**Team Members: Mabel Alamu, Jen Johansson, JB , Radhika Sagar**

**Project Title:**

The correlation between COVID cases and number of pets being adopted.

**Project Description/Outline (2-4 sentences)**

We’ll take a look at available COVID data (documented, positive test results) and cross-reference it with publicly available data related to pet adoptions to determine if there is an increase in pet adoptions as the pandemic continues.

**Research Questions to Answer (4 minimum)**

1. What is the baseline adoption rate by month/year for city x? Plot 2018, 2019,2020
2. Is there an increase in adoption rates after the pandemic hit the US (ie after March 2020 for city x)? theory: more people are staying home and feeling isolated
3. If there is a correlation to adoptions, does it correlate to documented COVID cases?
4. Is there a specific type of pet being adopted?
5. Most popular pet color?
6. Most popular breed?

**Null Hypothesis:**

There is no correlation between COVID positive cases and pet adoption rates.

**Alternative Hypothesis:**

There is a positive correlation between adoption rates in 2020 (after March) due to the COVID related lockdowns (as indicated by COVID cases).

**Null Hypothesis:**

All pets are adopted at the same rates regardless of environmental or external factors.

**Alternative Hypothesis:**

Dogs are the most adopted pets over other species such as cats, rabbits, etc.

BONUS:

1. Extend the analysis to multiple cities. Do correlations to COVID differ between cities?
2. As COVID death rates increase, are there more intakes?
3. Is there a less impacted county/city of COVID, and compare their adoption rates

[**https://covidtracking.com/data/api**](https://covidtracking.com/data/api)

**Data Sources**

<https://data.virginia.gov/resource/bre9-aqqr.json>

<https://data.norfolk.gov/Government/Norfolk-Animal-Care-and-Adoption-Center-NACC-/vfm4-5wv6> **for Norfolk, VA**

**Dallas COVID:**

[**https://www.kaggle.com/sudalairajkumar/covid19-in-usa**](https://www.kaggle.com/sudalairajkumar/covid19-in-usa)

<https://www.dallasopendata.com/City-Services/FY2020-Dallas-Animal-Shelter-Data/7h2m-3um5>

**Rough Breakdown of Task (Who's doing what)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Task** | **Targeted Due Date** | **Owner** |
| 1 | Find additional data sources – everyone - done | **done** |  |
| **2** | Create starter notebook (Jupyter) | **done** |  |
| **3** | Start coding access to covid API | **done** | **Radhika** |
| **4** | Start coding access to adoption API | **done** | **Radhika** |
| **5** | Decide what data is needed for analysis – team meeting Dec 3 | **Dec 3** | **Team** |
| **6** | Look for different COVID data that maps to city | **Done** |  |
| **7** | Create dataframe for COVID | **Saturday Dec 5** | **JB** |
| **8** | Create dataframe for City x Adoption | **Saturday Dec 5** | **Mabel** |
| **9** | COVID > reducing dataset to align to City x | **done** |  |
| **10** | COVID | City x > total positive cases per month? We need to decide what data we need. | **done** |  |
| **11** | Data manipulation: count of adoptions by date, make sure dates are in the same format, merge on date | **done** |  |
| **12** | Plot: multiple line plot of adoption rate for 2018,2019,2020 | **done** |  |
| **13** | Plot: total COVID cases over time | **done** |  |
| **14** | Plot: scatter plot COVID cases and 2020 adoption rates | **done** |  |
| **15** | Plot: assuming a correlation, what is the most popular pet being adopted during the pandemic? Pie or Bar charts | **n/a** |  |
| **16** | Of the most popular breed, what is the most popular color? | **n/a** |  |
| **17** | Gender? | **n/a** |  |
| **18** | Age? | **n/a** |  |
| **19** | Identify a strategy to use statistics to validate null hypothesis | **done** |  |

**Notes on Adoption datasets:**

**Dallas: no sex, no age**

**Austin: yes sex, age**

**Norfolk: yes sex, age**

**LA: does not**

**Montgomery Cty: age, color and sex (this will be our primary dataset)**

**King Cty has age and gender and color (if we do comparison we will use this)**