***Investigating the Relationship between Noise Complaints and Housing Cost in New York City***

Proposal Video Presentation Script

MGT 6203 – Team 10

Submission Due: Sunday, March 23rd, 2023

**Note:** “- ” in the script below are the parts that a group member will read.

# Title Page

* Hello, my name is \_\_\_\_\_ and I’ll be presenting on behalf of group 10 which consists of Juan, Jane, Muhammed, Nickolas, and Hisashi.
* For our group project, we *Investigated the Relationship between Noise Complaints and Housing Cost in New York City.*

# Presentation Outline

* In this presentation, I’ll:
  + Provide background information about NYC’s housing market and environmental noise,
  + Clearly state the business problem we seek to address and discuss a few articles related to the business problem,
  + Talk about our planned approach including the models we plan to use,
  + Share our initial hypotheses, and
  + Provide an update on our progress so far.

# Background Information

General NYC Information

* NYC is a vibrant metropolitan city that consists of 5 boroughs (Manhattan, Queens, Brooklyn, Bronx, and Staten Island) and is home to approximately 8.5M people (2021 US Census data); the largest city in the US. NYC’s rich history, culture, employment opportunities, and nightlife attract people from all walks of life. And because of all the hustle and bustle, it has also been nicknamed “The City that Never Sleeps”.

Environmental noise in NYC

* However, NYC is also a very noisy place to live. In fact, noise is the top civic complaint by New Yorkers who can . Noise is Numerous studies show that New Yorkers are frequently exposed to noise levels (say something about decibels here and the articles) beyond the limit
* What is environmental noise?
* What is NYC’s noise code?
* Is it a problem in NYC?
* Who cares about it?
* How is environmental noise/noise pollution measured?
* What can residents do in NYC to reduce their exposure to noise?
  + Talk to your neighbors.
  + Call 311 or submit a noise complaint online.
  + Talk to your children about the dangers of noise and limit their exposure to noisy places.
  + Wear hearing protection

NYC housing market and prices

* According to US Census data, the number of housing units in NYC has increased from 3.36M in 2011 to 3.52M in 2020. During that period, there’s been a year over year increase in housing between 9.05K and 27.4K.
* How big is the housing market in dollar terms, units, etc.?
* How many units are there in NYC?
* How expensive is it to live in NYC?
* Is housing affordable?
* What is rent controlled housing and how does it impact residents?
* What are the average housing and rental prices in NYC’s five boroughs?
* Is it difficult to find housing?
* Is there a trend over the past 5 or 10 years?
* How do residents feel about housing availability and prices in NYC?

# Problem Statement

# Planned Approach

## Data Collection

* For our analysis, we’ll be using 5 large datasets including:
  + The NYC 311 noise complaint data between 2010 and 2023 that is available from NYC Open Data. With over 32 million records and 41 columns, we’ll need to clean the dataset and extract the primary variables of interest including the *Created Date, Complaint Type, Descriptor, Borough,* and *Incident Zip Code.*
  + Two Zillow datasets. The Zillow Home Value Index (ZHVI) and the Zillow Observed Rent Index (ZORI), which represent the typical home value and the typical rental value for a geographical area.
  + The estimated population by zip code from the U.S. Census Bureau.
  + And income by zip code from the Internal Revenue Service.

## Data Preparation & Exploratory Data Analysis (EDA)

* At a high level, data preparation and EDA will include:
  + Summarizing noise complaints by geographical area and by month and year,
  + Discarding irrelevant variables in each of the datasets,
  + Normalizing the data (e.g., number of complaints/1000 residents)
  + Joining the various data sets by month and zip code,
  + Visually analyzing the relationship through scatter plots, histograms, boxplots, and correlograms, and
  + Identifying outliers and understanding their potential impact on our models and model interpretation.

### Modelling

### Variable Selection

### Goodness of Fit

# Initial Hypotheses

* We hypothesize that using a nontraditional predicting variable such as noise complaints (a proxy for noise level) together with traditional variables could lead to surprising insights about NYC housing and rental prices and provide value to a variety of stakeholders.
* We hypothesize that noise complaints are negatively correlated with NYC housing and rental prices and that the relationship is statistically significant.

# Progress Update

**Note:** this section will need to be updated after we do some exploratory data analysis and regression analysis with the datasets. In particular, they want to hear how things are going with respect to:

1. Data preparation and cleaning
2. Any unexpected problems, challenges, and interesting findings
3. To discuss things that aren’t working.

# References

McKinsey & Company. (2018, May). Getting Ahead of the Market: How Big Data Is Transforming Real Estate. McKinsey & Company. [https://www.mckinsey.com/industries/real-estate/our-insights/getting-ahead-of-the-market-how-big-data-is-transforming-real-estate#/](https://www.mckinsey.com/industries/real-estate/our-insights/getting-ahead-of-the-market-how-big-data-is-transforming-real-estate%23/)