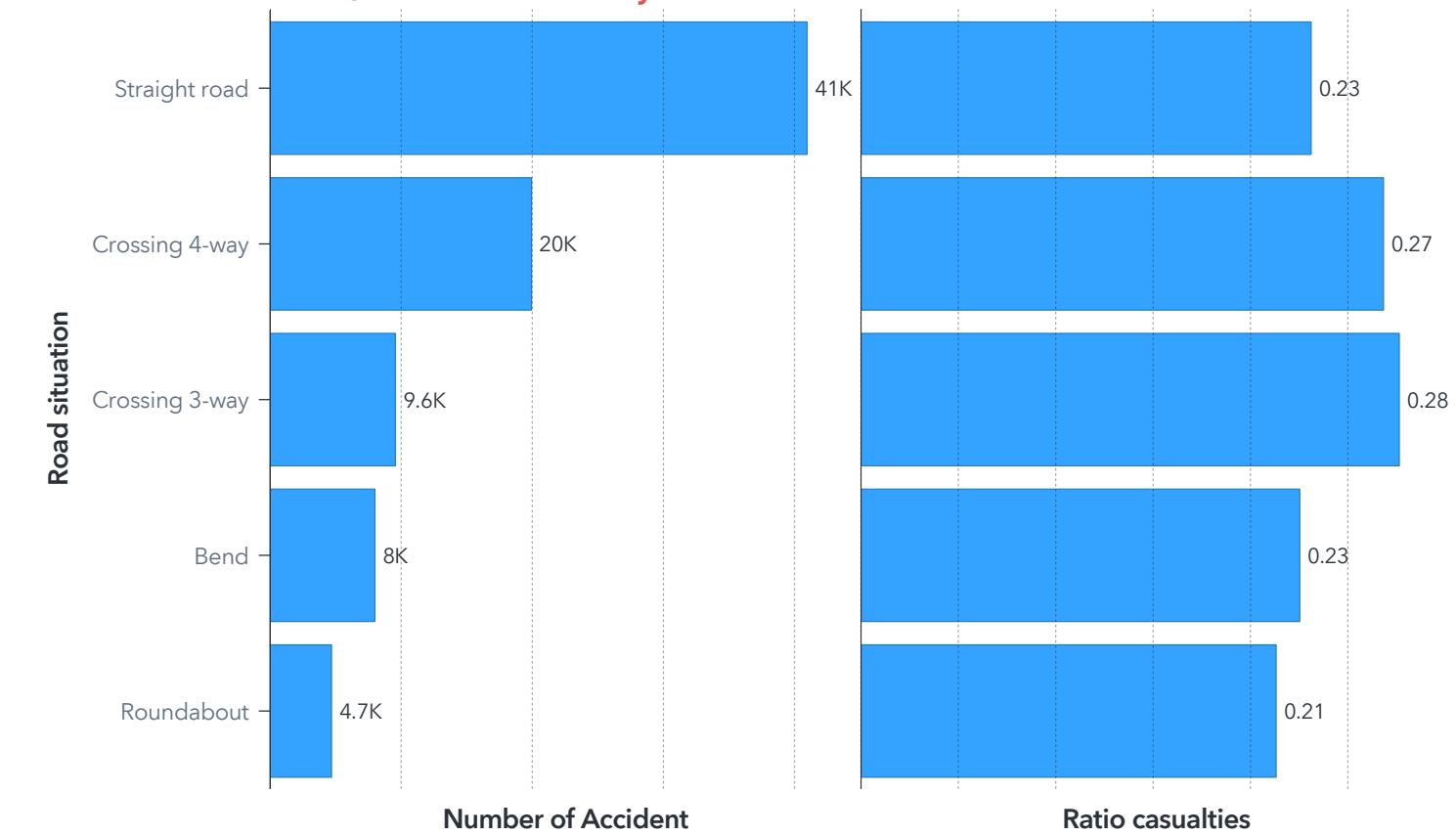
The bar plots shows more insights by comparing accident numbers and casualty ratios across road conditions. Straight roads recorded the largest number of accidents, with 41,000 incidents and a casualty ratio of 0.23. Crossings, particularly 4-way and 3-way, stand out with lower accident counts (20,000 and 9,600 respectively) but higher casualty ratios (0.27 and 0.28), indicating greater danger. Roundabouts, represented at the lower end of both metrics, have only 4,700 accidents and the lowest casualty ratio of 0.21, making them clearly stand out as a safer road design. The distribution of the figures within the visualizations indicates not just where accidents occur but also the severity and the relative safety of different road types.

Province	▲	Number of Accident	Number casualties	Ratio casualties	Ratio Lethal
Limburg		8,802	752	0.09	0.00
Noord-Brabant		19,086	2643	0.14	0.01
Noord-Holland		20,862	4190	0.20	0.00
Overijssel		9,446	1217	0.13	0.01
Utrecht		9,539	2026	0.21	0.00
Zeeland		2,765	478	0.17	0.01
Zuid-Holland		25,037	5611	0.22	0.00

Number of Accident of Province sized by Ratio casualties



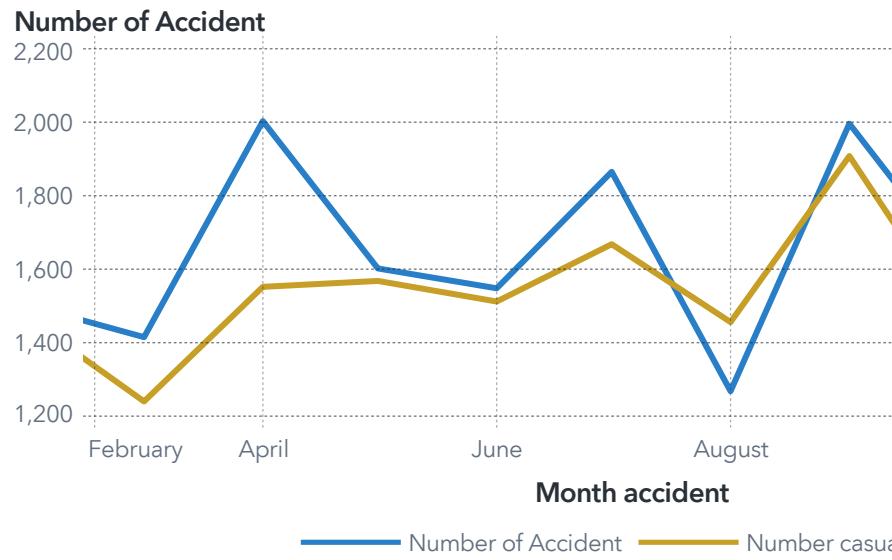
Number of Accident, Ratio casualties by Road situation



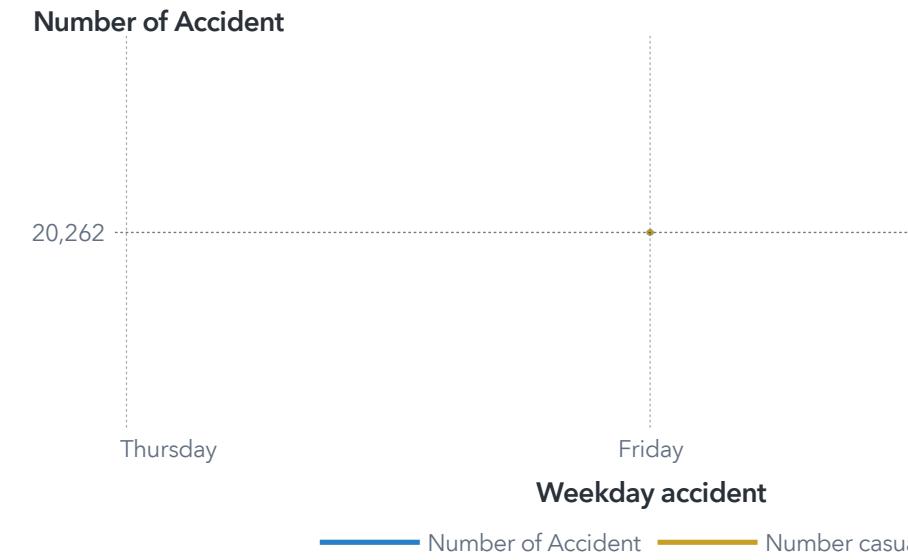
when(Q2)

Road accident patterns in the Netherlands shows a visible trends yearly , accident and casualty numbers peak during May (10,336 accidents, 2,056 casualties) and September (10,785 accidents, 2,210 casualties), which is probably caused by seasonal factors such as summer vacations and changes in weather conditions . Comparing, February has the lowest figures (9,727 accidents, 1,572 casualties), indicating decrease in road activity in winter. Fridays shows the highest weekly accident and casualty counts, with 20,262 accidents and 3,355 casualties, most likely due to rise in end-of-week traffic. Sundays have the lowest accident rates, which is likely due to less road activity. Hourly data indicates peak accident timestamp morning commutes (7-9 AM) and evening rush hours (3-6 PM), suggesting the need for enhanced safety measures during these critical periods. Late-night hours (11 PM-4 AM) show less accident activity, while accidents during holidays total 632, highlighting average risk during festive travel. Environmental factors, such as an average temperature of 12°C and a wind speed of 43 (0.1 m/s), appear to have little influence. However, targeted interventions during peak months, weekdays, and commuting hours can significantly improve road safety. Weekend traffic management during summer and increased vigilance on Fridays may help reduce risks associated with higher accident rates.

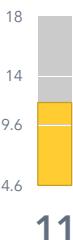
Number of Accident, Number casualties by Month accident



Number of Accident, Number casualties by Weekday accident



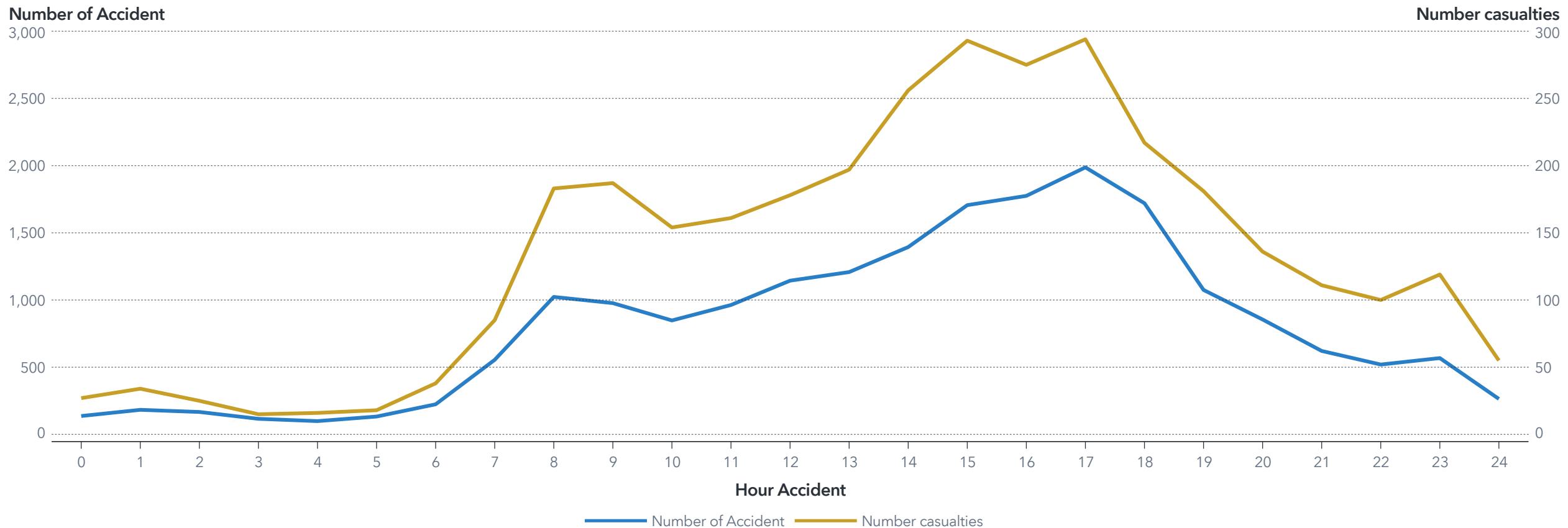
temperature(°C)



11

A2.3

Number of Accident, Number casualties by Hour Accident



41

A2.4

Holiday general
598

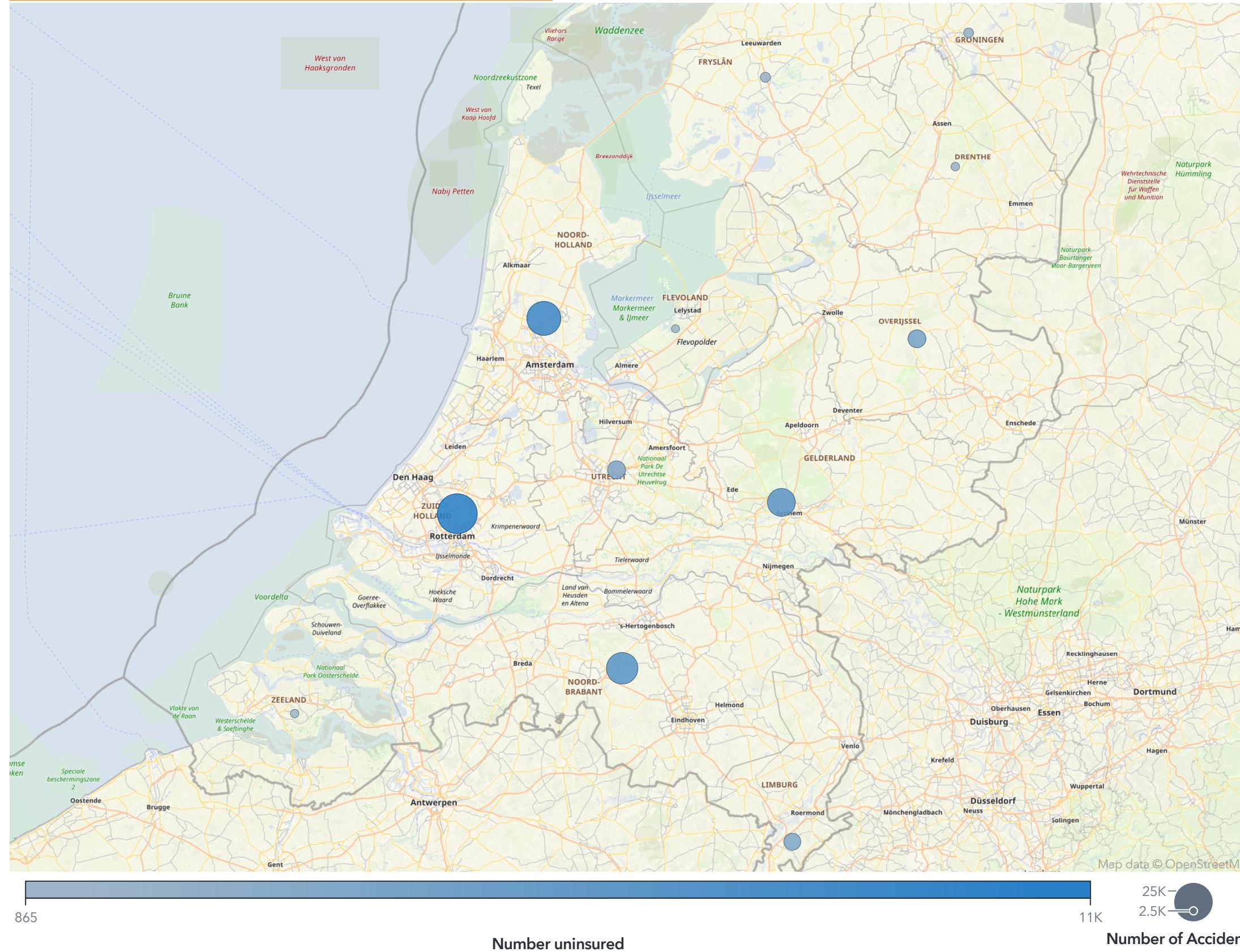
A2.5

A2.6

Offenders(Q3)

The visualization projects the dominance of uninsured vehicles and hit-and-run incidents across the Netherlands. Approximately 50,000 vehicles are uninsured, with higher concentrations in densely populated provinces such as Zuid-Holland and Noord-Holland. Similarly, 1,600 hit-and-run incidents are reported, often in regions with elevated accident rates and greater traffic density. The sparse distribution suggests that urban centers are main points for these issues, underlining the importance of targeted enforcement and awareness campaigns to reduce uninsured vehicles and hit-and-run cases.

Number uninsured by Province sized by Number of Accident



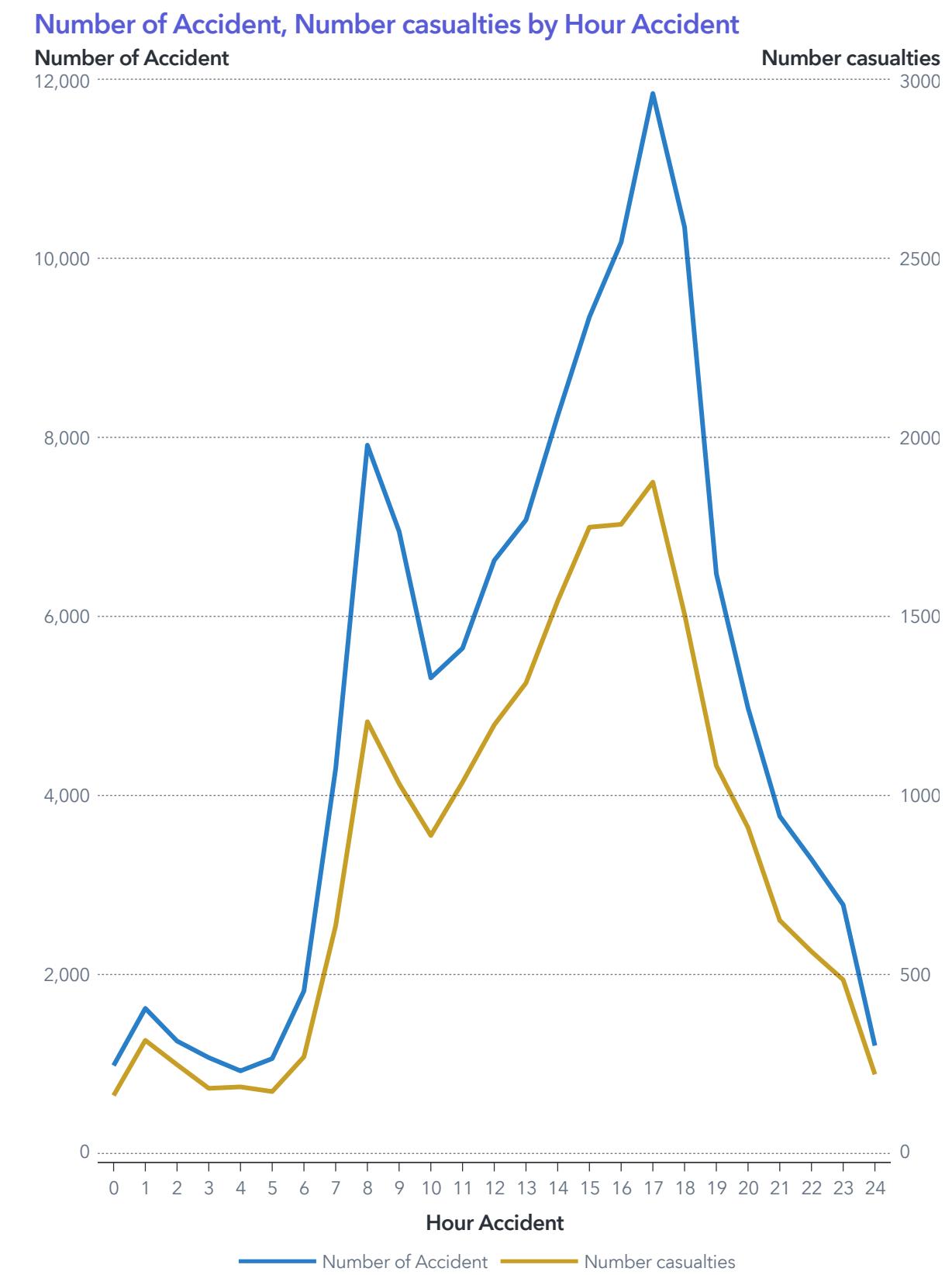
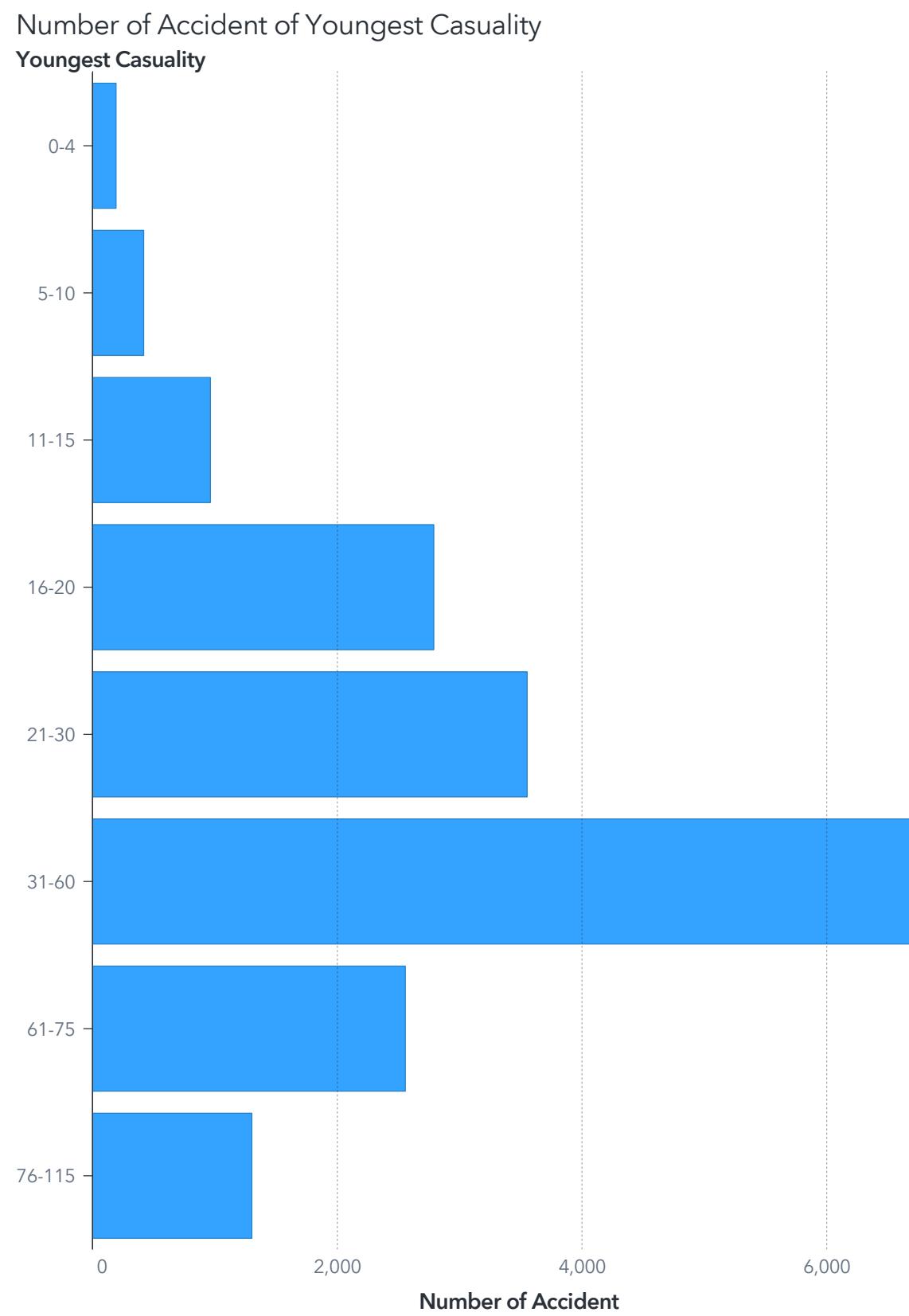
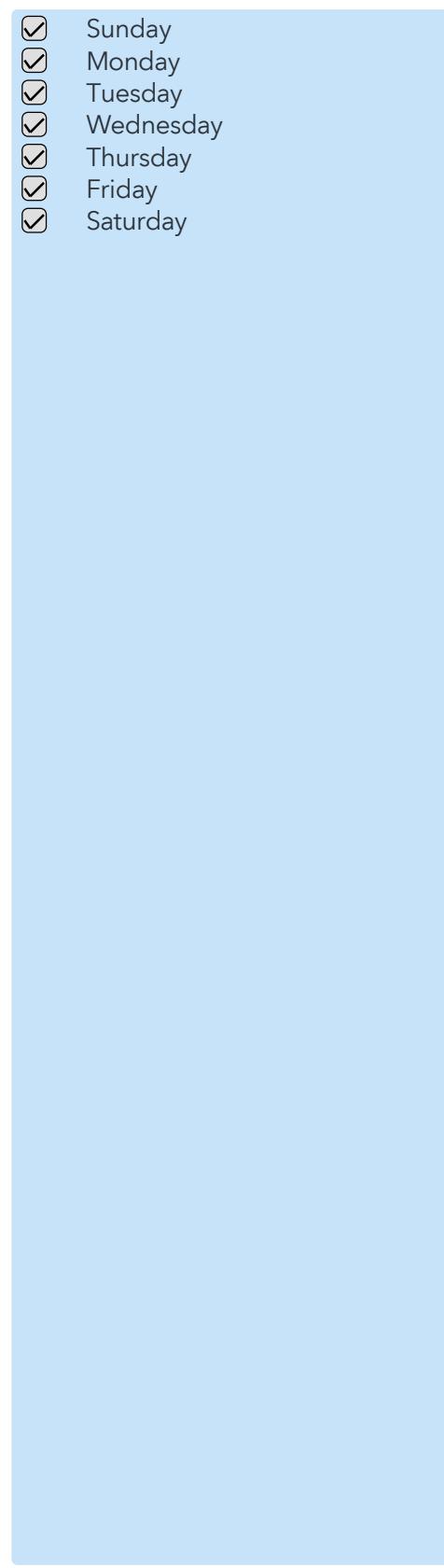
Number uninsured
50K

Number hit-and-run
1.6K

Casualties(Q4)

This visualization indicates the distribution of traffic accidents by age group, time of day, and day of the week. Accidents majorly involves working age individuals (16-60 years old), with the 31-60 age range experiencing the highest number of accidents. Risky morning (6 AM-9 AM) and evening (3 PM-6 PM) peak hours coincide with high accident and casualty rates due to increased road activity, fatigue, impatience, and distractions. Fridays are particularly hazardous, accounting for over 20,000 accidents and 3,400 casualties, driven by factors like drunk driving and work-leisure travel.

Preventive measures such as flexible work and school schedules, enhanced traffic regulations during peak hours, and targeted education for younger and middle-aged drivers can address these issues. Nighttime safety can be improved through better lighting, night patrols, and stricter speed enforcement. A multifaceted strategy integrating engineering, education, and enforcement is essential to reduce accident rates and enhance road safety.



A3.1

A3.2

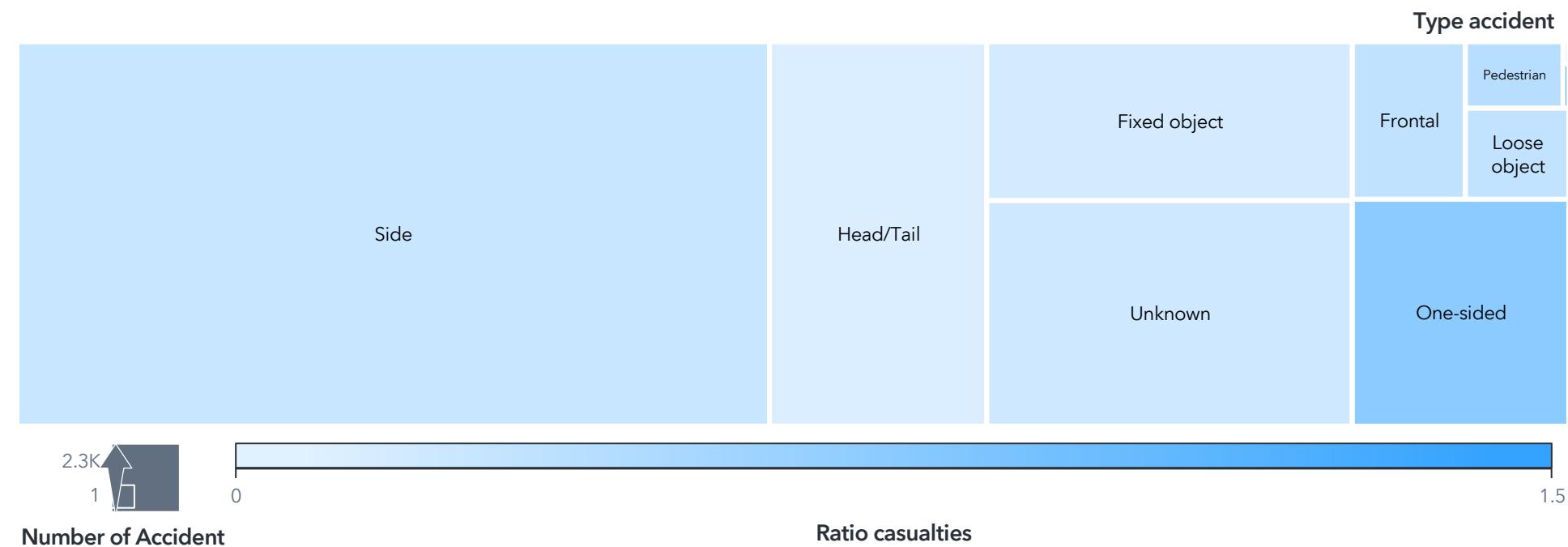
Type of Accidents(Q5)

Bend	Crossing 3-way	Crossing 4-way	Roundabout	Straight road
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A4.1

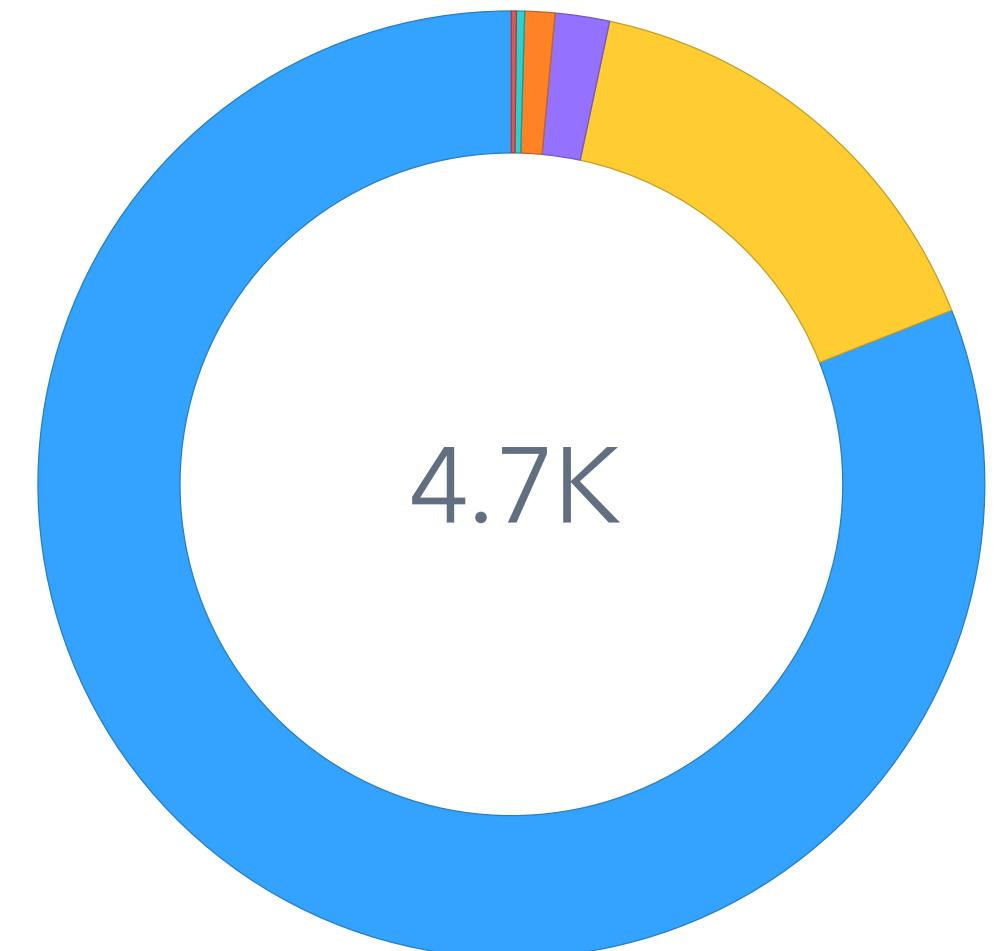
This illustration underscores crucial elements of traffic incidents. Side impacts and front/rear collisions are the most prevalent, with these categories significantly contributing to casualties. More than 80% of incidents result in only material damage, while a smaller fraction leads to injuries that require first aid or more severe consequences. Weather conditions also affect the situation, as most accidents happen during dry weather, although adverse conditions like rain and fog can heighten risks. These insights highlight the need for focused safety initiatives tailored to specific types of accidents and weather scenarios to lessen both occurrence and severity.

Number of Accident, Ratio casualties by Type accident



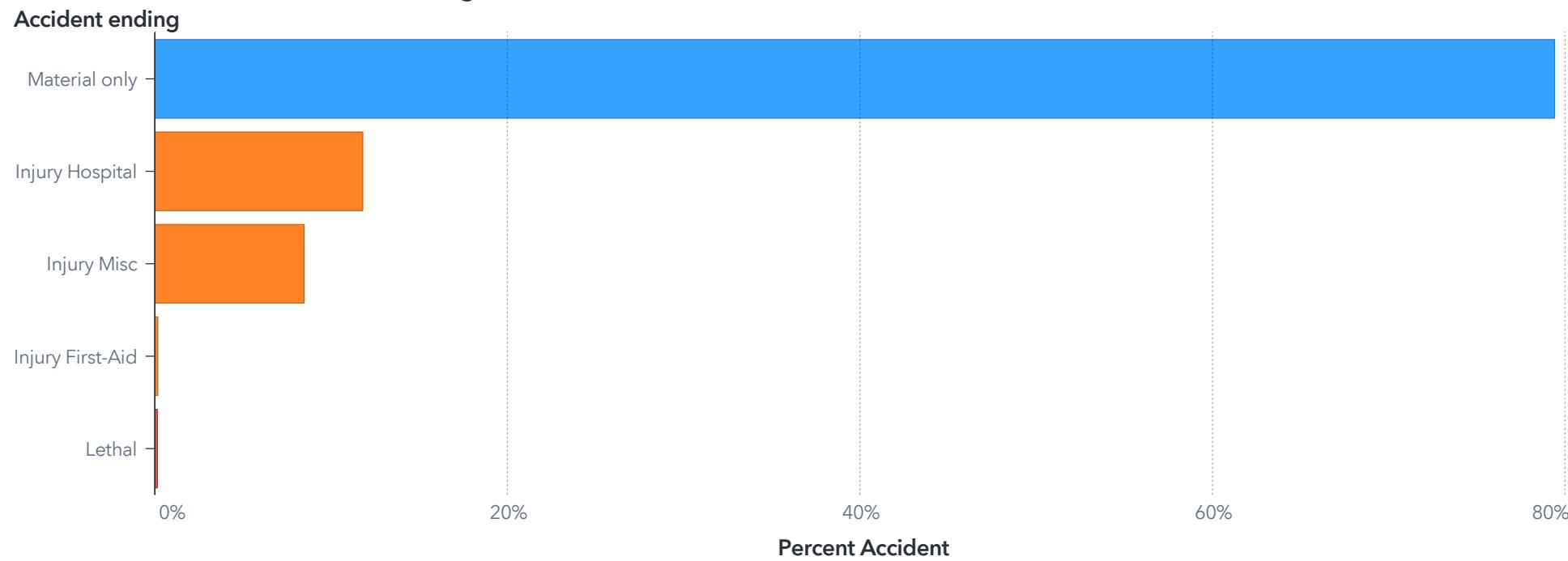
Number of Accident of weather condition

Number of Accident



A4.2

Percent Accident of Accident ending



4.7K

weather condition

■ Dry ■ Rain ■ Unknown ■ Mist ■ Snow/Hail ■ Strong wind

A4.3

A4.4

CONCLUSION

CONCLUSION

WHERE

Accidents predominantly take place in densely populated and urbanized regions such as Zuid-Holland and Noord-Holland, where elevated traffic density heightens the chances of incidents. These areas also report higher instances of uninsured vehicles and hit-and-run accidents, indicating a need for focused interventions in urban locations.

WHEN

The morning and evening commuting hours (6-9 AM and 3-6 PM) represent the most dangerous times for accidents due to heavy traffic from commuters and driver exhaustion. Fridays are particularly risky, as the combination of work-related weariness, recreational travel, and impaired driving leads to the highest rates of accidents and injuries.

OFFENDERS

The majority of offenders are within the working-age group (16-60 years old), with younger drivers exhibiting a pattern of riskier behaviors. Hit-and-run incidents reflect a lack of responsibility, with 1,600 cases recorded, highlighting the need for more stringent law enforcement and measures for public accountability.

CASUALTY

Although many accidents only cause property damage, a considerable number result in injuries, with casualty rates increasing during peak traffic times and adverse weather conditions. Young individuals and drivers in the working-age category are particularly affected, underscoring the necessity for focused safety initiatives.

TYPE OF ACCIDENT

Side and rear-end crashes are the most common types of accidents, with most occurring in dry weather. However, challenging weather conditions such as fog, rain, and strong winds complicate accident trends, necessitating adjustments in both infrastructure and enforcement strategies to effectively reduce risks.

Appendix

A1.1 Number of Accident of Province sized by Ratio casualties

Filters: Road situation NOT MISSING

A1.2 Number of Accident, Ratio casualties by Road situation

Filters: Road situation NOT MISSING

A2.1 Number of Accident, Number casualties by Month accident

Filters: Weekday accident = Friday

A2.2 Number of Accident, Number casualties by Weekday accident

Filters: Weekday accident = Friday

A2.3 temperature(°C)

Filters: Weekday accident = Friday

Display Rules: temperature(°C)

- 4.60 ≤ x < 9.60
- 9.60 ≤ x < 13.60
- 13.60 ≤ x ≤ 18.44

A2.4 Key value - Average wind speed (0.1 m/s) 1

Filters: Weekday accident = Friday

A2.5 Number of Accident, Number casualties by Hour Accident

Filters: Weekday accident = Friday

A2.6 Key value - Holiday general 1

Filters: Weekday accident = Friday

A3.1 Number of Accident of Youngest Casualty

Filters: (Weekday accident = Sunday) OR (Weekday accident = Monday) OR (Weekday accident = Tuesday) OR (Weekday accident = Wednesday) OR (Weekday accident = Thursday) OR (Weekday accident = Friday) OR (Weekday accident = Saturday)
Youngest Casualty NOT MISSING

A3.2 Number of Accident, Number casualties by Hour Accident

Filters: (Weekday accident = Sunday) OR (Weekday accident = Monday) OR (Weekday accident = Tuesday) OR (Weekday accident = Wednesday) OR (Weekday accident = Thursday) OR (Weekday accident = Friday) OR (Weekday accident = Saturday)

A4.1 Button bar - Road situation 1

Filters: Road situation NOT MISSING

A4.2 Number of Accident, Ratio casualties by Type accident

Filters:

Road situation = 'Roundabout'

A4.3 Number of Accident of weather condition

Filters:

Road situation = 'Roundabout'

A4.4 Percent Accident of Accident ending

Filters:

Road situation = 'Roundabout'

Display Rules:

Accident ending

- █ Lethal
- █ Material only
- █ Injury First-Aid
- █ Injury Hospital
- █ Injury Misc