

# Geographic Data Science

Global Spatial Autocorrelation

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**Global Spatial Autocorr.**

# Global Spatial Autocorr.

## “Clustering”

*Overall trend where the distribution of values follows a particular pattern over space*

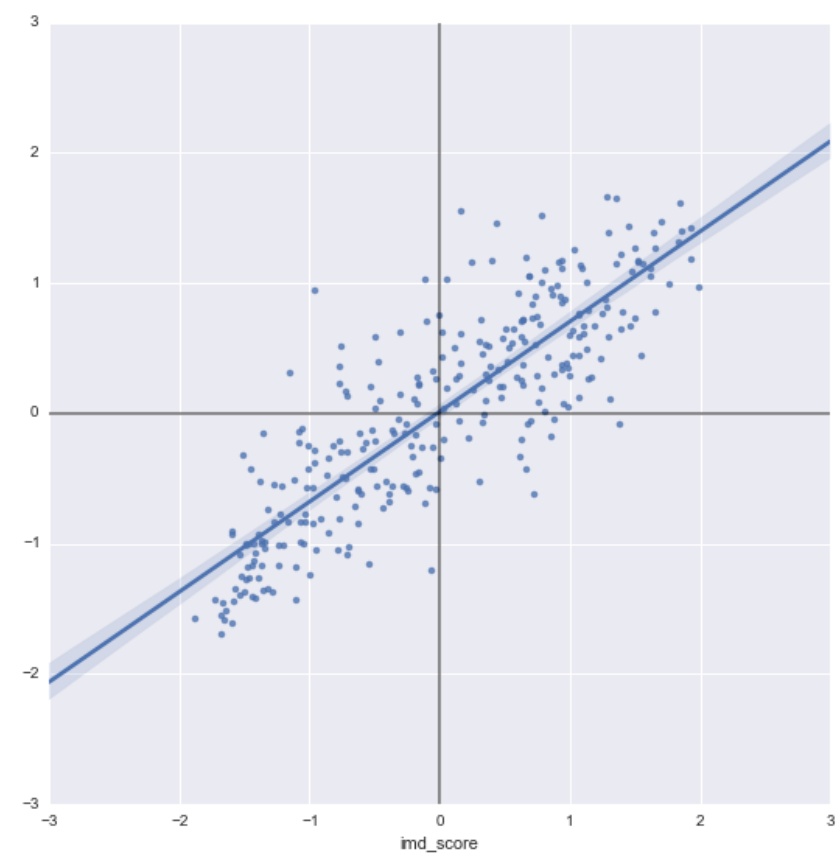
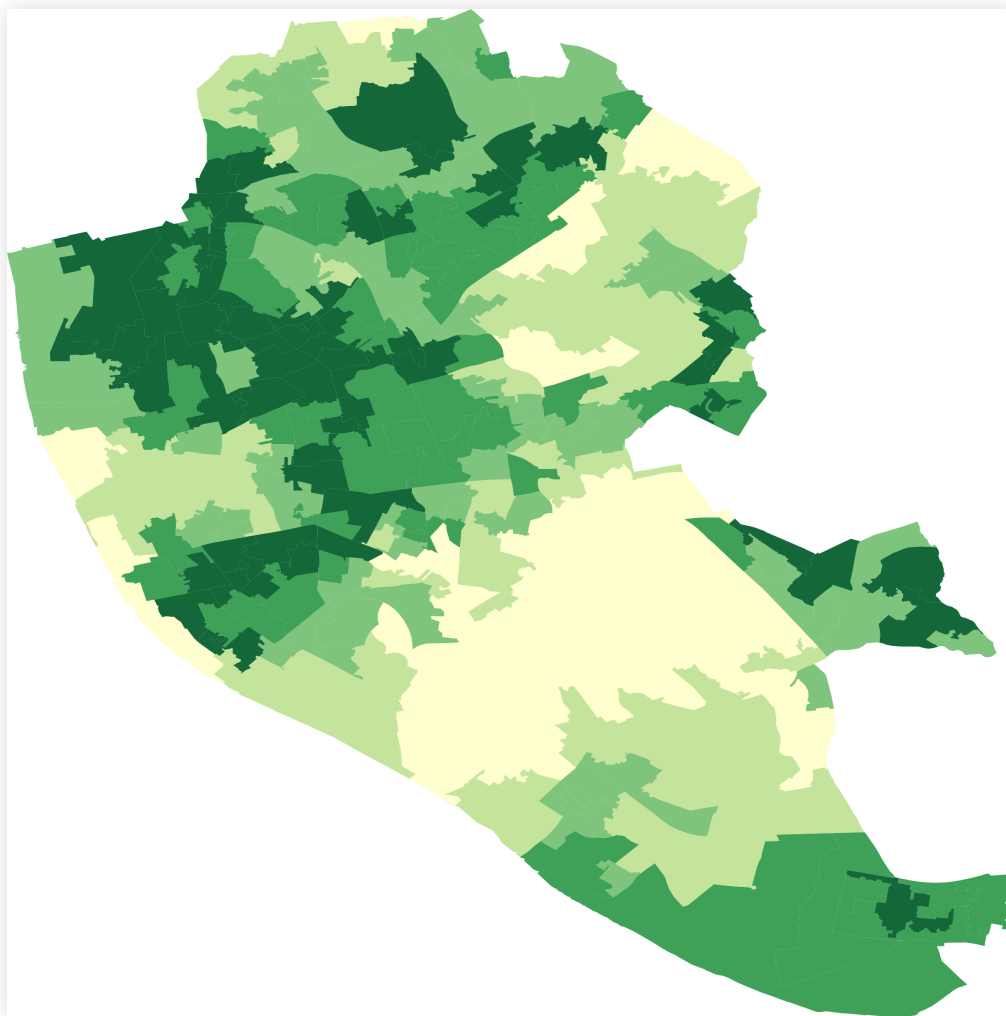
**[Positive]** Similar values close to each other (high-high, low-low)

**[Negative]** Similar values far from each other (high-low)

How to measure it???

# Moran Plot

- Graphical device that displays a variable on the horizontal axis against its spatial lag on the vertical one
- Variable and spatial weights matrix are preferably standardized
- Assessment of the overall association between a variable in a given location and in its *neighborhood*



# Moran's I

Formal test of global spatial autocorrelation

Statistically identify the presence of clustering in a variable

Slope of the Moran plot

Inference based on how likely it is to obtain a map like observed from a purely random pattern



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