

Baltimore Life Expectancy Project

Anton Kvit, 10/28/2016 Note: This code was written using a Windows machine, and may have difficulties when read on Mac machines

Make sure the following R packages are installed: tidy, geoR, dplyr, maps, maptools, rgdal, rgeos, sp, spatialEco, plyr, RColorBrewer, ClassInt, spatstat, spdep, sp, usdm, readr, lubridate, rmarkdown.

Baltimore_Life_Expectancy_Analysis.Rmd This file contains the final write up and the sources to the rest of the code

create_directories.R This file contains code to create all the necessary directories

Get_raw_data.R This file contains code to get all the raw data and shapefiles from various sources

Clean_Point_Data.R This file contains code to clean the raw data, and prepare data for merging using ArcGIS 10.4.1

Exploratory_1.R This file contains code for initial exploratory analysis, some Moran's I plots to determine whether there is spatial autocorrelation in the model, and some analyses to determine which parameters should be used in the final model

Exploratory_2_large_model.R This file contains code for a spatial simultaneous autoregressive lag model to account for spatial autocorrelation, that ended up being too big to be handled by the machine this code was written on

Exploratory_3_Moran_I.R This file contains code for a very early exploratory analysis, looking at spatial autocorrelation

Final_Analysis.R This file contains code for the final model as well as the final figures used in the write up

To reproduce the results of the Baltimore Life Expectancy Analysis:

Final_Analysis.R can be run in order to reproduce the final results and figures used in the write-up. It will use the shapefiles from the Analyzed_Data/ArcGIS folder, that were obtained from merging files in ArcGIS 10.4.1. The steps taken for this merging are outlined in the appendix at the end of the write-up.

Note: Due to the large size of the ArcGIS shapefiles and raw data (~1 GB), they were not uploaded to GitHub, but are available via a Google Drive link.

Exploratory_1.R can be run in order to reproduce the additional exploratory figures.

create_directories.R, Get_raw_data.R, and Clean_Point_Data.R can be run in order to download all the data necessary for this analysis, and prepare it for merging in ArcGIS 10.4.1