



Central Places and Retail Trade Across the Midwest

Paul Koesters and Janana Khattak

Motivation

Predict retail capture as a function of central place status across seven Midwestern states.

Theory

Central Place Theory explains the geographic relationships between populations and markets. Counties with larger populations, in absolute terms or relative to their neighboring counties, will support businesses in a larger number of retail industries.

Pull Factor Importance

Pull factors provide a measure of retail capture.

(Local Per Capita Retail Sales)

(Seven State Average Per Capita Retail Sales)

Question

Do central places and more populous counties exhibit greater retail capture in Nebraska and surrounding states?

Data Sources

Population Data: 2017 US Census Bureau

County Sales Data: 2017 US Census Bureau

Water Amenity Scale Source: Climatic data from Area Resource File (ARF) by David McGranahan

Used data from 2017, because this is the most recent census data for sales by county

Methods

We use Ordinary Least Square regression to compare populations and pull factors adding potential tourist controls such as the presence of bodies of water, and interstates. States include Nebraska, Iowa, Kansas, Colorado, South Dakota, Missouri, and Wyoming.

Regression Results

<i>Variable</i>	<i>Estimate</i>	<i>Std. Error</i>	<i>T Value</i>	<i>P value</i>
Intercept	0.00749	0.139274	0.054	0.5711
Central Place	0.122908	0.044559	2.758	0.00600**
Interstate	0.19446	0.039893	4.875	1.43 e-06***
Logpop	0.064151	0.014788	4.338	1.71e-05***
Amentiy	-0.103566	0.030814	-3.361	0.00083***

N = 550, Adjusted R-squared= 0.1591

Conclusion

After additional control variables, a positive relation between central place status and population and retail capture remains. This includes both absolute and relative population.

Limitations+Discussion

Central place requires first that areas be physically homogeneous and limitless flat surfaces, and second, that populations be distributed evenly. This is not reality. The inclusion of Colorado and Wyoming, because of their mountainous topography, especially hinder the application of theory. In future research, we can test for the effect the states' inclusion has.

Contact

paul22@huskers.unl.edu jkhattak2@huskers.unl.edu