

Map Project 3 | Infographics

Introduction

This project will focus on creating an infographic that includes a thematic map(s), charts/graphs, and facts using quantitative data. You will be required to find & compile quantitative data for your area of interest, visualize the data using an appropriate method (choropleth, dot density, graduated symbol, cartogram, or density surface), create charts and/or graphs, and pull out some interesting facts for the infographic.

Deliverables / Due Dates

We will have a Map Critique for this project on Tuesday March 6, 2018. Each student should come to the critique prepared with a draft of their map.

March 6. Bring first draft maps to class (MC3)

March 18. Final map submitted to instructor

The final map submission will include (reference the *'How to' Submit an Assignment* on the course website):

- First draft map
- Written feedback received from MC3
- Final map

Instructions

Infographics are a visual image used to represent information or data. Maps are one way of visually representing data, but so are graphs, charts, and tables. The infographic should inform people on a topic without too much reading – information is displayed using graphics.

Thematic maps are maps that tell a story. As opposed to reference maps, whose focus is on the representation of the location of earth features, thematic maps represent the shapes and extents of thematic distributions. There are many kinds of thematic maps. In this exercise we will concentrate on producing thematic maps as a choropleth, graduated or proportional symbol, dot density, cartogram, or density surface. Each map that you produce should be able to stand-alone and tell a story of its own.

Here are the guidelines for the assignment:

- The maps should be designed for an **8.5 x 11 or larger** piece of paper, printed in **color**.
- This is an **infographic with at least one thematic map**, which means it is meant to tell a story.

- The infographic will include at least **one chart/table/graph** and at least **two factoids** around the map that summarize or highlight interesting aspects of the data.
- Consider the **color rules and connotations** when choosing color for map and elements around the map.
- You must create a **custom color ramp** for your map(s).
- Follow best practices for **aggregating quantitative data**, including **normalization** if applicable.
- The **audience is general** – people of all ages and backgrounds that are interested in the topic of your choice.
- Follow best practices in the **placements, alignment, and direction** of all labels.
- The maps should include all the necessary **map elements**, such as title, subtitle, scale bar, north arrow, legend, text, sources, cartographer, etc.
- Follow best practices in **placements, style, and visual arrangements** of all map elements on the page.

Here are the general steps for Thematic Mapping:

1. Select an area of interest (AOI) to map out a phenomenon. This can be a city, state, country, neighborhood, etc.
2. Find quantitative data for you AOI. Many states, counties and cities have websites that host GIS data. The US Census Bureau is also a good resource for a wide variety of quantitative data.
 - a. It is likely that you will find a boundary file for your AOI, and a tabular file of your quantitative data (i.e. excel table). Put your GIS skills to work using a table join. Review your notes from the GIS classes to remember the formatting requirements for your table so that it successfully joins.
3. Determine if you need to 'normalize' your data. Normalization is "the process of dividing one numeric attribute value by another to minimize differences in values based on the size of areas or the number of features in each area. For example, normalizing (dividing) total population by total area yields population per unit area, or density." (GIS Dictionary)

4. Choose how you will visualize your data: Choropleth, dot density, graduated or proportional symbol, cartogram, and/or density surface.
 - a. Your map(s) should either make a scientific point OR a persuasive argument for some sort of socio/political/economic action. Either way, the map should be able to tell a 'story'.
 - b. It is required that you use a custom color ramp to display your data (choropleth, graduated symbol and/or density surface). You can use one from the Peterson or Brewer books used in class.

There are a number of considerations that need to be made when mapping out quantitative data.

- **Modifiable Areal Unit Problem (MAUP)** – data is sometimes aggregated into arbitrary areal units such as census tracts. Consider that a tract of unusually high density may be vacant except for one corner or edge that happens to be near a major road. Be explicit on your map about the spatial units.
- **Normalization** – sometimes when you divide one variable by another you get some odd looking numbers that may be hard for the map-reader to understand. Consider changing those numbers to reflect units that are more common. For example rather than having a number of .00004514 cancer deaths, convert the number to 4.5 cancer deaths per 100,000 people.
- **Fallacy of Ecological Inference** – Aggregated data are generalizations that may tell us something about the character of an area or the people living within that area. Avoid taking those characteristics and applying it to sub-groups or individuals within the aggregation.