Homework 9: Smoothed maps of Florida breast cancer mortality rates by race

PHC 6937: Spatial Epidemiology-Smoothed disease map

**Project Background:**

We have a shapefile with the following key variables:

**Name2\_: name of county in FL;**

**CWF7094: number of breast cancer deaths in White females in FL;**

**CBF7094: number of breast cancer deaths in Black females in FL;**

**POPWF7094: Total number of population of White females in FL;**

**POPWF7094: Total number of population of Black females in FL;**

We like to investigate the spatial patterns of breast cancer mortality rates by county and race in FL. You are asked to create the raw rate map and the maps with smoothed rates using the methods of raw rate, empirical Bayes rate, spatial rate and spatial empirical Bayes rate by race. (*Note: the definition of neighborhood is based on “Rook contiguity” with the first rank when you create the smoothed rates*.)

1. Open the shapefile of “Florida\_breat\_cancer” into OpenGeoda ;
2. Calculate the raw and empirical Bayes, spatial rate and spatial empirical Bayes smoothed rates for both White and Black females;
3. Save the calculated rates in the attribute table and export as a new shapefile;
4. Start the ArcMap, import the new shapefile and create the following cholopleth maps. (*All following maps use the same categories of the classification of the rate, which you need to specify the appropriate cut-off points; Each map also includes at least the title and the legend because it is a thematic map.*)
   1. Raw and smoothed breast cancer mortality rates for White females;
      1. Map 1: raw rate for White females;
      2. Map 2: empirical Bayes rate for White females;
      3. Map 3: spatial rate for White females;
      4. Map 4: spatial empirical Bayes rate for White females;

(Note: Display four maps in a single page)

* + 1. Export the maps as a picture and insert below evaluation;
  1. Raw and smoothed breast cancer mortality rates for Black females;
     1. Map 1: raw rate for Black females;
     2. Map 2: empirical Bayes rate for Black females;
     3. Map 3: spatial rate for Black females;
     4. Map 4: spatial empirical Bayes rate for Black females;

(Note: Display four maps in a single page)

* + 1. Export the maps as a picture and insert below evaluation;

1. Do these maps of raw, empirical Bayes, spatial rate and spatial empirical Bayes smoothed rates are similar? If they are different, please explain why they are different.