

Evidencing the benefits of cluster programmes – towards a framework of effects

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What are the effects of cluster programmes?

Do clusters yield positive effects on firm performance?

A review of cluster programme effect analyses in Sweden and internationally

A study conducted for the Swedish Agency for Economic and Regional Growth (Tillväxtverket)

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- A need for evidence of clusters' effects on firm performance
- Turned to existing effect analyses and academic literature
- Found a positive answer to the question...**and** a number of similar 'categories of effects'
- In the process of developing a cluster programme 'framework of effects'...

Testing and elaborating on the 'generic effect logic'

Generally-accepted effect logic of cluster policy



Source: Wise, Wilson and Smith (2017) *A review of cluster programme effect analyses in Sweden and internationally* for Swedish Agency for Regional and Economic Growth

Academic literature provided a baseline

Impacts of clustering

- benefits of agglomeration *and* diversification
- (positive) innovation externalities
- stronger firm-level productivity effects (for small firms)
- new ventures benefit from knowledge spillovers in the ecosystem
- positive effects on firm-level sales, employment, exports

Impacts of cluster programmes

- positive evidence of public investment catalysing private investment
- significant (positive) evidence on firm-level innovation
- mixed evidence of effects on firm-level productivity
- productivity gains an indirect effect of innovation activities in firms
- mixed evidence on firm-level employment, growth and exports
- evidence of positive impact on regional GDP growth and resilience
- stronger university-industry linkages supporting stronger entrepreneurial activity

Synthesis of findings from literature review

	IMPACTS OF CLUSTERING (THEORY)	IMPACTS OF CLUSTER POLICY (SPECIFIC POLICY PROGRAMMES)
INNOVATION IN FIRMS	Positive impact (driven by firm connections with other firms/actors within and outside of cluster)	Significant evidence of positive impact on firm-level innovation
PRODUCTIVITY OF FIRMS	Positive impact (particularly for smaller firms and new ventures)	Some evidence of positive impact on firm-level productivity
EMPLOYMENT IN FIRMS	Positive impact (but more limited evidence)	No significant evidence of impact on firm-level employment
WIDER REGIONAL IMPACTS	Some evidence of positive impact on wages and on employment growth	Evidence of impact on regional GDP growth, new ventures/entrepreneurial activities, and resilience

Source: Wise, Wilson and Smith (2017) *A review of cluster programme effect analyses in Sweden and internationally* for Swedish Agency for Regional and Economic Growth

Complementing literature, reviewed 6 effect analyses from 5 countries

Effect analyses from 6 cluster programmes

- Innovation Network programme, Denmark
- Pôle de Compétitivité (PdC) programme, France
- Collaborative Network Programme (CNP), Northern Ireland
- Norwegian Innovation Clusters Programme*
- Regional Cluster Programme, Tillväxtverket, Sweden
- Vinnväxt – regional growth through dynamic innovation systems, Vinnova, Sweden

Characteristics of the cluster programmes

- Common general aims for strengthening (Triple Helix) linkages and collaboration to foster innovation...and thus longer-term competitiveness
- Monitoring and evaluation practices focus on the direct effects and behavioral changes (vs. indirect economic impacts in firms or system-level changes)
- An even smaller portion analyse economic impacts in 'cluster firms' in relation to control groups

*A more recent programme-level evaluation was published following this report

Selected results from case studies

	Denmark	France	Northern Ireland	Norway	Sweden (TVV)	Sweden (Vinnova)
	55% of companies have or plan to develop new products, services or processes as a result of cluster activities	2500 collaborative R&D projects generated innovations, of which 75% are new products or processes	56% of companies engaged in collaborative research, development or design activities	434 new collaborative research and innovation projects (2016)	65% of companies perceive cluster initiative supports innovation and renewal	27% of companies have introduced new products or services
	Companies gain new collaborations with other companies (49%), with knowledge institutions (36%), with public sector actors (23%) and with international partners (14%)	60% of companies gained new collaboration partners as a result of cluster activities	54% of companies reported that CNPs had had a significant impact on helping companies establish and maintain business contacts	Each cluster company establishes an average of 11 new collaboration partners each year	57% of companies perceive cluster initiative contributed to new R&D contacts	50% of companies initiated new collaborations with other companies or reserach actors as a result of cluster activities
	Companies in R&D collaboration increase productivity with an average of 9% a year over 9 years		Created turnover of £15,36 M; safeguarded £16,28 M	Cluster companies experience 7,3% higher sales revenue (compared to control group)	71,2% of cluster companies with higher revenue growth and 50,9% with higher employment growth compared to national average for the sector	Faster revenue growth per employee (over last 5 years) in cluster companies relative to control group
	Companies in clusters experience significantly higher probability of participating in other innovation programmes	Collaborative R&D projects led to creation of 93 start-ups	51% of companies reported that CNP has had a significant impact on improving the image of their sector	313 new international collaboration projects (2016) 114 new cluster-to-cluster collaboration projects (2016)	Cluster programme contributed to new collaboration between policy actors on regional and national levels and with clusters in other countries	Strengthened capability to manage structural change

Case studies
also provided
positive
evidence

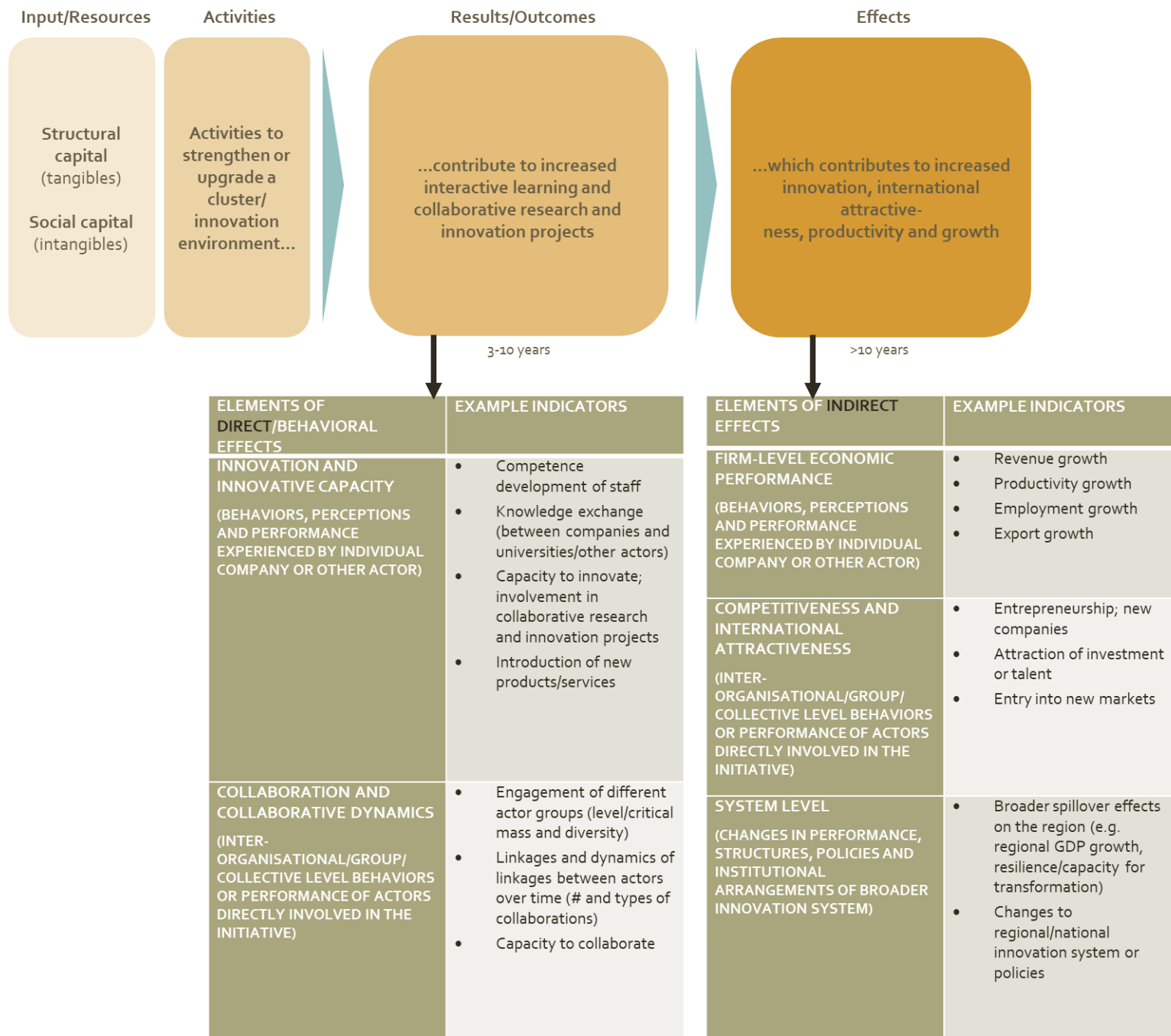
Similar types of effects measured across cluster programmes

ELEMENTS OF DIRECT/BEHAVIORAL EFFECTS	EXAMPLE INDICATORS
INNOVATION AND INNOVATIVE CAPACITY (BEHAVIORS, PERCEPTIONS AND PERFORMANCE EXPERIENCED BY INDIVIDUAL COMPANY OR OTHER ACTOR)	<ul style="list-style-type: none"> • Competence development of staff • Knowledge exchange (between companies and universities/other actors) • Capacity to innovate; involvement in collaborative research and innovation projects • Introduction of new products/services
COLLABORATION AND COLLABORATIVE DYNAMICS (INTER-ORGANISATIONAL/ GROUP/ COLLECTIVE LEVEL BEHAVIORS OR PERFORMANCE OF ACTORS DIRECTLY INVOLVED IN THE INITIATIVE)	<ul style="list-style-type: none"> • Engagement of different actor groups (level/critical mass and diversity) • Linkages and dynamics of linkages between actors over time (# and types of collaborations) • Capacity to collaborate

ELEMENTS OF INDIRECT EFFECTS	EXAMPLE INDICATORS
FIRM-LEVEL ECONOMIC PERFORMANCE (BEHAVIORS, PERCEPTIONS AND PERFORMANCE EXPERIENCED BY INDIVIDUAL COMPANY OR OTHER ACTOR)	<ul style="list-style-type: none"> • Revenue growth • Productivity growth • Employment growth • Export growth
COMPETITIVENESS AND INTERNATIONAL ATTRACTIVENESS (INTER-ORGANISATIONAL/ GROUP/ COLLECTIVE LEVEL BEHAVIORS OR PERFORMANCE OF ACTORS DIRECTLY INVOLVED IN THE INITIATIVE)	<ul style="list-style-type: none"> • Entrepreneurship; new companies • Attraction of investment or talent • Entry into new markets
SYSTEM LEVEL (CHANGES IN PERFORMANCE, STRUCTURES, POLICIES AND INSTITUTIONAL ARRANGEMENTS OF BROADER INNOVATION SYSTEM)	<ul style="list-style-type: none"> • Broader spillover effects on the region (e.g. regional GDP growth, resilience/capacity for transformation) • Changes to regional/national innovation system or policies

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A framework of effects that mirrors the generic effect logic



Questions to discuss

1. Does the categorization of types of effects make sense? What adjustments would you propose?
 - Direct results/effects – cluster participants
 - Innovation/innovative capacity (individual actor)
 - Collaboration/collaborative dynamics (group/collective; involved in CI)
 - Indirect effects – cluster participants and spillovers
 - Actor-level performance (individual actor; affected by CI)
 - Competitiveness and intl attractiveness of regional innovation ecosystem (group/collective; affected by CI)
 - Effectiveness of business and innovation support system (group/collective; affected by CI)
2. Where do your experiences fit (or not)?
3. Do you currently monitor/assess system level effects?
 - If so, what types of 'categories'/indicators...and how?
 - If not, why not?