

Online Appendix (December 2018)

This is an online appendix for the manuscript titled, “Spatial Tools for Case Selection: Using LISA Statistics to Design Mixed-Methods Research,” by Matthew C. Ingram and Imke Harbers.

The appendix provides color versions of grayscale figures reported in manuscript, and also provides information about robustness checks for the techniques discussed in the paper.

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LISA Statistics

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- b. Figure A-2: Color version of figure 2 (permutation method)
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- e. Figure A-5: Color version of figure 3 (permutation method)

LISA Statistics

Figure A-1 shows a color version of Figure 1.

Figure A-1: Moran scatterplot for outcome of interest (DV)

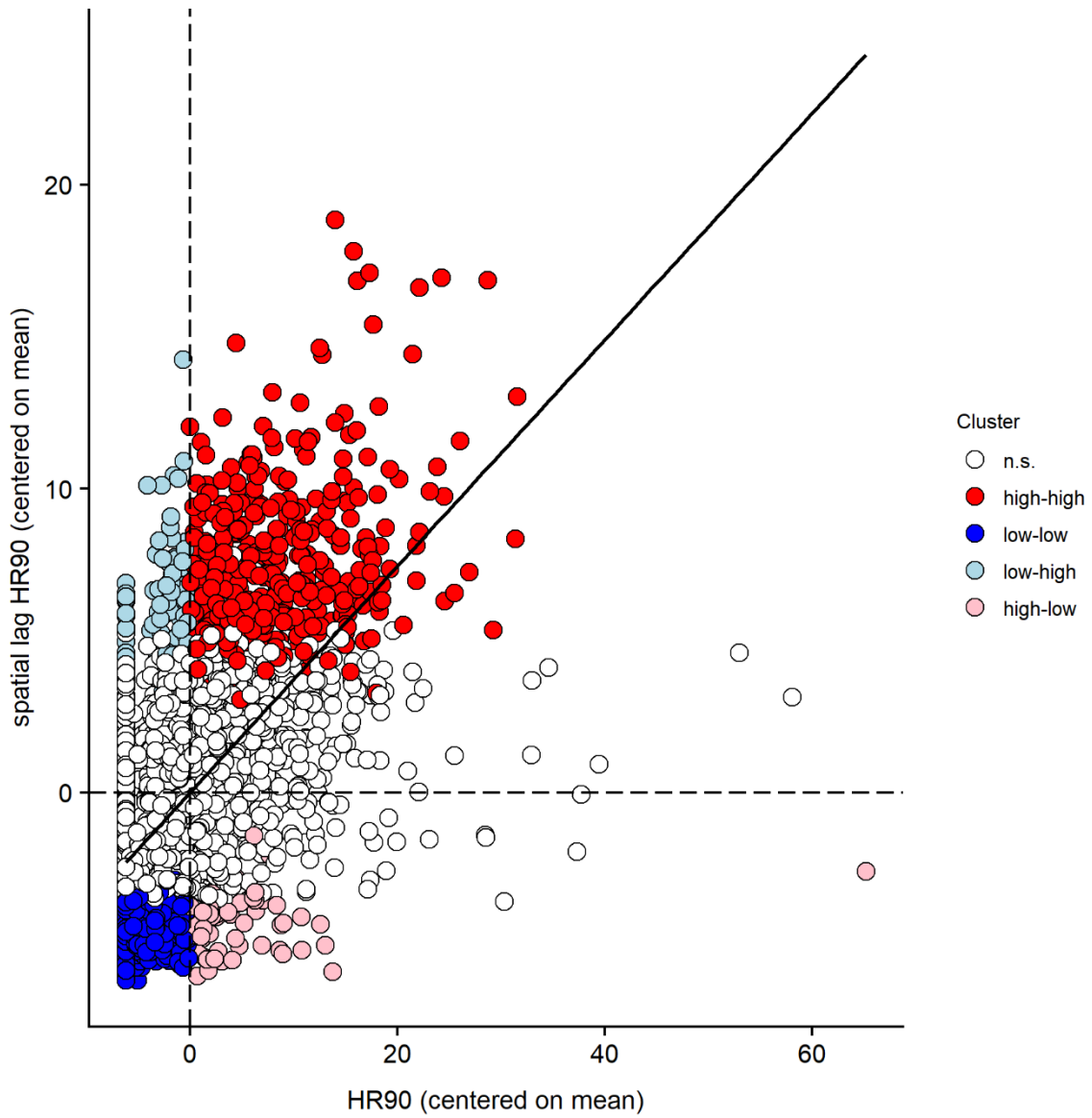
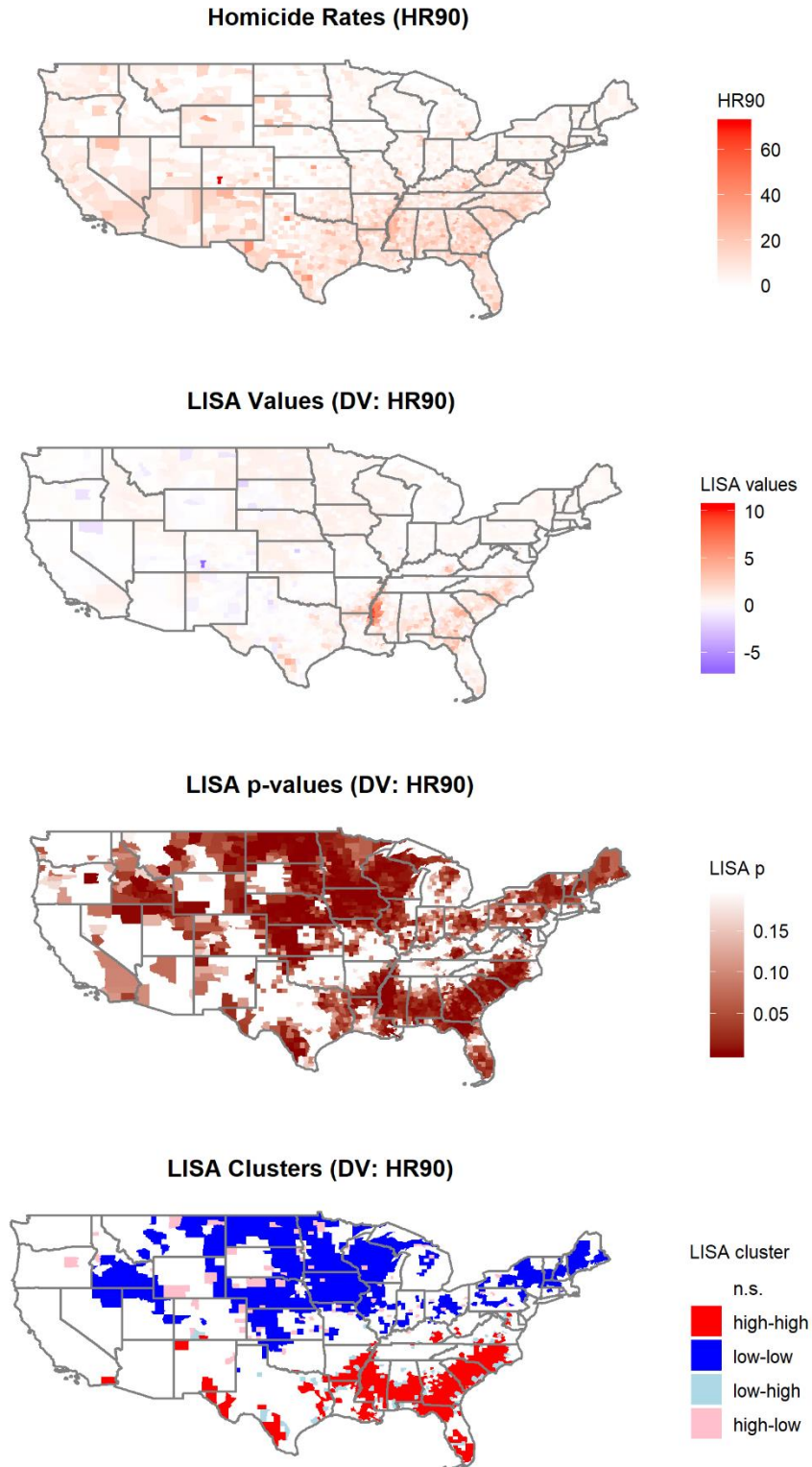


Figure 2 in the paper shows six maps in three rows, translating the data from the quadrants in Figure A-1 into a more accessible map-based representation that helps visualize the geographic clustering of values. Below is a color version of Figure 2 from the paper (Figure A-2).

Figure A-2. Color version of Figure 2 (permutation method).



The fourth map in Figure A2 shows statistically significant clusters of high homicide rates across the South (red) and clusters of low homicide rates in the Upper Midwest and Northeast (dark blue). The colors for high-high and low-low clusters in this map can be compared directly with the Moran scatterplot in Figure A-1; that is, the red counties in the South in Figure A-2 are the same units as the statistically significant, red observations in the top-right quadrant in Figure A-1, and the dark blue counties in the Upper Midwest and Northeast in Figure A-2 are the same units as the dark blue observations in the lower-left quadrant in Figure A-1. Dissimilarity clusters are depicted in light blue and pink. These are spatial outliers, i.e. clusters of dissimilar values that are far away from the regression line in Figure A-1).

As indicated in the paper, the LISA statistics and maps reported above were generated using a conditional permutation approach (Anselin 1995) with 999 permutations. Estimation was implemented in Python (version 3.5.2; Python Software Foundation 2016) using the PySAL package (PySAL Developers 2017; Rey and Anselin 2007). There are many ways to estimate LISA values, including more conservative exact and saddlepoint methods (Tiefelsdorf 2002). Figure A-3 (below) shows the same maps generated with the alternative saddlepoint method to enable a comparison between results. The saddlepoint estimates were generated in R (R Core Team 2016) with the *spdep* package (Bivand and Piras 2015).

Subsequently, Figure A-4 reports a Moran scatterplot for the residuals, as in Figure A-1 for homicide rates. Figure A-5 reports the same visualization of Lisa statistics as Figure 3 in the paper, but in color.

Figure A-3. Analysis from Figure 1, but with alternative saddlepoint method.

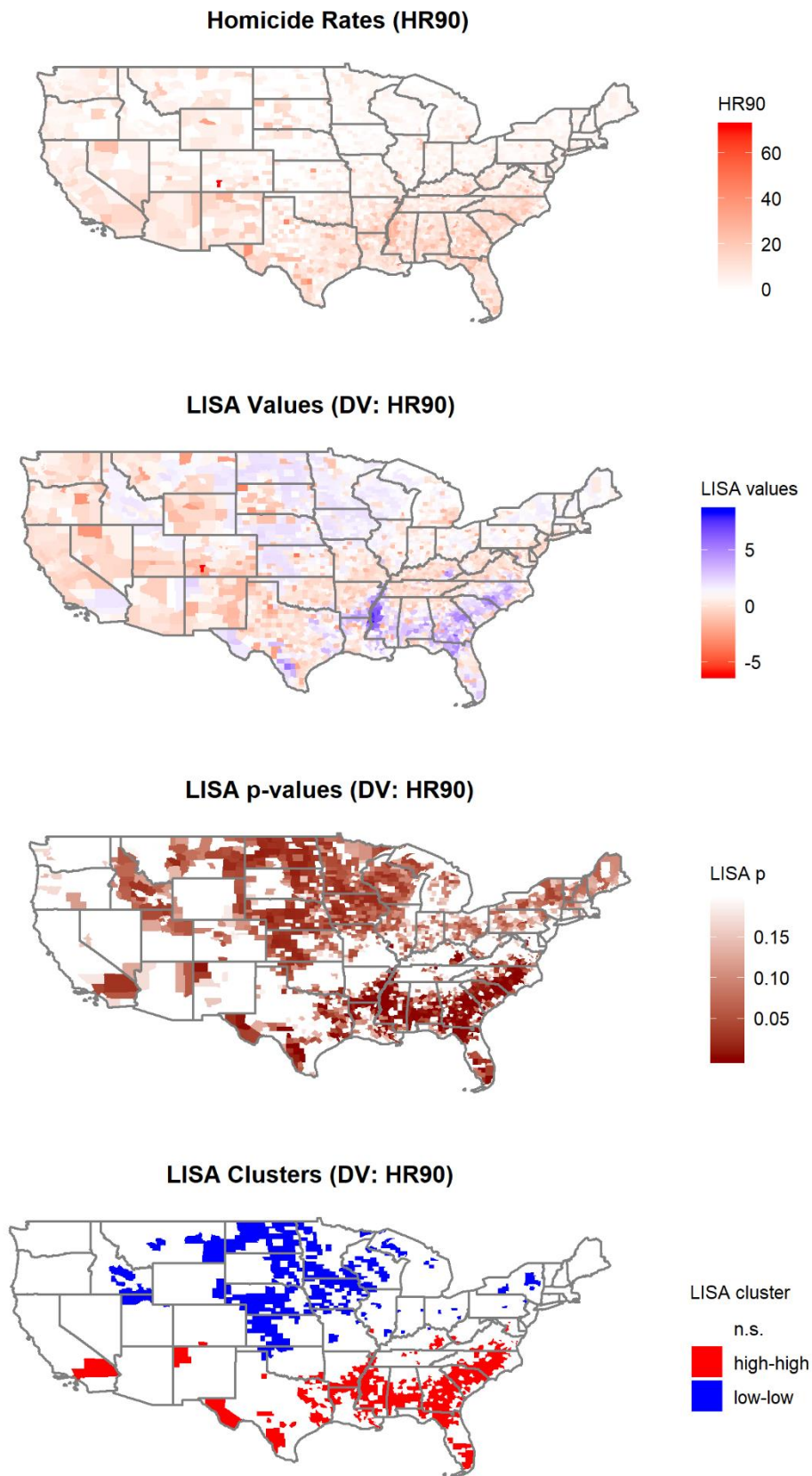


Figure A-4: Moran scatterplot for residuals from baseline OLS model

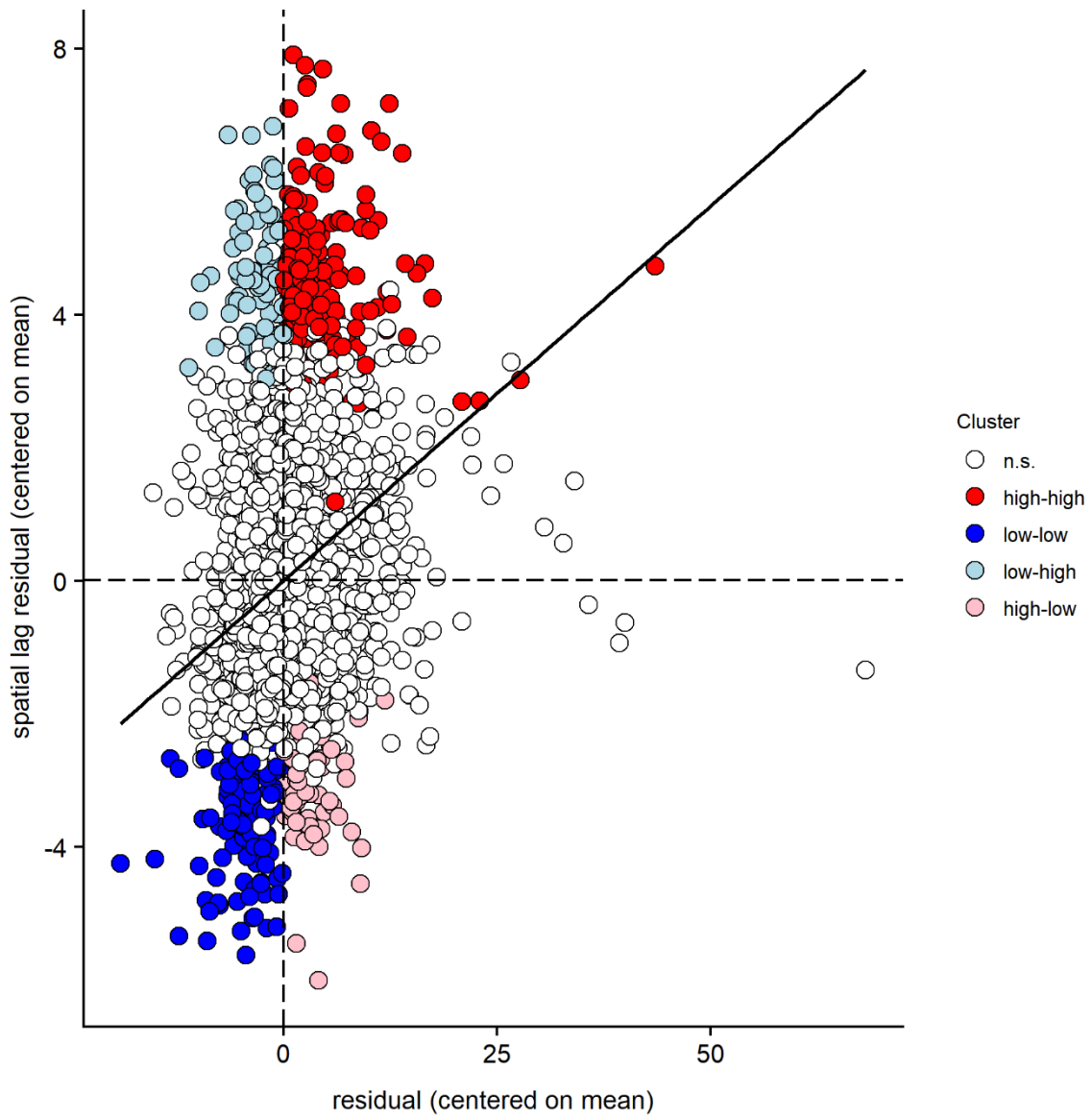
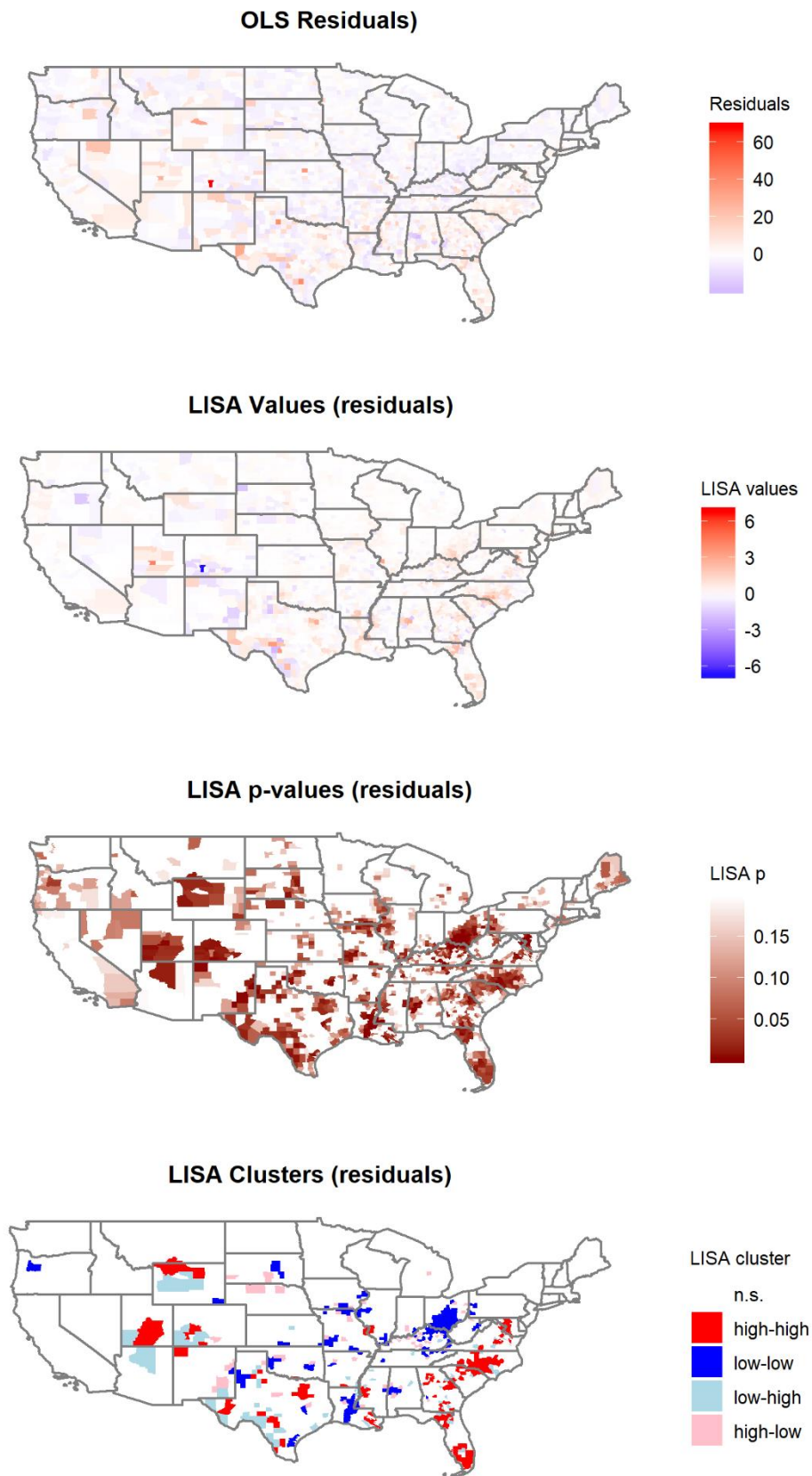


Figure A-5. Color version of figure 2.



Additional References

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