**MSCA COVID-19 Hackathon Project**

*by* ***MScA Research Group***

**Team:** Devanshi Verma, Oleksiy Anokhin

**Audience:** A working anti-crisis group the Chicago City and cab drivers’ union

**Objective:**

* evaluate the impact of COVID-19 on financial well-being of Chicago taxi drivers and their families
* evaluate the behavioral changes of Chicago taxi customers

**Research Hypotheses:**

* COVID-19 negatively affected the financial well-being of Chicago cab drivers and their families
* COVID-19 changed the behavior of Chicago cab clients

**Data and source:**

* Taxi trips in Chicago (12/2019 – 06/2020)
* Taxi trips reported to the City of Chicago in its role as a regulatory agency. To protect privacy but allow for aggregate analyses, the Taxi ID is consistent for any given taxi medallion number but does not show the number, Census Tracts are suppressed in some cases, and times are rounded to the nearest 15 minutes
* For 12/2019 – 06/2020 dataset has 4137294 \* 23 columns

**Topics for exploratory data analysis (before and during COVID):**

* Payments
  + Amount
  + Type (Credit card/Cash)
* Tips
* Rides
  + Total
  + By company
* Mobility
  + Duration of a trip
  + Mileage of a trip
  + Hours of use
* Hotspots
  + Pick up spots
  + Drop off spots

**Results:**

* Ridership dropped by 95% - from 50000 rides to 2500 rides per day
* Some companies adapted better (case of Taxi Affiliation Services vs Flash Cab)
* The average duration of a trip increased by 3 minutes – people make longer trips (especially due to the lighter traffic)
* The average mileage of a trip increased by 1 mile
* The average daily fare per ride remained the same – about $16
* The cumulative revenue dropped by 95% (from $750000 to $45000 per day)
* The distribution of rides by hour changed and become more condensed – people use taxi cabs much less during evenings and nights

**Conclusions and recommendations:**

* COVID-19 significantly affected Chicago cab drivers and their families
* Tax payments will probably decrease due to such drop of traffic
* Companies should develop more flexible pricing models during COVID