

Impact of Bike Sharing on Number of Vehicles Registered in Munich

Aleem Ud Din



Rationale:

This project aims to analyze whether with the introduction of Bike sharing, will there be any impact on number of vehicles purchased/registered in Munich?



Data Sources:

Data Source 1:

Data URL:

<https://opendata.stadt-muenster.de/sites/default/files/Fahrzeugbestand-Regierungsbezirk-Muenster-2018-2022.xlsx>

Data Type: XLSX

Short description.

The Excel file contains information on the number of vehicles registered in the administrative district of Münster in the years 2018-2022. However, the data of only years 2018 - 2020 were used in analysis.



Data Sources:

Data Source 2:

Data URL:

<https://www.kaggle.com/datasets/lucafrance/bike-traffic-in-munich/download?datasetVersionNumber=7>

Data Type: XLSX

Short description.

This dataset provided information regarding bike traffic data for each station in 15 minutes intervals along with other attributes but for the sake of comparison only bike traffic data was used.



Overview of the Data:

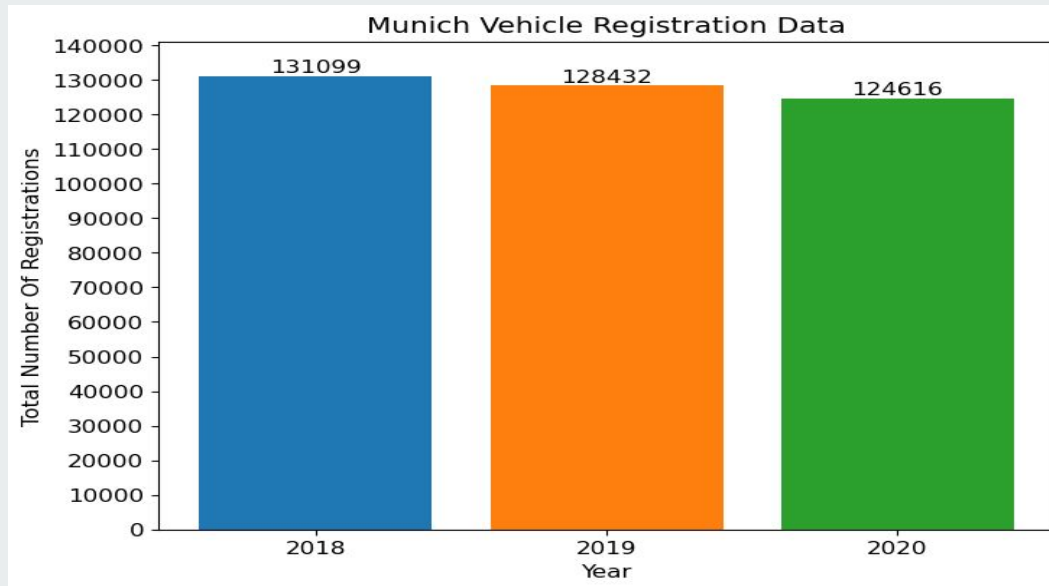
```
'''  
# Display the shape of the DataFrame  
print("Number of rows in Vehicle Registration Data:", mvr_df.shape[0])  
print("Number of rows in Bike Sharing Data:", bike_df.shape[0])  
print("Number of columns in Vehicle Registration Data:", mvr_df.shape[1])  
print("Number of columns in Bike Sharing Data:", bike_df.shape[1])  
'''
```

```
Number of rows in Vehicle Registration Data: 45  
Number of rows in Bike Sharing Data: 7452  
Number of columns in Vehicle Registration Data: 20  
Number of columns in Bike Sharing Data: 7
```



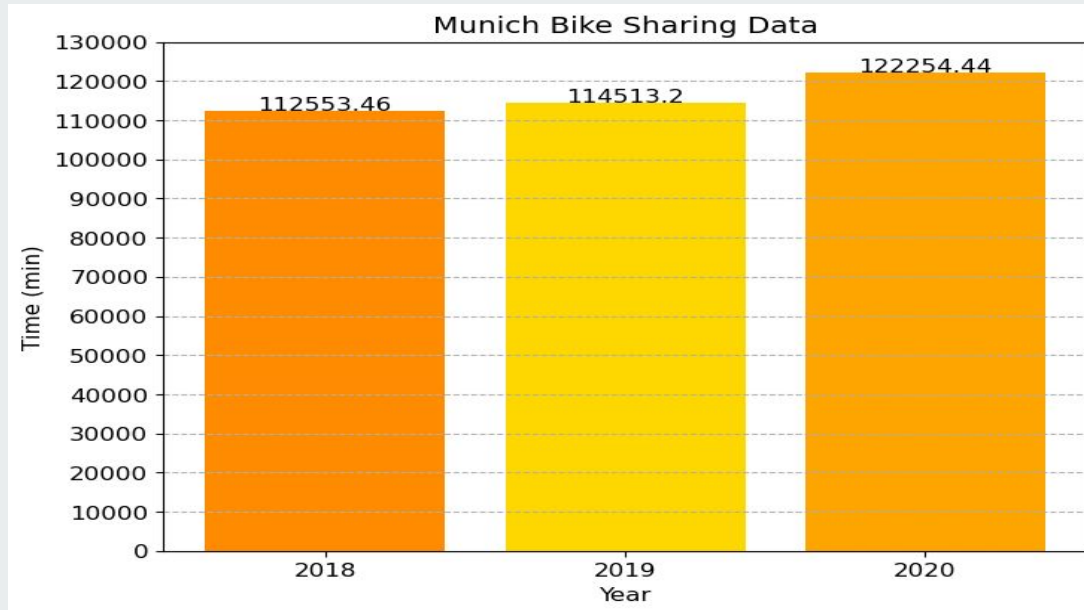
Visualization of Data:

1. Munich Vehicle Registration



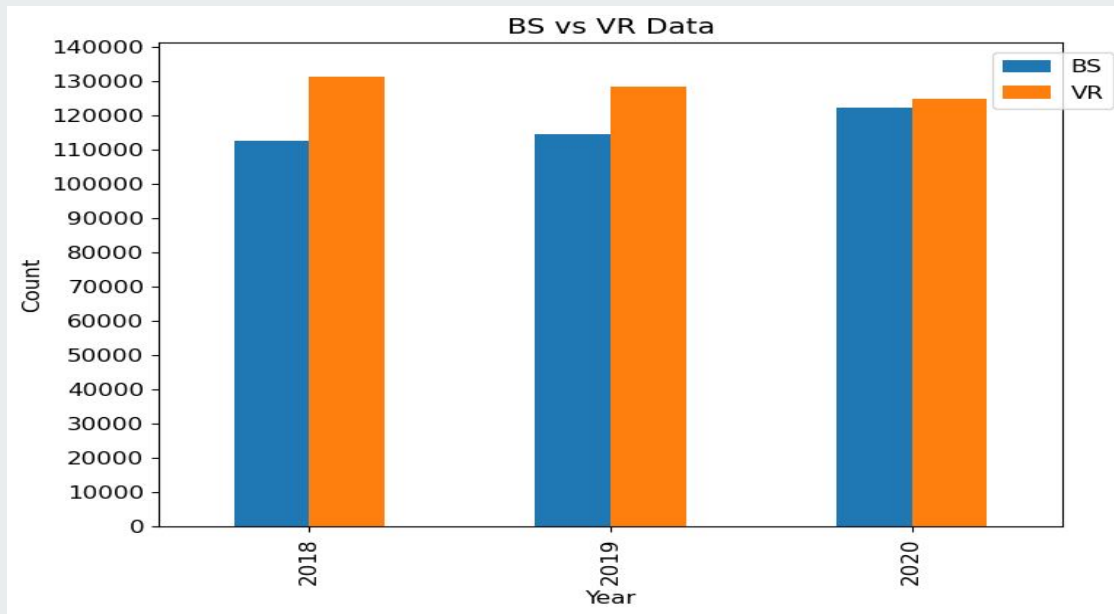


2. Munich Bike Sharing Data



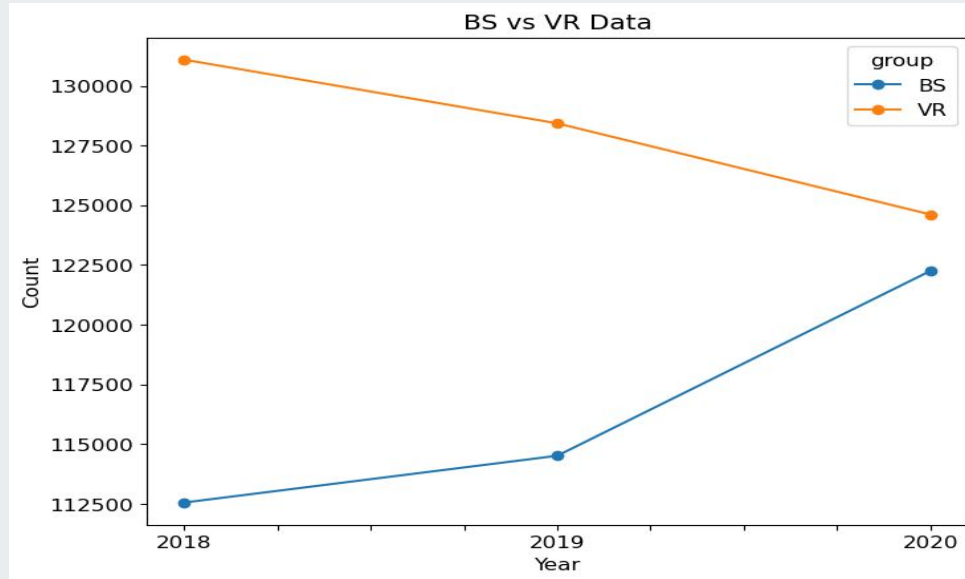
Results

The following graph compares the two datasets discussed before.



Results

The line plot shows the yearly trend of Vehicle Registration in Munich and the time bike sharing service was used.





Results Summary

- ❖ Numbers of Vehicle registration were decreased during the chosen time period by keeping all other values constant.
- ❖ People inclination towards bike sharing service was increasing with the passage of each year.



Conclusion

By analyzing the data and trends of bike sharing usage and vehicle registrations, we can determine there is a noticeable impact of bike sharing on the number of cars registered in Munich. It is important to note that this analysis does not consider other factors such as population growth, environmental effects, and vehicle types. However, with the inclusion of these factors, we can make more comprehensive conclusions.