

The background of the slide features a close-up, slightly blurred image of a bicycle's rear wheel and chain. The spokes of the wheel are visible, radiating from the center hub. The chain is positioned on the right side of the frame, partially obscured by the wheel's rim. The overall image has a blue-tinted, semi-transparent appearance, serving as a backdrop for the text.

# Analysis of Average Number of Bikes Used in Different Areas of Münster city

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# Motivation

Promote

- Promote cycling as an environmentally friendly and sustainable mode of transportation.

Reduce

- Reduce traffic congestion and improve overall transportation efficiency.

Create

- Create vibrant and livable communities by prioritizing cycling infrastructure.

Identify

- Identify areas with high bike utilization and address the need for additional bicycle workshops.

Contribute

- Contribute to the overall well-being and quality of life in the analyzed areas.

# Introduction

- **Purpose:** Examine the average number of bikes used in different areas and identify the need for new bicycle workshops.
- **Datasets:** Utilized two datasets - one on bicycle riders in various areas and another on existing bicycle workshops.
- **Methodology:** Merged datasets based on geographical coordinates.
- **Analysis:** Determined the average number of bikes used in each area.
- **Insights:** Uncovered areas with high bike utilization, indicating a potential need for additional bicycle workshops.

# Introduction

- **Implications:** Provides insights for urban planning and resource allocation.
- **Benefits:** Promotes cycling as a sustainable and healthy mode of transportation.
- **Recommendations:** Actionable suggestions for city planners, policymakers, and stakeholders.
- **Overall Goal:** Enhance biking infrastructure and support the growth of cycling communities.

# Methodology



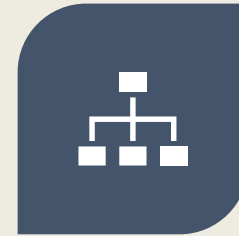
EXTRACT DATA  
FROM THE  
DATABASES



ANALYZE THE  
DATASET



FINDINGS

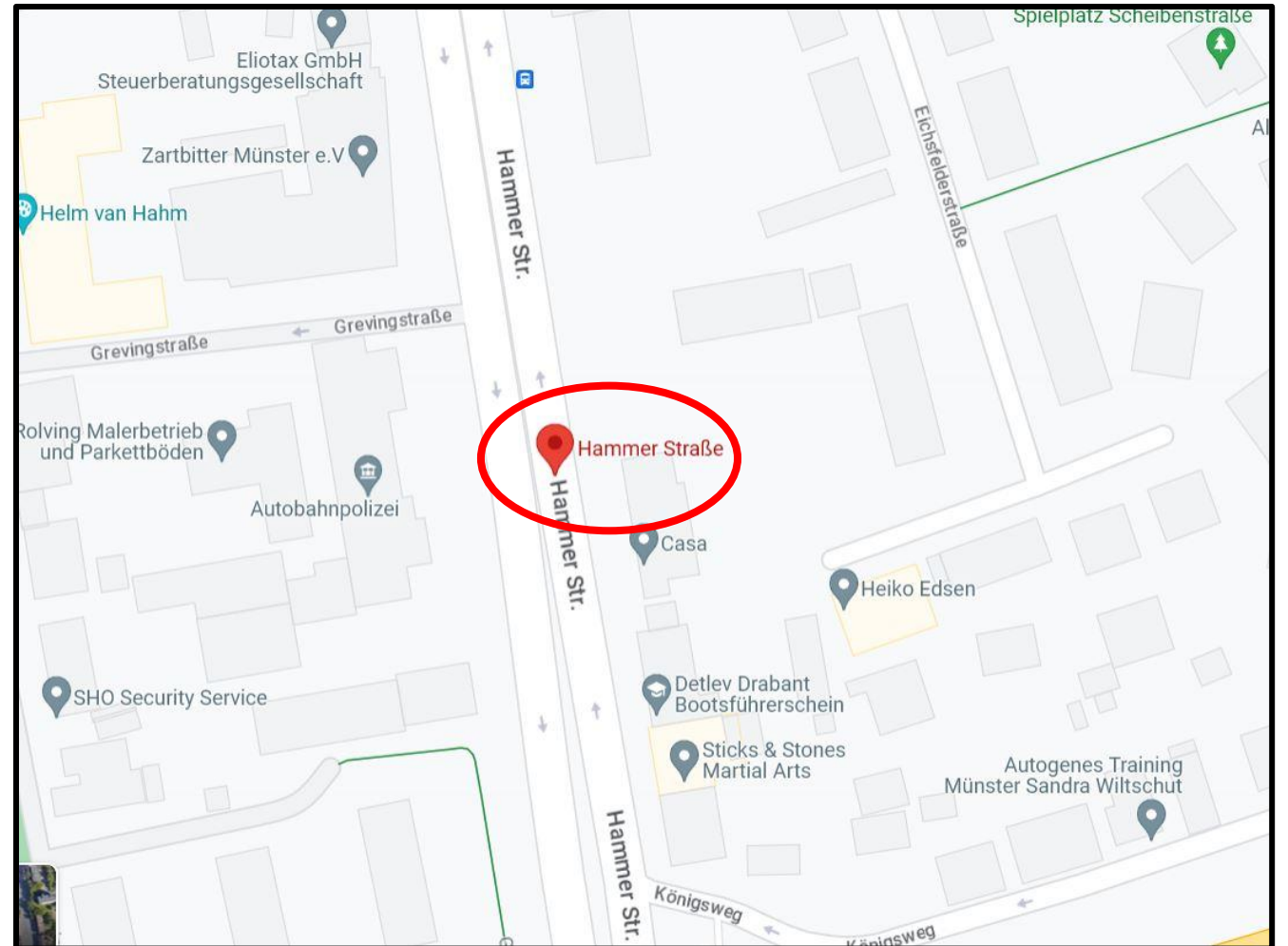


PLOT GRAPH(S)



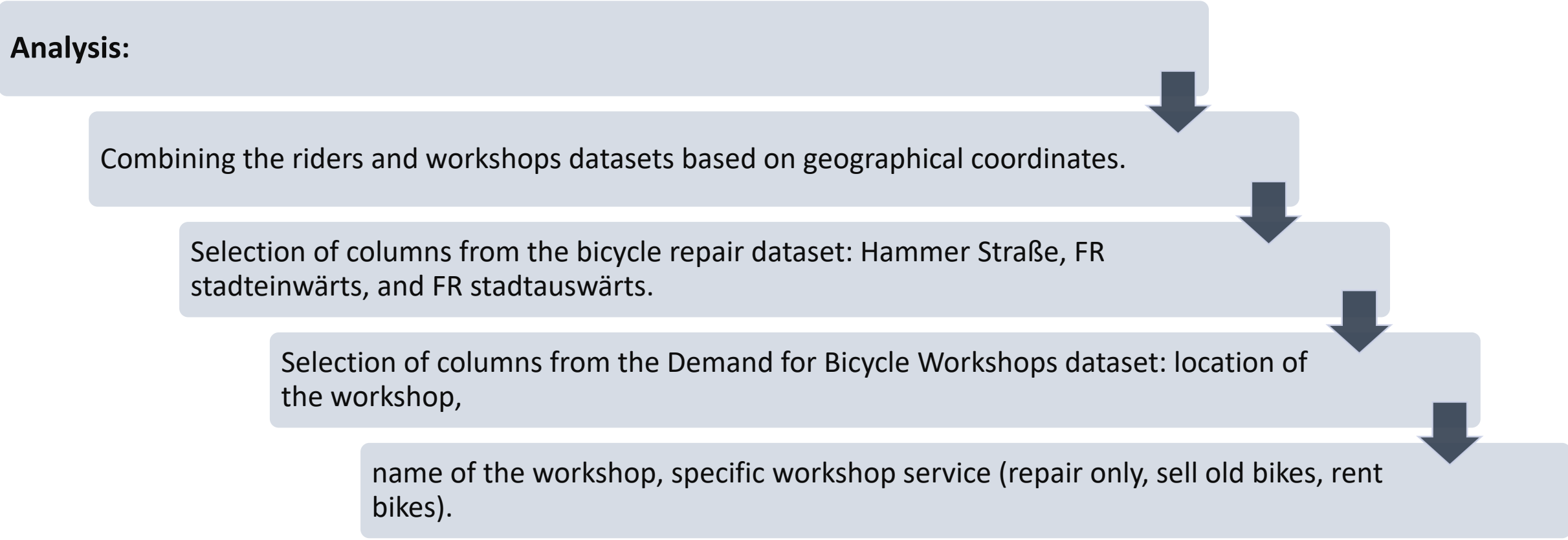
CONCLUSION

# Location under consideration



# Analysis and Findings

## Analysis:



```
graph TD; A[Analysis:] --> B[Combining the riders and workshops datasets based on geographical coordinates.]; B --> C[Selection of columns from the bicycle repair dataset: Hammer Straße, FR stadteinwärts, and FR stadtauswärts.]; C --> D[Selection of columns from the Demand for Bicycle Workshops dataset: location of the workshop,]; D --> E[name of the workshop, specific workshop service (repair only, sell old bikes, rent bikes).];
```

Combining the riders and workshops datasets based on geographical coordinates.

Selection of columns from the bicycle repair dataset: Hammer Straße, FR stadteinwärts, and FR stadtauswärts.

Selection of columns from the Demand for Bicycle Workshops dataset: location of the workshop,

name of the workshop, specific workshop service (repair only, sell old bikes, rent bikes).

# Analysis and Findings

## Findings:

Calculation of the total number of bikes used in each area.

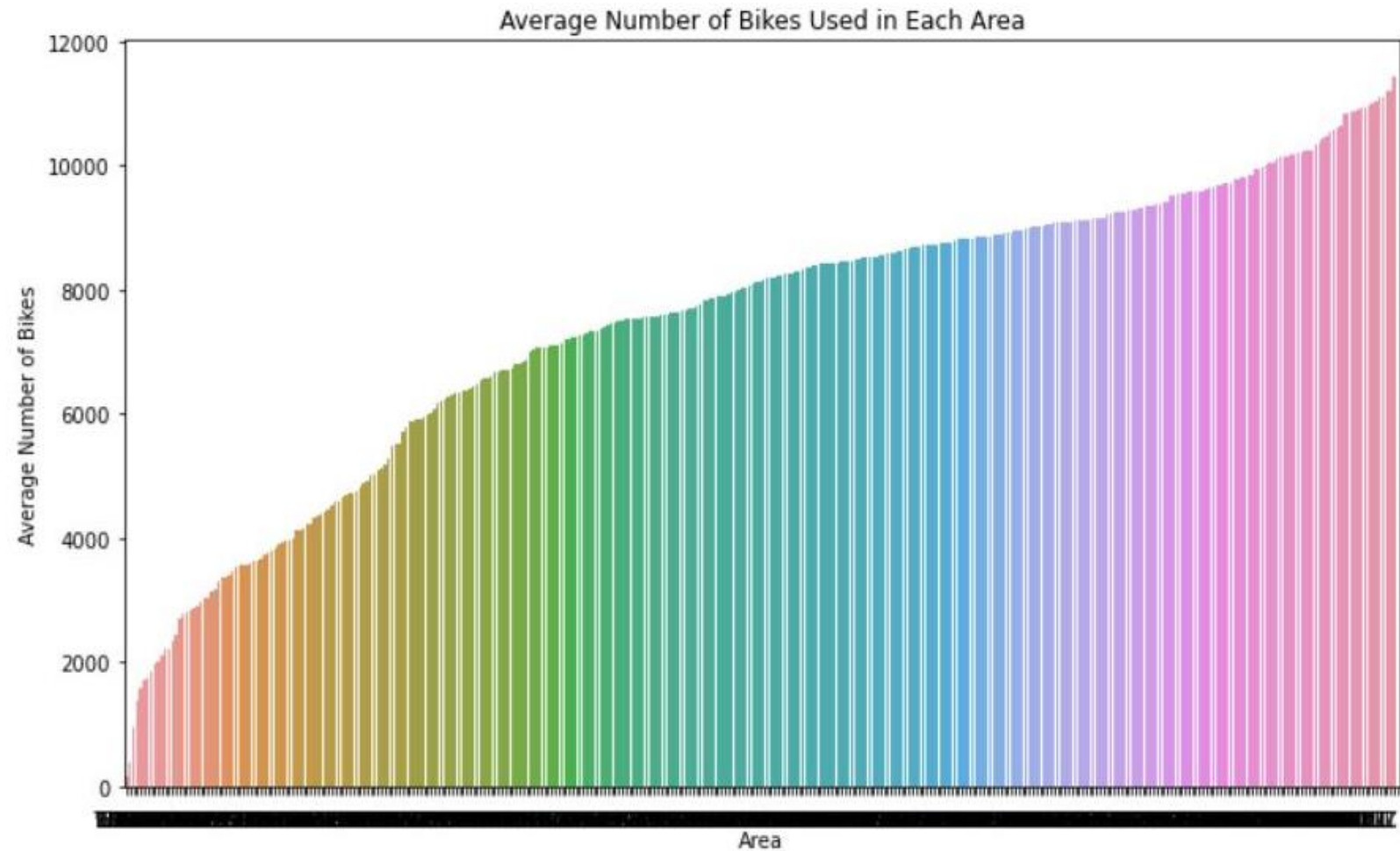
The highest average number of bikes was observed in Area 1.

Area 2 had the second-highest average number of bikes, closely following Area 1

Area 3 exhibited the third-highest average number of bikes



# Analysis and Findings



# Inference



Straße is divided into 68 different areas based on geometric coordinates.



Coordinates of some areas are as follows : Area 1 - (8.56320985, 49.6561285), Area 2 – (8.56310315, 49.65543005),..., Area 68 - (8.7557659 49.4211285)



We see a steep increase in bicycle workshops from Area 1 to Area 68



Area 1 – has the lowest count of about 800 whereas Area 68 has a count of approx. 11000, which is almost a difference of approx. 10200.



## Conclusion

- The steep increase in bicycle workshops from Area 1 to Area 68 suggest an increase in bicycle traffic with Area 1 having the lowest traffic and Area 68 having the highest
- This also shows that there is a variation in demand for bicycle workshops across several areas.
- This analysis provides valuable insights for decision-makers, entrepreneurs, and urban planners to promote cycling and support the cycling infrastructure in specific areas.

# Future Scope

1. **Collaboration with Local Authorities:** Engaging with local authorities and policymakers to advocate for improved cycling infrastructure in areas with high bike usage. This collaboration can contribute to the development of safer and more cyclist-friendly environments, attracting more riders and increasing the demand for bicycle workshop services.
2. **Integration of Technology:** Exploring the integration of technology solutions, such as online booking systems, mobile apps for bike repairs, or inventory management tools. This integration can streamline workshop operations, enhance the customer experience, and improve efficiency in managing repairs, inventory, and customer communication.
3. **Community Engagement:** Implementing initiatives to actively engage with the local community and raise awareness about the benefits of cycling and the availability of bicycle workshops. This can include organizing events, workshops, and partnerships to foster a sense of community, educate cyclists, and increase workshop visibility among potential customers.

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Thank You

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