WVU Regional Research Institute grad assistant wins national award for throwing assumptions out the window

Silicon Valley conjures images of leading edge technology.

Las Vegas makes one think of gambling and entertainment.

Hollywood stands for the movie industry.

Making those connections between cities and their key industries is automatic in most people’s minds because of the high concentrations of specific industry areas in each of those cities. Economists call this phenomenon “industrial agglomeration,” and policymakers have touted it as a proven strategy for developing local economies. Even though agglomeration has existed for years, researchers and policy makers still find it challenging to measure and are often forced to make assumptions.

Zheng Tian, a graduate research assistant at the WVU Regional Research Institute and a Ph.D. candidate in economics was fascinated by the issue and came up with an approach and a technical paper that won a significant national recognition for taking some of the guesswork out of measuring the phenomenon.

Delving into the available literature, Tian fashioned a quantitative technique that would provide an index of agglomeration that does not depend on assumptions regarding statistical distribution. The result of this work was a paper “Measuring Agglomeration Using the Standardized Location Quotient with a Bootstrap Method.” It won the 2012 M. Jarvin Emerson Student Paper Competition award, which will be presented in June at the Mid-Continent Regional Science Association conference in Bloomington, MN.

“Measuring agglomeration is one of the important aspects of empirical research in regional economics,” Tian, said. “Economists have long been seeking to develop an index that can accurately reflect the degree of agglomeration across industries, time and space.”

Tian used a simple bootstrap method to measure agglomeration of manufacturing industries at the county level in the United States.

“Using the bootstrap method, I can obtain a relatively accurate cut-off value that can be used to divide regions into two contrasting groups, one with agglomeration and another without agglomeration,” Tian said. “Then we can examine the distinctive industrial and local factors within each group that can determine the formation of agglomeration.”

Data obtained through this method will provide policymakers with more accurate information, helping them to make better policy decisions.

Dr. Randall W. Jackson, director of the Regional Research Institute, said Tian’s work is an exceptional contribution to this field of study,
“It's very gratifying to see Zheng be recognized for his excellent work,” he said. “We have long known that he has exceptional research skills, and now he's establishing his research communication credentials.”

Dr. Brian Cushing, associate professor of economics at West Virginia University and Zheng Tian’s academic advisor said, “It’s been clear from the moment Zheng arrived at the University that he is a very bright and talented scholar. He has proven to be a creative thinker, one who is extremely careful in his research. Zheng is well organized and has excellent verbal and written communication skills, continually demonstrating that he can explain complex ideas to others in a manner that they can understand. We are all very proud of his achievement.”

In addition to the award, Tian’s paper will be published in an upcoming issue of the *Journal of Regional Analysis and Policy*.

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