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The principle of relatedness

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New Science of Cities - GEO4-3632

Utrecht, 24 September 2020

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structure of lecture

1. relatedness and regional diversification

2. agents of (structural) change

3. smart specialisation policy

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regional diversification

- how do regions create **novelty?**
- new activities do **not start from scratch**
- **local capabilities** condition which new activities are feasible to develop in a region
- local capabilities provide **opportunities** but also set **limits** to the diversification process in a region
- region is more likely to diversify into new activities **related to existing activities in region** that provide local capabilities on which new activities can draw

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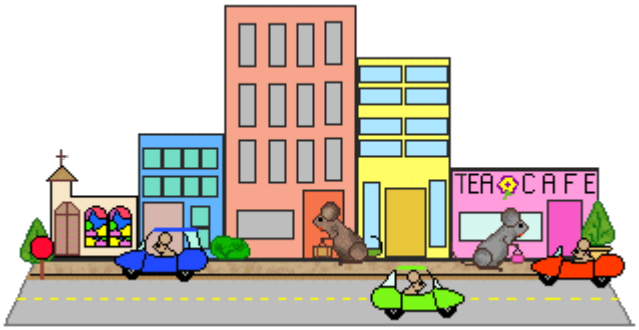
related diversification **unrelated diversification**

region A region B



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studies: **related diversification is rule**, unrelated diversification the exception (Hidalgo et al 2018)

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regional diversification

- Hidalgo, Klinger, Barabasi and Hausmann (2007)

- how countries build comparative advantage in **new export products**

- **national capabilities** condition which new export products will be feasible to develop

- **product space**: **relatedness** between products based on co-occurrence of products in countries' export portfolios

- countries develop new export products that are **closely related** to existing export products

- countries with higher **related variety** have more opportunities to diversify and sustain higher economic growth rates

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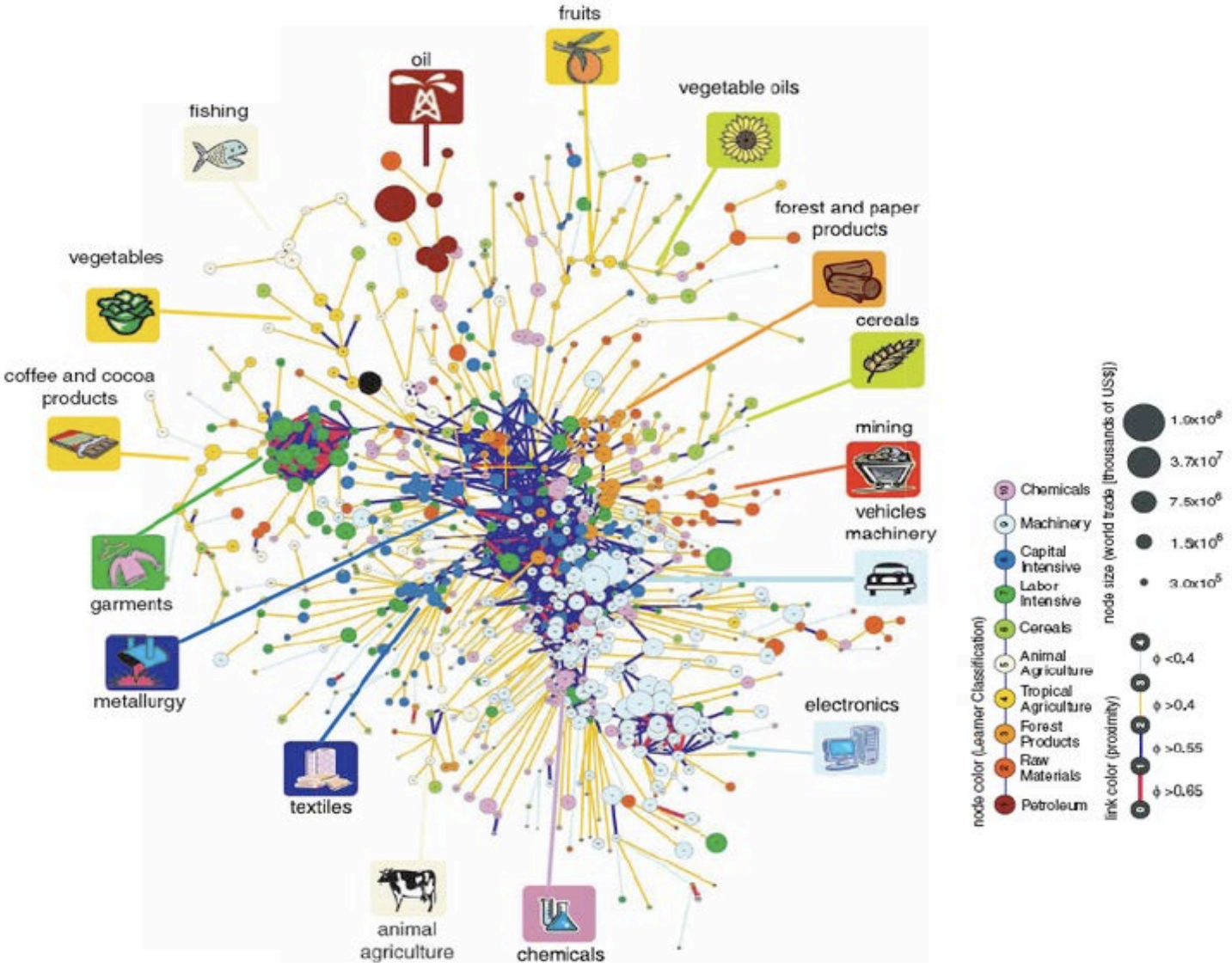
product space



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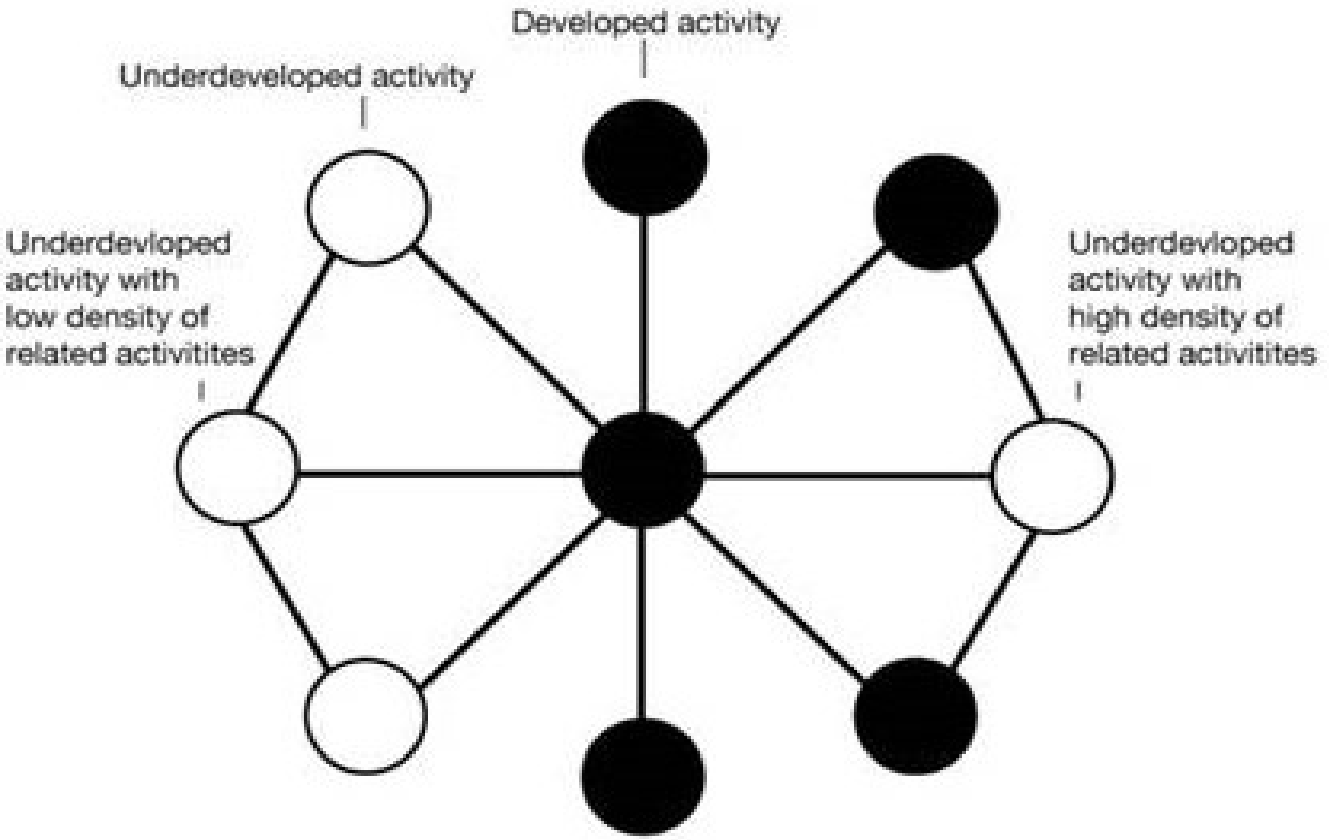
related diversification in regions



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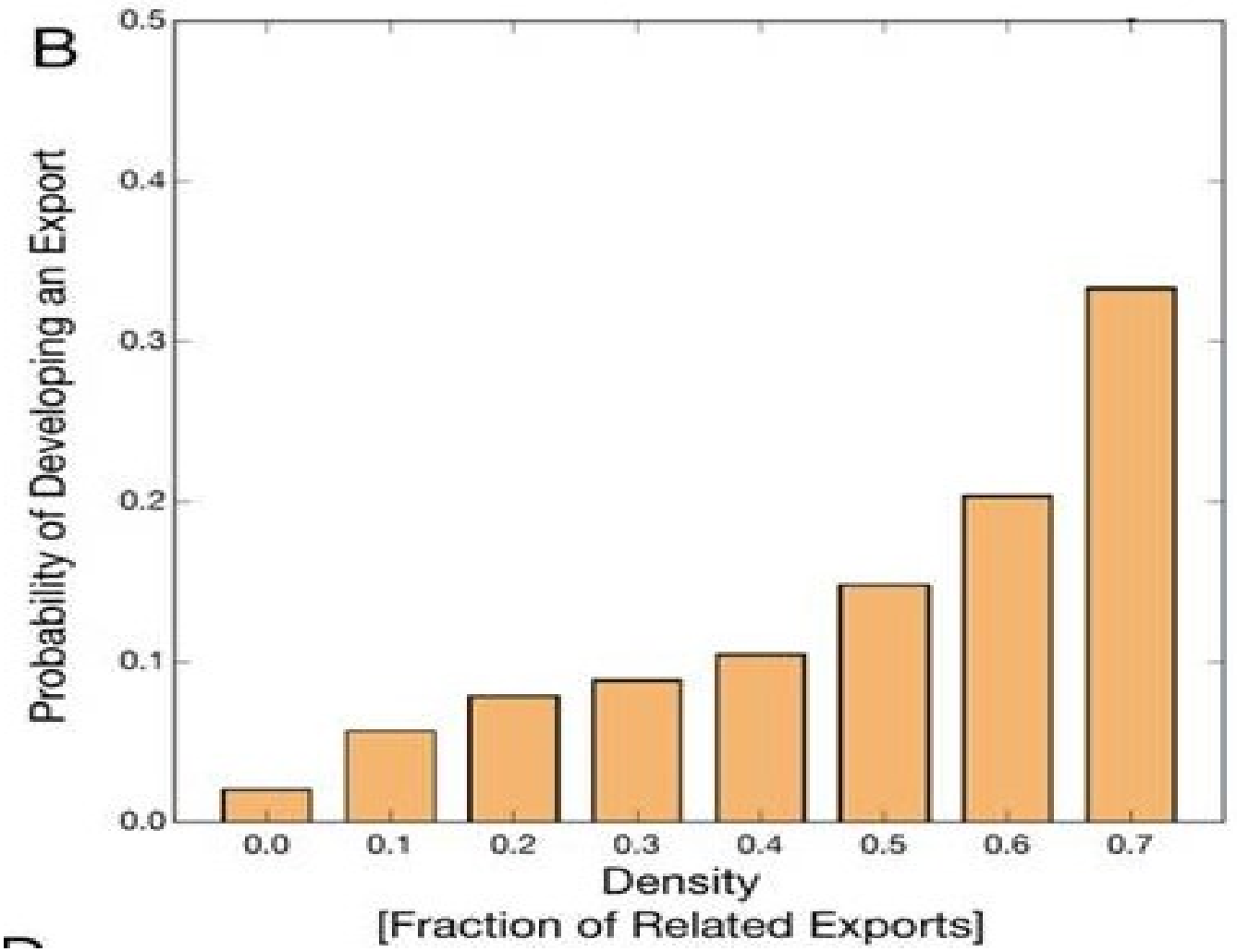
related diversification in regions



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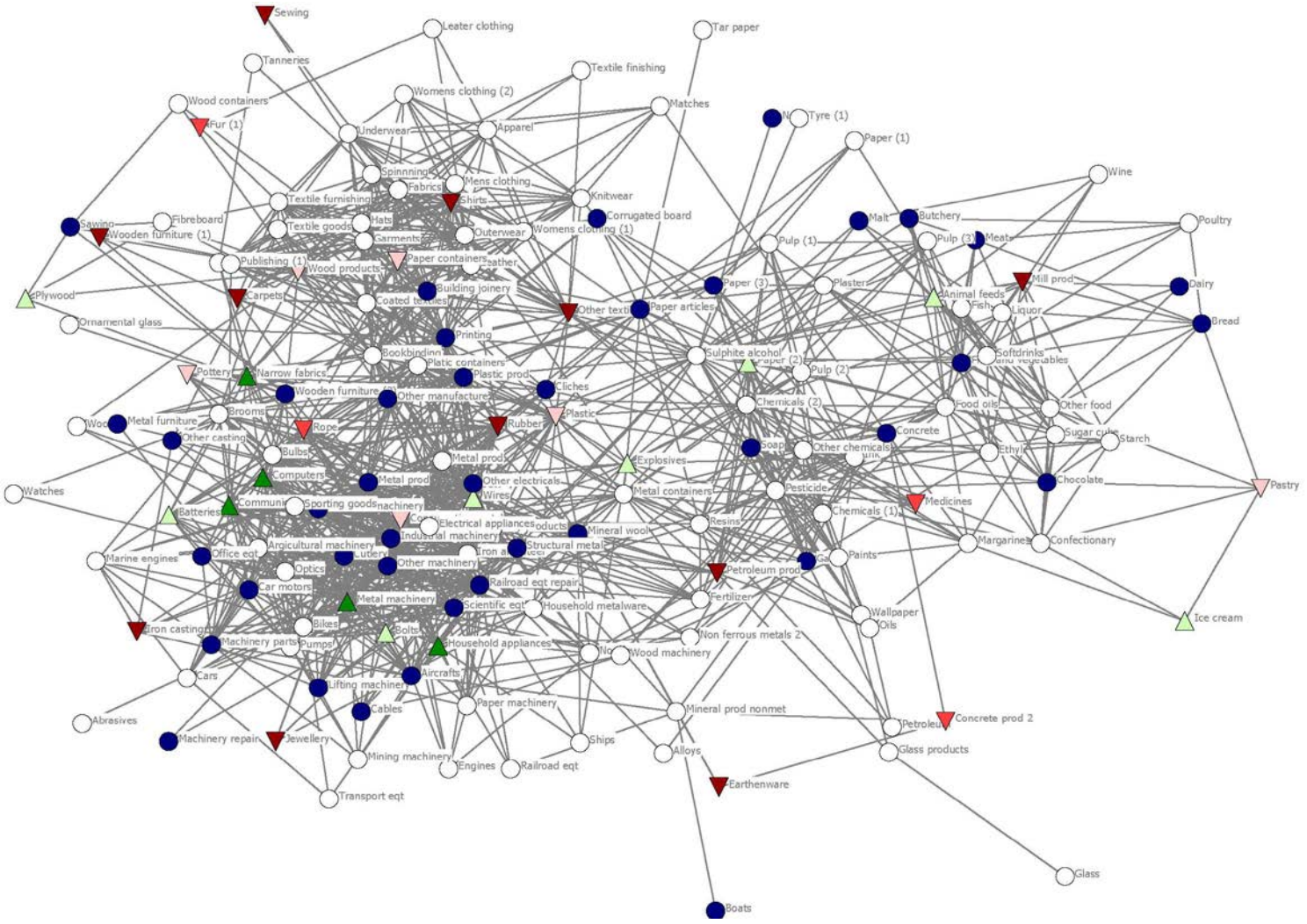
diversification in Linkoping region (Neffke et al. 2011)



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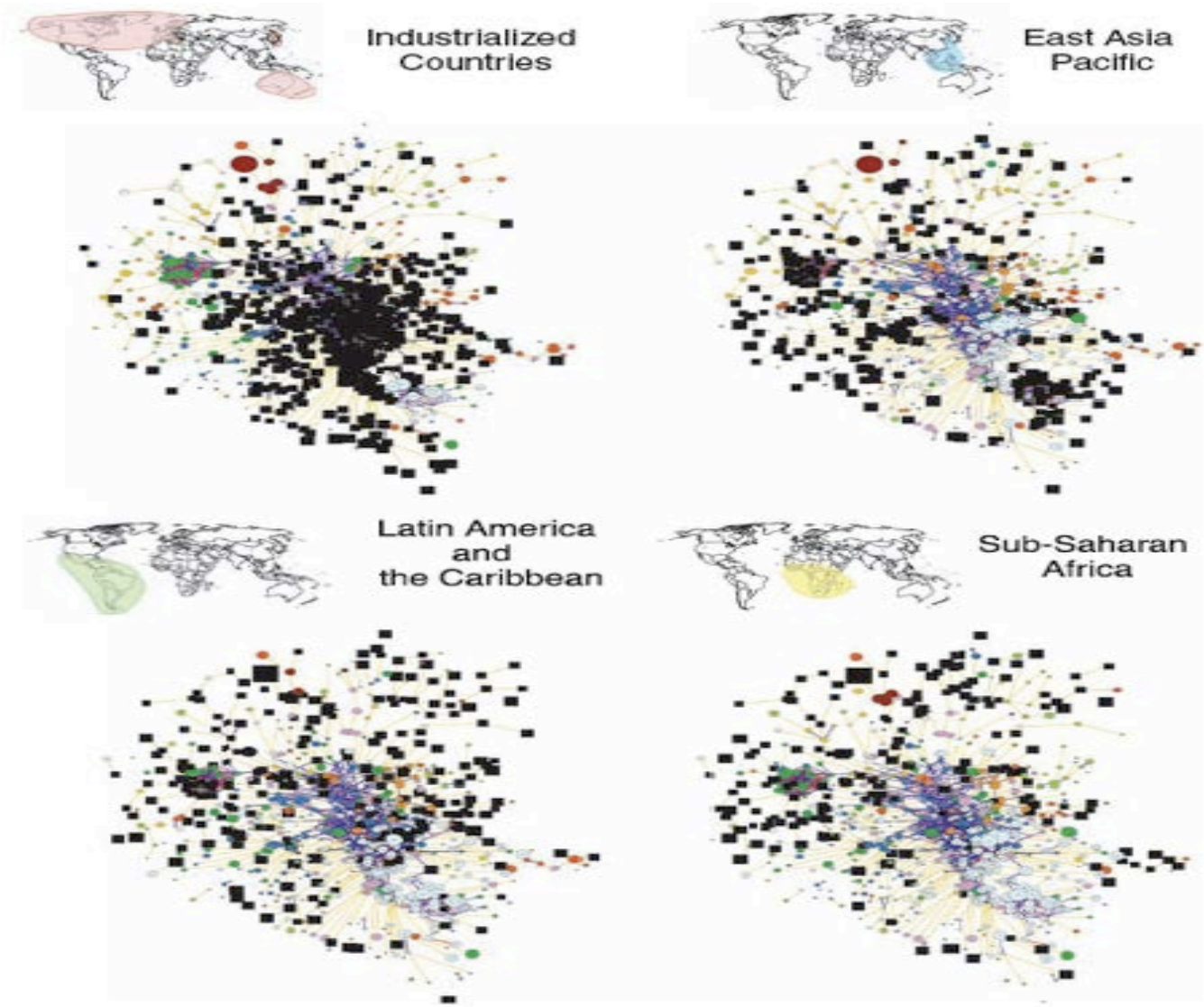
(Hidalgo et al)



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regional diversification

- other relatedness measures (Boschma 2017), e.g.:

- **technology space**: relatedness between technologies: co-occurrence of technology classes on patent documents

- **solar technology space**: relatedness between solar technologies and with other technologies

- **industry space**: relatedness between industries: based on similarities of skills requirements: intensity of labor flows

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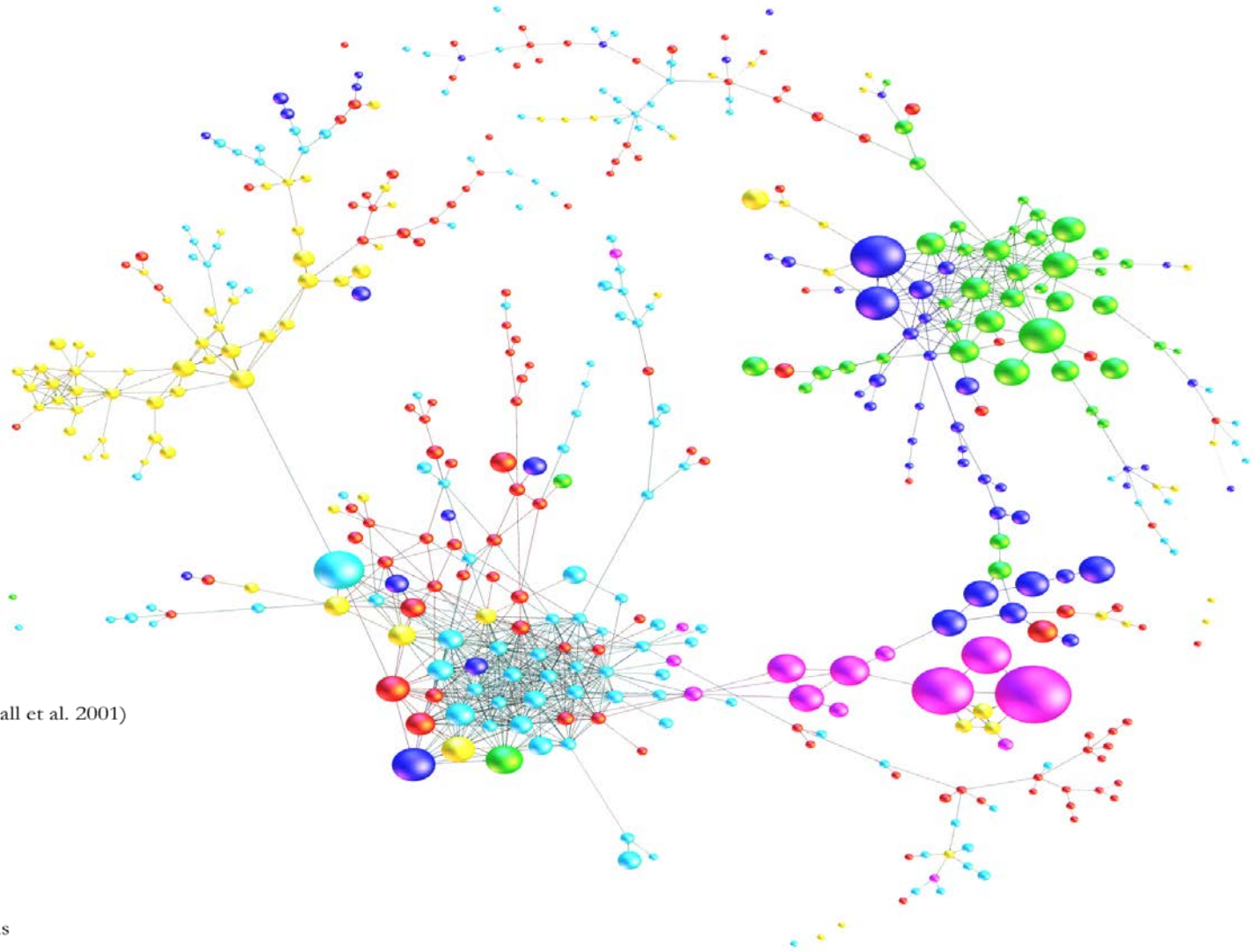
technology space (Boschma et al. 2015)



Node size: # of patents

Node color: USPTO classification (Hall et al. 2001)

- Mechanical
- Chemical
- Drugs and Medical
- Electrical and Electronic
- Computers and Communications
- Others

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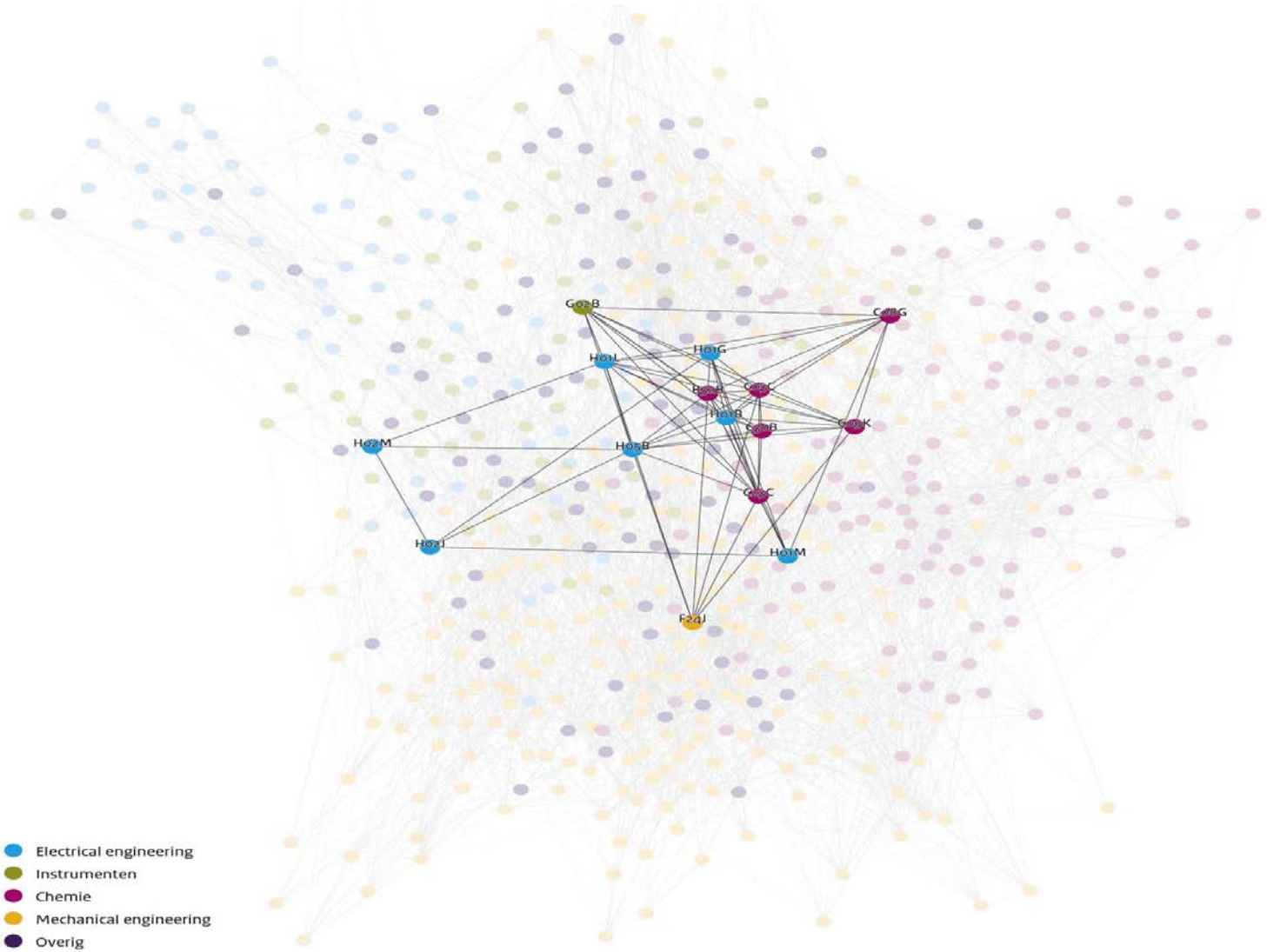
solar technology space



Bron: OECD REGPAT database

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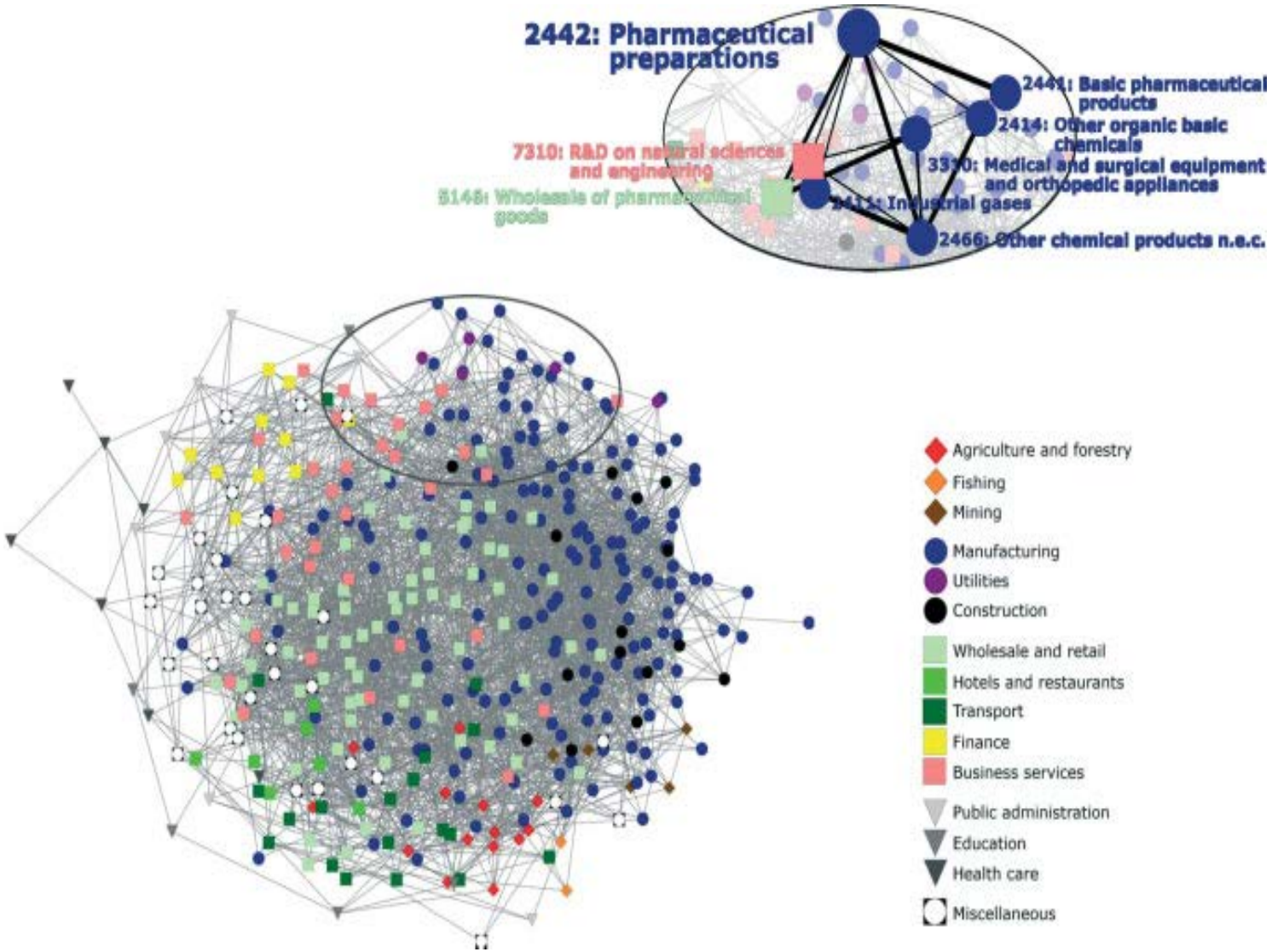
skill space



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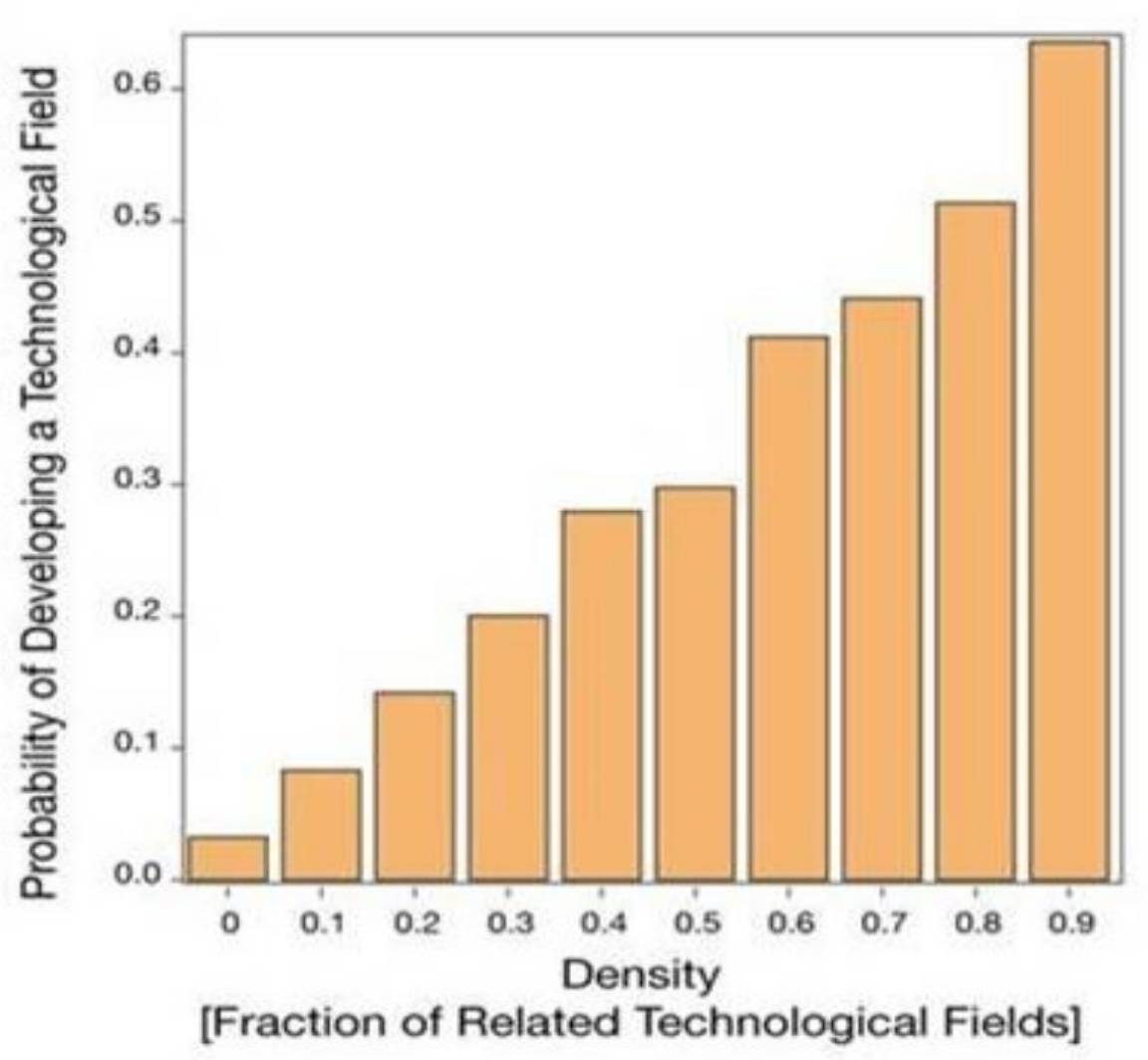
regional diversification



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agents of change

- so regional capabilities matter, but who are the agents of change?

- **what kind of entrepreneurs** drive this process of regional branching?

- **experienced entrepreneurs** with relevant knowledge from **related industries** are crucial in the formative stage of a new industry in a region (Klepper 2007): higher survival rate

- **regions with related industries** have a higher probability to develop the industry: positive effect of **related-industry externalities** on survival (Boschma and Wenting 2007)

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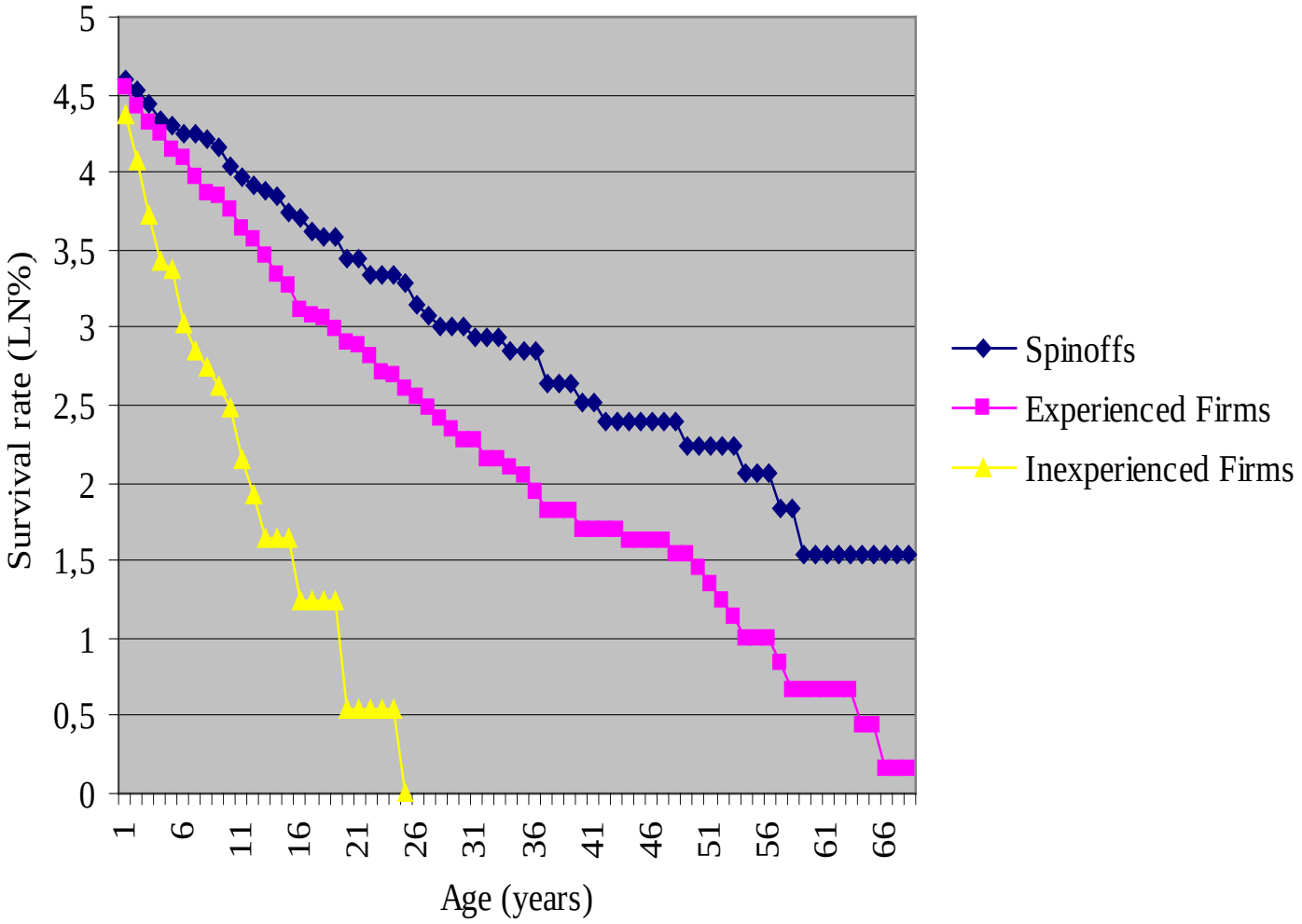
agents of change



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Boschma and Wenting (2007) on rise of British car industry

Table 1. Estimation results of the Cox regressions (standard errors in parentheses)	I	II	III	IV	V
LOCREL	-0.202**	-0.266**	-0.241**	-0.215**	-0.346*
	0.069	0.073	0.075	0.076	0.139
URBECON	0.041	0.048	0.061	0.052	0.166
	0.053	0.053	0.053	0.053	0.094
LOCECON	0.025**	0.030**	0.029**	0.028**	0.026
	0.007	0.008	0.008	0.008	0.016
ENTR1		-0.370**	-0.313*	-0.292*	
		0.143	0.144	0.145	
ENTR2		-0,193	-0,158	-0,148	
		0.149	0.148	0.149	
EXPEF			-0.853**	-0.864**	-0.978**
			0.154	0.154	0.310
SPINOF			-1.293**	-0.300	-0,607
			0.197	0.483	1.023
PARENTS				-0.356*	-0.280
				0.165	0.344
Chi-square	13.121**	20.191**	72.390**	75.390**	24.442**
-2 Log Likelihood	3626,713	3606,509	3565,284	3560,668	1027,602
	N=380	N=380	N=380	N=380	N=133

** significant at the 0.01 level

* significant at the 0.05 level

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agents of change

- **entrepreneurs from related local industries** induce new industry formation in a region
- **entrepreneurs** create structural change in **short run**, but **less** in **long run** due to high failure in region with unrelated activities
- **new subsidiaries** are key agents of structural change in **long run**: to survive, they depend less on related employment in region (see Elekes et al. 2019, EG: effect of MNE's)
- structural change has to be brought in primarily by **actors from outside the region**

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smart specialization policy

- EEG has been influential in the EU: smart specialization policy
- focus on **identifying possible diversification strategies** for regions, based on their **capabilities**

- **relatedness**: to assess **potential risks** of alternative diversification strategies for regions

- **complexity**: to assess **potential benefits** of policy

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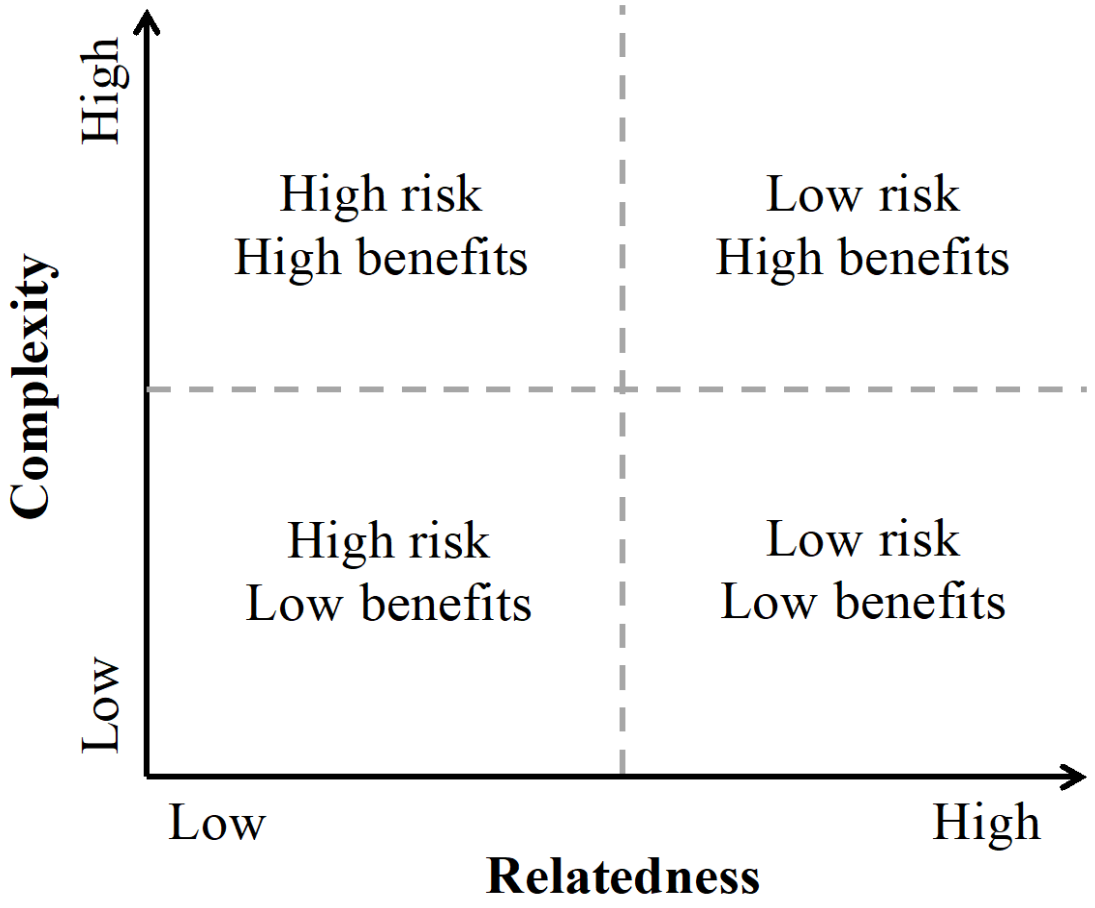
smart specialization policy



Source: Balland et al. (2018)

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smart specialization policy

- **debate:** which diversification strategy?
- **critique on related diversification policy:**

- it happens any how, so **why bother**?
- there is a **risk of lock-in**: related diversification makes regions **more coherent** over time
- unrelated diversification requires **new capabilities** (knowledge, skills, institutions): therefore, need for strong policy intervention

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smart specialization policy

- **critique on unrelated diversification policy** (and what Smart Specialization was supposed to avoid):

- high risk policy failure (also because more experimentation is required)

- cathedrals in the desert: not sustainable in long run

- risk of duplication, especially when policy on ‘grand challenges’ is promoted (all regions go for the same)

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smart specialization policy

- policy focus on related or unrelated diversification depends on **region-specific context**

- **major urban regions**: related diversification provides many opportunities to move in more complex activities, but they also have favorable conditions for unrelated diversification

- **specialized old industrial regions**: unrelated diversification is needed to overcome trap of related diversification in low complex activities (Detroit)

- **peripheral regions**: related diversification provides many opportunities, but they might become trapped in a low complexity economy after some time

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smart specialization policy

- **effectiveness of policy** also depends on **institutional context**

- **institutional context** differs **across European regions**

- national institutions (Boschma and Capone 2015)
- degree of political autonomy (Pike and Rodriguez Pose 2011)
- entrepreneurial culture (Andersson and Koster 2011)
- bridging and bonding social capital (Cortinovis et al 2017)
- quality of government (Charron et al. 2014)

- **challenge for EEG**: how to design and implement policy and governance: need to connect to transition studies and political sciences

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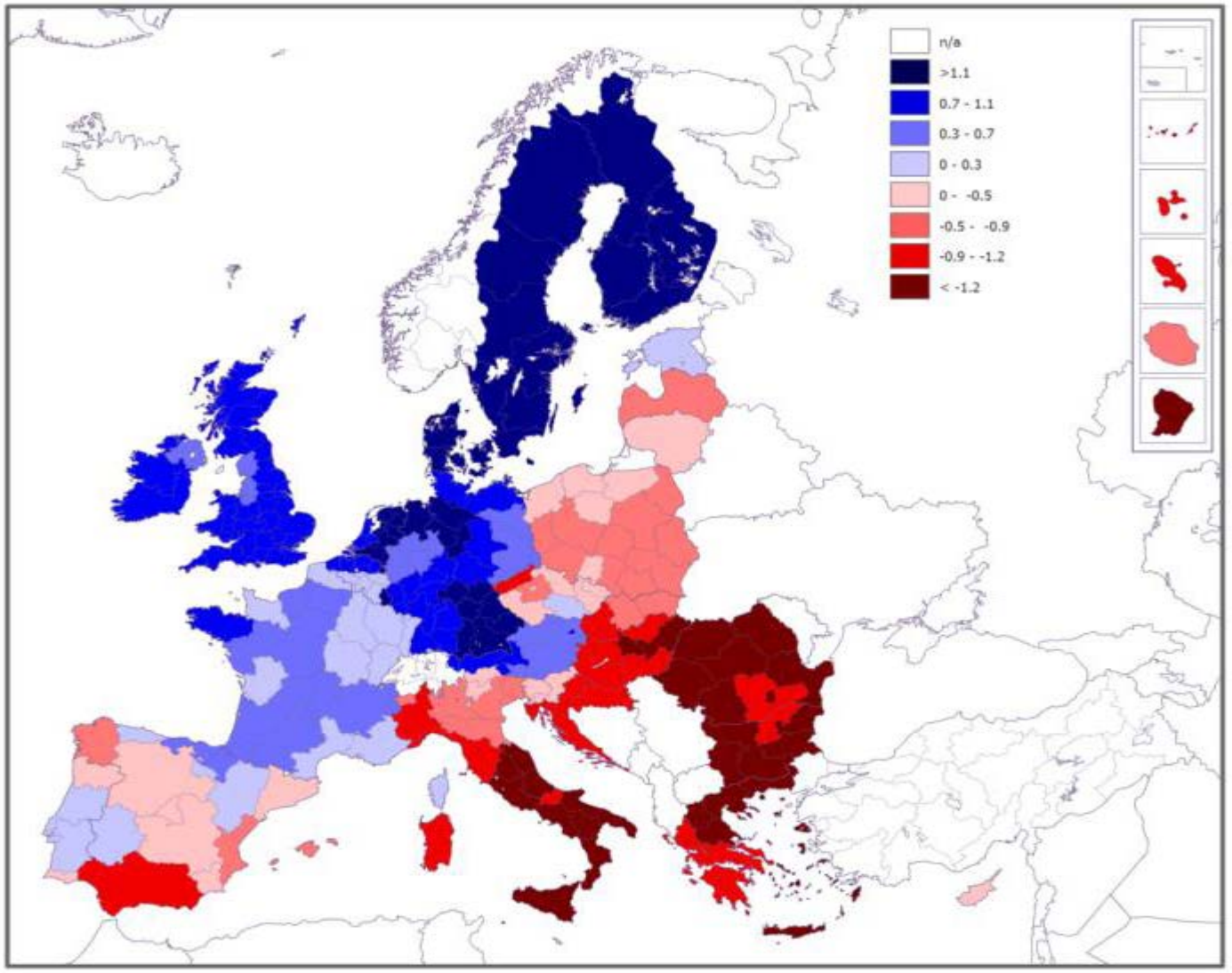
Quality of government 2017



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Source: Charron and Lapuente 2018

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thank you for your attention!