Case Study - Dutch Traffic Accidents

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Data Visualisation

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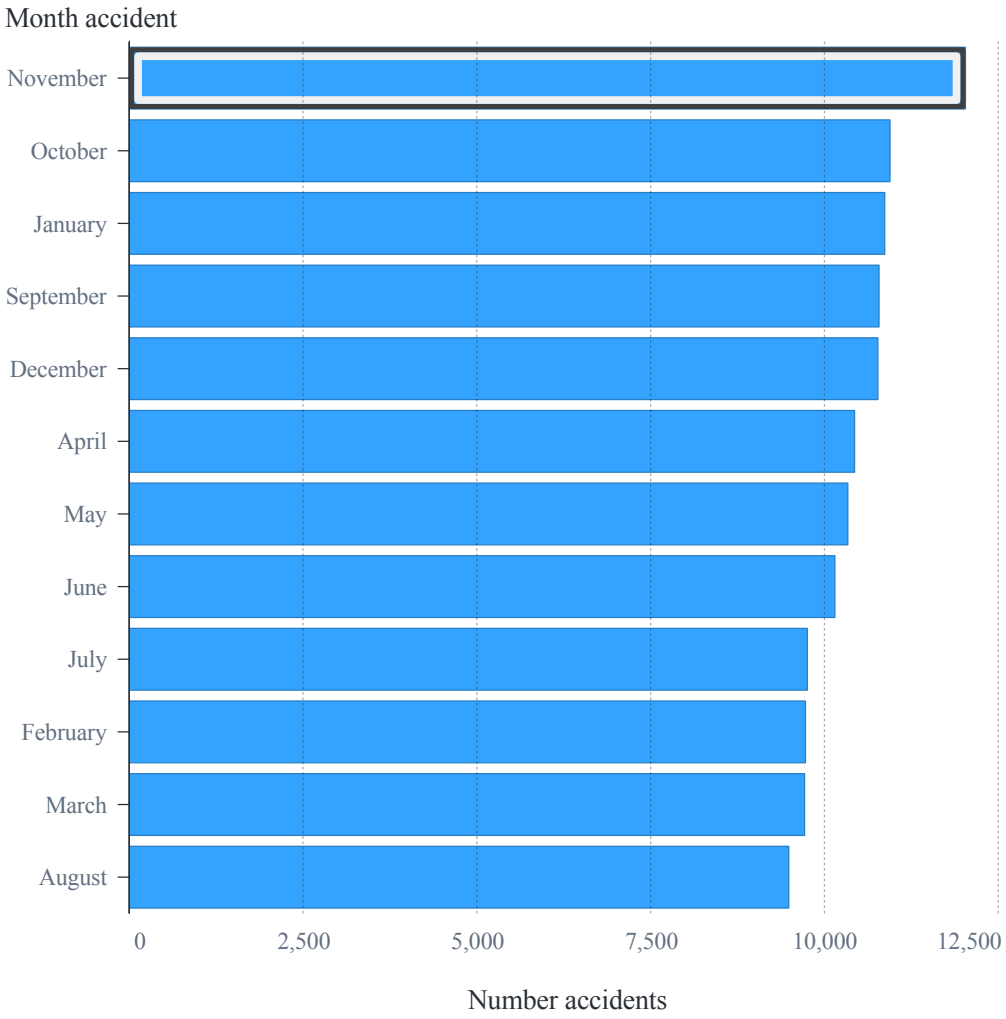
SAS Case Study
Analysis Of Traffic Accident Data in the Netherlands

Executive Summary

Introduction

This report presents the findings of a data visualization analysis of accident data collected by the Netherlands in 2016. The purpose of this analysis is to identify patterns and trends in the accident's occurrence, with a particular focus on the time of the accidents. By analysing the data, this report aims to shed light on the key factors contributing to the accidents, thereby offering valuable information that can enhance safety and reduce risk.

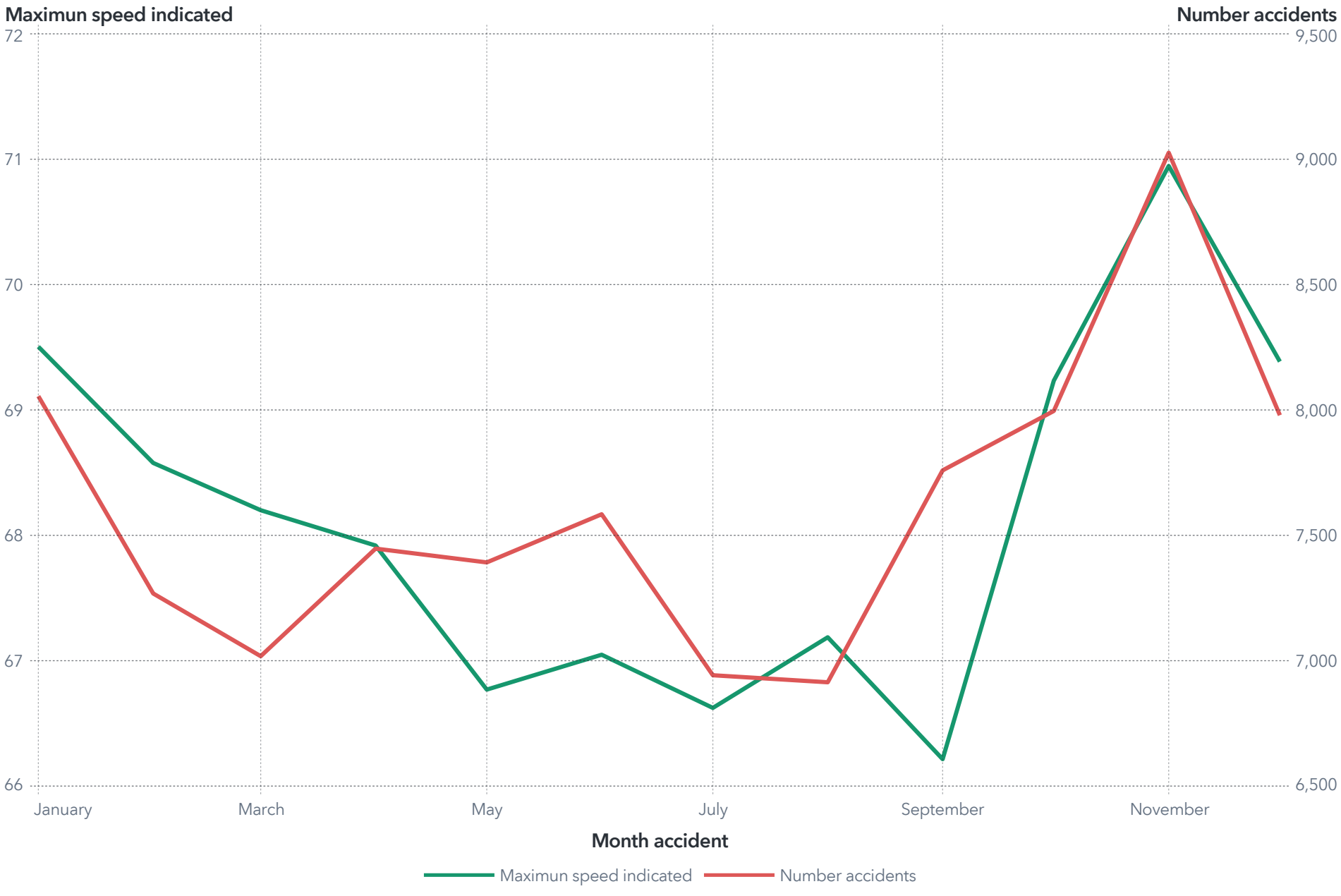
Number of accident By month



Month accident	Number accidents
December	10,768
November	12,028
October	10,943
September	10,785
August	9,487
July	9,754
June	10,150
May	10,336
April	10,433
March	9,714
February	9,727
January	10,867

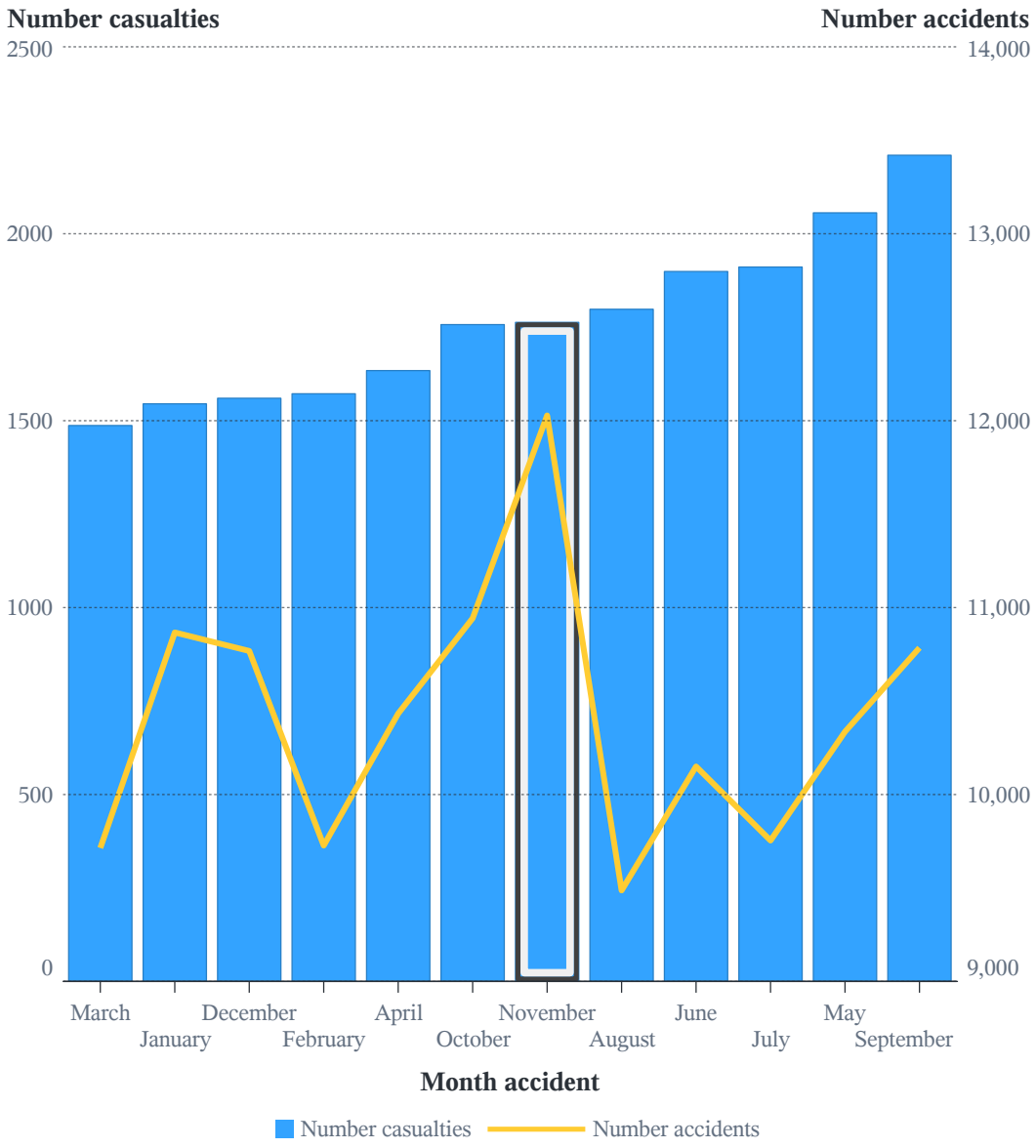
A4.1

Maximum speed indicated by Month



A5.1

Number of Casualites By Month



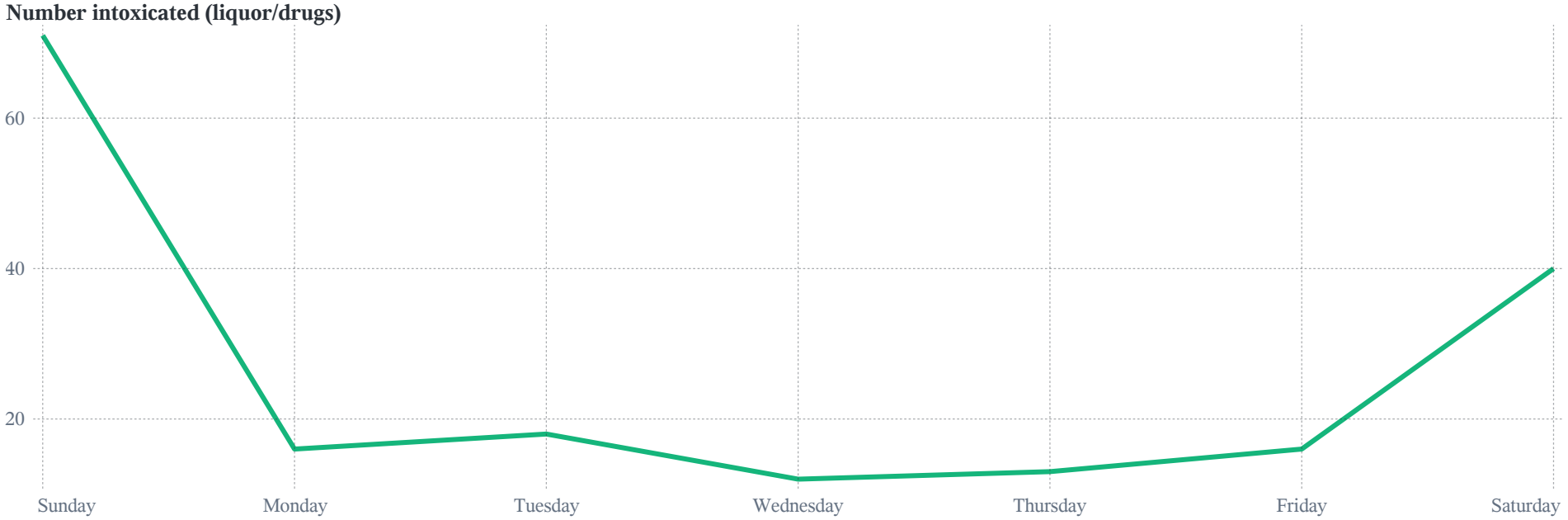
A6.1

Number casualties ▲	Month accident	Number accidents
1487	March	9,714
1545	January	10,867
1560	December	10,768
1572	February	9,727
1634	April	10,433
1757	October	10,943
1763	November	12,028
1798	August	9,487
1899	June	10,150
1911	July	9,754
2056	May	10,336
2210	September	10,785

Number of intoxicated by month

Number of Intoxicated by weekday

Month and weekday Hierarchy > November ▾



A7.1

Analysis:

The graph shows a correlation between the number of intoxicated drivers and the number of accidents throughout the week in November. Accidents frequently occur on weekends compared to weekdays when the intoxication level is low. This implies that liquor and drugs could be major factors contributing to the frequent occurrence of accidents over time.

Maximum speed indicated by weekday

Month and weekday Hierarchy > November ▾

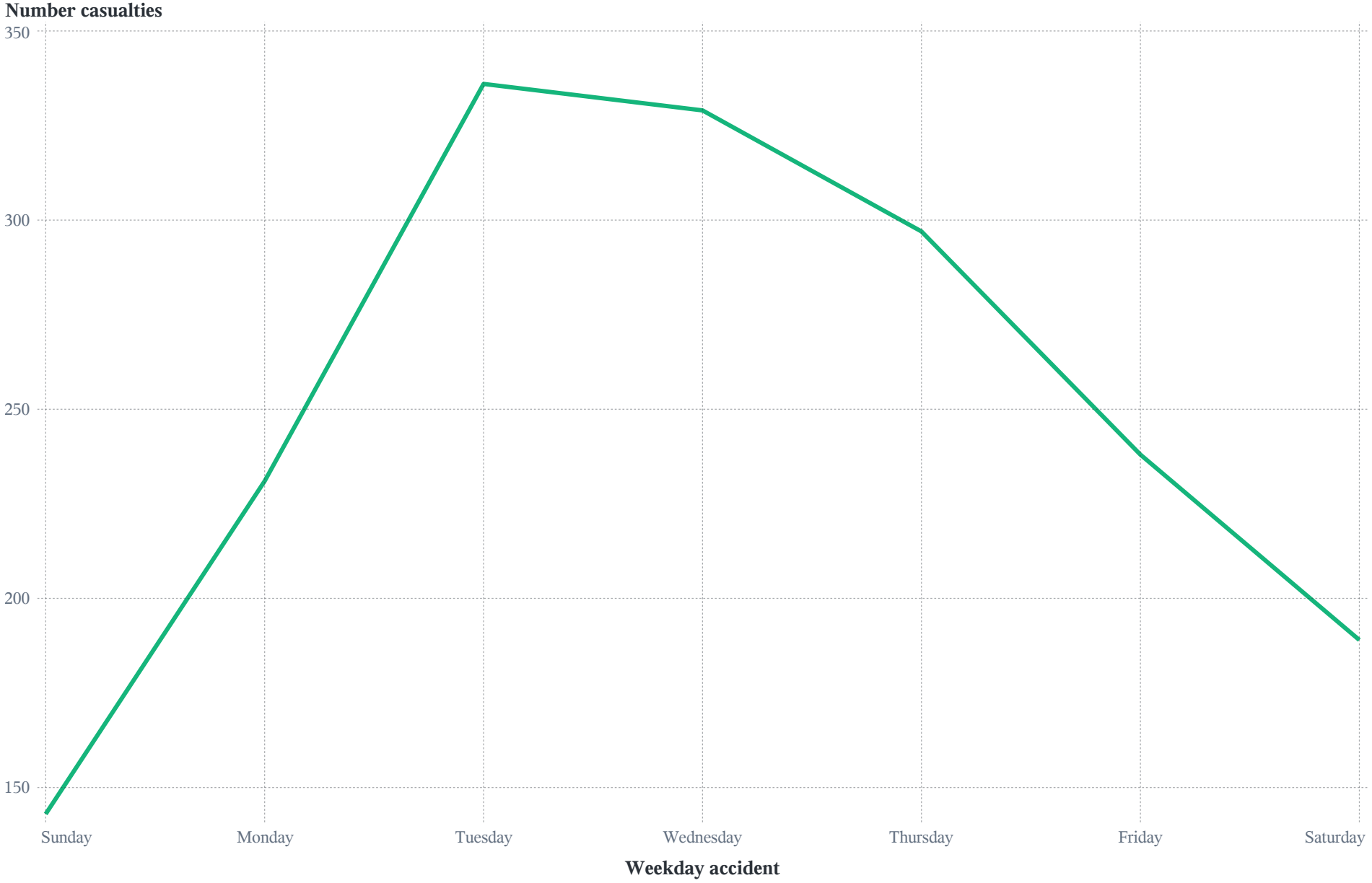
A8.1

Analysis:

The graph shows that driving behaviour differs by day of the week, with the maximum speed reached on Monday. There's a noticeable drop in maximum speed around mid-weekday and then it increased again by Thursday and slide through the weekend with Saturday having the lowest maximum speed. this could be due to various factors, such as reduced traffic, weekend speed enforcement, or due to holiday preparations.

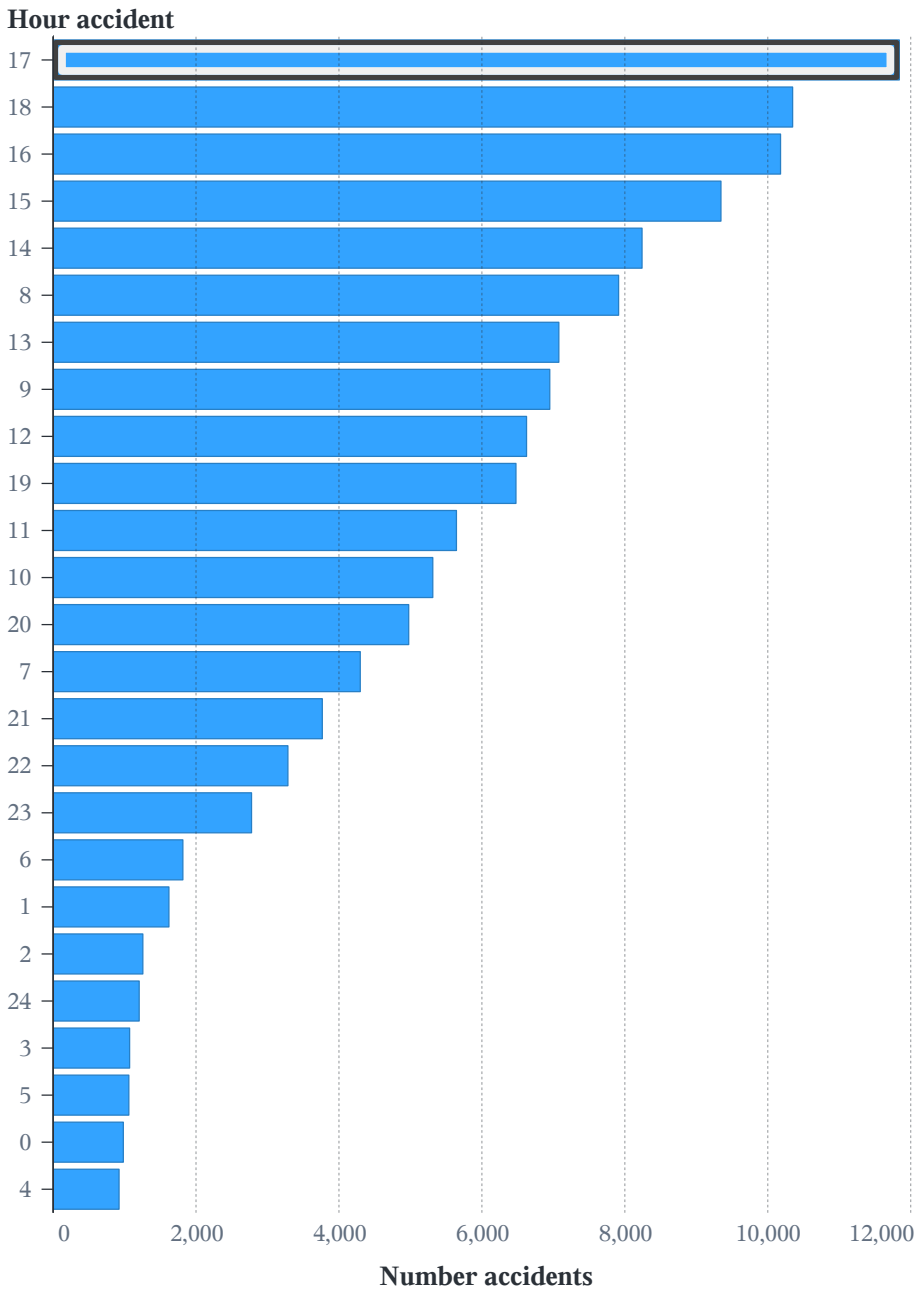
Number of Casualties by weekday

Month and weekday Hierarchy > November ▾



A9.1

Hour of accident by number of accident



Hour accident ▲	Number accidents
0	983
1	1,621
2	1,256
3	1,071
4	923
5	1,060
6	1,816
7	4,298
8	7,913
9	6,950
10	5,313
11	5,644
12	6,625
13	7,077
14	8,241
15	9,345
16	10,179
17	11,841
18	10,348
19	6,477
20	4,976
21	3,767
22	3,286
23	2,777
24	1,205

Conclusions and Insights

Key Findings

Accident by Time: Based on the collected data, accidents frequently occur around certain times of the day. Meaning that it's riskier to drive around certain periods of the day.
Accident by Weekday: Based on our analysis, accidents occur mostly on Thursdays and Fridays. This could be due to fatigue from traffic or rush hour. Liquor and drugs can also contribute to this because it's the weekend and people travel more on weekends compared to weekdays.
Accident by Month: Based on our data collection, we observed that November has the highest number of accidents compared to other months. This could be due to the holiday season, in preparation for the December festivities. We also observed a surge in liquor and drugs during this time. That can also be a major factor.

Recommendation

Insfrastructural Development: This development is a vital component in enhancing road safety. Improvements such as better road lights can reduce the risk of accidents at night or in poor weather conditions by increasing visibility. Well-maintained signage is vital to providing drivers and other road users with information about road traffic, conditions, and regulations. This is very important in a high-risk area.
Installing speed cameras will help reduce the maximum speed limit to the lowest. Speed cameras can be used to enforce safer driving behaviour. Cameras should be strategically placed in a high-risk area with a low speed limit and in some other region with a history of speeding.

Enchance Traffic Law Enforcement: Enchancing traffic law enforcement is a vital strategy for improving road safety and reducing accidents. The law has to be very effective so that offenders will be issued a ticket and ensure compliance with traffic regulations.

Creating Traffic Awareness: Implementing public safety campaigns during weekends and the last quarter of the year could reduce the risk of accidents. However, the analysis suggests a wide range of accident prevention strategies, including the promotion of safe driving campaigns focused on the dangers of driving under the influence of drugs or liquor.

Data Collection: This is fundamental to understanding and improving road safety. Reliable data allows for informed decision-making and the development of targeted interventions to reduce risk oc accidents

Conclusion

Based on our analysis of the 2016 accident data from the Netherlands, we have provided key insights into the trend and patterns related to accidents. We observed that accidents spike during the winter months, with a notable correlation between accident occurrence and intoxication, particularly on weekends.The data also revealed that the maximum speeds differ by day, with the highest speed recorded at the beginning of the week, and finally, it also revealed that the frequent occurrence of accidents varies by time of the day, potentially contributing to the frequency and severity of accidents.

Appendix

A1.1 Number accidents, Number casualties by Month accident

Filters: Weekday accident = 8 January 1960

A1.2 Number accidents, Number casualties by Weekday accident

Filters: (0 ≤ Number casualties ≤ 9) AND Number casualties NOT MISSING
Weekday accident = 8 January 1960

A1.3 Number accidents, Number casualties by Hour accident

Filters: Weekday accident = 8 January 1960

A1.4 Number accidents of Weather condition 2

Filters: Weekday accident = 8 January 1960

A1.5 Ratio casualties by Month accident

Filters: Weekday accident = 8 January 1960

A2.1 Number accidents of Youngest casualty

Filters: Youngest casualty NOT MISSING

A3.1 Frequency Percent of Accident ending

Display Rules:

Accident ending

- Lethal
- Material only
- Other

A4.1 List table - Month accident 1

Filters: Month accident NOT MISSING
(9,487 ≤ Number accidents (Frequency) ≤ 12,028) AND Number accidents (Frequency) NOT MISSING

A5.1 Dual axis time - Month accident 4

Filters:
Month accident NOT MISSING
(30 ≤ Maximun speed indicated ≤ 130) AND Maximun speed indicated NOT MISSING

A6.1 Dual axis bar-line - Month accident 1

Filters:
Month accident NOT MISSING
(0 ≤ Number casualties ≤ 9) AND Number casualties NOT MISSING
(9,487 ≤ Number accidents (Frequency) ≤ 12,028) AND Number accidents (Frequency) NOT MISSING

A7.1 Time - Month and weekday Hierarchy 2

Drill Levels:
Month and weekday Hierarchy: November

A8.1 Time - Month and weekday Hierarchy 3

Drill Levels:
Month and weekday Hierarchy: November

Filters:
Month accident NOT MISSING
Weekday accident NOT MISSING
(30 ≤ Maximun speed indicated ≤ 130) AND Maximun speed indicated NOT MISSING

A9.1 Time - Month and weekday Hierarchy 1

Drill Levels:
Month and weekday Hierarchy: November

Filters:
Month accident NOT MISSING
Weekday accident NOT MISSING
(0 ≤ Number casualties ≤ 9) AND Number casualties NOT MISSING