



# Correlation between rates of accidents in Germany and Münster with respect to bicycle count in Münster

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Name : Sagni Majumdar

Matriculation No. : 22970363

Subject : AMSE/SAKI

# Motivation or Rationale Behind the Project

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- In 2022, there were 2,782 road traffic fatalities in Germany.
  - In February 2023, roughly 21,600 people were injured in road traffic accidents in Germany.
  - Newly started riding bicycle in Germany, gave rise to the following questions in my mind :
    - Since we are riding a lot of the times on the same road that the cars and buses are taking. Is it safe to ride a bicycle?
    - Is this above-mentioned percentage same in other cities of Germany ?Which is the best city to focus on for any query related to bicycle traffic?
    - Has the accident rate increased or decreased from 2020 to 2021?



# Introduction

## **1. Which is the best city to focus on for any query related to bicycle traffic?**

Since Münster is called the “Bicycle Capital of Germany” . The focus should be on this city when considering Bicycle accidents.

## **2. Has the accident rate increased or decreased from 2020 to 2021?**

We can do a analysis of the accident rates in the past years



# Introduction

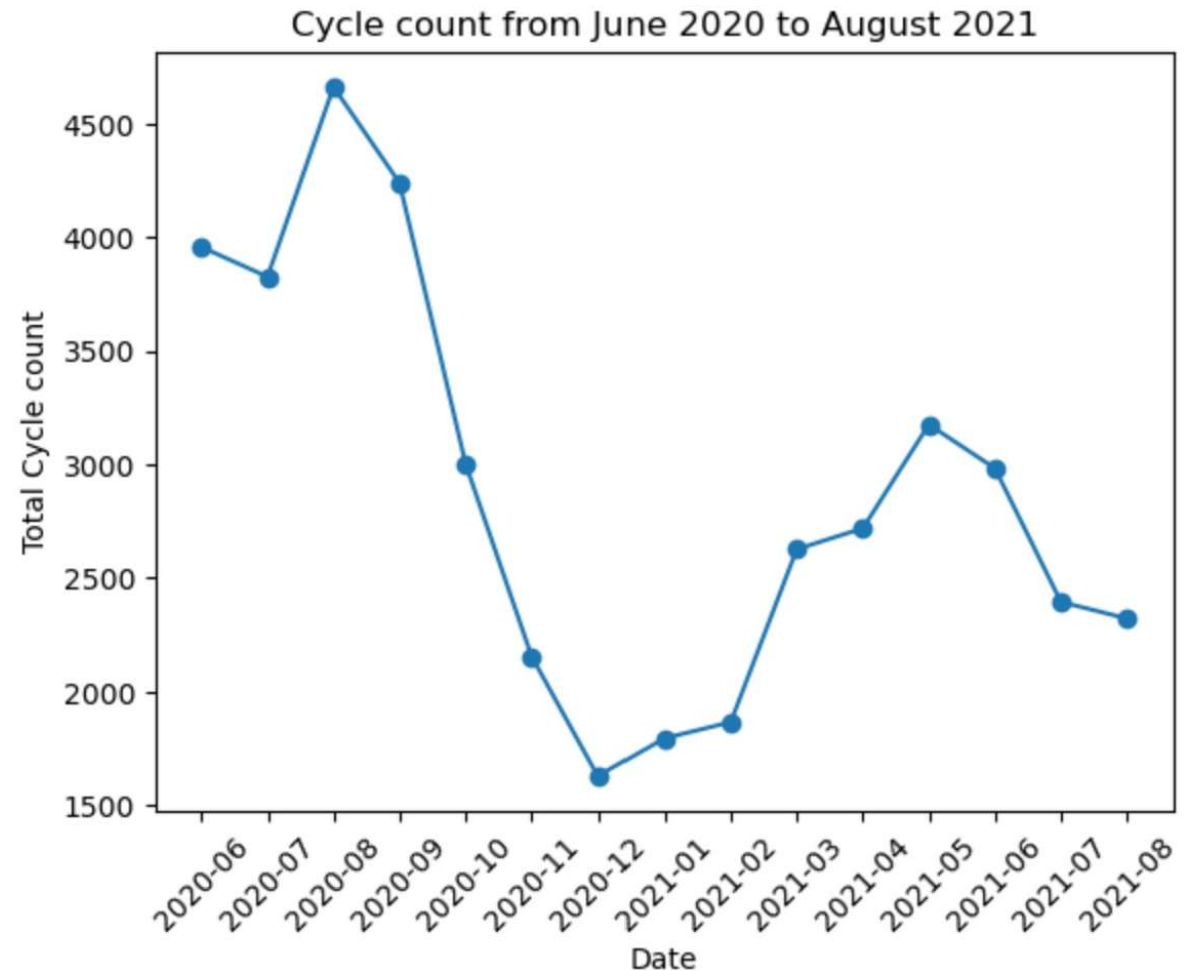
**3. Since we are riding a lot of the times on the same road that the cars and buses are taking. Is it safe to ride a bicycle?**

Münster owing to it's highest bicycle traffic can answer this question in terms of the accident rates in this city (in Münster)

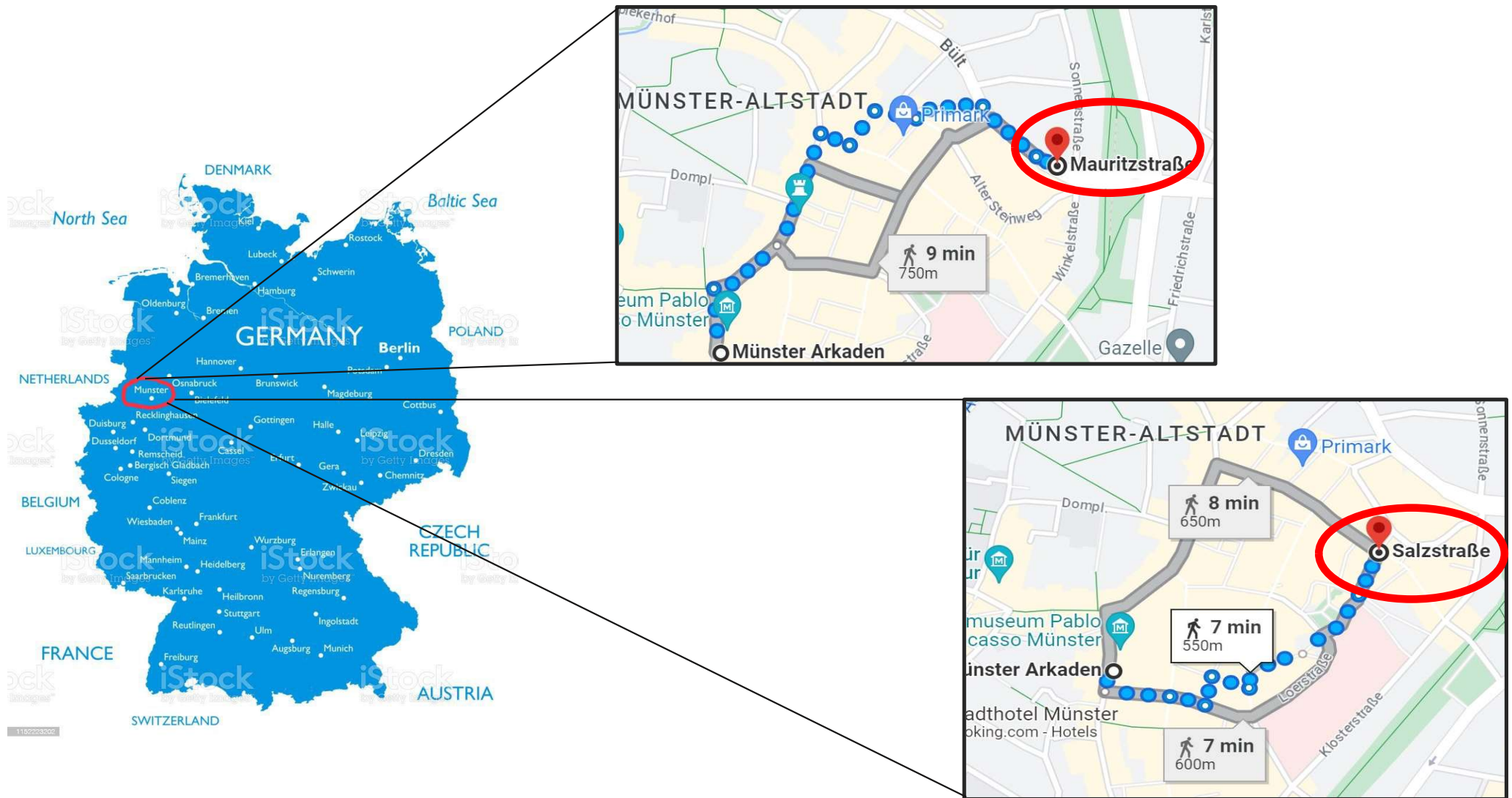




**Question 1:- What is the inference from Bicycle counting stations in Münster? Does the number of Bicycles increased or decreased from 2020 to 2021?**



# Areas under consideration



# Question 1:- Discussion and Inference

## Inference



We see a steep decline as we approach the winter months with an increase again from the month of January



We see a count of 3925 and 3826 in June and July 2020 respectively, whereas we see a count of 2983 and 2395 in June and July of 2021 respectively. Comparing these data show us a significant decrease in rate by almost a 1000.



We had observed a steep in August 2020 but we don't see any similar steep in August 2021. We see a rather decline with a total count of 2322.

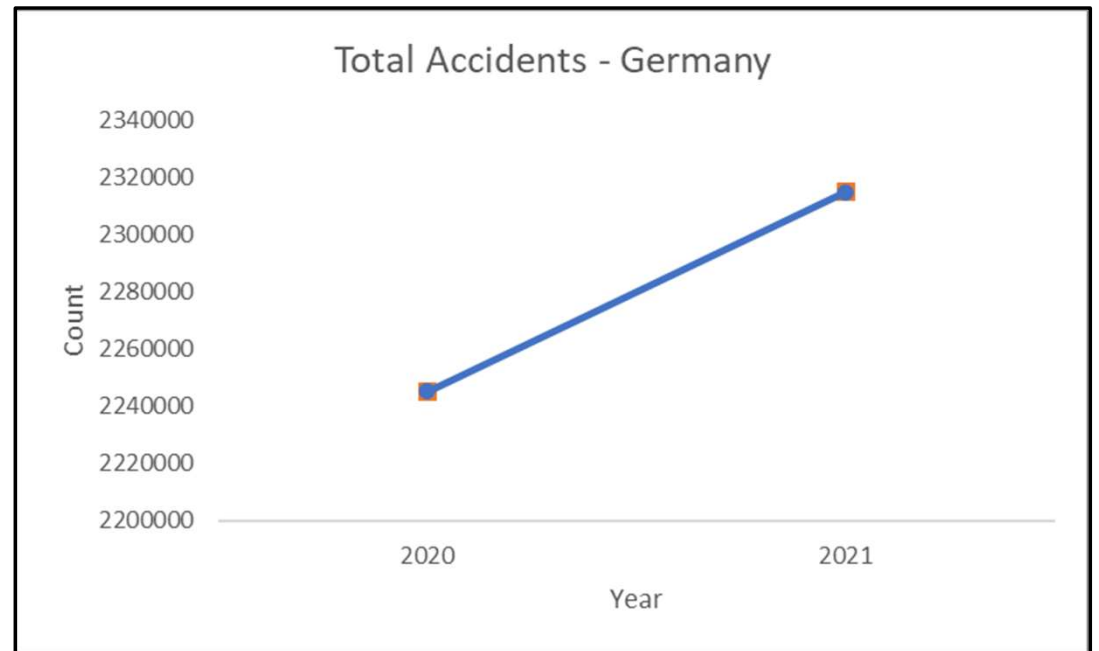
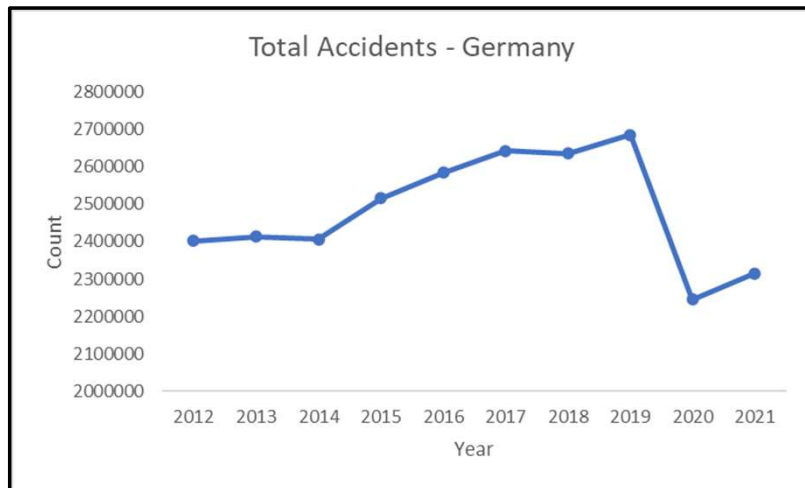
## Discussion :

**Expectation** :- An increase in bicycle traffic from year 2020 to the year 2021

**Result** :- Significant decrease in bicycle traffic by almost 1000.

**Question 2:- What is the change of accident rate across Germany?  
Has the accident rate increased or decreased from 2020 to 2021?**

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## Question 2:- Discussion and Inference

### Inference



We see an increase in the total accident count across Germany from the year 2020 to 2021 roughly by a count of 2,090,353



Even though the count seems a lot, we can see a significant improvement (lowering) in accident count when compared with past years



Seeing the past years graphs and comparing we see an increase in accident rate compared to the previous year where there was a steep decline

### Discussion :

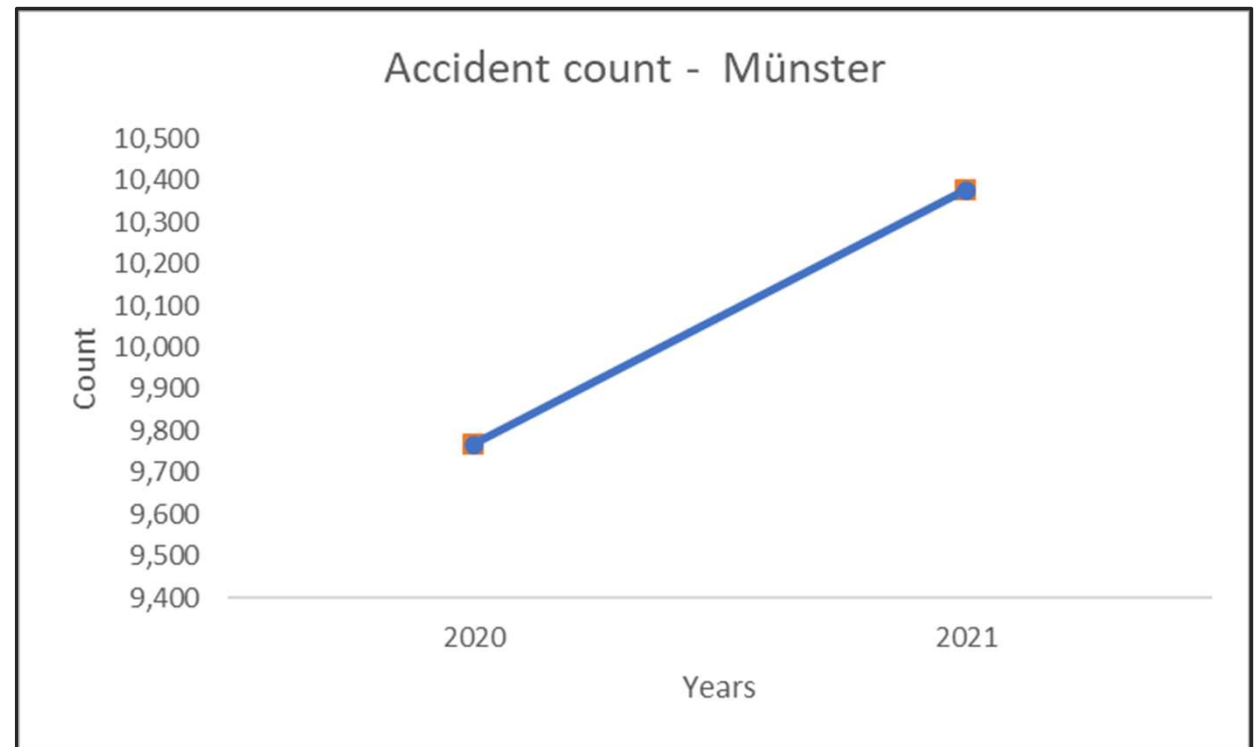
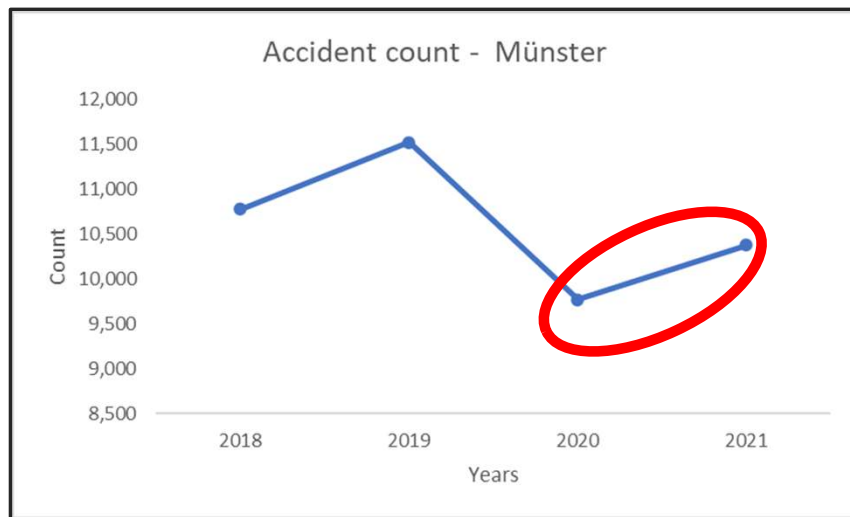
**Expectation :-** Following previous trend of steep decrease in accident rate from year 2019-2020, we expected to see similar decreasing trend

**Result :-** We see contrary to our expectation – an increase in accident rate from year 2020-2021

**Assumption :** - The decrease in accident rate from 2019-2020 can be because of lower traffic during Covid-19 Lockdowns.

**Question 3:- What is the change of accident rate across Münster?  
Has the accident rate increased or decreased from 2020 to 2021?**

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# Question 3:- Discussion and Inference

## Inference



We see a steep increase in the total accident in Münster from the year 2020 to 2021.



The rate of increase of accidents is from 9,767 in 2020 to 10,376 in 2021, which shows a significant increase

## Discussion :

**Expectation** :- Following previous trend of steep decrease in accident rate from year 2019-2020, we expected to see similar decreasing trend

**Result** :- We see contrary to our expectation – an increase in accident rate from year 2020-2021

**Assumption** : - Similar to the accident rate graph across Germany, the decrease in accident rate from 2019-2020 can be because of lower traffic during Covid-19 Lockdowns.

# Conclusion

- In the conclusion we try to answer the following mentioned questions :
- **Question 1 : How is the total accident across Germany related to the accident rate in Münster?**
  - The second and third graph shows a almost similar rate of increase in accident rates. Therefore, we can conclude that the increase in rate of accidents in Germany definitely closely related to the the increase in the rate of accidents in the city of Münster.
- **Question 2 : How is the accident rate in Münster related with the bicycle count across the major locations of Münster?**
  - We can see that the bicycle count has significantly decreased in the major summer months from the year 2020 to the year 2021, whereas the accidents in Münster has increased

# **Discussion and Further Scope :**

The following question stay open for further research :

1. How is the total accident across Germany related to the accident rate due to bicycles in Münster?
2. Why does Münster, the bicycle capital see a decrease in cyclist?
3. Is the decrease in bicycle count linked with the increased rate of accidents, causing citizens of Münster to cycle less frequently or Is the decrease in bicycle traffic because post Covid-19 people are more frequently using public transportation?





# Thank You

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