PAM 6950 - Spring 2020 - Professor Rich
Homework #03

Introduction

Your first two homework assignments included a pre-packaged dataset and shapefile. You will now find spatially referenced data on your own. Homework 3 is due on **Monday, February 17th**. Requirements are below. On that day, you will be assigned to a partner and discuss each other's maps and identify revisions. In our next class (Monday, March 2nd), you will give a very brief presentation of your revised map and submit additional materials.

Warning: you will likely face several data complications that take time to resolve. **Start early**!

Instructions

- Pick any topic relevant to social science research.
    - Choose a topic you think you will analyze in your research paper.
    - The topic should allow you to exhibit "spatial thinking," meaning that you have a plausible reason to think geographic location and/or socially organized boundaries matter.
    - Find, download, and clean spatial data on the specific topic. You can use object (polygon, point, line) or field (raster) data.
    - You **must** have at least two unique sources of data that you will overlay. Note that a map of neighborhood poverty rates from the American Community Survey and neighborhood racial composition drawn from the Census would be inadequate for this exercise because they both come from the same agency / source.
    - Your data can be historical or contemporary. I recommend that you focus on a single point in time or a single year for mapping purposes. If your data are longitudinal, you can choose to focus on just one cross-section of data or you can create variables summarizing the time period.
    - Your data can focus on a single small area or cover an entire country, region, etc.
    - Here are some examples of spatial data:
        - County crime statistics across the U.S.
        - Annual precipitation or temperature in a given area
        - School district boundaries and test scores in the top 50 metro areas of the US
        - Location of banks and payday lenders in the Denver area
        - Country per capita GDP, mortality rates, and fertility rates
        - Upward economic mobility rates for children born from various neighborhoods across the U.S.
        - Locations of public health clinics in Cleveland
        - Railway lines and stations in India, and passenger volume per day
        - Housing sales data from Zillow

        - Neighborhood racial composition (or poverty, income, etc.)
        - Concentration of indigenous persons in states across Mexico
        - Industry labor force participation
        - Historic neighborhood redlining maps from the Homeowners Loan Corporation
        - Age distribution in rural counties throughout the US
        - Locations of public housing in New York City

- Create a professional map adhering to the following constraints:
    - Your map must communicate an idea that you can explain in 150 words or less.
    - Your map should fit on a single 8.5x11 page. It is okay to have more than one map on a page but it must all fit on one page.
    - You must show at least two overlaying layers of data. It is okay to include more than two layers of data but be careful to limit its complexity. See Rich and Jennings 2015 for a simple example.
    - Your map should be drawn at a geographic extent to show that is suitable for the type of research question you are analyzing. You can zoom in on a single exemplary area for detail or you can pan out to show a wide distribution (of U.S. counties, for instance)—but you need to make a choice that maximizes clarity for viewers.
    - Your map should have a legend, axis bar, and a title. A north arrow is optional.
    - Your map should convey context to the reader. That is, don't just show a map of a polygon floating in space—help us understand where this polygon exists in the world.
    - There should be notes identifying the sources of data and any definitions that are unclear. It is okay to have a long note for the map, but it should not include any analysis or interpretation—just clarifying facts.

- Accompanying the map, on a separate document, respond (informally) to the following questions:
    1. Summarize the idea your map communicates in 150 words or less
    2. Provide the links of the data sources you found. Was it hard to find data on your topic?
    3. Report the coordinate system you used in the map projection. Explain your choice for this coordinate system.
    4. Explain what kind of "symbology" you used for each layer and why you choose it.
        - If you have area data, did you make a choropleth map? If not, why? If so, what color ramp did you use and why? How did you define your thresholds for color shade (if applicable)?
        - If you have point data, did you use a graduated scale or nominal symbols? What informed your choice?
        - If you have line data, how did you incorporate data to visualize it
    5. Are you satisfied with the map?