Lab 7 ESDA in Geoda
Due Nov 13, 2014

1. Data preparation and open data in Geoda

Get a shapefile for Buenos Aires election dataset. Open the shapefile from Geodata by click  from the main manu. In the popup window, choose INDRANO as key variable and click Ok.

2. Choropleth mapping

There are four options: quantile, percentile, box plot and standard deviation
Percentile mapping: a percentile map shows the spatial pattern of a variable using its percentile values

Right click on a map, select Choropleth→Percentile. Then, choose the variable APR99PC (the electoral results for the center right party APR, "Action por la Republica"
Box Map: a box map corresponds to boxplot of EDA. It shows the spatial pattern of a variable with its quartile values

Right click on a map, select Choropleth→Box Map→Hinge = 1.5. Then select APR99PC variable

Open a boxplot to compare them. Select Explore→Box plot and then, select APR99PC again
In the boxplot, select positive outlier.

Assignment 1

- ✧ For the variable AL99PC (the electoral results for the centrist "Alianza"), make a box map and box plot, but choose negative outliers. Show your work.
- ✧ Briefly discuss the map pattern of the AL99PC variable and the spatial pattern of the negative outliers
- ✧ For the variable TURN99PC (the vote turnout), make a box map and boxplot, but choose negative outliers.
- ✧ Briefly discuss the map pattern of the TURN99PC variable and the spatial pattern of the negative outliers.

3. Conditional plot

Conditional plot: the distribution of a variable conditional on another variable

Choose Explore →Conditional Plot and choose Map View. Select EAST (X variable), NORTH (Y variable), and APR99PC (variable 1). Press Ok

Assignment 2

- ✧ Make a conditional plot for the variables AL99PC and TURN99PC.
- ✧ Discuss the map patterns for the AL99PC and TURN99PC given the EAST and NORTH variables

4. Brushing and Linking

For the rest of this exercise, use the crime dataset. Open the crime dataset. In the popup window, choose POLYID as key variable and click ok.
In order to browse the brushing and linking function, we will first make a choropleth, open the attribute table, and make graphs.

Percentile map: choose map→ Percentile and choose CRIME for variable. Press Ok

Histogram: choose Explore →Histogram and choose HOVAL for variable. Press ok

Parallel coordinate plot: choose Explore →Parallel Coordinate Plot and choose CRIME, HOVAL, INC for variables. Press OK
For linking, select polygons which are in the 4th range
For brushing, move mouse pointer on the map. Then, holding <Ctrl>key, make a rectangle with the mouse. Move the mouse pointer on the map freely and see the dynamic change of the selection.

5. More plots

Scatterplot: GeoDa provides dynamic functions on a scatterplot

Choose Explore → Scatter plot and choose CRIME (Y variable) and INC (X variable).
Choose Excludes selected. Then select potential outliers on the left button. Geoda provides the change of regression line and its coefficient value.
3D ScatterPlot: Using 3D scatter plot, the relationship between 3 variables can be investigated.

Choose Explore→ 3D scatter plot and choose HOVAL (X variable), INC (Y variable), and CRIME (Z variable).
Moving a mouse, you can change the perspective of the 3D scatterplot

Assignment 3.

Make a boxplot of INC variable and select the observation that has the highest INC value. Include the boxplot in your report
Examine the boxplot. Is the selected observation a potential outlier? Briefly discuss it
Make a quantile map with INC variable and select the observation with highest INC value. Include the quantile map in your report.