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1) To what extent are people able to interpret data and geography in a spatially ordered treemap (SOT) by performing complex graphical perception tasks?

Which of the 4 maps to the right shows the geographic distribution of the map to the left?

2) Tasks

| Objective 1 | To investigate whether people are able to make sense of SOTs & to identify the kinds of inference tasks that are suitable for such a technique. |
| Objective 2 | To investigate and identify what kind of support mechanisms & metaphors (visual indicators or morphing) are useful in supporting the process of spatial problem solving & decision making when using SOTs. |
| Objective 3 | To investigate the effects of spatial ability; that is to examine how task performance and support mechanisms are modulated by spatial ability with respect to SOTs. |

3) Hypotheses

**HYPOTHESIS ONE:** Statistical tasks
Ho: Choropleth (CHO) maps will perform better than SOT on statistical tasks;
H1: SOT will perform better than CHO on statistical tasks.

**HYPOTHESIS TWO:** Geographical tasks
Ho: CHO maps will perform better than SOT on geographical tasks;
H1: SOT will perform better than CHO on geographical tasks.

**HYPOTHESIS THREE:** Statistical Geographical tasks
Ho: CHO maps will perform better than SOT on statistical geographical tasks;
H1: SOT will perform better than CHO on statistical geographical tasks.

**HYPOTHESIS FOUR:** Hierarchical tasks
Ho: CHO maps will perform better than SOT on hierarchical tasks;
H1: SOT will perform better than CHO on hierarchical tasks.

**HYPOTHESIS FIVE:** Effects of spatial ability
Ho: Subjects with better scores in the spatial ability test will outperform subjects with poor scores in the spatial ability test in the perceptual tasks;
H1: Spatial ability has no effect on perceptual tasks.

References