Swedish Clusters

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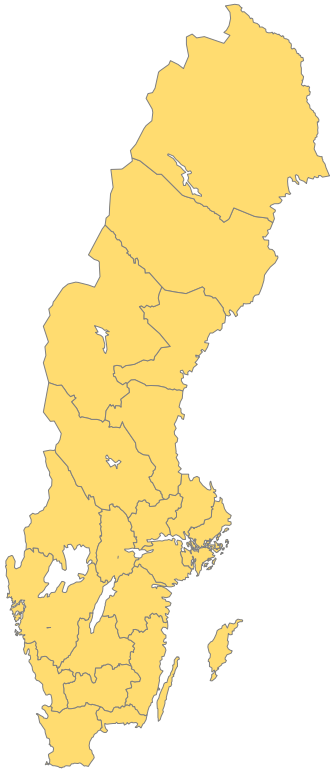
Swedish Clusters

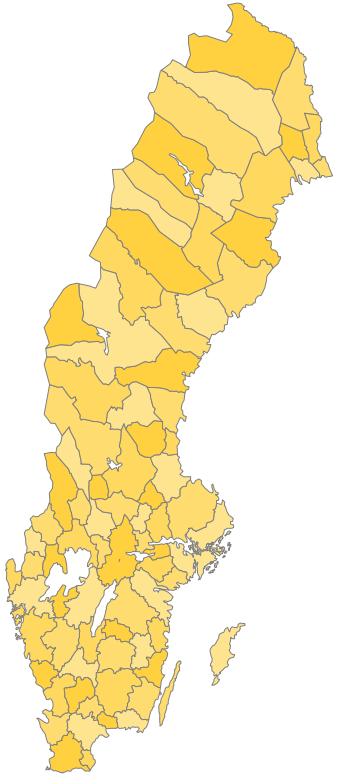
Sweden: Clusters in Focus

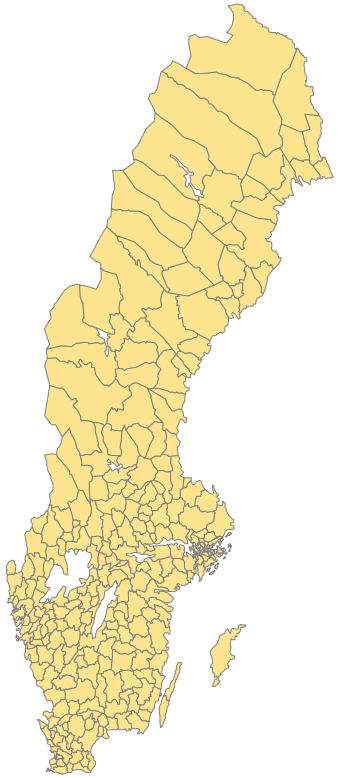
New organisations	• Vinnova • ITPS • NUTEK • ISA
Special projects	• Swedish Cluster Focus Group • TCI Conference
Regional growth programmes	• Vinnväxt Initiative

Swedish Clusters

Swedish regions







1,000 km

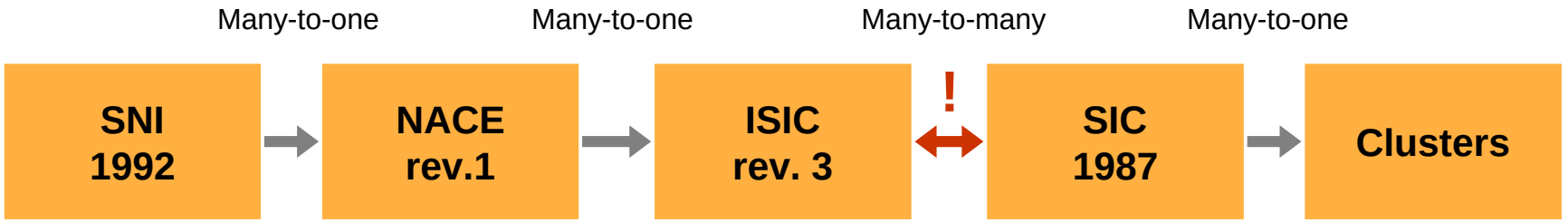
21
Counties
(regional government units)

81
Labour Market Regions
(local commuting regions)

288
Municipalities
(cities, townships)

Swedish Clusters

Industry classifications



- 740 codes
- Five-digit codes
- *Newsprint: 21121*

- 503 codes
- Four-digit codes
- *Manuf. of paper and paperboard: 21.12*

- 292 codes
- Four-digit codes
- *Manuf. of pulp, paper and paper board: 2101*

- 1006 codes
- Four-digit codes
- *Paper mills: 2621*

- 41 codes

Fundamental problems

- Granularity: fewer SNI codes than SIC codes
- Overlap: ambiguous relationships between SIC and ISIC/NACE/SNI

Swedish Clusters

Major cluster composition modifications

Aerospace Engines

- Granularity problem
- Aerospace engines cannot be distinguished
- Cluster has been included in Aerospace and Defence

Motor Driven Products

- Overlap problem
- Only few SNI codes allocated here (tyres, accumulators, brooms)
- Cluster has been excluded in analysis

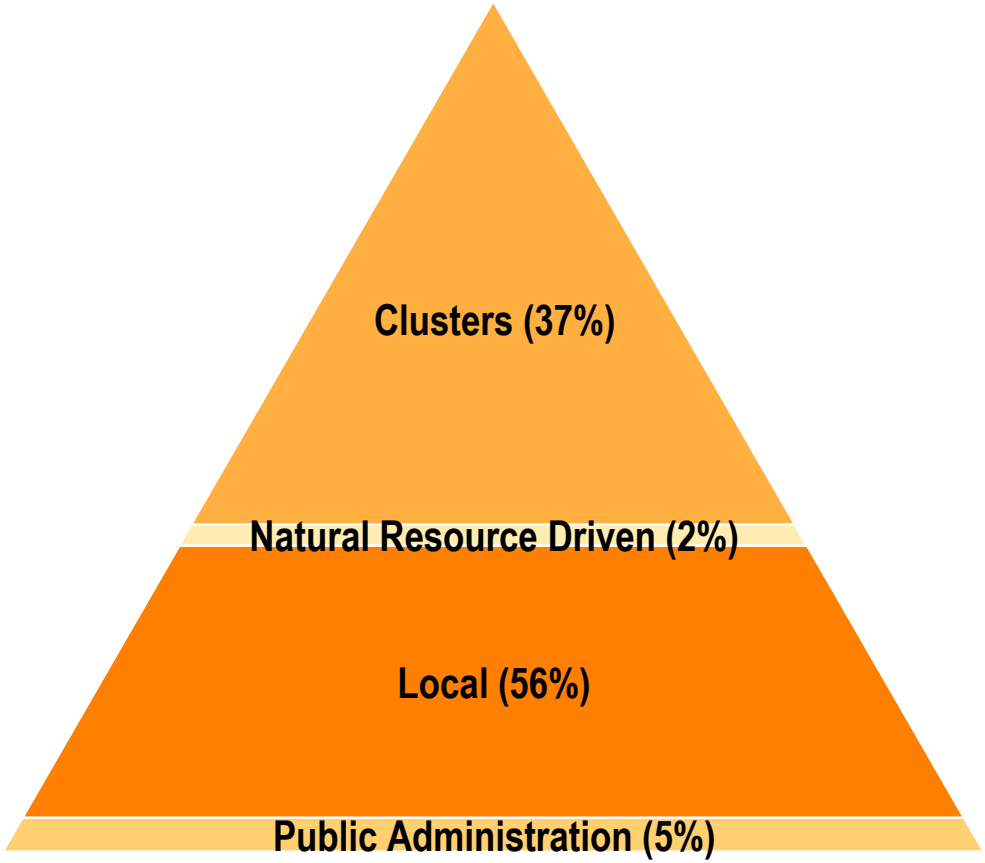
Prefabricated enclosures

- Overlap problem
- Only one SNI code allocated here (office furniture)
- Cluster has been excluded in analysis

Only 38 clusters (of 41) remain in the Swedish analysis

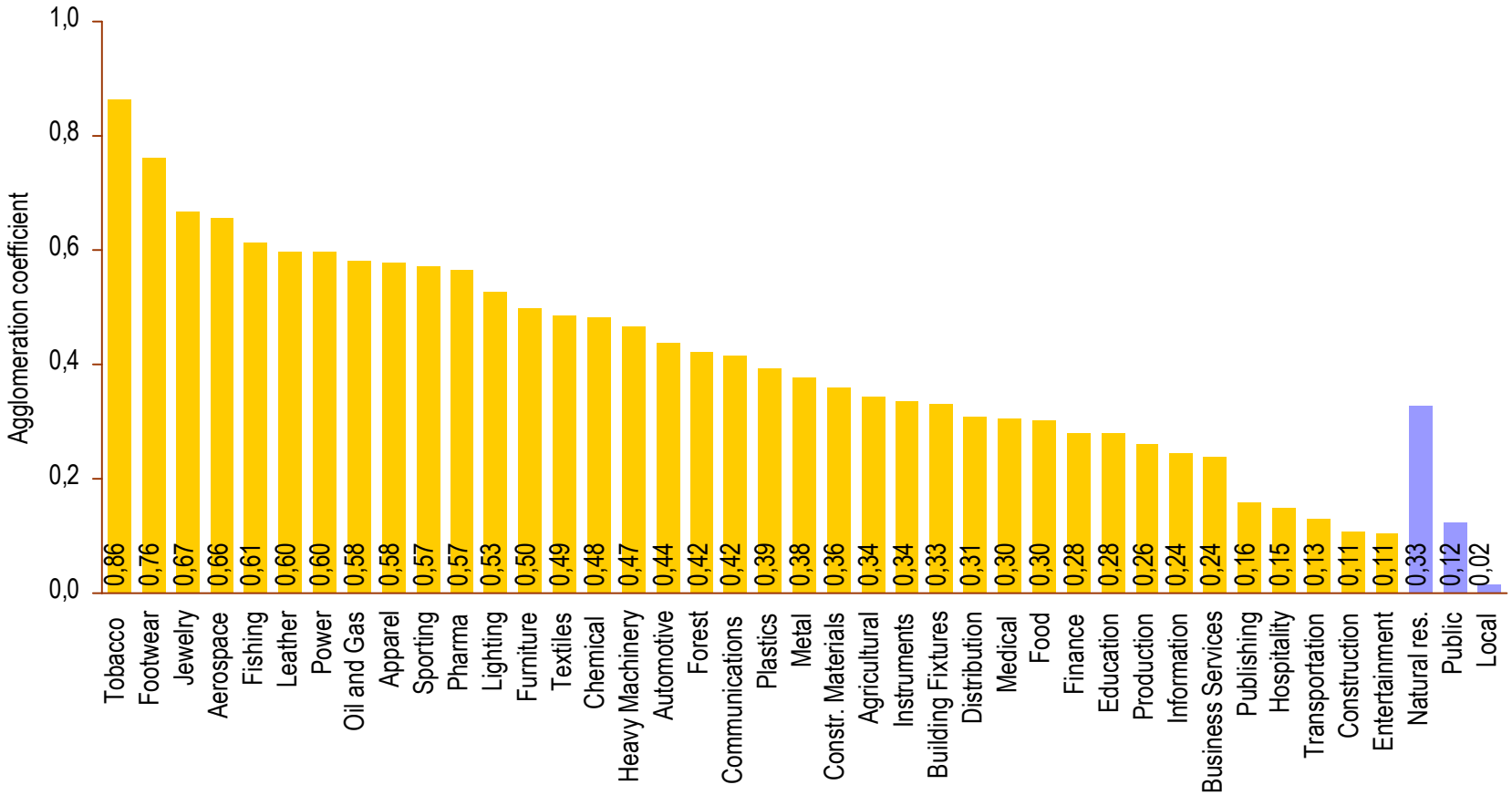
Swedish Clusters

Sectors



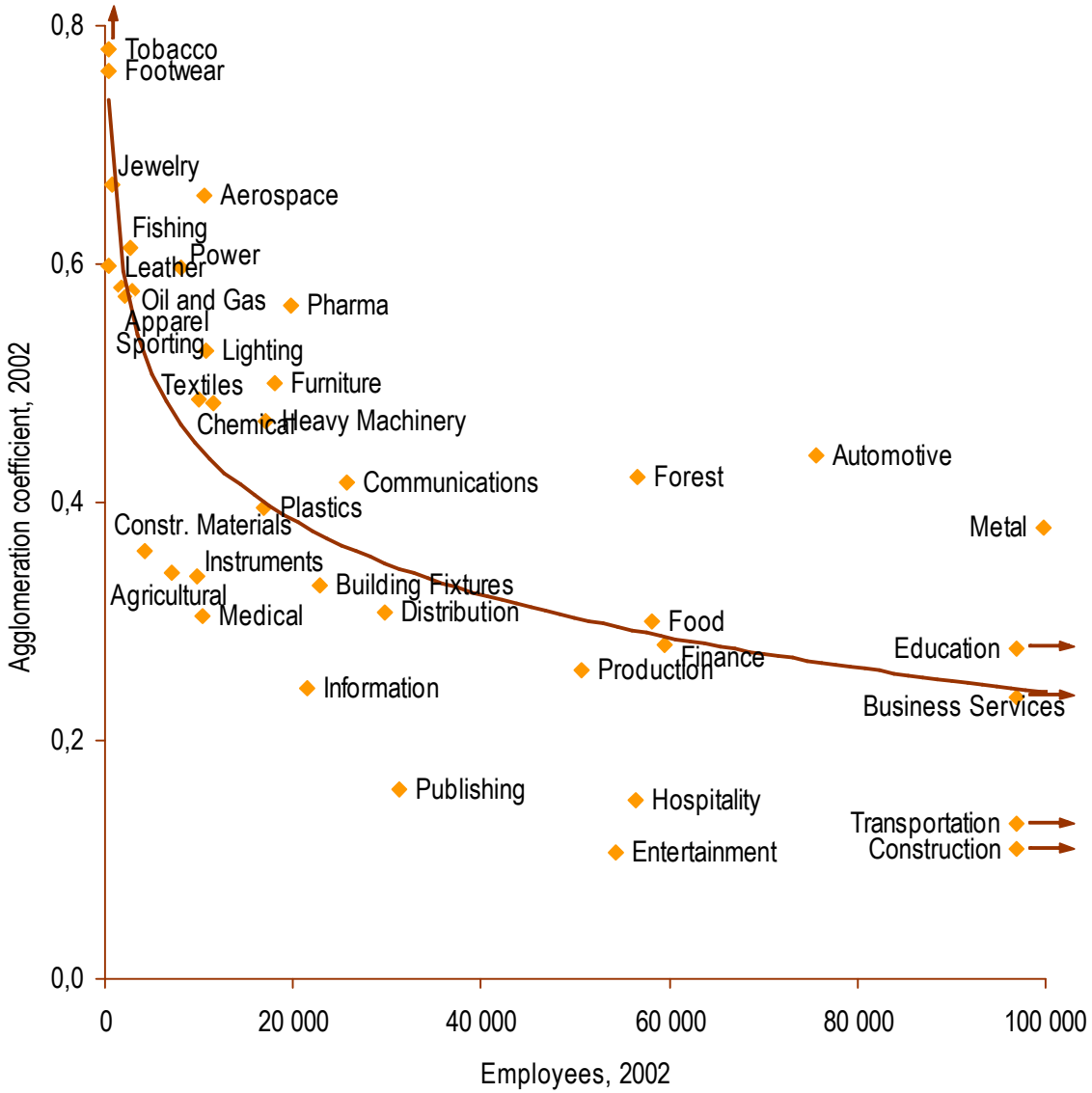
Swedish Clusters

Agglomeration coefficients



Note: The clusters' (yellow) agglomeration coefficients are based on the cluster sector, while the other sectors' (blue) are based on the sum of all segments.

Swedish Clusters



Swedish Clusters

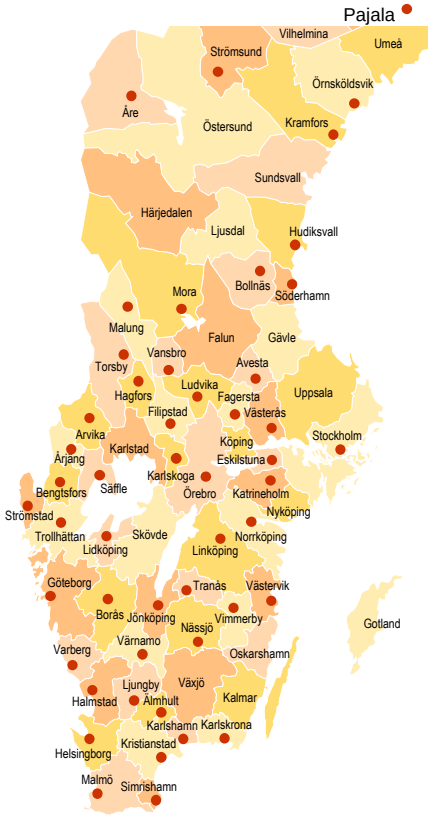
	Empl.	Share of nat. empl.	Work sites	Empl.per work site	Aq
Business Services	196 857	5,30%	24 032	8	0,24
Transportation and Logistics	148 747	4,00%	5 609	27	0,13
Education and Knowledge Creation	118 374	3,19%	3 116	38	0,28
Heavy Construction Services	103 914	2,80%	10 628	10	0,11
Metal Manufacturing	99 858	2,69%	5 330	19	0,38
Automotive	75 710	2,04%	662	114	0,44
Financial Services	59 486	1,60%	3 235	18	0,28
Processed Food	58 157	1,57%	2 290	25	0,30
Forest Products	56 664	1,53%	1 648	34	0,42
Hospitality and Tourism	56 368	1,52%	6 941	8	0,15
Entertainment	54 274	1,46%	10 141	5	0,11
Production Technology	50 723	1,37%	2 192	23	0,26
Publishing and Printing	31 336	0,84%	3 122	10	0,16
Distribution Services	29 843	0,80%	3 179	9	0,31
Communications Equipment	25 678	0,69%	373	69	0,42
Building Fixtures, Equipment and Services	22 793	0,61%	1 204	19	0,33
Information Technology	21 583	0,58%	1 422	15	0,24
Biopharmaceuticals	19 767	0,53%	133	149	0,57
Furniture	17 969	0,48%	945	19	0,50
Heavy Machinery	17 013	0,46%	492	35	0,47
Plastics	16 915	0,46%	481	35	0,39

	Empl.	Share of nat. empl.	Work sites	Empl.per work site	Aq
Chemical Products	11 542	0,31%	274	42	0,48
Lighting and Electrical Equipment	10 836	0,29%	354	31	0,53
Aerospace Vehicles and Defense	10 519	0,28%	62	170	0,66
Medical Devices	10 339	0,28%	718	14	0,30
Textiles	10 074	0,27%	518	19	0,49
Analytical Instruments	9 758	0,26%	363	27	0,34
Power Generation and Transmission	8 111	0,22%	221	37	0,60
Agricultural Products	7 153	0,19%	843	8	0,34
Construction Materials	4 219	0,11%	412	10	0,36
Apparel	2 873	0,08%	271	11	0,58
Fishing and Fishing Products	2 681	0,07%	291	9	0,61
Sporting, Recreational and Children's Goods	2 188	0,06%	137	16	0,57
Oil and Gas Products and Services	1 806	0,05%	40	45	0,58
Jewelry and Precious Metals	757	0,02%	116	7	0,67
Leather Products	449	0,01%	96	5	0,60
Footwear	387	0,01%	41	9	0,76
Tobacco	381	0,01%	2	191	0,86

Swedish Clusters

Strong cluster criteria

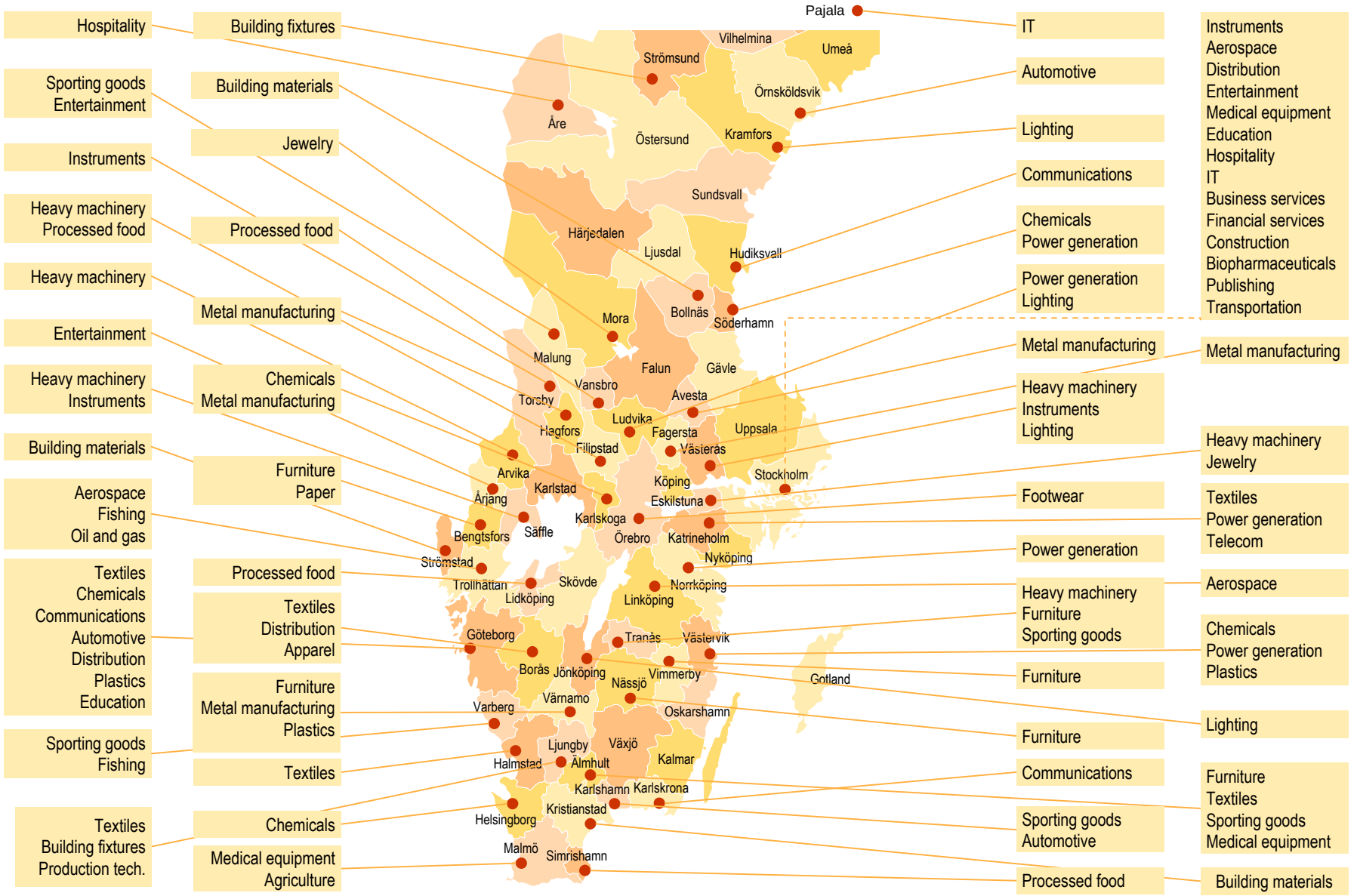
Criterion A (absolute importance)	• Minimum **15%** of cluster's workforce • Minimum 1,000 employees • Minimum 2 work sites
Criterion B (relative importance)	• Minimum location quotient **5** • Minimum 100 employees • Minimum 2 work sites



Note: The location quotient is defined as a region's share of a cluster's workforce divided by the region's share of the total national workforce.

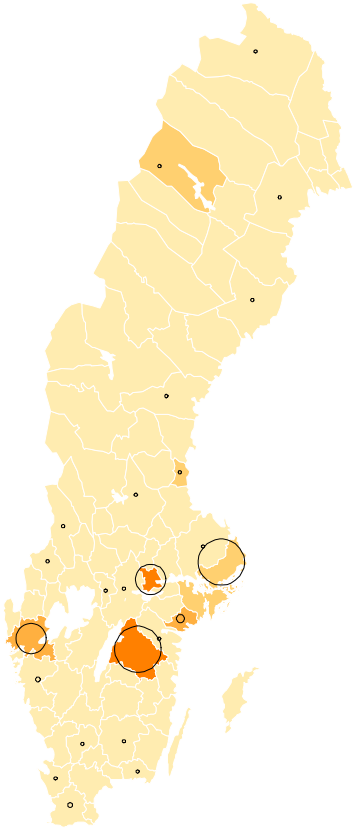
Example: If a region has 12% of a cluster's workforce but only 2% of the total workforce, the location quotient for this region/cluster is 6.

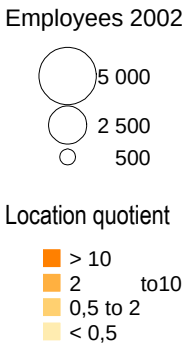
Swedish Industry Clusters

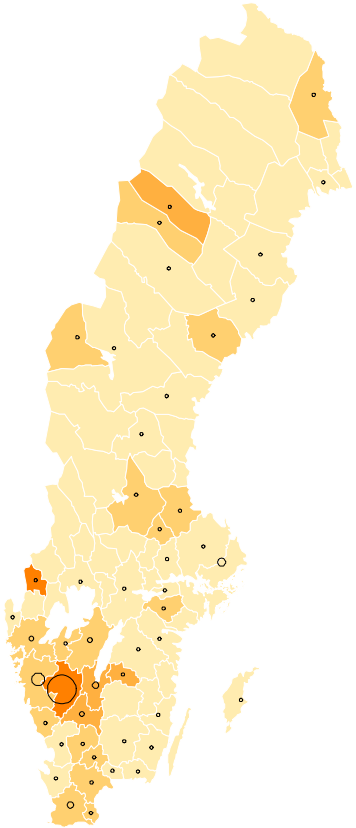


Swedish Clusters

Two concentrated clusters







Aerospace

Apparel

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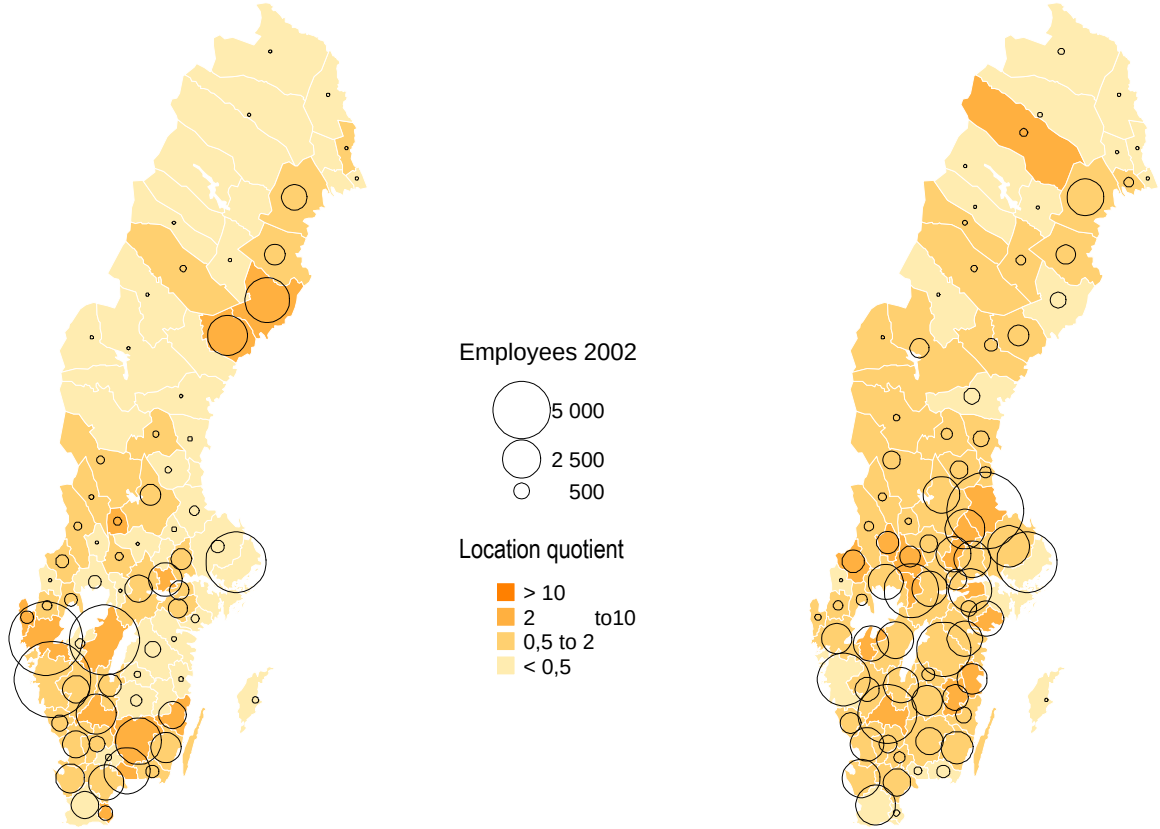
Two dispersed clusters



Automotive

Metal Manufacturing

Swedish Clusters

Agglomeration coefficient defined

$$Ak_b = \frac{1}{2}\sum_{n=1}^{R}\left|\frac{a_{b,n}}{A_b} - \frac{t_n}{T}\right|$$

Agglomeration coefficient Ak for the industry b, where

R = number of regions

$a_{b,n}$ = number of employees in industry b in region n

A_b = national number of employees in industry b

t_n = total number of employees in region n

T = national total number of employees

When Ak = 0, the industry is proportionally spread across regions.

When Ak ? 1, the industry is concentrated to few/small regions.