Cluster-Based Strategies for Innovation and Growth in Micropolitan Areas

Mercedes Delgado
MIT Sloan and MIT Lab for Innovation Science and Policy
April 25, 2018

delgadom@mit.edu http://delgadom.com
Industry Clusters are Everywhere

A cluster is a **geographical concentration of related industries and firms** connected through various types of linkages and spillovers and supporting institutions.

- **Automotive in Indianapolis**
- **Medical Devices in Minneapolis**
- **ICT in Christchurch NZ**
- **Wine in South Australia**
Regions Have Comparative Advantages Manifested in their Clusters
Cluster Composition of Indianapolis-Anderson-Columbus IN, Economic Area, 2015

Indianapolis-Anderson-Columbus, IN EA: Strong clusters colored (~75 percentile employment specialization, LQ) and their connected clusters.
Do Clusters Matter?
Clusters and Economic Performance

Industries that are part of a strong cluster environment register higher growth in jobs, startup activity (employment and count of startups), innovation, and job resilience to economic shocks.

What Attributes of Clusters Matter for Performance?

Co-location of Innovation and Production

- Economies of **agglomeration of various types** arise in clusters, including input-output, shared skills, and knowledge links (Marshall 1920; Porter 1998).

- We find that the **co-location** of innovation & production **matters** for performance:
  - **Clusters with dual strength** in patenting and employment **registered higher growth** in patenting/jobs, and
  - **They were more resilient to the Great Recession**

- Despite internet and globalization, in the U.S. economy there is meaningful co-location of I&P for many cluster categories, **especially for those with high knowledge intensity**: e.g., Information Technology; Medical Devices; and Automotive.

Innovation and Production Co-locate in *Regional* Clusters
Strong Automotive clusters across Economic Areas, 2015

- **EAs with Dual Specialization have 49% of Auto patents** and 37% of employment
  - Detroit EA has 34% of Auto patents and 12% of employment
- **Nearby regions have similar strong clusters**: Opportunity for inter-regional collaboration
Metro Areas with Dual Specialization have 39% of Auto patents and 17% of employment.

Cities are not isolated units: Multiple Metro Areas within an EA are specialized in the cluster.

Economic Activity is highly concentrated in Metro Areas, especially patenting:
- Metro Areas have 94% of US Auto patents and 73% of employment.

Innovation and Production Co-locate in *City* Clusters
Strong Automotive clusters across Metro Areas, 2015
Fostering Innovation and Growth in Micropolitan Areas

• Micro Areas are small
  • They account for ~10% of U.S. traded employment
• But agglomeration benefits could be fostered in smaller cities if they have meaningful employment density and proximity to Metro Areas

An effective strategy to foster innovation in Micro Areas should be based on the ability to connect to the nearby regional clusters
Benefits of Connecting Distressed Places to the Nearby Clusters

Clusters Matter for Inner Cities:

- **Inner cities** are economically distressed parts of a city (unemployment, poverty)
- Similarly to Micro Areas, inner cities are **small, but close to an urban region**
- We find that **inner cities that specialize in clusters that are strong in the surrounding city** ("connected") create more jobs

Delgado/Zeuli (2016). *Economic Development Quarterly*
Cities are not Isolated Units. They are Integrated into Regions

Indiana has many cities: large (14 Metro Areas) and small (24 Micro Areas)

Source: Initiative for a Competitive Inner City
### Inclusive Prosperity by Connecting Micro Areas to Clusters

Strong Clusters in Indianapolis-Anderson-Columbus, IN EA and in its Micro Areas

<table>
<thead>
<tr>
<th>Micro Areas in Indianapolis EA</th>
<th>Biopharma</th>
<th>Medical Devices</th>
<th>Auto</th>
<th>Production Tech</th>
<th>Metalworking Tech</th>
<th>Plastics</th>
<th>Upstream Metal Mfg</th>
<th>Environmental Svc</th>
<th>Distribution &amp; eComm.</th>
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- This EA contains 12 Micropolitan Areas
- A **connected** Micro Area specializes in clusters that are strong in the nearby EA
- All Micro Areas are connected to at least one strong cluster in the surrounding Indianapolis EA
- Regional clusters vary in their connectivity: Automotive vs Biopharma
Policy Implications: How to Integrate the Micro Areas into the Regional Clusters?

What not to do: Generic Policies or ‘Best Practices’

• Choosing generic clusters (e.g., ‘high-tech’ clusters or AI clusters) and
• Policies to attract any type of firms may not be effective.

What to do: Tailored policies to economically connect small cities to their regions

• Step 1: Map the cluster composition of the region and its cities (industries, firms, people)
• Step 2: Identify clusters in the region that have some presence in the Micro Area
• Step 3: Develop initiatives to connect the Micro Area to the nearby clusters:
  • STEM Skills needed by the strong regional clusters
  • Supply chain services (Delgado and Mills, 2017): logistical, design, engineering services
  • Capital and social infrastructure that increases the circulation of ideas, people, goods and services.
Thank You!

delgadom@mit.edu

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Selected References


