

Innovation, Creativity and Globalization: The Role of Cities and Clusters

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The presentation will focus on the following questions:

- How can we explain the variety of geographical agglomerations? In what ways are clusters distinct?
- How do different types of clusters evolve over time and how do they promote creativity and innovation?
- Why do particular types of technologies tend to thrive in particular localities?
- What are the implications for industrial and regional policies? To what extent may innovation-conducive clusters be policy-driven?

Structure of Presentation

- (1) Generally-held arguments regarding the relationship between clustering, knowledge and innovation
- (2) Recent developments regarding globalization and localization
- (3) Analysis of the strengths and limits of the advantages of clustering by considering the effects of unintended outward knowledge flows
- (4) Transactions costs classification of various types of industrial clustering.
- (5) Evolutionary perspective on technical change to show the importance of both transactions costs and knowledge features in explaining patterns of cluster development.

Hypotheses concerning the Geography of Creativity and Innovation.

Hypothesis 1: *The contemporary geography of creativity and innovation is essentially a geography of the currently more innovative sectors of the economy*

Hypothesis 2: *The contemporary geography of creativity and innovation is essentially a result of spatial differences in the phases of product or profit cycles.*

Hypothesis 3: *The contemporary geography of creativity and innovation is essentially the outcome of variations in the characteristics between different places which lead to differences in the geography of creativity and entrepreneurship.*

Hypothesis 4: *The contemporary geography of creativity and innovation is essentially a result of the fact that innovation is most likely to occur in small and medium-sized enterprises, whose spatial patterns happen to uneven.*

Spatial transactions costs have *fallen* globally
(globalization)

- RO-RO freight technology
- air-transport improvements
- shipping economies of scale
- use of GPS systems
- information and communications ICT technologies
- video-conferencing

Spatial transactions costs have *increased* locally

For high value-adding innovative activities ICTs and face-to-face contact are complements

For low value adding non-innovative activities, ICTs and face-to-face contact are substitutes

Modern crucial role of cities as centres for skills, creativity and innovation

Advantages of Industrial Clustering

Key features: Marshallian sources of localisation and growth:

- (a) knowledge spillovers
- (b) intermediate specialist inputs
- (c) skilled local labour pool

Urbanisation versus Localisation Economies

Role of local knowledge spillovers: Crucial distinction between tacit knowledge and formal codified knowledge (information)

Disadvantages of Industrial Clustering

(i) High local factor costs

(ii) Problem of Unintended Knowledge Outflows

We can split knowledge spillovers into two types, namely knowledge inflows and knowledge outflows

The overall advantages of clustering depend on the net advantages of knowledge inflows and outflows

Table 1. Industrial clusters: a transactions costs perspective

Characteristics	Pure agglomeration	Industrial complex	Social network
Firm size	atomistic	some firms are large	variable
Features of relations	non-identifiable fragmented unstable frequent trading	identifiable stable and frequent trading	trust loyalty joint lobbying joint ventures non-opportunistic
Membership	open	closed	partially open

Characteristics	Pure agglomeration	Industrial complex	Social network
Access to cluster	rental payments location necessary	internal investment location necessary	history experience location necessary but not sufficient
Space outcomes	rent appreciation	no effect on rents	partial rental capitalisation
Example of cluster	competitive urban economy	steel or chemicals production complex	new industrial areas
Analytical approaches	models of pure agglomeration	location-production theory input-output analysis	social network theory
Notion of space	urban	local or regional but not urban	local or regional but not urban

Table 2. Industrial clusters: knowledge, technology and cluster dynamics

Features	Pure Agglomeration	Industrial complex	Social network	
			New Social Network	Old Social Network
Nature of technical knowledge	codified, explicit and mobile transmitted by way of information	mixed, routinized R&D-intensive based on non-transferable experience	tacit, new, sticky and leaky transmitted within cognitive networks	mixed, mature, incremental transmitted within localised networks
Technological trajectory	oriented to processes, problem-solving	oriented to complex products, cost-cutting	oriented to radically new products	oriented to processes, customer-driven
Dynamics Sources of innovation	stochastic external to the firm	strategic internal to the firm	mixed mixed	mixed external to the firm

Dynamics Sources of innovation	stochastic external to the firm	strategic internal to the firm	mixed mixed	mixed external to the firm
Internal capture of innovation returns	low, perfect or monopolistic competition	high, private creation of new knowledge, oligopolistic competition	mixed, public- private creation of new knowledge	low, collaboration and competition
Technological opportunities	medium	low	very high, uncertain	low
Degree cumulativeness of	low	high	low	high
Knowledge base	diversified	specialised	research-based	specialised along the filière

Modes of governance	market	hierarchies	relational networks	social and historical networks
Industrial examples	Finance banking insurance business services retailing	Steel chemicals automotive pharmaceuticals machine tools medical instruments ICT hardware	SME high-tech clusters in general purpose technologies	Customised traditional goods textiles footwear furniture tourism
Examples of cluster	Silicon Valley California	Silicon Glen (Scottish Electronics Industry)	‘Silicon Fen’ Cambridge UK	Italian industrial districts (Emilia-Romagna)
Pavitt Classification	Supplier dominated firms	Production Intensive Firms	Science-Based Firms	Supplier dominated firms

Conclusions

Innovation is directly related to clustering in many situations

There is no simple single model of clustering

Innovation and creativity have many different origins and many different manifestations

No simplistic policy panacea

Key role for careful policy analysis based on existing industrial structure, industry mix and skills composition