Uber Usage

MIDS-W200 Section 001, Final Project
Project 2: Data Analysis with Numpy and Pandas
The A-Team: Adam Yang, Armand Kok, Alla Hale

Agenda

- Background
- Data Sources and Data Preparation
- Key Questions, Answered
  - What is the overall Uber usage?
  - How does Uber usage depend on day and time of day?
  - How do key holidays impact Uber usage?
  - How do weather related variables impact Uber usage?
  - What other factors impact Uber usage?
  - Do Uber data indicate that we are missing key public transit options?

Background

Ride sharing services are extremely popular

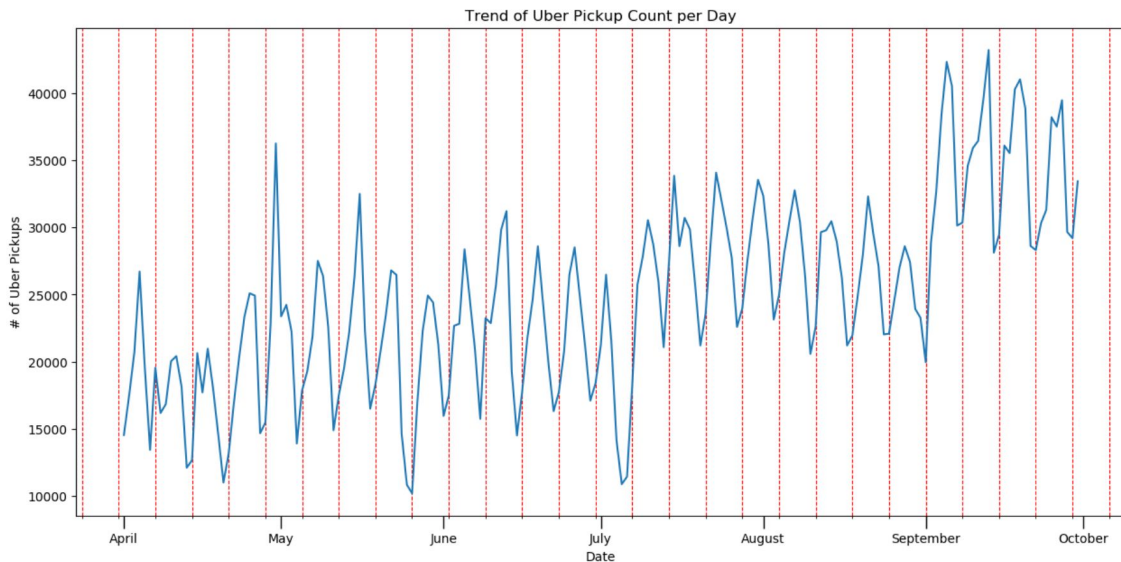Data describing the use of these services can shed light on how people get around a city

City administrators could use this data to optimize their operation

This analysis focuses on Uber usage in NYC from April to September 2014

Data Sources and Data Preparation

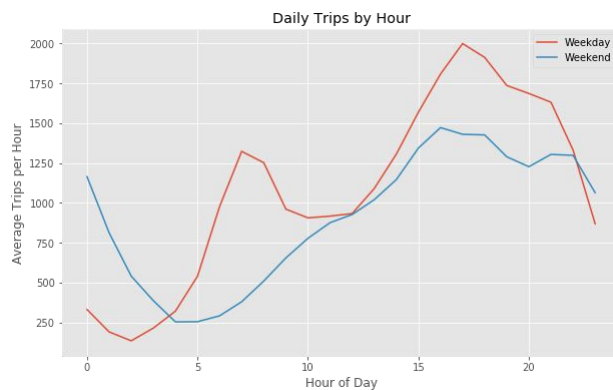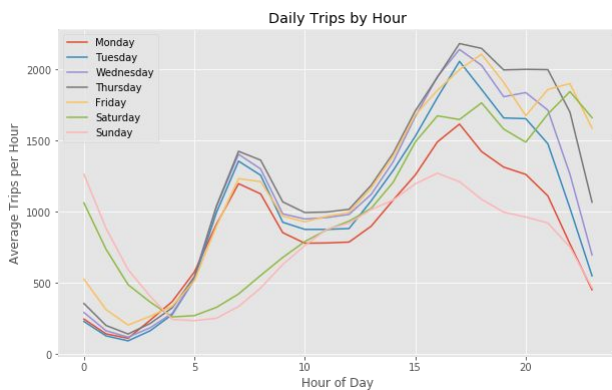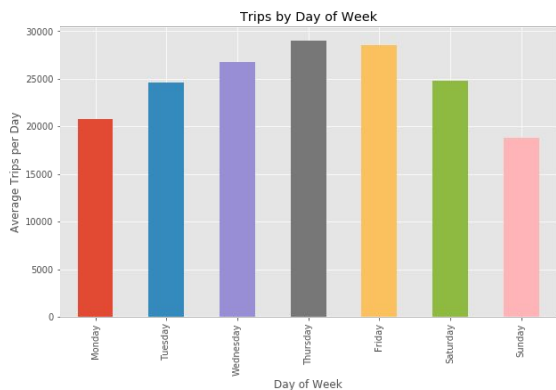| Variable	Description
date_time_h	Date and time rounded to the nearest hour
date_time	Date and time of the Uber pickup, rounded to the nearest minute.
dow	Name of the day for the pickup (e.g. Monday, Friday, Sunday)
lat	The latitude of the Uber pickup
lon	The longitude of the Uber pickup
weather_description	Description of weather (e.g. sky is clear, broken clouds, drizzle)
wind_speed	Wind speed in m/s
humidity	% humidity
temperature	Temperature in celsius
holiday	Name of the holiday (NaN for regular days)

What is the overall Uber usage?

Trend of Uber Pickup Count per Day

Month	Trips Per Day
April	19000
May	21000
June	22000
July	26000
August	27000
September	34000

- Rides peak in the middle of the week
- Gradual increase from April to end of August
- Big jump in September
- Schools start on September 4, 2014

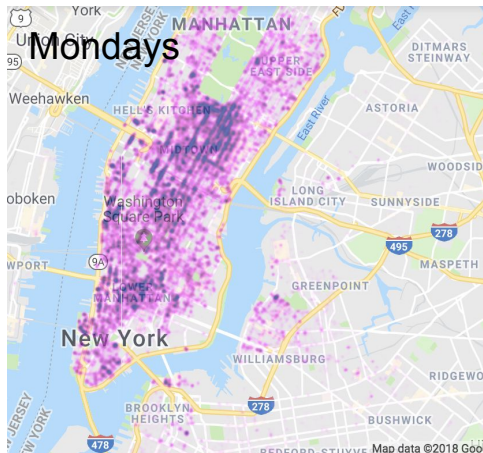# How does Uber usage depend on day and time of day?

Most popular day of the week to ride Uber is Thursday
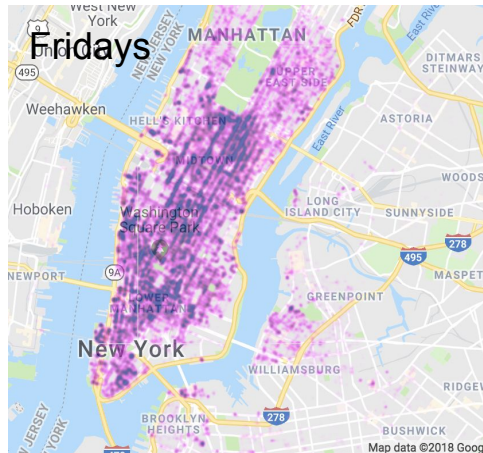
People use Uber both for work and for recreation- Clear rush hour pattern
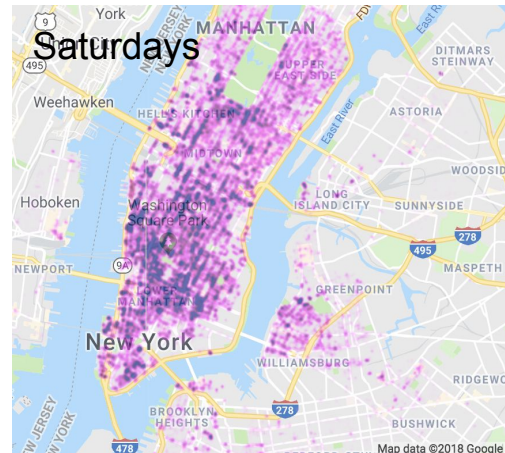
Weekdays look very different than weekends

How does Uber usage depend on day and time of day?

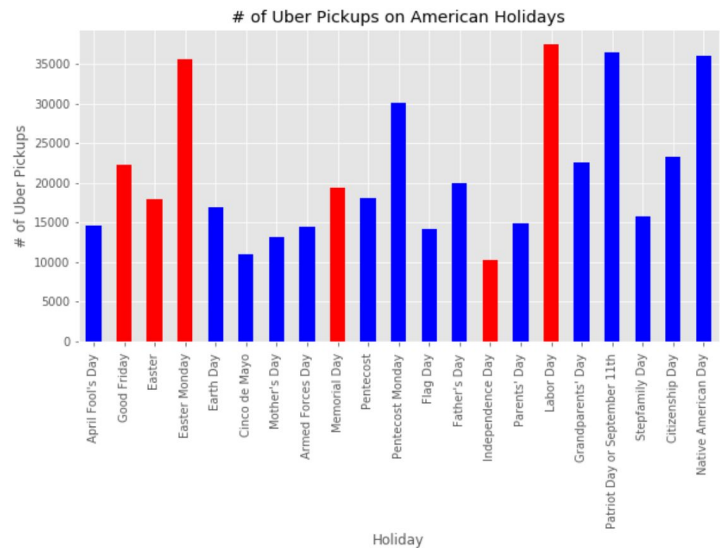Mondays

Fridays

Saturdays

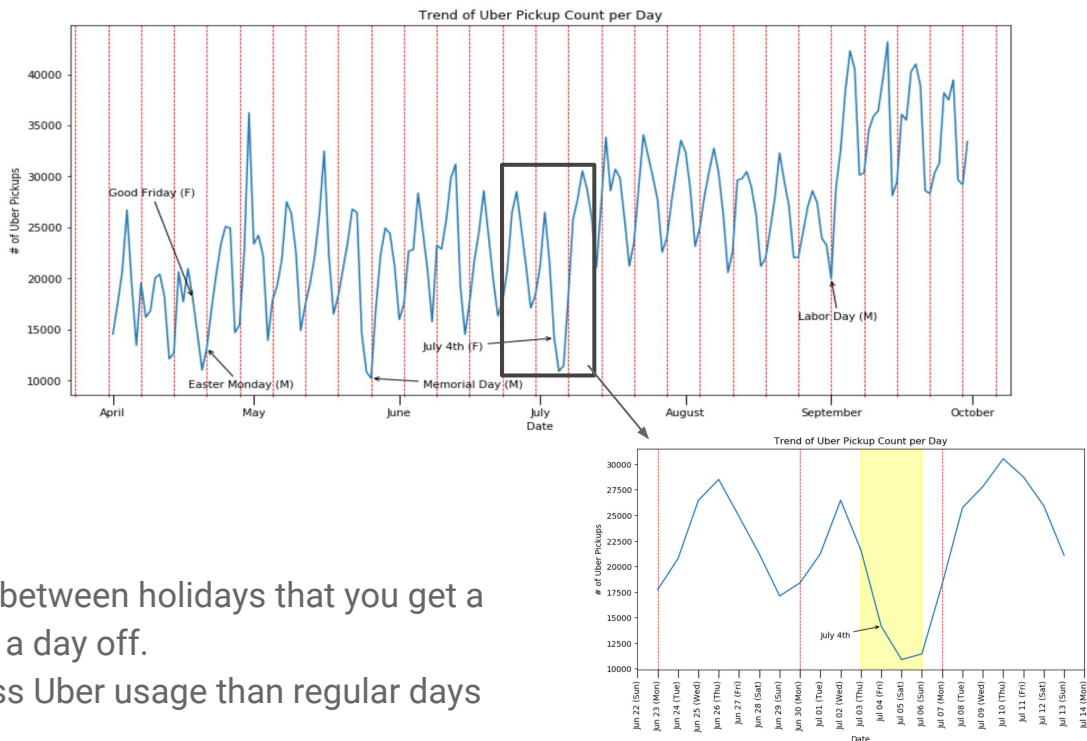Mondays are for working

Fridays are for both

Saturdays are for playing

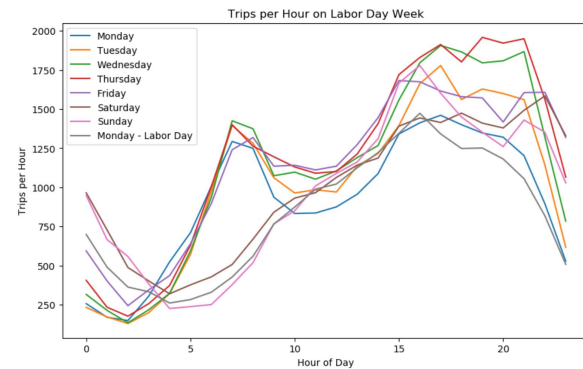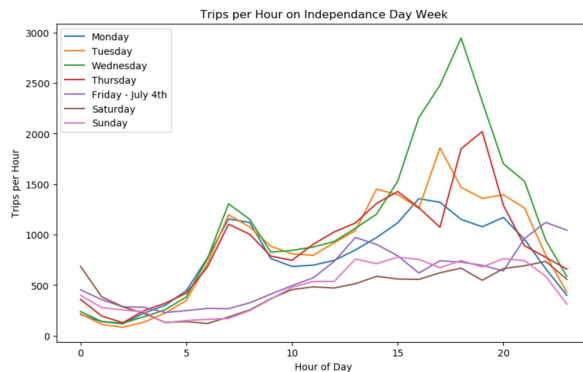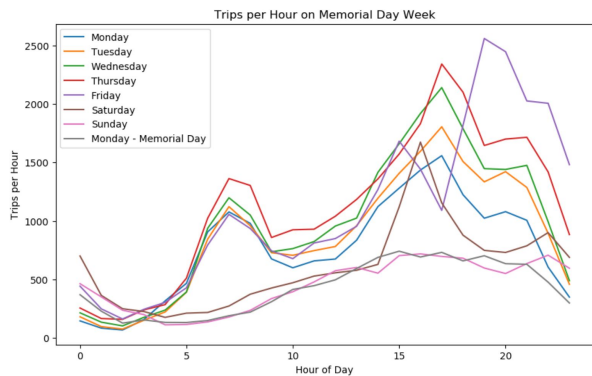# How do key holidays impact Uber usage?

- No clear difference in Uber rides between holidays that you get a day off, vs holidays you don't get a day off.
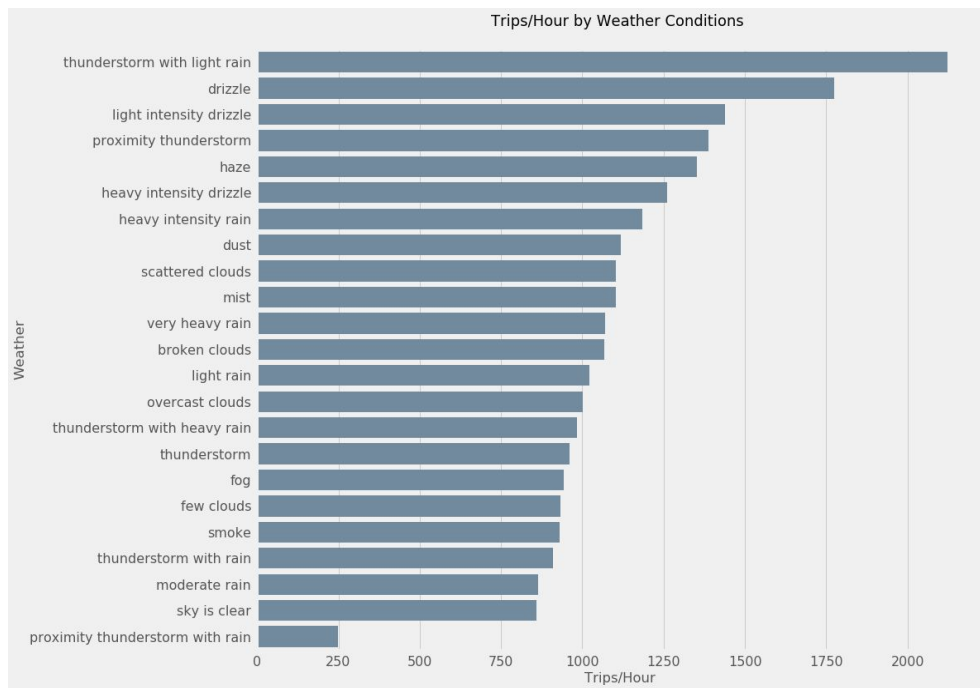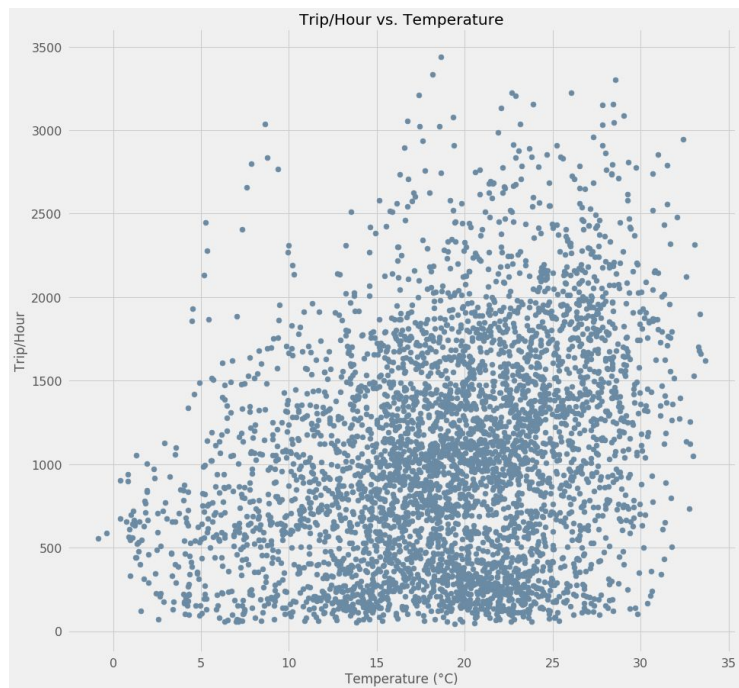- Holidays are actually showing less Uber usage than regular days
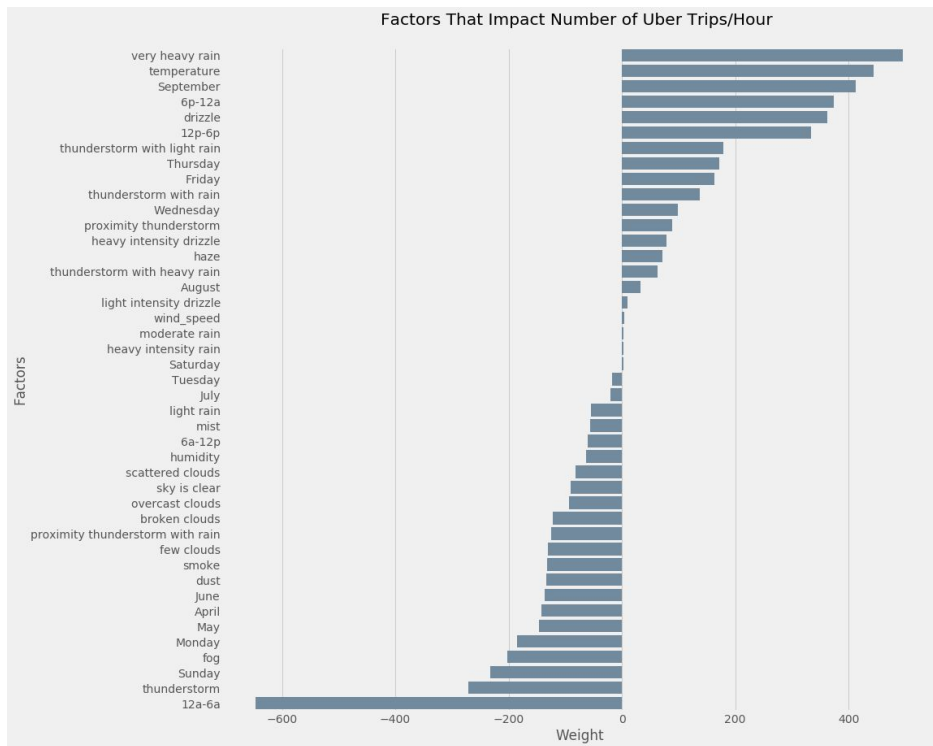
How do key holidays impact Uber usage?

- Weekends of Memorial day and Independence day have much less Uber usage than the average weekend
- A spike in rides on Saturday of Memorial Day weekend
- Labor Day weekend had much more Uber pickups in the evening.
- On the day before the weekend, people are getting off early (around 3pm)
- Rides pick up again around 8pm on the same day

How do weather related variables impact Uber usage?
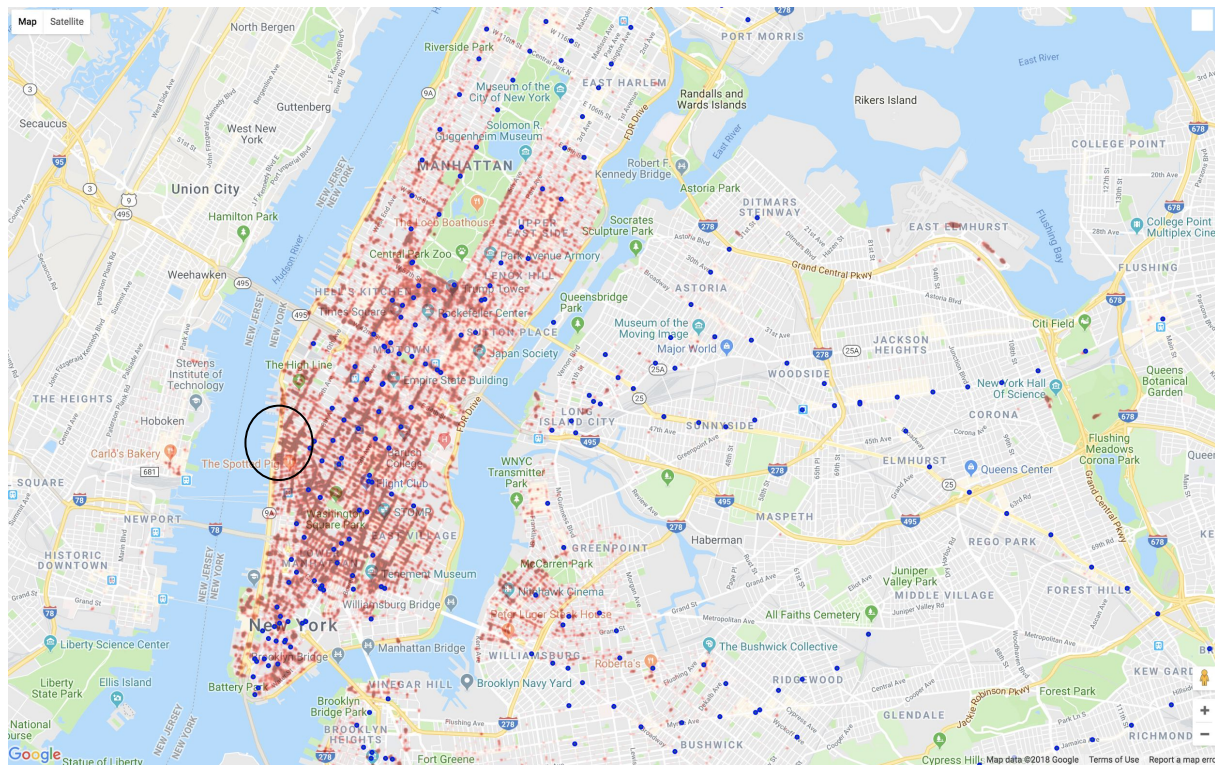
What other factors impact Uber usage?

Conclusions

- People in NYC mostly use Ubers to get to (8am) and from work (5pm)
    - In 2012, 56% of people in NYC do not own a car
- On Saturdays, Uber rides peak from 3pm to 12am - Uber used for evening activities
- Uber usage jumps up in September
    - Possible cause is school starting on September 4th
- Ubers are used less on days off (holidays)
    - Stay home? Alternatives like walking or subway?
    - Only times uber rides peak on holidays is during dinner time (catching reservations?) and night time (getting home faster or alcohol)
- Ubers are used more during bad weather or when it's hotter out
- Disclaimer: our analysis is limited to our data set
    - Only have Spring and Summer data, can't see the impact of really cold days
    - Can't see if September peak holds up with school days and drops when school ends

Next steps: Are missing key public transit options?

Not obviously

Perhaps in the circled area

Perhaps Uber is not a direct offset of public transit-

Reasons for taking Uber are different than for public transit