NARSC 2022
Call for Submissions for Special Session
Industry Clusters, Agglomeration Economies and Proximity Spatial Methods

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Industry clusters are groups of interrelated firms in a region that share common supply chains, occupations, knowledge-base and technologies. The presence of clusters can be identified when there are higher than average industry employment concentrations – industry specialization – among inter-related firms. The benefits of regional industry specialization were identified by Alfred Marshall and, more recently, the thought leaders of Arrow and Romer (MAR). The current example of how the regional economies of agglomeration are put into practice is Michael Porter's Cluster Mapping Project (CMP).

The CMP cluster definition is based on a one-size-fits-all approach based on national aggregated data as well as regionally specific concentrations. One critique to the CMP methodology is that it is discursive and superficial, for example, Brookings. National, aggregated, average-based data and decision-making may not well align with the specific industry characteristics on the ground in any one region, especially smaller regions. This is especially true given that large metro regions exert excessive influence on average economic statistics.

If cluster-based economic development strategies are to be effective, cluster definitions are better constructed taking into consideration the context for a specific region – the conditions on the ground. Another term may be "endogenous clusters." Are there unconventional data sources that may provide critical information on a specific region that may distinguish the characteristics, and relevant policy interventions, from one region to another?

Ideally, this session will investigate new methods to define and measure industry clusters. For example, can machine learning technology help identify clusters based on regional characteristics and policy interventions endogenously? Are there new

spatial models that can redefine the spatial scale of a cluster which need not coincide with the administrative boundaries?

A supervised clustering algorithm could select the regional characteristics and policy interventions based on economic performance goals agreed to by regional stakeholders, e.g., growth in employment or earnings-per-worker or equity. Performance characteristics could then be used to construct several cluster hierarchies that depend upon each performance goal as well as the geographic unit of analysis—or scale of the region.

Specific topics in these sessions may include, but are not limited to:

(I) Methodological breakthrough

- Critique of current definitions, methods, metrics and practices
- Alternative, unconventional data sources and methods for defining and measuring clusters and/or regional knowledge spillovers
- Geographic proximity versus industry (relatedness) proximity
- Can improved spatial methodology support or refute defining clusters endogenously – from the ground up – versus a common, universal definition across all regions?
- New methods and data for measuring regional knowledge spillovers
- Regional scale and agglomeration economies – is there a population tipping point and how would we know?

(II) Cluster dynamics and policy effectiveness

- Regional cluster dynamics over time
- Regional cluster dominance, persistence and resiliency to economic demand and supply shocks
- Cluster development policy effectiveness and regional scale, industry/technology and occupational specializations

(III) New trends/challenges and their impacts on clusters

- The positive or negative agglomeration effects of automation and worker displacement on regional industry and worker specializations
- Post-COVID19 supply chain healing, optimal co-location and reshoring
- The effect of offshoring—did it reinforce or diminish agglomeration economies?
- The effect of regional technology type specialization on agglomeration economies
- Technology/design *making* and technology/design *using* in production – i.e., the colocation of research & development with production & distribution

If you are interested in presenting your research in this special session, please submit an abstract (2,000 to 5,000 characters and spaces) through the **conference portal by June 20, 2022**. Information on how to do that can be found [here](). Upon submitting your abstract, you will receive an abstract ID number (e.g. P54321). In addition, please send your abstract ID number and a copy of your abstract (with name, email, and affiliation for <u>all authors</u>) to the session organizers Timothy Slaper and Kerry Fang – tslaper@indiana.edu and lfang3@fsu.edu – *by June 20, 2022*.