

# Capital Bike Sharing System

## RENTAL QUANTITY FORECASTING

### FACTOR ANALYSIS – DATA VISUALIZATION

### PREDICTIVE MODEL RESULTS

#### KEY ANALYSIS RESULTS:

- Seasonality and distribution in hours and months
- Increase in demand from 2011 to 2012
- Weather as decisive factor

#### Weather based rentals quantity

Heavy Rain, Heavy Snow

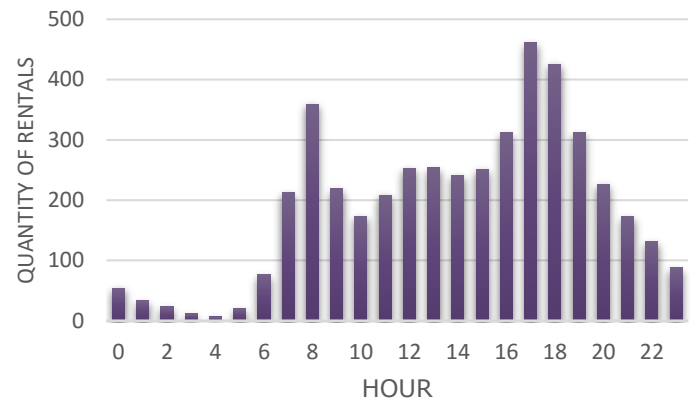
Light Snow, Light Rain

Mist, Cloudy

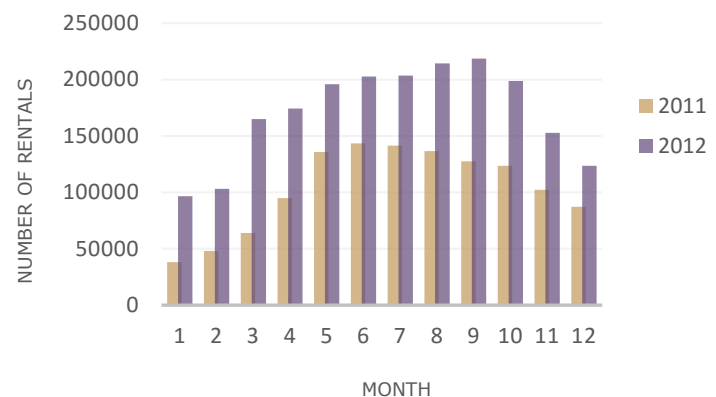
Clear, Few clouds

0 1000000 2000000

#### Average rental by hours



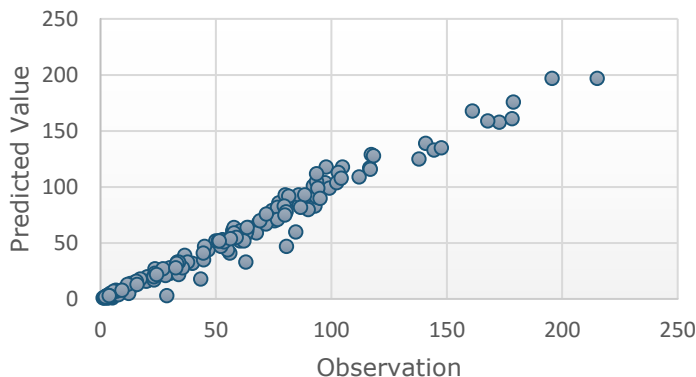
#### NUMBER OF RENTALS VS MONTHS IN 2011 AND 2012



#### MODEL KEY NOTES:

- Hour-based rental demand predictive model.
- Prediction and Observation correlation: 95.78%
- Major decisive factors includes: hour, months, years and weather.

#### Predictive Model Performance



#### RECOMMENDATIONS:

- Supply-chain forecasting.
- Maintenance period planning
- Request location data collection and population for predicting location distribution and business saturation