

Thematic Mapping

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Definition: Thematic Maps show the spatial distribution of a wide variety of qualitative and quantitative information. In fact, almost any subject that can be expressed as a geographical distribution can be mapped.

Qualitative thematic maps depict the distribution of nominal data (data which is classified without hierarchy). Examples of this type of map would show the location of different types of precipitation (for example, rain, snow, hail), vegetation or employment.

Quantitative thematic maps are more complex, and involve the location of ordinal, interval, and ratio data. Ordinal data provides the map user with information about rank or hierarchy, for example, a map showing populated places classified as city, town or village. Maps symbolizing interval or ratio data provide more precise information. They employ a scale of measurement, usually described in the map legend. For example, a rainfall map indicating the number of millimeters per year in different locations, would illustrate interval data. There are six common types of quantitative thematic maps; Dot map, Choropleth map, Graduated Symbol map, Chart map, Flow map and Isarithmic map.

The Dot map uses uniform point symbols to show spatial data, with each symbol representing a unit value. The Choropleth map symbolizes, with shading, derived data based on administrative units. The derived data are usually classified prior to mapping and are symbolized using a color scheme. The Graduated Symbol map uses different sized symbols such as circles, squares, or triangles to represent different range values. The Chart map uses either pie charts or bar charts. A variation of the graduated circle, the pie chart can display two sets of data simultaneously. The Flow map displays different quantities of flow data by varying the width of line symbols. Similar to the graduated symbols, the flow symbols usually represent ranges of values. The Isarithmic map uses a system of isolines to represent a surface. Each isoline connects points of equal value (Chang, 2004).

The legend is the key for understanding the theme of the map. Composing a thematic map almost always begins with choosing categories and symbols to represent the aspects of a data set that illustrate the cartographer's point. The legend is a key to these categories and their symbols.

- The categorization scheme should not include more categories than are required for illustrating the point. More than 5 to 7 different thematic categories is more than most people can hold in their head when scanning a map.
- The legend heading and labels for symbols should be completely and clearly understandable.
- The categories portrayed in the legend, whether qualitative or quantitative, should each be something that the user can visually imagine. Always avoid arcane or arbitrary classes and definitions when you can use a more evocative, natural scheme (Cote).

References/Sources:

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