CASE STUDY: Hubway Bike-Share

**Introduction**:

A motorcycle parked on the side of a building

Description automatically generatedHubway bike-share originates from Boston and was launched in April 21st, 2011. The bike-share network appeared in three bound neighborhood cities such as Cambridge, Somerville and Brookline with more than 100 stations and 1,000 bikes and was also supported by Harvard University with 11 stations across Cambridge, Alston and Longwood areas. In 2019, the Hubway was re-launched under ‘Bluebikes’ brand after the company joint partner with Blue Cross Blue Shield of Massachusetts with 3,000 bikes.

In order to use the Hubway bike, a commuter must register as either annual or casual member. According to Bluebikes (2020), before the partnership, the Hubway prices remained constant. To be an annual member, so called ‘registered’, you must purchase annual ticket with $85 through online and receive a key to unlock a bike at any Hubway station. For the casual member, so called ‘casual’, you can purchase day-pass tickets from any station by credit card with $6 for 24-hour or $12 for 72-hour period after purchase. However, the service is free for any trip less than 30 minutes.

**Data Set**:

The Hubway case study consists of two data frames: trips and stations. There are 142 stations corresponding to 1164 bike-shares, and took place in four municipalities such as Boston, Cambridge, Somerville, and Brookline.

**Purpose**:

Goal of this case study is to identify two business insights and one recommendation to the Hubway company for improvement.

**Report Finding:**

Insight 1: Membership

After analyzing duration of the trips, we found Casual riders made 1.3 times longer than the Registered ones, because the Registered riders took the bikes more usual, as daily short commute with average 657 seconds. However, it represented only 30% of the total trips and there were around 22% only of them incurred additional fees. In addition, if dissected users by genders and age groups, male retired elders with age above 60 denoted 80% of the total riders.

Insight 2: Station Improvement

Among the total 142 stations with 1570001 trips, ‘Esplanade - Beacon St. at Arlington St.’ (or #58) station was the most popular round trips with 3064, following by ‘Charles Circle - Charles St. at Cambridge St.’ station and ‘Boston Public Library - 700 Boylston St.’ station with 2739 and 2548 trips respectively. Furthermore, the high seasons for the bike-share were in August, September, and October, and daily crowds time is from 4:30PM to 6:30PM with peak from 5PM to 5:30PM.

Recommendation:

Reference:

Source:  
Video: <https://www.youtube.com/watch?v=oCdjMpmzTuM>  
Website Bluebike: <https://www.bluebikes.com/blog/bluebikes-coming-soon>  
Website Hubway: [https://www.thehubway.com](https://www.thehubway.com/)

Prices: https://www.bluebikes.com/blog/membership-pass-price-changes

The longest duration is 9999 seconds or 27 hours.

In average, a trip took 912.4 seconds or 15 minutes. However, if we considered by groups of riders, the average duration of a trip for Casual and Registered were 1520 seconds and 657 seconds respectively.

Registered used bike more frequently than Casual, accounting for 70% of the total numbers.

Bike B00490 has been using for 2120 trips.

Bike B00490 has longest trips time with 2058643 seconds.

Riders with age above 30 have longer ride time than the below 30 one.

Top 3 stations popular for starting the trips includes South Station, Boston Public Library, and Charles Circle. (SHOW in a map)

Top 3 stations having highest round-trip riders includes The Esplanade, Charles Circle, and Boston Public Library.

Casual riders took more round-trip with 57% of total round trip (73068).

Among total trips with 1570001:

. 20% of them have different start and end municipalities.

. 7.8% of them incurred additional fees

Trips in Brookline has longest average duration in rides.

Peaked months for trips were August, September, and October.

Male represents majority of the trips with 53% of the total at 150001.

Crowded time is from 5PM to 6PM with peak from 5PM to 5:30PM.

Retired\_elder with age above 60 represents 80% of the total riders.