

Exercise 8: Mapping Airbnb

ECON 256

Data Analysis and Visualization

Objective

Customize a map.

1 Set up Your R Workspace

Set up your R script with a preface, initializing TidyVerse as well as sf. eg:

```
setwd ("/Users/justintyndall/Desktop/myproject")
library(tidyverse)
library(sf)
```

2 Download the Data

I have posted a folder on Laulima that contains a shapefile of oahu. Download the file and put the folder into your working directory. **Unzip** the file.

Additionally, I have posted two .csv files on the course site: listings_2016.csv and listings_2018.csv. These files contain the location and characteristics of every Airbnb unit listed online in Oahu, including their latitude and longitude coordinates. The 2016 data was recorded in January, 2016 and the 2018 data was recorded in January, 2018.

3 Load Data into RStudio

Use the `read_sf()` command to load the shapefile into R.

Use two `read_csv()` commands to load the two .csv files into R.

You should now have three objects saved.

4 Plot the Data

Use the `ggplot()` function, combined with the `geom_sf()` function and the `geom_point()` function to plot the location of airbnb units on the map of Oahu. If you need a hint of how to plot these things, look back at your code for Exercise 6 and 7. The basic code should look something like this (with the blanks filled in):

```
ggplot() +
  geom_sf(_____) +
  geom_point(_____)
```

Produce two maps, one for 2016 Airbnb listings and one for 2018 Airbnb listings.

Now customize the style of your maps:

- use the `theme_void()` option
- change the color of Oahu
- make a change to the type and size of symbol you are using to plot the Airbnb locations
- the HEX code for Airbnb's branded color is `#ed6464`. Use this color for the airbnb location symbols.
- add a title
- add a caption with the data sources. Data sources are: "US Census Bureau and Inside Airbnb."

5 Compare the Maps

Save the maps as image files. You could do this by clicking on the "export" button on the plot viewer. Or you could add a `ggsave()` function as a line of code directly under where you produce the map.

```
ggsave("mymap2016.png")
```

Look at the maps side by side and answer the following questions as comments in your code: **Did the number of Airbnb listings on Oahu increase or decrease from 2016 to 2018? What is one neighborhood where there was a significant change in the number of listings?**

6 Send me Your Code

Save your R script. Name it with your last name, followed by the exercise number and submit it on Laulima.