Cluster Mapping: Creating the Knowledge Infrastructure for Accelerating Innovation and Entrepreneurship

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Research About Clusters

Case Studies

• Show nature of clusters
• Establish types of linkages that exist within clusters
• Identify patterns of cluster dynamics and their drivers
• Develop hypotheses on the impact of clusters on firms and regions

Cross-sectoral quantitative Studies

• Systematic comparison of clusters across sectors and locations
• Measurement of the overall importance of clusters
• Tracking cluster evolution
• Empirical tests of the impact of cluster presence on regional and firm-level economic performance

“Cluster Mapping”
Cluster Mapping: The Method

1. Classify industries by their geographic footprint
   - Traded – geographically concentrated
   - Local – present everywhere

2. Group traded industries into cluster categories
   - Co-location of employment and establishments
   - Similarities in skill use (national)
   - Input-Output linkages (national)

3. Group clusters
   - Data on weaker linkages to track relationships across clusters

   • Unique allocation of all narrow industries to one cluster category
   • Aggregation of data into indicators by cluster category and location (establishments, employment, wages, patents, skills,…)
   • Can be linked to location-specific outcome data

   • Reflect fundamentally different competitive dynamics that matter for policy
   • Are more informative on actual economic linkages and similarities than traditional groupings by technology, policy priority
   • Critical for development paths, while clusters are key for current performance
What data is now available?
Production Technology Clusters in Europe
Relative Employment Specialization

- Who are our peers and rivals?
- How does our performance stack up?
- What is our specific cluster profile?
- What competitive advantages do we offer as a location?

Source: European Cluster Portal
• What are the current anchors of our economy?
• What related fields might offer opportunities?

Source: European Cluster Portal
Europe’s Hotspots of Emerging Industries

- Where are new industries most likely to emerge?
- Where does cluster strength coincide with emerging industries, and where not?
What do we learn from the data?
3000 Strong Clusters Across Europe

NUMBER OF STRONG CLUSTERS BY PERFORMANCE STARS

- 4 Stars
- 3 Stars
- 2 Stars
- 1 Star
- 46% of traded industry jobs
- 50% of traded industry payroll

Stars for
- Specialization
- Size
- Wage/productivity
- Growth/Entrepreneurship

Source: European Cluster Panorama, 2016
Clusters and Economic Performance

Presence of Strong Clusters

Prosperity
- Wages
- Productivity
- Job growth
- Resilience
- Patenting

Entrepreneurship
- New business formation
- Survival of new firms
- Job growth in new firms

Structural Change
- Path of structural change (emergence of new clusters)

Clusters and Entrepreneurship

• **67 700 gazelles** in traded industries in Europe employ 1.9 million workers or 1.6% of all employees

• **25 000 or 38% of all trade industry gazelles are located in strong clusters;** gazelles are as concentrated geographically as overall employment

• **Gazelles in strong clusters account for 46% of all gazelle employment;** they employ 35 employees on average compared to 24 in gazelles elsewhere

Source: European Cluster Panorama, 2016
Profile of Regions by Emerging Industry Strength

- Average Wage, PPP / Employee
- GDP per capita, PPP
- Patents per Million People

Average

Source: European Cluster Panorama, 2016
How does it matter for policy?
From Cluster Mapping to Cluster-Based Policies

• Cluster mapping data provides **critical intelligence** to guide policy action

• How does **industrial composition** (what) and **performance within specific industries** (how) contribute to a location’s overall economic performance?

• What **clusters can specific policy programs**, for example on entrepreneurship, **leverage in a given location** to enhance impact

• What **opportunities for industrial upgrading do specific locations have** given their unique cluster portfolio and neighboring locations?

• Where are the hotspots of specific industries, clusters, or groups of related clusters that make them **the most suitable locations for cluster-specific programs**?
Types of Government Interventions in Clusters

• **Direct intervention at the firm level**
  – Attraction of firms
  – Subsidies, directed credit

High short-term impact/High distortion/low productivity impact

• **Intervention into the market**
  – Provision of monopoly rights; Entry/trade barriers
  – Demand subsidies

Long-term impact/Low distortion/high productivity impact

• **Investments in the cluster-specific business environment**
  – Specific to the cluster
  – Benefiting the cluster but part of a general upgrading strategy

• **Enable collaboration with and within the cluster**
  – Support for cluster initiatives
  – Active engagement with the cluster in setting and implementing policies

*CREATE CLUSTERS? LEVERAGE CLUSTERS!*
Policies for Entrepreneurship and Innovation: What Role for Clusters?

- Cluster data as a key part of the **diagnostics** to identify locations and fields of economic activities that promise the highest returns for policy action

- Clusters as an **organizing principle** to bundle traditional entrepreneurship and innovation programs with other complementary policy tools for strengthening firm level performance

- Cluster organizations as **key partners** in designing and delivering entrepreneurship and innovation programs