

**SOCIOLOGY 4670/5670: SPATIAL DEMOGRAPHY
SPRING 2020**

**Homework #1
Due March 16, 2020**

Spatial Introduction to a Major Metropolitan Region or City/Suburbs

- I. Choose 5 to 8 variables from Social Explorer. You can choose your MSA region or central city/suburbs (this will be more intellectually challenging). Your data analysis should be done at the census tract level.
- II. One variable should be a dependent variable and the remaining variables should be your independent variables.
- III. Compute spatial descriptive statistics for your dependent variable and two independent variables. Summarize your results in a table. You may want to include a few maps of the spatial descriptive statistics.
- IV. Compute a Moran's I statistics for all your variables at the census tract level. You can choose the weight matrix or compare how the results vary by different types of weights.
- V. Create a table for a bi-variate Moran's I analysis. (1 dependent and 2 independent variables at a minimum).
- VI. Create a grid for your MSA region or Central City/Suburbs. You can choose the scale for grids.
- VII. Compare the Moran's I statistics for the white population and black population using census tracts and grids.
- VIII. Using the table from Part IV, create LISA or Local G* maps of key variables (hint: the top 2-3 variables that are significant)
- IX. Create 2-3 BiLISA maps based on your initial findings.
- X. Write up your results. Your write-up should be 6-9 pages of text. You should include maps and tables to support the text. Your maps should be a combination of thematic maps and spatial descriptive statistical, LISA and BiLISA maps.

Grading:

The assignment is worth 30% points and will be evaluated according to the standard grading criteria for the course.