

Continental US Counties Cancer Examples

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The examples are from around 2002. The files have been edited a bit to improve on the labeling. The general goal was use CCmaps to look at cancer rates and condition on two available risk factors to see what would appear. Expectations were low for two reasons. First the risk factor data is far from ideal. Second the CCmaps two-way modeling is primitive. The patterns shown in most of the examples are very weak. The relationship between the percent receiving mammograms and breast cancer mortality so weak, I wondered if mammograms made a difference in reducing the mortality rates. A few years later this became a hot topic.

Occasionally a strong pattern appears. Here the word “strong” is relative to most of the other examples. The conditioning variables in such patterns may not be causal in the slightest but rather can be confounded with causal variables that are almost inevitably not available. I like to use such examples in teaching. I ask my students to conjecture about causal variables that might be associated with the conditioning variables. (Some are quite good at this.) In publication I indicated an association among three variables precipitation, percent below the poverty level and white male lung cancer mortality for health service areas. The example here suggests an association of the three variables, percent Hispanic, socioeconomic status and white male lung cancer at the county level.

CCmaps can show computed variables and their standard errors. The “Estimated Standard Error on a Slider” example has computed the percent change for two time periods, obtained its standard error and two both on separate sliders. The error propagation computation also based on the standard errors of the original variables. That counties with small values for the first time period tend to have high standard error for percent change is no surprise. In general some measures of variable quality may well have patterns in maps. It can be worth looking.

Of course CCmaps can show predicted values, residuals and one predictor (or candidate predictor) in a modeling context. If someone is really interested I could likely find the model. The data reminds me that I was curious about humidity and lung cancer at the time. I still am.