BIKESHARE COMPANY

ANALYTICAL REPORT
JANUARY –JUNE

PREPARED FOR: **PREPARED BY:**

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OCTOBER, 2022

1.0   INTRODUCTION

Bike Share Company is a business model that provide convenient, affordable and efficient transportation options for customers who want to go to places without the hassle of owning or operating a vehicle. It offers a fleet of bikes which can be unlocked at one station, used and returned to any other station in its ecosystem. My objective of this analysis is to find out the determining factor that drives the demand on bike share rentals, construct statistical models and then try to make prediction on rentals based on the information and models I have. My exploration and the analysis of the data will be performed in Microsoft Excel as per requested.

1.1   Problem statement?

While there are several advantages to the system, it comes with several difficulties for the operators like the optimum demand prediction which leads to a demand and supply problem, where to build new stations or expand old ones. They also need to know how they can maintain an adequate inventory of bikes, how natural and man-made factors are affecting the bike rental demands. Natural factors include seasons, months, day of week, peak timings, working and non-working days etc. and man made factors consists of location of bike stations and characteristics of the area. I have performed an exploratory data analysis on these factors and try to answer the problem statement.

1.2   Dataset Overview

This dataset contains the hourly and daily count of rental bikes between January and June 2007. The dataset contains 666 rows and 9 columns. There are two types of users, the subscribers and the customers. Trip data was also included for analyzing of the station level data.

1.3   Data Wrangling

The data is in xlsx format. The data was cleaned by removing duplicates and filling up missing cells. New data files were generated with several values of interest for each trip such as: starting month, starting hour, day of the week, users' age and brackets etc.

1.4 Sample Questions

- ❖ What are the types of customers the company has and what is the count for each?
- ❖ Do men make use of the service than women?
- ❖ What is the average trip duration?
- ❖ What is the age distribution of customers?
- ❖ What is the most common start station?
- ❖ What is the most common end station?
- ❖ What is the most common trip (start station to end station)?
- ❖ Who are the users with high trip duration?
- ❖ Number of trips made by subscribers and customers
- ❖ Which type of user takes longer rides on average?
- ❖ What is the subscription rate among men and women?
- ❖ What gender records the highest average trip duration?
- ❖ What month records the highest traffic? June
- ❖ What day records the highest traffic?
- ❖ What time records the highest traffic?
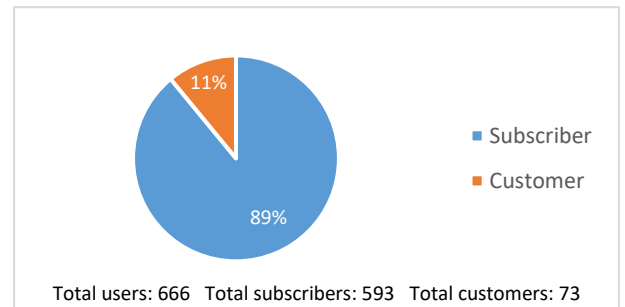
1.5 Summary

Most of the users of bikeshare whom are men within the age of 30-49 has subscribed to bikeshare. More bikes and staffs are recommended at high traffic stations, months, weekdays and hour of the day. Adverts should focus more on men and benefits of bikes such as accessibility, low cost and improved health.

2.0   VISUALIZATIONS

2.1   Convert more users to subscribers

89%

of users are **Subscribers**

Total users: 666   Total subscribers: 593   Total customers: 73

2.2   Target more **Men** within the age of **30-59**

79%

of users are Men

Distribution of users by age group

Age group	Count
30-39	248
40-49	174
50-59	118
60-69	58
20-29	47
70-79	19
80 above	2
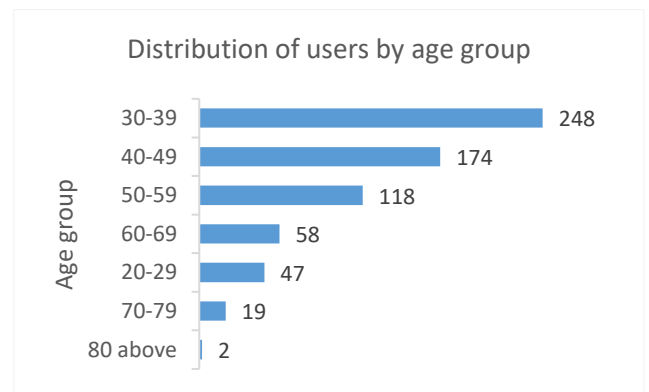
2.3   Provide more staffs and bikes at these high traffic stations

Most common start station

Start station	Count
Central Park S & 6 Ave	12
West St & Chambers St	8
W 43 St & 6 Ave	7
2 Ave & E 31 St	7
Lafayette St & E 8 St	7
Pershing Square North	6
W 20 St & 11 Ave	6
Bayard St & Baxter St	6
Duane St & Greenwich St	6
E 32 St & Park Ave	6

Most common end station

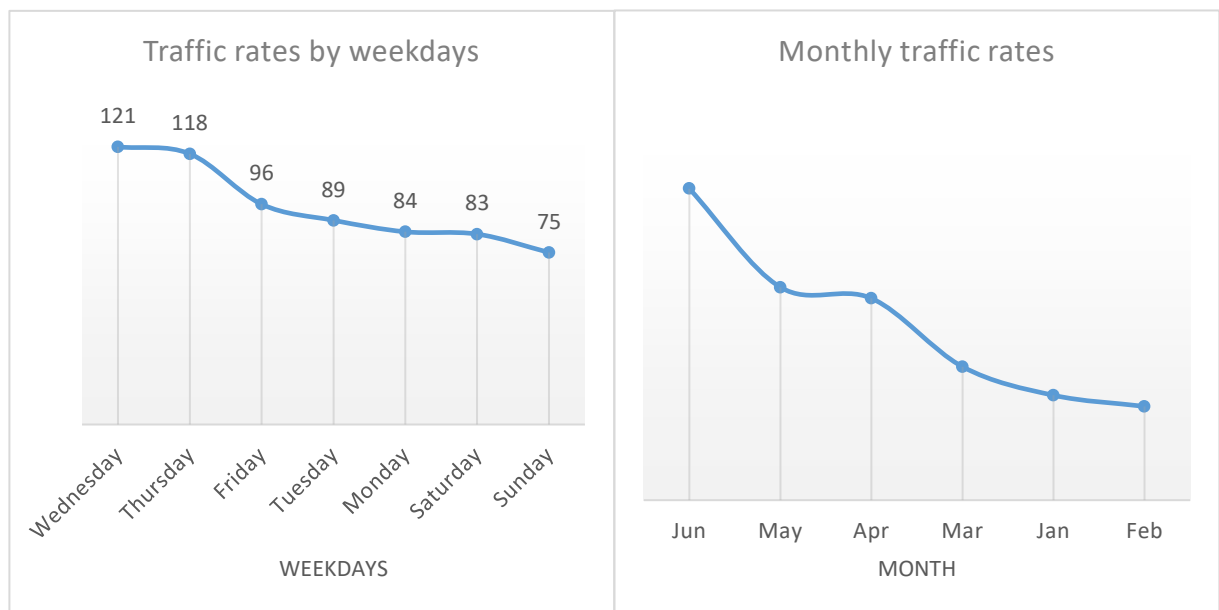| End station	Count
E 17 St & Broadway	10
E 7 St & Avenue A	10
W 38 St & 8 Ave	8
W 33 St & 7 Ave	8
E 23 St & 1 Ave	6
West St & Chambers St	6
South End Ave & Liberty…	6
E 15 St & 3 Ave	6
Greenwich Ave & 8 Ave	6
1 Ave & E 68 St	6

Most common start stations is Central Park S & 6 Ave while most common end stations are E17 St & Broadway.

Most common trip

Start to end station	Count
York St & Jay St TO Rivington St & Chrystie St	2
Pershing Square North TO W 33 St & 7 Ave	2
W 26 St & 8 Ave TO W 38 St & 8 Ave	2
Bayard St & Baxter St TO Bayard St & Baxter St	2
W 20 St & 8 Ave TO W 26 St & 8 Ave	2
Central Park S & 6 Ave TO Central Park S & 6 Ave	2
University Pl & E 14 St TO Washington Pl & Broadway	2
Rivington St & Chrystie St TO W Broadway & Spring St	2
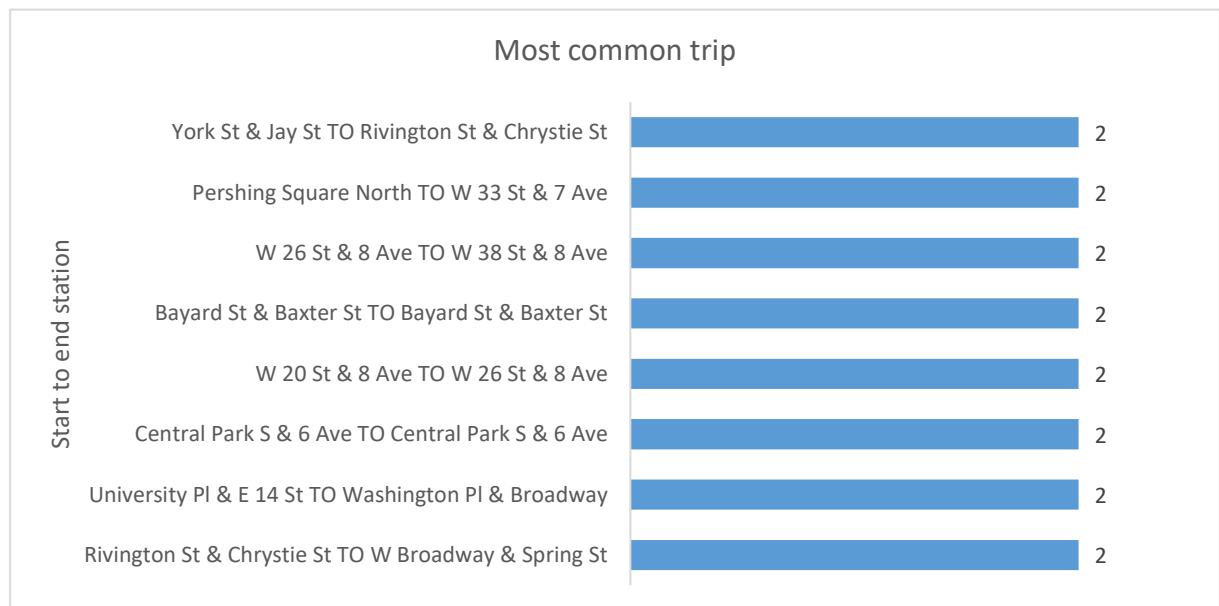
2.4   Our best hours, weekdays and month of the year.

Traffic rates by time of the day

Time	Rate
5 PM	63
6 PM	62
4 PM	58
8 AM	52
9 AM	45
3 PM	44
7 AM	38
1 PM	38
12 PM	37
11 AM	36
7 PM	35
8 PM	33
2 PM	28
10 AM	22
9 PM	18
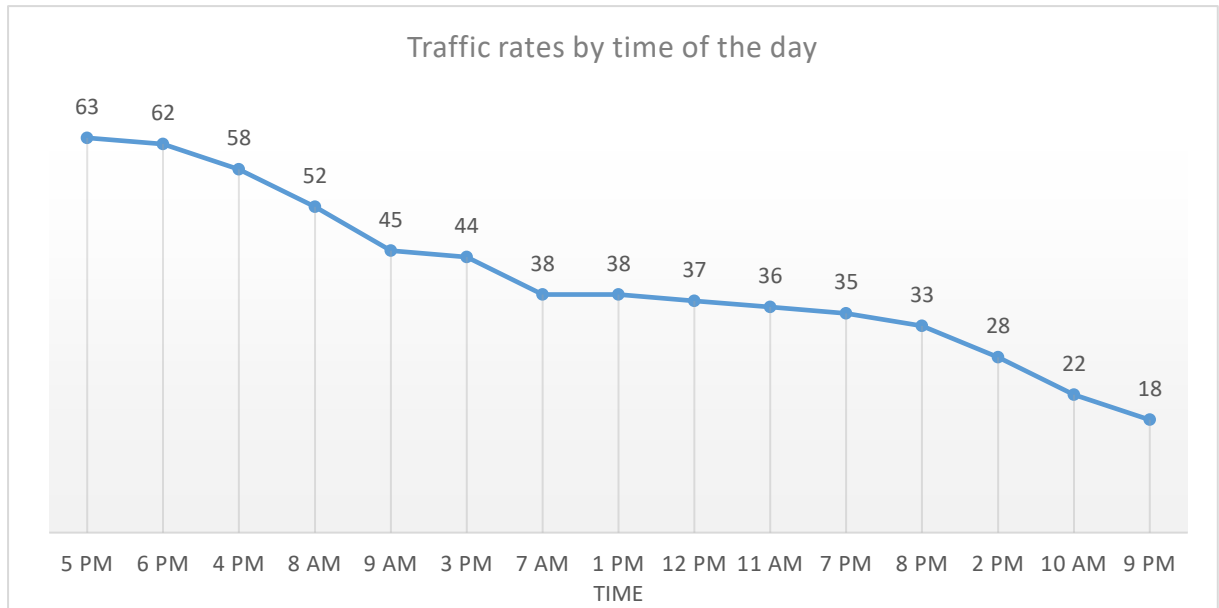
Highest bike traffic is observed from 9:00AM to 11:00AM in the morning and 4:00PM to 6:00PM in the evening

Traffic rates by weekdays

Weekday	Rate
Wednesday	121
Thursday	118
Friday	96
Tuesday	89
Monday	84
Saturday	83
Sunday	75

Highest bike traffic is observed on Wednesday

Monthly traffic rates

Months shown: Jun, May, Apr, Mar, Jan, Feb

Highest bike traffic is observed in June

3.0   **RECOMMENDATIONS**

TARGET MORE MEN AGE 30-59

1. Most of the rentals are from men within the range of 30-59, campaigns and adverts should be targeted mostly towards men within this age range.

2. While planning for extra bikes to stations, the peak rental hours must be considered, i.e. 8–9 am and 5–6 pm. Provide more staffs and bikes at these high traffic stations.

3. Offer dynamic pricing depending upon the seasonal variations to promote bike usage during fall and winter seasons.

4. Data about most used routes can be used to construct roads/lanes dedicated to bikes specifically.

5. Maintenance activities for bikes should be done at night due to low usage of bikes during the night time. Removing some bikes from the streets at night time will not cause trouble for the customers.

6. Converting customers to subscribers on the weekends by providing them with discounts and coupons.

7. Most of the rentals are for commuting to workplaces and colleges on a daily basis so bikeshare should launch more stations near these landmarks to reach out to their main customers.