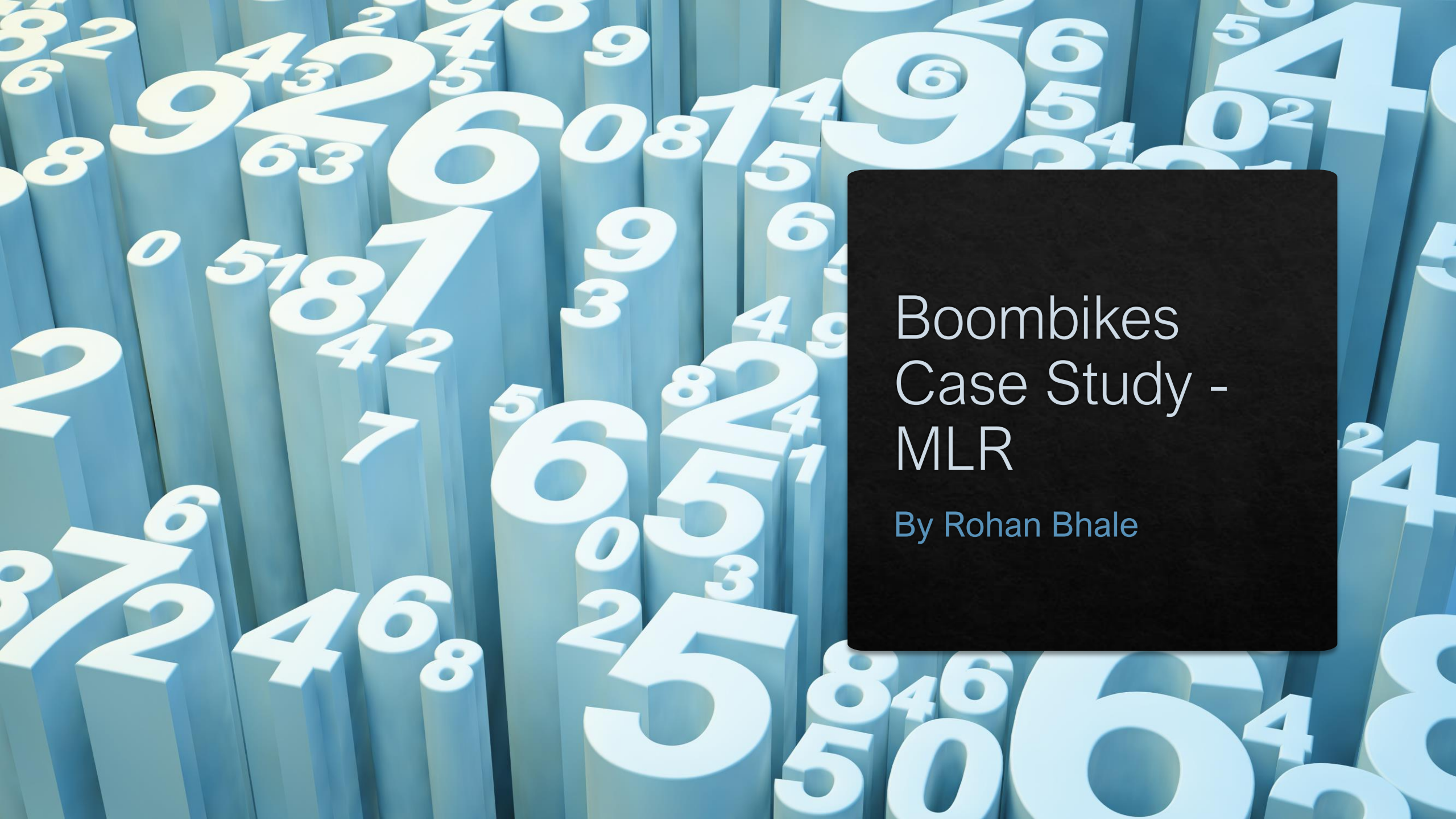

Boombikes Case Study - MLR

By Rohan Bhale

BoomBikes Case Study Milestones

Goal

1. Detect the variables which are significant in predicting the demand for shared bikes.
2. How well those variables describe the bike demands

Predictions using MLR

1. Reading and Understanding the data
2. Data Visualization
3. Data Preparations
4. Splitting the data into Training and Test sets
5. Building a Linear Model
6. Residual Analysis of the train dataset
7. Making Predictions using Final Model
8. Model Evaluation

Conclusions

I have built the model using multiple linear regression and the supporting libraries to predict the increase in the bike usage

Goals

- A US bike-sharing provider BoomBikes has recently suffered considerable dips in their revenues due to the ongoing Corona pandemic. The company is finding it very difficult to sustain in the current market scenario. So, it has decided to come up with a mindful business plan to be able to accelerate its revenue as soon as the ongoing lockdown comes to an end, and the economy restores to a healthy state.
- In such an attempt, BoomBikes aspires to understand the demand for shared bikes among the people after this ongoing quarantine situation ends across the nation due to Covid-19. They have planned this to prepare themselves to cater to the people's needs once the situation gets better all around and stand out from other service providers and make huge profits.
- They have contracted a consulting company to understand the factors on which the demand for these shared bikes depends. Specifically, they want to understand the factors affecting the demand for these shared bikes in the American market. The company wants to know:
  - Which variables are significant in predicting the demand for shared bikes?
  - How well those variables describe the bike demands?
- Based on various meteorological surveys and people's styles, the service provider firm has gathered a large dataset on daily bike demands across the American market based on some factors.

- Business Goal: You are required to model the demand for shared bikes with the available independent variables. It will be used by the management to understand how exactly the demands vary with different features. They can accordingly manipulate the business strategy to meet the demand levels and meet the customer's expectations. Further, the model will be a good way for management to understand the demand dynamics of a new market.

Predictions using MLR

In this, we have gone through following steps to make the predictions:

- 1. Reading and Understanding the data
- 2. Data Visualization
- 3. Data Preparations
- 4. Splitting the data into Training and Test sets
- 5. Building a Linear Model
- 6. Residual Analysis of the train dataset
- 7. Making Predictions using Final Model
- 8. Model Evaluation

Conclusions

- US bike-sharing provider BoomBikes can focus more on Temperature as the 0.4918 coefficient plays important role in the increase of the bike usage
- We can see the high number of revenues with the bike usage in 2019 compared to 2018. But company needs to observe the Corona Pandemic situation to make further decisions
- Also, BoomBikes can focus more on the inventory availability on Summer, Winter seasons, August and September month, Weekends and Working days as the coefficients can highly increase the usage and revenue.
- We can also see the negative coefficients which affect the usage. Obviously the LightSnow, Cloudy & Mist Environment and Spring are negatively correlated. The suggestion is if we can provide any discounts to increase the usage and so the revenue for the bikes.