BENSON DATA INSIGHTS

Data Science Solutions

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AGENDA

- Overview
- Methodology
- MTA Ridership Data
- Customer Demographics
- Areas of Interest Proximity
- Findings

OVERVIEW

Issue: A sports beverage company needs to increase market share but but their resources are limited.

Objective: Provide a strategy for a promotion campaign driven by our data analysis.
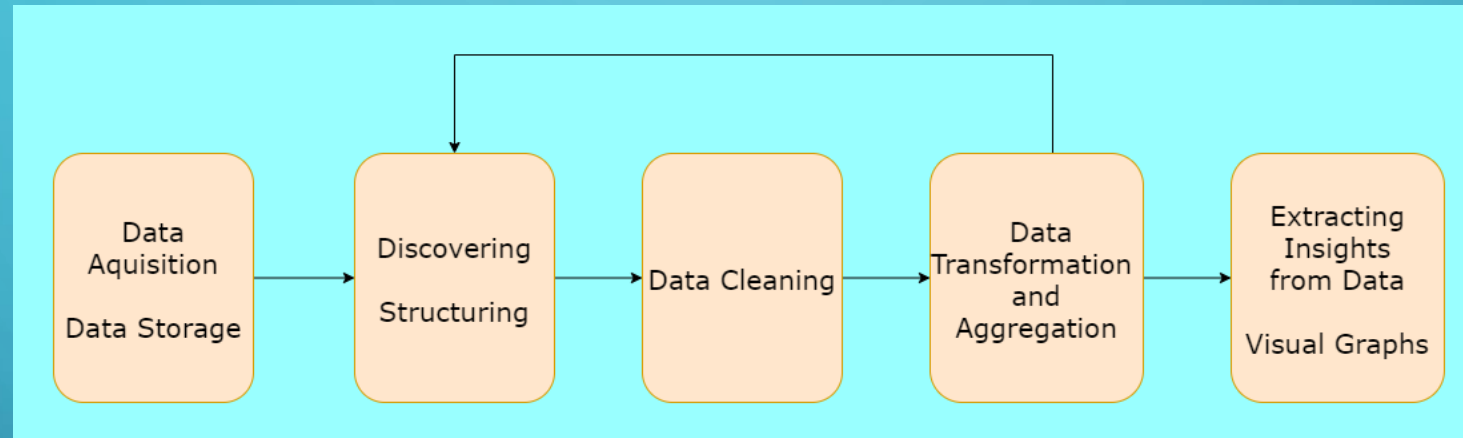
METHODOLOGY

Customer Identification

Areas of Interaction

High Value Locations
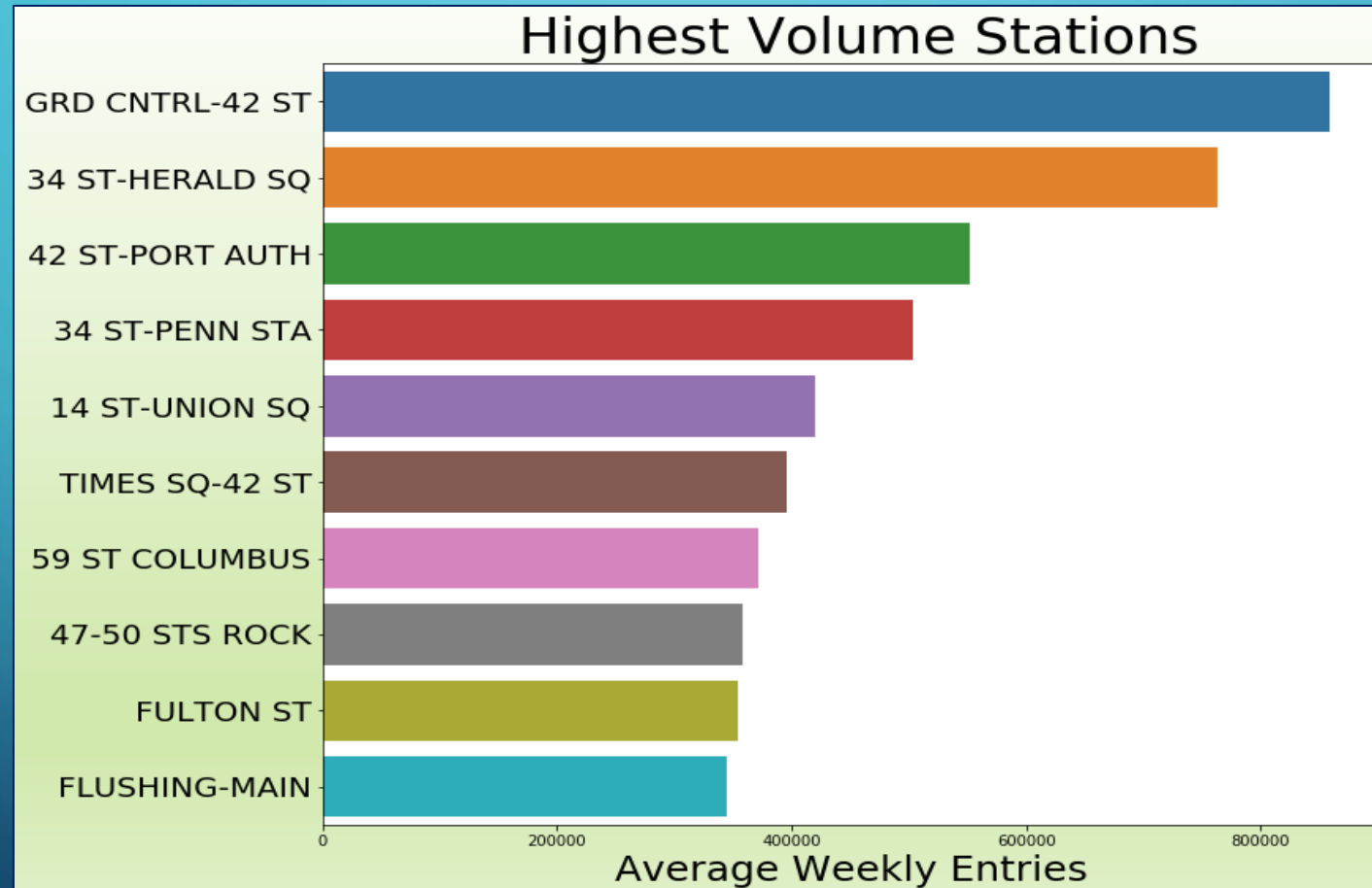
DATA ANALYSIS PIPELINE
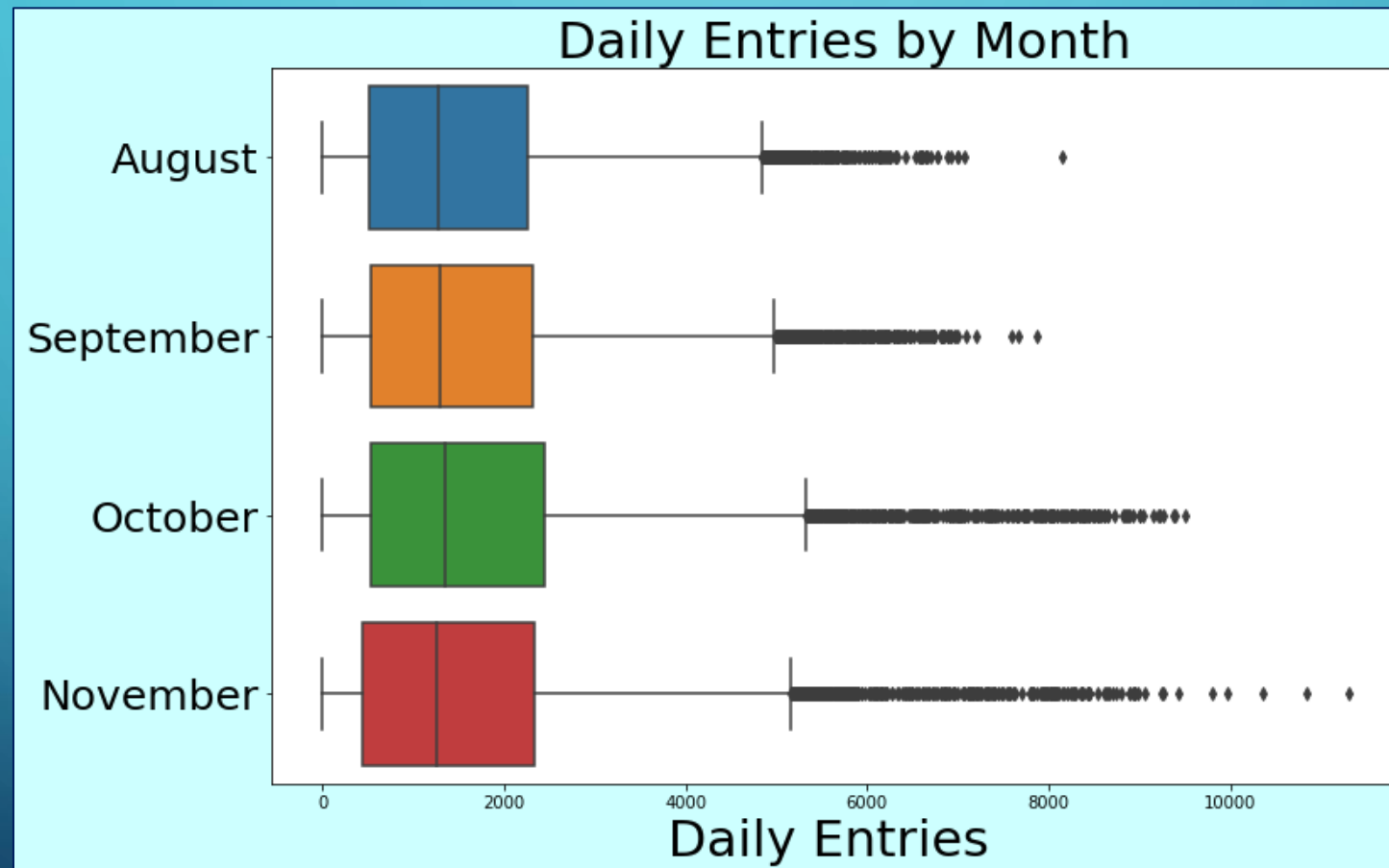

Data: Turnstile data from MTA.info
Time Period: August – November 2019
Analysis Tools: Jupyter Notebook, Pandas, Matplotlib, Seaborn, Pickle
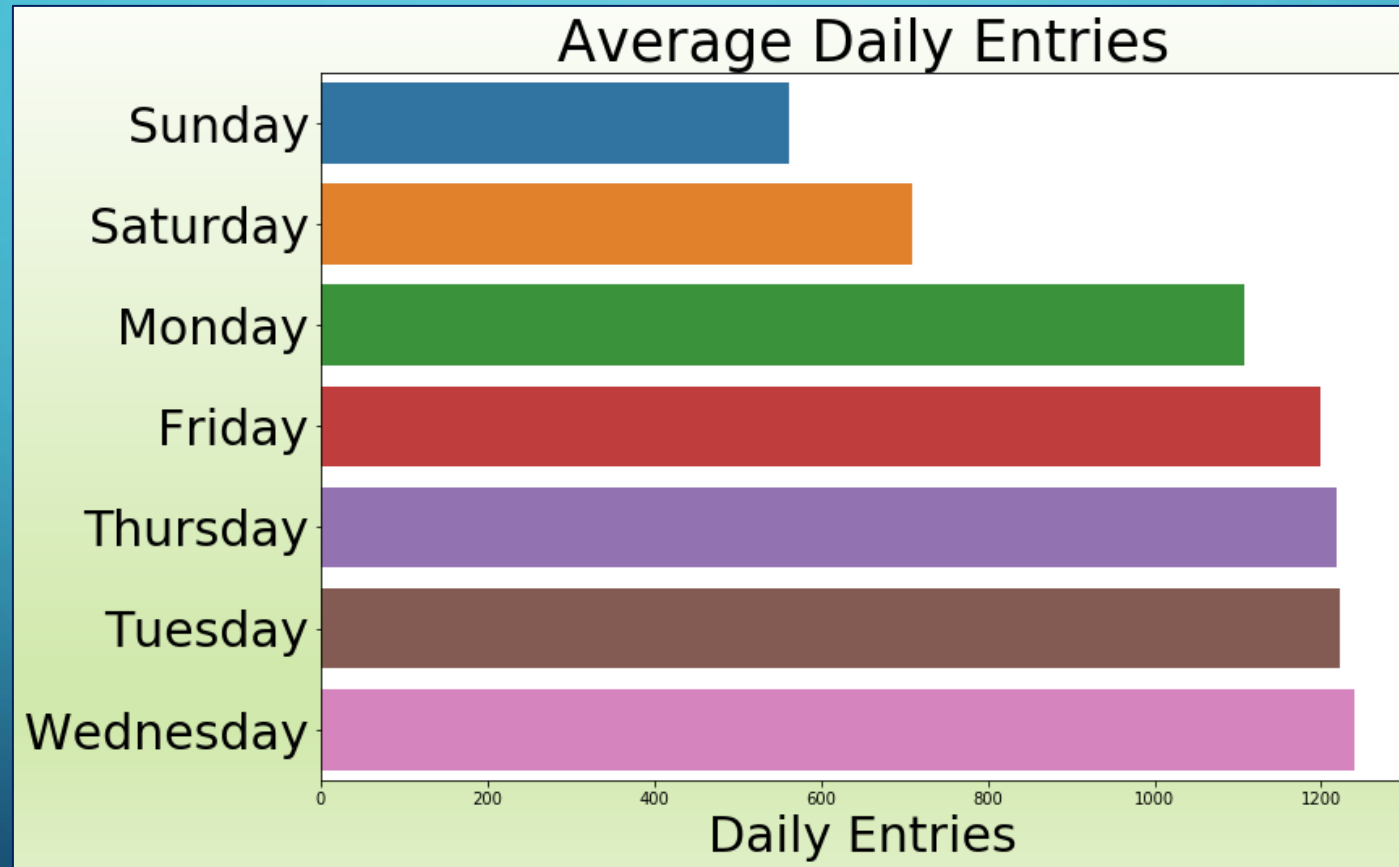
SUBWAY STATIONS

# SUBWAY STATION ENTRIES

DAY OF THE WEEK

AGE DEMOGRAPHICS

- **Target Customer** Age:
  - 20 to 44 year old
  - Of either gender
  - Across income spectrum
  - Heathy lifestyle

- Given the limited / incomplete information on exercise data for specific areas, we decided to use **Age** as a proxy characteristic to analyze first.
- According to a CDC study*, people who were most likely to exercise were between the ages of 18-24, followed by 25-34 and 35-44.
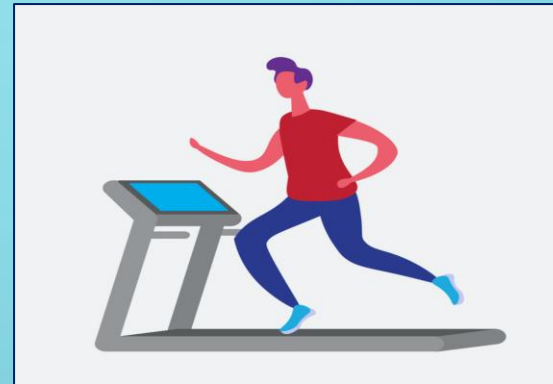
* CDC: Adult Participation in Aerobic and Muscle-Strengthening Physical Activities (2011)

DEMOGRAPHICS METHODOLOGY

Our approach to using the age factor was:

- Focusing on areas defined by circles with a **½-mile distance** (radius) from each of the **high-traffic subway stations** (center)
- Identifying **US census tracts** (blocks) that best approximated the areas enclosed by the circles
  - Age data by tracts available through ACS*
- Calculating and comparing these areas in terms of **proportion of 20-44 year olds** to other age ranges

*ACS demographics (NYC gov)

DEMOGRAPHICS RESULTS

- **Distribution mostly similar** across areas
- Exception: **Penn Station** had smaller percentage of target consumers
- **Port Authority, Times Square,** and **Grand Central** appear to have an edge over others
- **Columbus Circle** station was added as well in order to be assessed together with another external factor (following section)

Age distribution of areas surrounding major subway stations
Range from 20 to 44 highlighted in blue
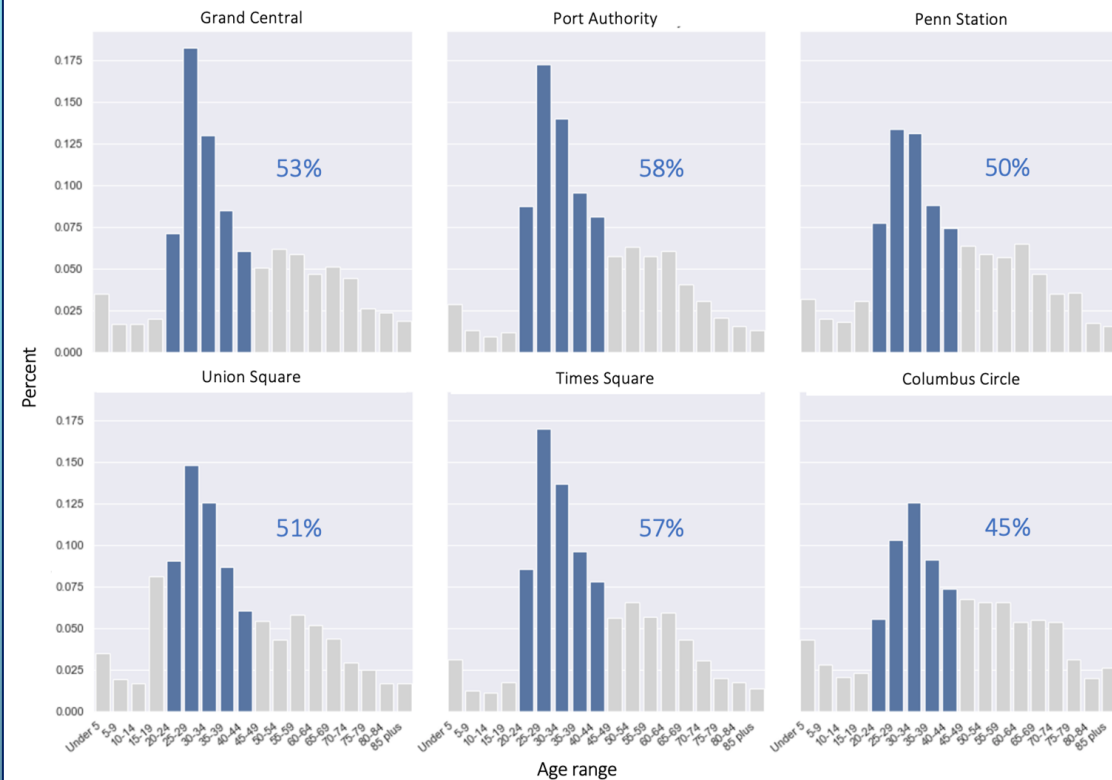
TARGET:
PEOPLE UTILIZING PARKS FOR RECREATION

City parks provide access to recreational opportunities, increase property values, spur local economies, and combat crime.

NYC Parks

PARKS CHOSEN

Key Factors:

- Proximity

- Size

- Amenities

Park Name
The Highline
Chelsea Piers
Central Park
Riverside Park
East River Park
DeWitt Clinton Park
Hudson River Park Trust
Washington Square Park
Tompkins Square Park

HOW FAR WILL PEOPLE GO FOR PARKS?

There is no agreed upon standard amongst park planning studies.

People will walk further for recreational purposes than they will for running errands or commuting for work.

PARKS RESULTS

Station	Total
14th St - Union Square	1
34th St - Penn Station + Herald Square	2
42nd St - Grand Central Station	0
42nd St - Port Authority	0
42nd St - Times Square	0
59th St - Columbus Circle	2

COMBINED RESULTS

MTA Station	Ridership Volume	Customer Demographics	Park Proximity	Total
Grand Central Station	1	3	3	7
34th St	2	5	1	8
42nd St Port Authority	3	1	3	7
Times Square	5	2	3	10
14th St Union Square	4	4	2	10
59th St Columbus Circle	6	6	1	13

RECOMMENDATIONS

- Where would a promotion be most effective?
    - 42nd St Port Authority
    - Grand Central Station
- When would be the ideal time?
    - Wednesdays in September

THANK YOU

QUESTIONS?

APPENDIX

SOURCES

- https://realmta.info/

- https://new.mta.info/map/5256

- https://popfactfinder.planning.nyc.gov/profile/39084/economic

APPENDIX: PARKS

Pedestrians and Park Planning: How Far Will People Walk?

https://www.smartcitiesdive.com/ex/sustainablecitiescollective/pedestrians-and-park-planning-how-far-will-people-walk/24937/

Walkability Standards: Test of Common Assumptions-Colorado Landscape Architecture Firm

Park Name	14th St - Union Square	34th St - Penn Station	42nd St - Grand Central	42nd St - Port Authority	42nd St - Times Square	59th St - Columbus Circle
The Highline	20	9	34	18	24	35
Chelsea Piers	25	14	39	23	29	40
Central Park	47	28	20	17	18	1
Riverside Park	69	48	48	36	40	19
East River Park	37	56	54	65	62	79
DeWitt Clinton Park	55	33	34	21	26	14
Hudson River Park Trust	26	32	55	41	45	58
Washington Square Park	9	29	37	39	37	54
Tompkins Square Park	19	42	44	51	48	64
Total within 15 min	1	2	0	0	0	2