

# Maps in **Stata** - New Developments

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Maps are the original dataviz since 25000 BC

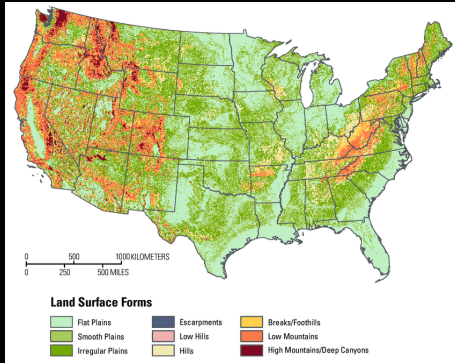


(a) The Ming empire (1389)



(b) Pomponius Mela's world map (45 AD)

## Map types



(c) Rasters



(d) Vectors

Vectors contain **areas**, **lines**, and **points**.

## Shapefiles

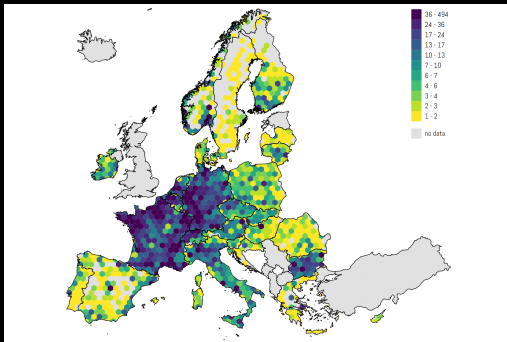
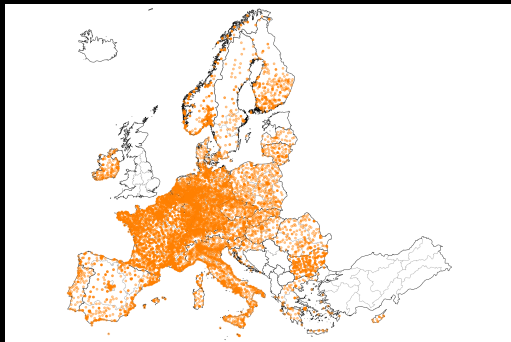
- The spatial information of vector layers comes in many formats but the most popular are **shapefiles**.
  - The format is defined by ESRI, makers of ArcGIS, and one of the oldest commercial GIS service providers
- Each shapefile is a collection of files, of which the three most important are:
  - **.dbf**: contains the attributes
  - **.shp**: the core file with the shape information
  - **.prj**: the projection file



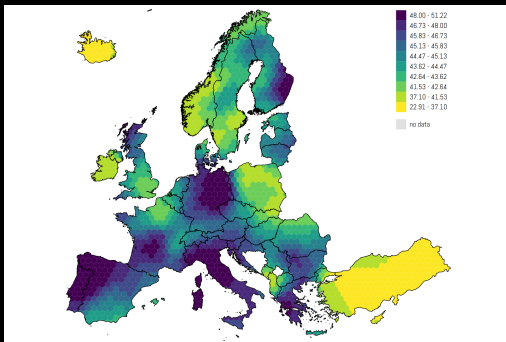
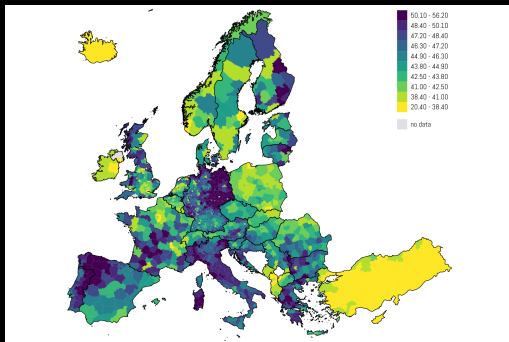
## spmap vs geoplot

	spmap	geoplot
Developed by	Maurizio Pisati (U. Milano Bicocca, Italy)	Ben Jann (U. Bern, Switzerland)
First release	Dec 2006	Feb 2023
Last updated	Jan 2018	Aug 2024
Requirements	Stata 15	Stata 17+ (ideally v18): (frames, clegends)
Multiple layers	Limited (one per polygon, line, points)	Unlimited
Color palettes	Limited but expandable	Unlimited
Customizations	Decent options	High

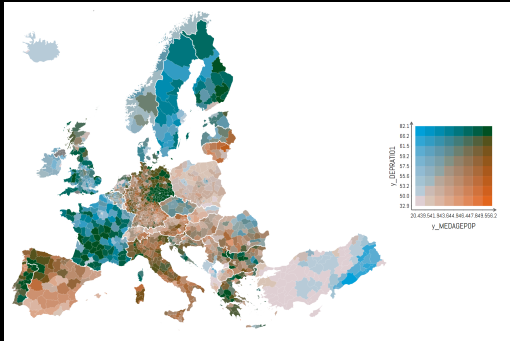
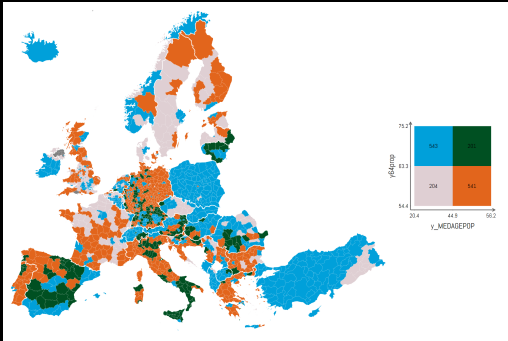
## geoplot: Point Density



## geoplot: Spatial Smoothing



## bimap: Mapping two variables



Data: <https://github.com/asjadnaqvi/The-Stata-Guide/tree/master/GIS>

The-Stata-Guide / GIS /	
cities.dta	new GIS layers
cities_data.dta	new GIS layers
cities_shp.dta	new GIS layers
countries.dta	new GIS layers
countries_shp.dta	new GIS layers
demo_r_pjanind3.dta	GIS folder updates
demo_r_pjanind3_2022.dta	new GIS layers
lakes.dta	new GIS layers
lakes_shp.dta	new GIS layers
nuts0.dta	GIS folder updates
nuts0_shp.dta	GIS folder updates
nuts1.dta	GIS folder updates
nuts1_shp.dta	GIS folder updates
nuts2.dta	GIS folder updates
nuts2_shp.dta	GIS folder updates
nuts3.dta	GIS folder updates
nuts3_shp.dta	GIS folder updates
nuts_all.dta	new GIS layers

Get the following three packages:

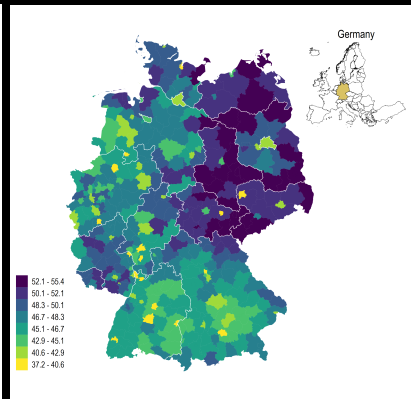
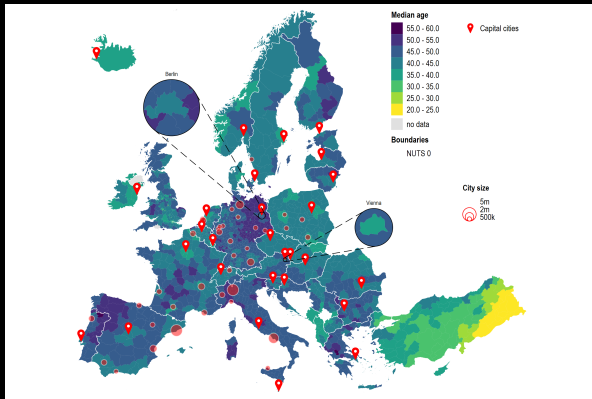
```
ssc install geoplot, replace // the core package
ssc install palettes, replace // for customizing colors
ssc install colrspace, replace
ssc install moremata, replace // for additional functionality
```

Set your font:

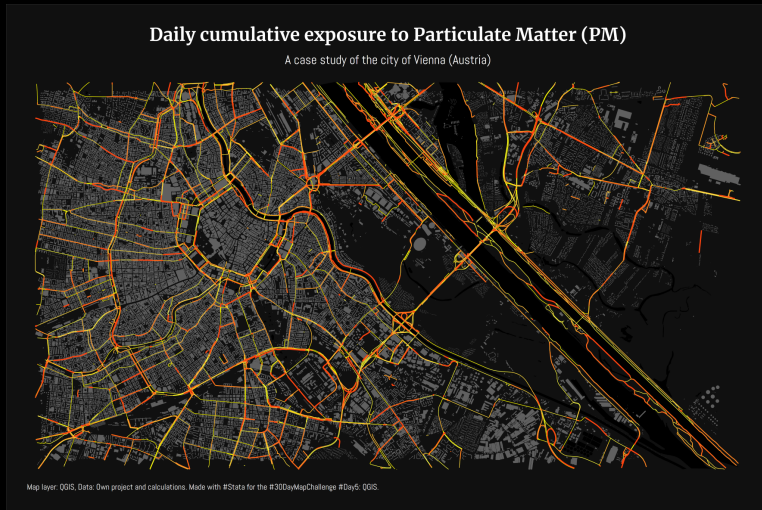
```
graph set window fontface "Arial Narrow" // narrower fonts fit better
```

Let's make some maps!

## geoplot

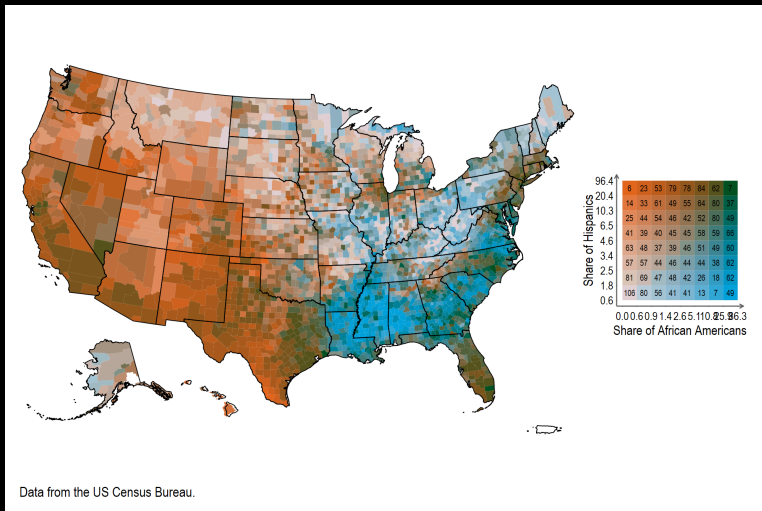


## custom map + QGIS





## bimap



## custom map + spikes

### Social Connectivity Index - UK

Lines show NUTS 2 regions with the highest connectivity outside the origin country



Map layers: SGGIS Eurostat, SCI data Facebook

### Social Connectivity Index - Poland

Lines show NUTS 2 regions with the highest connectivity outside the origin country



Map layers: SGGIS Eurostat, SCI data Facebook

## Rate of depletion of available ground water

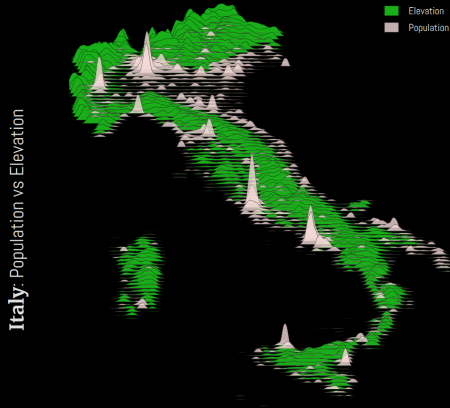


Data source: EarthStat, University of Minnesota (USA), Brauman et. al. (2016): Water depletion: An improved metric for incorporating seasonal and dry-year water scarcity into water risk assessments. *Elementa: Science of the Anthropocene*.  
Made in #Stata for the #30dayMapChallenge #Day13: Natural Earth.

## Scatter plot extracted from rasters



## Ridgeline plot extracted from rasters







Data sources: JRC Geostat 2018 Population raster, Copernicus elevation raster v1.1. @AsjaNagy





## More map examples

Thank you!

More Stata viz:

-  [The Stata Guide on Medium](#)
-  [The Stata Gallery on Medium](#)
-  [StataViz portfolio](#)
-  [#30DayMapChallenge 2021](#)

Connect with me:

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-  [AsjadNaqvi](#)