

tmap: creating thematic maps in a flexible way

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A thematic map is a geographical map in which statistical data are visualized. The theme refers to the statistical phenomena that is shown, such as the unemployment rate at municipal level. The best known thematic map type is the choropleth, where regions are coloured according to a statistical variable, for instance unemployment rate or population density. Another popular thematic map type is the bubble map, in which the sizes of the bubbles are defined by a statistical variable, for instance city population.

With the tmap package, thematic maps can be generated with great flexibility. The syntax for creating plots is similar to that of ggplot2. A thematic map is created by stacking layers, for instance one for colouring municipalities, one for thick borders of higher level regions, and one for text labels. It is also possible to create small multiples. Layout settings such as legend positioning and margins can be specified for particular shape objects by layout themes. The standard work flow that is needed to create a thematic map is embedded in tmap by several convenient functions, e.g., for reading ESRI shape files, setting the proper projection, appending data, and calculating densities from absolute values.