



RUB

RUHR-UNIVERSITÄT BOCHUM

REGIONAL INNOVATION

**How to Analyze a Region's Innovativeness?
Theories and Methods of Regional Innovation**

Prof. Dr. Uta Wilkens / Simon Rohde (M.Sc.)

Lukas Zaghaw

Seminar, Summer 2020, Coaching 2 (Unit 2: Quantitative Tools) 04.05.2020

GEFÖRDERT VOM



Bundesministerium
für Bildung
und Forschung



INSTITUT FÜR ARBEITSWISSENSCHAFT
Lehrstuhl für Arbeit, Personal und Führung



Contents of Coaching 2 (Continued)

~~Part 1 | Theory and Methods to the Regional Dynamic Capabilities View~~

~~Part 2 A. | Cluster Analysis and Porters Diamond: What Makes a Region Competitive?~~

Part 2 B. | Ecosystems and How to Measure Them

Part 3 | It's OWL - Entrepreneurial Ecosystems

Learning Outcomes

- Distinguishing Between and Compare Different Theories and Concepts: **Framing Ecosystems**
- **Consolidating Information and Generating Recommendations**
- Learning about **Secondary Data Research and Evaluation in Regional Context**

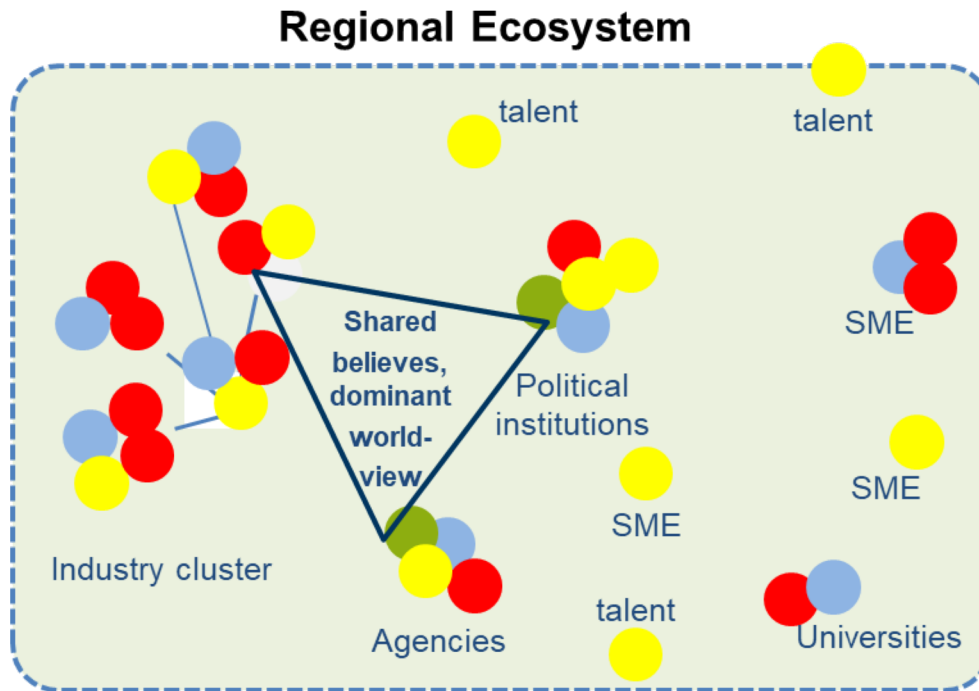
Beyond Clusters

Ecosystems and How to Measure Them

A Quantitative Tool

4 | Beyond Clusters

The Regional Ecosystem Approach



= a set of relationships between living and non-living organisms – companies, individuals etc.

Industry clusters are **part** of the ecosystem.

- **complex, dynamic, adaptive, emergent** systems
- *Innovation Ecosystems* = dynamic, purposive communities with strong relationships
- based on **collaboration, trust and co-creation** of value and sharing complementary technologies or competencies

Source: EC 2016 and the there mentioned sources

4 | Beyond Clusters

The Regional Ecosystem Approach

- Regional Ecosystem Concept
- **Advancement and Consolidation** of Previous Concepts: e.g. Cluster theory, regional innovation systems, Creative Cities..
- Identified **Key Dimensions** Determining Existence and Success of a Regional Ecosystem:

entrepreneurial culture	social capital and business networks
knowledge linkages	demand conditions
highly skilled human resources	dynamic local context and support structures
financing and funding conditions	cross-sectoral business combinations

EC 2016 and included mentioned sources; Stam (2015); De Villiers Scheepers et al. 2018

4 | The Regional Ecosystem approach

A Selected Ecosystem Theory: Erik Stam's Entrepreneurial Ecosystem

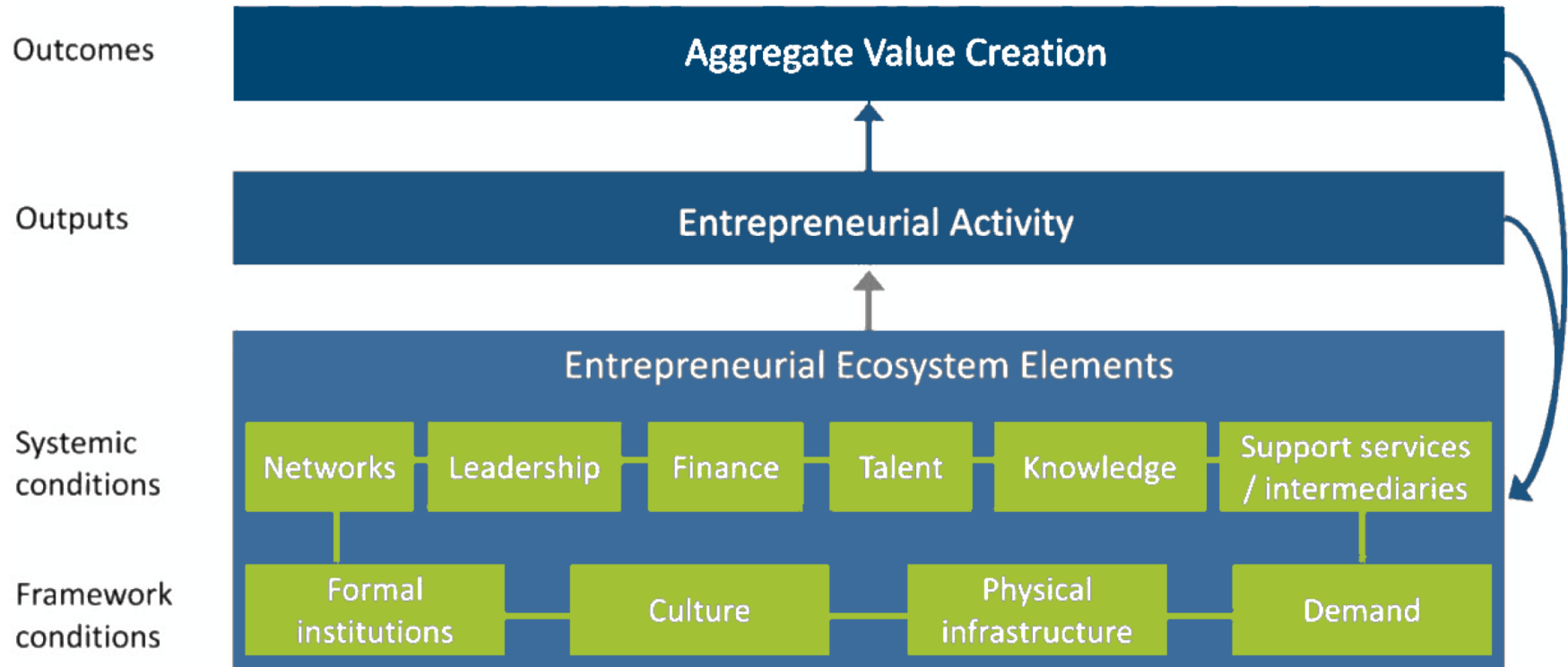


Illustration Modelled after Stam 2015: 1765

4 | The Regional Ecosystem approach

How to Assess Regional Ecosystems? Measuring Regional Ecosystems

Focus on Entrepreneurship	Global Entrepreneurship Monitor <i>Global Entrepreneurship Research Association</i>	Focus on the link between entrepreneurship and economic development; measurement of differences in the level of entrepreneurial activity among countries.	National (85 countries)
	Flash Eurobarometer Survey <i>European Commission – DG GROW</i>	Comparative assessment of entrepreneurship development among EU countries and with non-EU countries.	National (all EU28 countries + BRICS, Japan, Norway, US, Israel, Iceland and South Korea)
	OECD Entrepreneurship Index <i>The Organisation for Economic Co-operation and Development</i>	Collection of indicators on entrepreneurship, harmonized on international level.	National (OECD countries)
	World Bank's Entrepreneurship Database <i>The World Bank</i>	Source providing comparable cross-country data on new business registration in order to cope with dynamics of private companies.	National (worldwide coverage)
Focus on Territorial Competitiveness	Regional Competitiveness Index <i>European Commission – Joint Research Centre</i>	Overview of the territorial competitiveness at a regional level; emphasis on regions' strengths and weaknesses.	Regional (270 regions out of EU28 countries)

4 | The Regional Ecosystem approach

How to Assess Regional Ecosystems? Measuring Regional Ecosystems

Category	Scoreboard <i>Organisation</i>	Description	Coverage
Measuring innovation performance	Regional Innovation Scoreboard <i>European Commission – DG GROW</i>	Comparative assessment of innovation performance among EU member states based on regional statistical facts.	Regional (190 regions out of 22 EU member states + Switzerland and Norway)
	Regional Innovation Monitor Plus <i>European Commission – DG GROW</i>	Platform providing a series of innovation performance indicators in order to share knowledge on policy trends.	Regional (30 EU regions)
Focus on sectors, industries and clusters	US Cluster Mapping <i>Harvard Business School's Institute for Strategy and Competitiveness and the US Department of Commerce</i>	Interactive platform providing regional data on clusters and business environments.	Regional (only US regions)
	European Cluster Observatory <i>European Commission – DG GROW</i>	Providing data and analysis of clusters, cluster organizations and regional microeconomic framework conditions	Regional (Regions from EU28 + Switzerland and Norway)
	European Service Innovation Scoreboard <i>European Commission – DG GROW</i>	Measurement of the transformative power of service innovation on regions and clusters.	Regional (280 regions out of EU28 + Iceland, FYROM, Norway, Serbia, Switzerland and Turkey)
	Demand-side Innovation Score-board <i>European Commission – DG GROW</i>	Measurement of four broad markets (B2B, B2C, B2G, G2C)	National (pilot 8 countries)

4 | The Regional Ecosystem approach

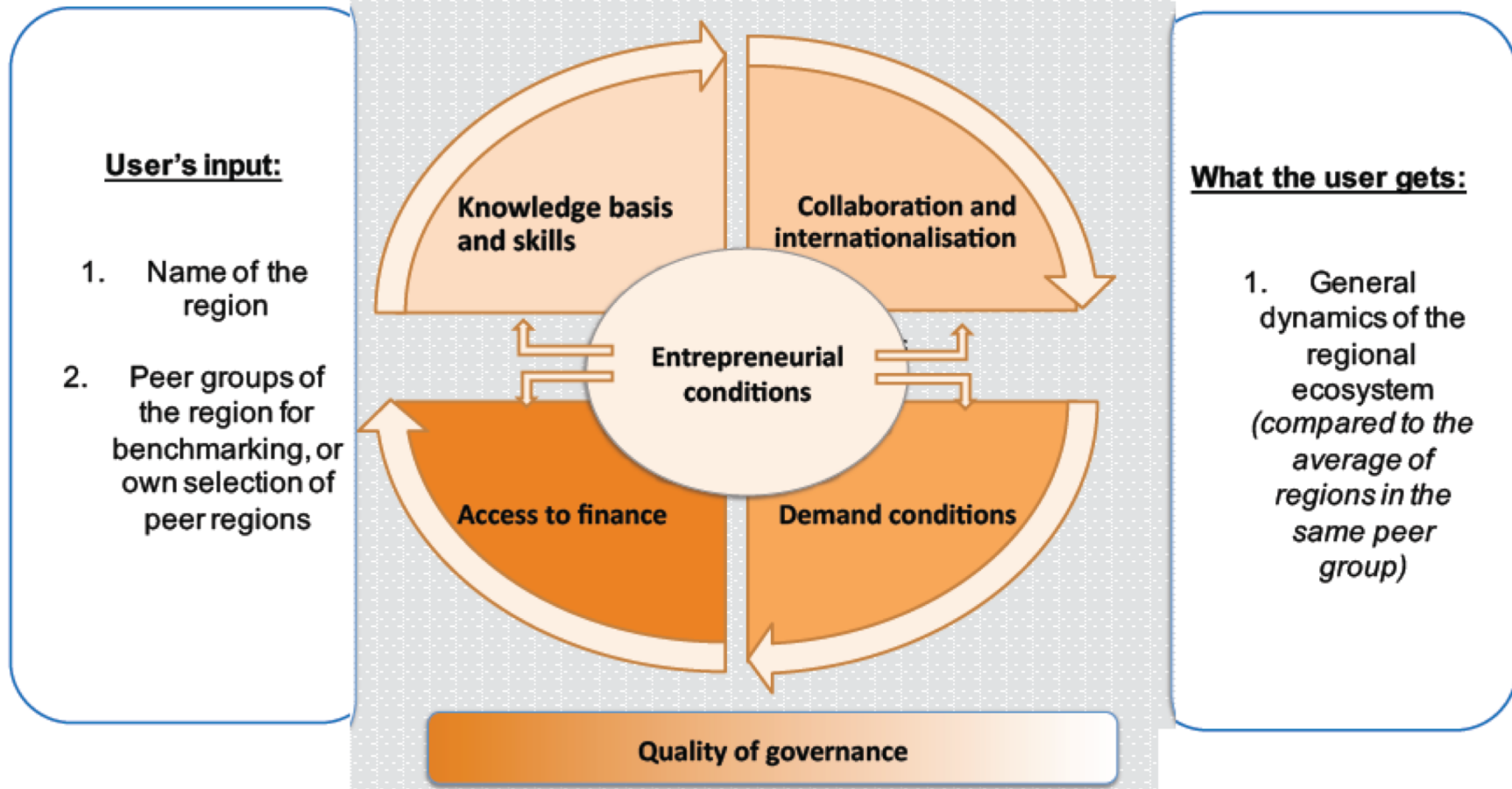
How to Assess Regional Ecosystems? Bundling Different Initiatives

- Bundling these initiatives: [EU Regional Ecosystem Scoreboard](#)
- **Target Group:** policy-makers responsible for regional, industrial and cluster policies
- **Objective:** identify, describe and capture the quality of conditions in the regional ecosystem for innovation and entrepreneurship
- **Selection of Indicators:** aiming to truly capture conditions and dynamics
 - Often Implicit: Your Qualitative Research (i.e. expert interviews)
- The **Performance of Regional Innovation Systems** e.g. SME's innovation activities or innovative products and services is NOT measured
- → Innovative performance is the result of favorable conditions

4 | The Regional Ecosystem approach

How to Assess Regional Ecosystems? Bundling Different Initiatives

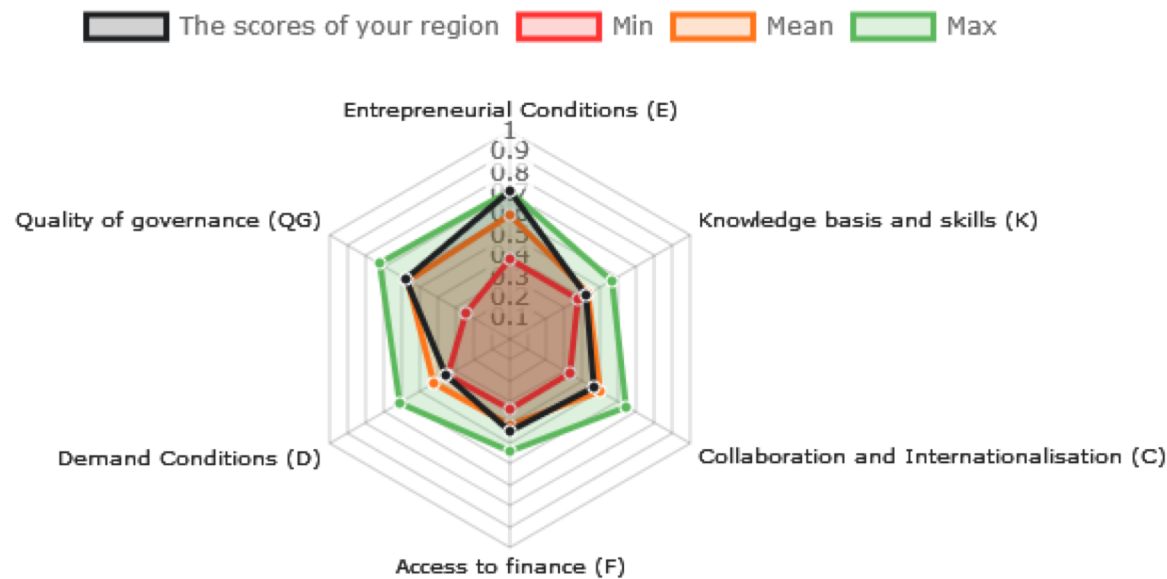
6 Key dimensions of the regional ecosystem



4 | The Regional Ecosystem approach

How to Assess Regional Ecosystems? EU Regional Ecosystem Scoreboard

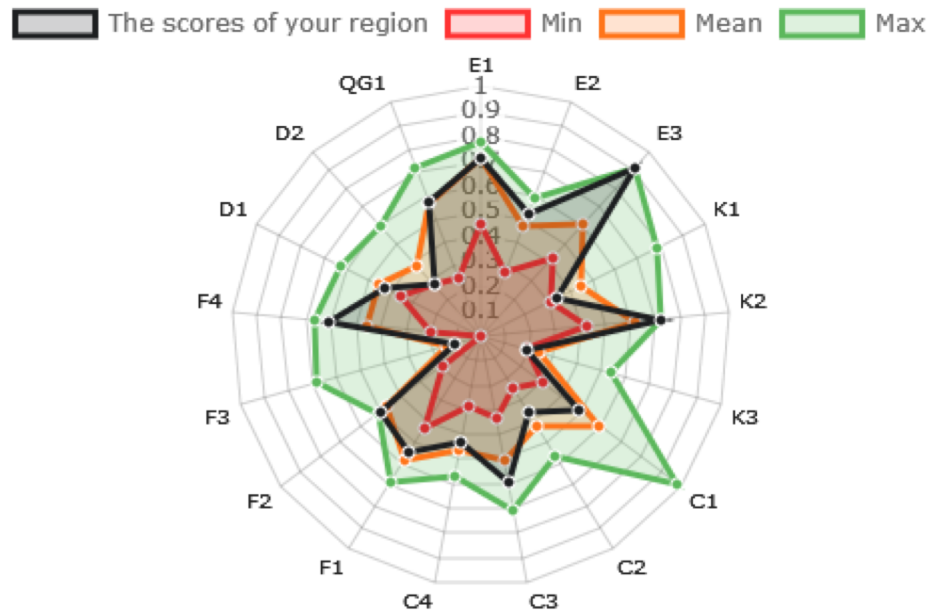
- The EU Regional Ecosystem Scoreboard: **The Measurement Framework**
- **Six** key dimensions divided in **17** sub-dimensions which are composite indicators of **58** individual indicators



The Six Dimensions

4 | The Regional Ecosystem approach

How to Assess Regional Ecosystems? EU Regional Ecosystem Scoreboard



The 17 Sub-Dimensions

Legend

Entrepreneurial Conditions

E1: Regulatory framework for starting a business; **E2:** Entrepreneurial culture; **E3:** Attractiveness of the region and quality of infrastructure

Knowledge basis and skills

K1: Human resources; **K2:** Vocational training and lifelong learning; **K3:** Skills

Collaboration and Internationalisation

C1: General system linkages; **C2:** Cross-sectoral linkages; **C3:** Specialisation; **C4:** Openness of the region

Access to finance

F1: Attitudes of investors and private financing; **F2:** Legal framework support-ing access to finance; **F3:** Availability of funds from public sector; **F4:** Support from Structural Funds

Demand Conditions

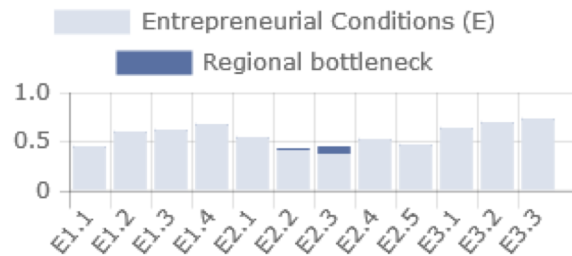
D1: Private demand; **D2:** Public demand

Quality of governance

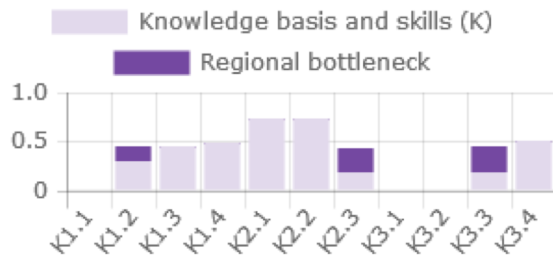
QG1: Quality of governance

4 | The Regional Ecosystem approach

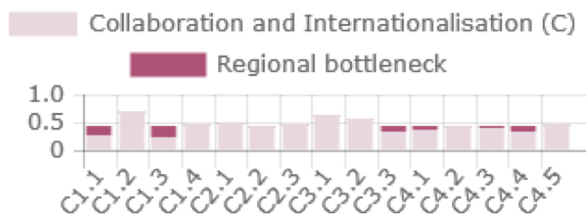
How to Assess Regional Ecosystems? EU Regional Ecosystem Scoreboard



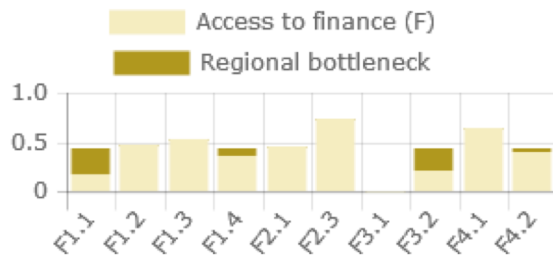
[Show the legend](#)



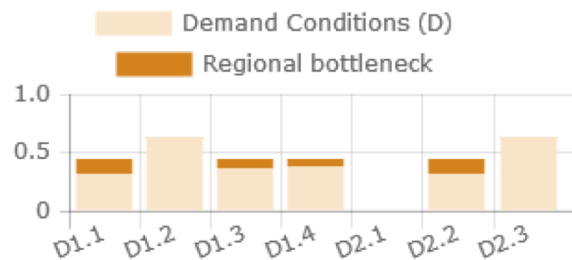
[Show the legend](#)



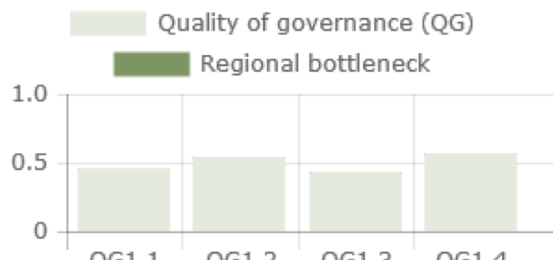
[Show the legend](#)



[Show the legend](#)



[Show the legend](#)



[Show the legend](#)

Policy Action Dashboard

Immediate recommendations for action.

4 | Regional Ecosystems Summary

- **Regional Ecosystem Theory..**
- is highly comprehensive and subsumes elements you are familiar with from the Regional Dynamic Capability View
 - **actors** (e.g. industry clusters, SMEs, institutions, agencies, education and research)
 - **resources** (human, capital, knowledge)
 - ..whether and how they are allocated, relate to and condition each other
 - **modes of communication and collaboration, shared beliefs and culture**
- provides a larger paradigm for many **interpretations and focal points** of different ecosystem conceptualizations
 - e.g. innovation ecosystems, entrepreneurial ecosystems
- is an advanced concept that aids in understanding **how (economic) activity and innovation functioning in a region**: interdependencies, linkages, dynamics and processes.

4 | Regional Ecosystems Summary

- **Ecosystem Analysis..**
- deals with complex, **dynamic, adaptive, emergent systems.**
- should consider ecosystem's **various constitutive elements** determining its functioning and success: e.g. (entrepreneurial) culture, linkages, knowledge, talent/human resources, demand conditions, social capital, (support)systems and networks, cross-sectoral communication and business activity, access to funding, formal institutions and quality governance, infrastructure.
- Is based on careful scrutiny of various **secondary data pools and aggregators.** Quantitative data/indicators can be consolidated to key dimensions.

5 | Coaching 2 (Part 2 B: Ecosystems)

Learning Outcomes

- Grasping Different **Quantitative Approaches to Regions**
- Learning to Distinguish Between and **Comparing the Applicability** of Different Theories and Concepts
- Learning about **Secondary Data Research and Evaluation in Regional Context**

Contact

Prof. Dr. Uta Wilkens

uta.wilkens@ruhr-uni-bochum.de

Simon Rohde (M.Sc.)

Simon.rohde@ruhr-uni-Bochum.de

Lukas Zaghaw

Lukas.Zaghaw@ruhr-uni-Bochum.de

Chair for Work, Human Resources and Leadership

Institute of Work Science

Ruhr-Universität Bochum

Building NB, 1st Floor, Room 170

44780 Bochum

Fon: +49 (0)234 32-27876

Fax: +49 (0)234 32-14198

INSTITUT FÜR ARBEITSWISSENSCHAFT

Lehrstuhl für Arbeit, Personal und Führung

6 | References + Further Study

Bathelt, H./Glückler, J. (2003): *Wirtschaftsgeographie: Ökonomische Beziehungen in räumlicher Perspektive*. Stuttgart: UTB.

Cohendet, P./Grandadam, D./Simon, L. (2010): The Anatomy of the Creative City. *Industry and Innovation*, 17 (1), 91-111.

Cohendet, P./Grandadam, D./Simon, L./Capdevila, I. (2014): Epistemic communities, localization and the dynamics of knowledge creation. *Journal of Economic Geography*, 14 (5), 929-954.

DiMaggio, P.J./Powell, W.W. (1983): The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*, 48 (2), 147-160.

Farhauer, O./Kröll, A. (2014): *Standorttheorien. Regional- und Stadtökonomik in Theorie und Praxis*. Wiesbaden: Springer Gabler

Gabler Wirtschaftslexikon (o.J.): Veröffentlicht im Internet, URL: <https://wirtschaftslexikon.gabler.de/> (Zugriff am 01.08.2019).

Grabher, G. (1993): *The embedded firm – On the socioeconomics of industrial networks*. London/New York: Routledge.

Grandadam, D./Cohendet, P./Simon, L. (2013): Places, Spaces and the Dynamics of Creativity: The Video Game Industry in Montreal. *Regional Studies*, 47 (10), 1701-1714.

Granovetter, M.(1973): The Strength of Weak Ties. *American Journal of Sociology* 78 (6), 1360-1380.

Greenwood, R./Meyer, R.E. (2008): Influencing Ideas: A Celebration of DiMaggio and Powell (1983). *Journal of Management Inquiry*, 17 (4), 258-264.

Heidenreich, M. (2005): The Renewal of Regional Capabilities - Experimental Regionalism in Germany. *Research Policy*, 34 (5), 739-757.

6 | References + Further Study

- Léon, L.R./Izsak, K./Bougas, K./Soto, V. (2016): Regional Ecosystem Scoreboard Methodology Report. Internal Market, Industry, Entrepreneurship
- Meyer, J.W./Rowan, B. (1977): Institutionalized Organizations: Formal Structure as Myth and Ceremony. *American Journal of Sociology*, 83 (2), 340-363.
- Menzel, M./Fornahl, D. (2010): "Cluster life cycles—dimensions and rationales of cluster evolution." *Industrial and Corporate Change*, 19(1), 205-238.
- Oliver, C. (1991): Strategic Responses to Institutional Processes. *Academy of Management Review*, 16 (1), 145-179.
- Porter M. (1998): "Clusters and the new economics of competition." *Harvard Business Review*, 76 (6).
- Porter, M. (2008): *On Competition*. Boston: Harvard Business School Publishing.
- Porter, M. (2014): Reshaping Regional Economic Development: Clusters and Regional Strategy, keynote speech at the Midwest Future Conference in Minneapolis on September 29, 2014.
- Powell, W.W./Colyvas, J.A. (2008): Microfoundations of Institutional Theory. In: Greenwood, R./Oliver, J./Suddaby R./Sahlin-Andersson, K. (Hrsg.), *The SAGE Handbook of Organizational Institutionalism*, 276-298.
- Stam, Erik (2015): Entrepreneurial Ecosystems and Regional Policy: A Sympathetic Critique, in: *European Planning Studies*, Vol. 23, (9), 1759-1769..
- Teece, D.J./Pisano, G./Shuen, A. (1997): Dynamic capabilities and strategic management. *Strategic Management Journal*, 18 (7), 509-533.
- Teece, D.J. (2007): Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28 (13), 1319-1350.
- Teece, D.J. (2012): Dynamic Capabilities: Routines versus Entrepreneurial Action. *Journal of Management Studies*, 49 (8), 1395-1401.
- Weick, K.E. (1995): *Sensemaking in Organizations*. California: SAGE Publications.
- Wilkins, U. (2017): Towards a Regional Dynamic View – Components of Macrofoundation. In: *Journal of Competences, Strategy & Management*, Vol. 9: Approaching Dynamic Capabilities from a Multi-Level Perspective – Macrofoundations and Microfoundations (S. 33-56). Augsburg: Hampp-Verlag.