

Regional resilience

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Background

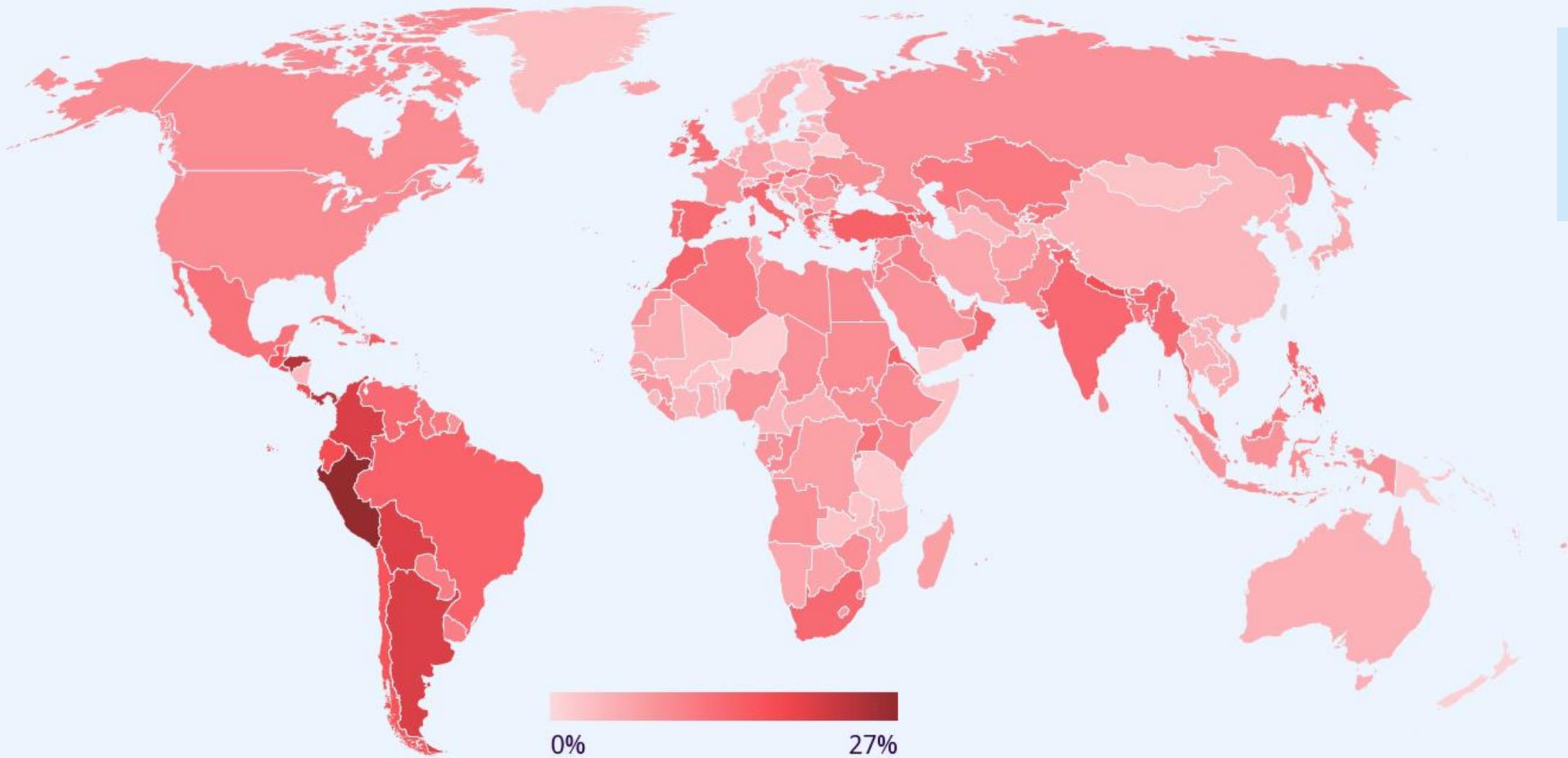
- Resilience: “*The ability of a substance or object to spring back into shape, **elasticity**. The **capacity to recover quickly from difficulties**, toughness.*” (Oxford Dictionary of English 2010:1512).
- Resilience in different fields of science (Davoudi 2012):
 - Psychology: Life control and ability to recover from difficulties
 - Physics: the characteristics of a spring and describe the stability of materials and their resistance to external shocks
 - Biology, ecology: The ability of ecological systems to recover from disturbances
- Growing interest for regional (economic) resilience in regional studies along with the 2008 economic crisis (e.g. Martin 2012) and a resilience research boom along with the Covid-19 crisis. Uncertainty is certain - How to deal with it?



...or not?



Figure 3. Working hours lost around the world in 2020 relative to the fourth quarter of 2019 (percentage)



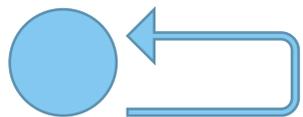
Which reasons might cause the spatial differences in regional responses to covid-19 pandemic?

Source: ILO nowcasting model

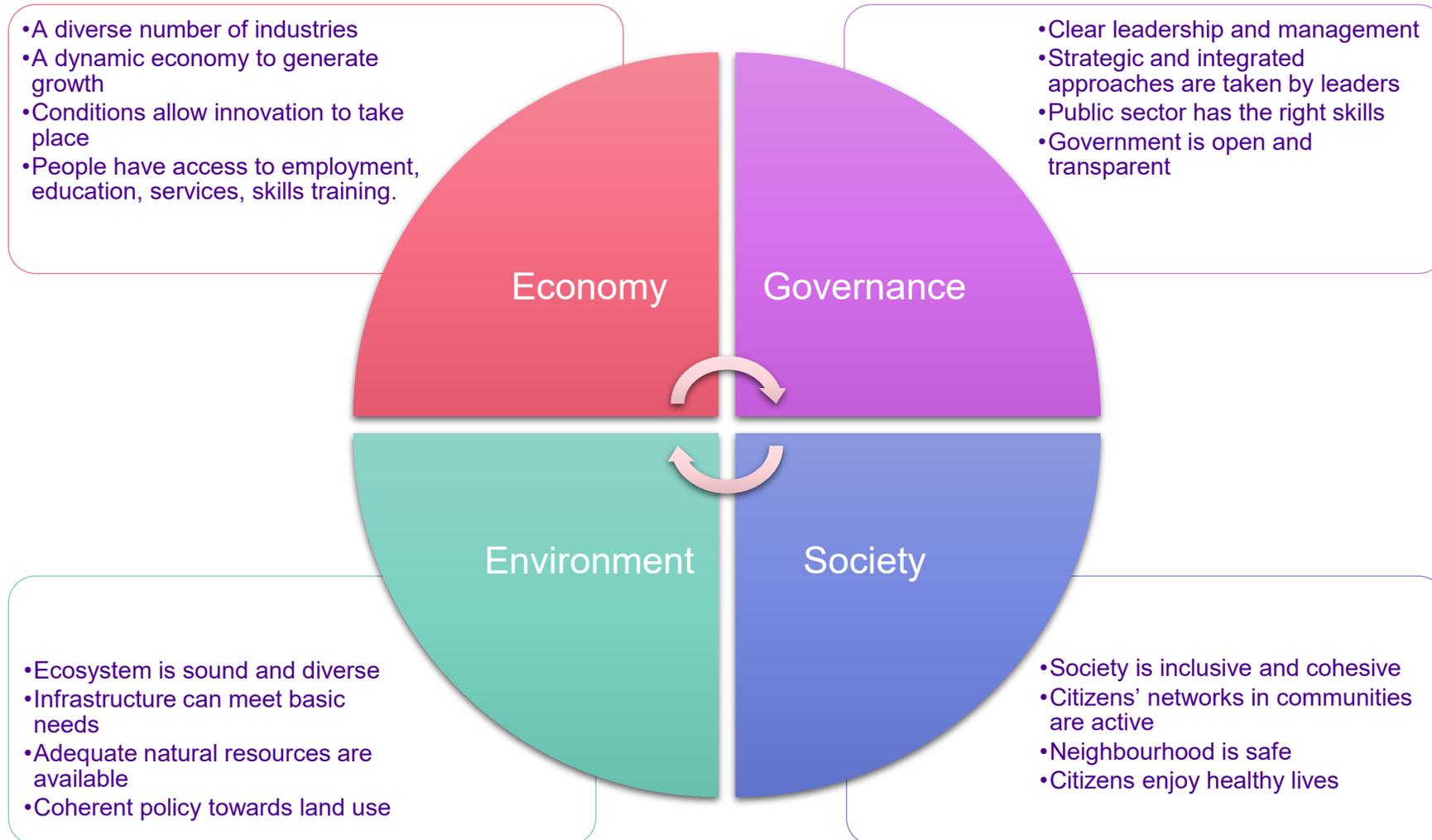
From: ILO Monitor COVID-19 and the world of work. Seventh edition Updated estimates and analysis. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/briefingnote/wcms_767028.pdf

Three different approaches on resilience

- Approaches on resilience (Davoudi 2012:300-303, Martin 2012:10, Walker et al. 2004)
 1. **Engineering resilience:** The ability of a system to resist and **bounce-back** to a pre-shock state or equilibrium (physical sciences)
 2. **Ecological resilience:** The ability of a system to absorb disruption before it is de-stabilized and moved to **another stable state or configuration, bounce-forth. The identity of the system remains** the same (core functions, structures, feedback-systems) (ecological sciences)
 3. **Evolutionary resilience, Adaptive resilience:** The ability of a system to undergo anticipatory or reactionary **reorganization** to minimize impact of a destabilizing shock. Focus is on adaptive capability. Stable states of a system are considered nonexistent.



Regional resilience

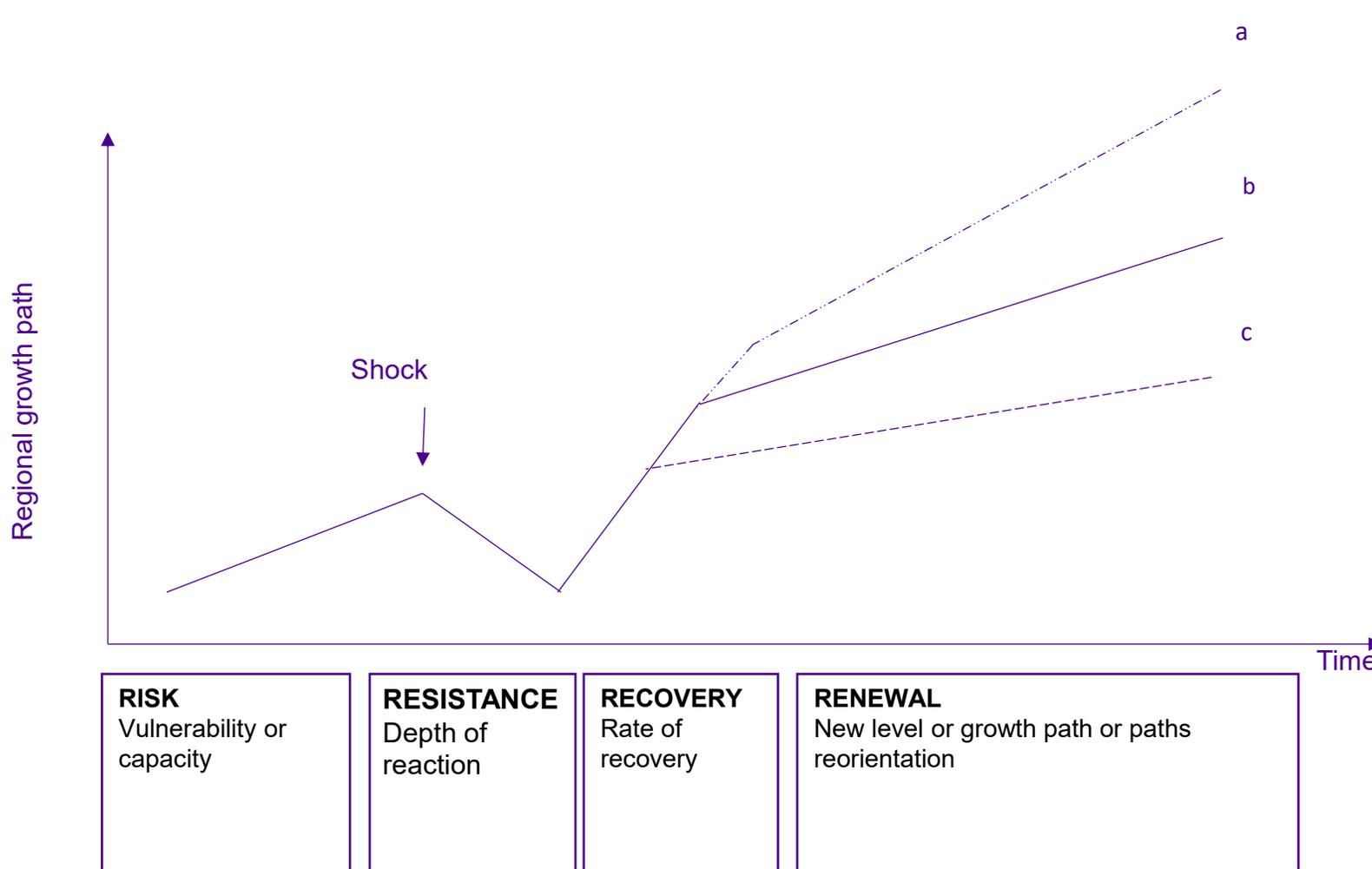


Regional economic resilience

Regional economic resilience – definition

- “To reconfigure, that is adapt, its structure (firms, industries, technologies and institutions) so as to maintain an acceptable growth path in output, employment and wealth over time.” (Martin 2012: 10)
- ”The capacity of a regional or local economy to **withstand or recover** market, competitive and environmental shocks to its developmental growth path, if necessary, by undergoing **adaptive changes** to its economic structures and its social and institutional arrangements, so as to maintain or restore its previous developmental path, or transit to a new sustainable path characterized by a more productive and equitable use of its physical, human and environmental resources. (Martin & Sunley 2020, 15)

Measuring regional economic resilience

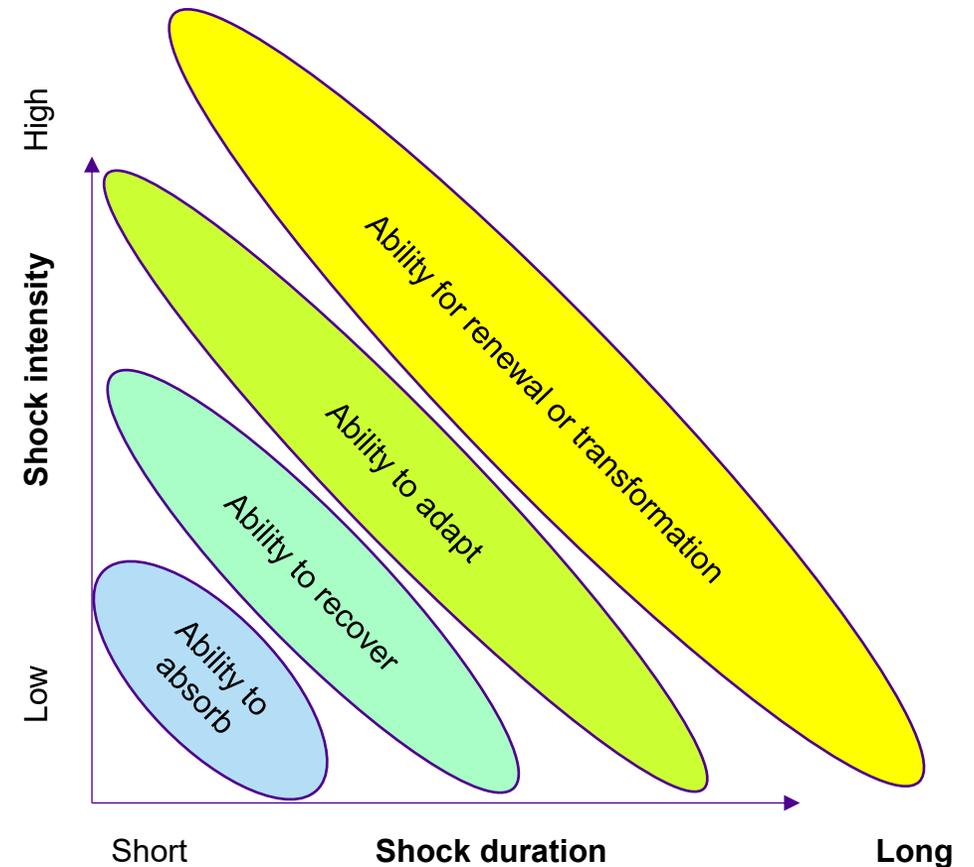


- Actual resilience is about the **outcome** in a crisis situation (cf. risk /potential)
- Resilience is about measuring **change**
- Crisis can have long-term effects on regional economy (hysteresis)
- "Regional growth path" impacts are usually measured with **GDP or employment** (better for social impacts) changes
- Reorientation can be quantitatively measured with changes in industrial structure
- Figure:
 - a) recovers to better state than it was
 - b) recovers to its previous state
 - c) remains at a lower level than it was

Crises call for resilience

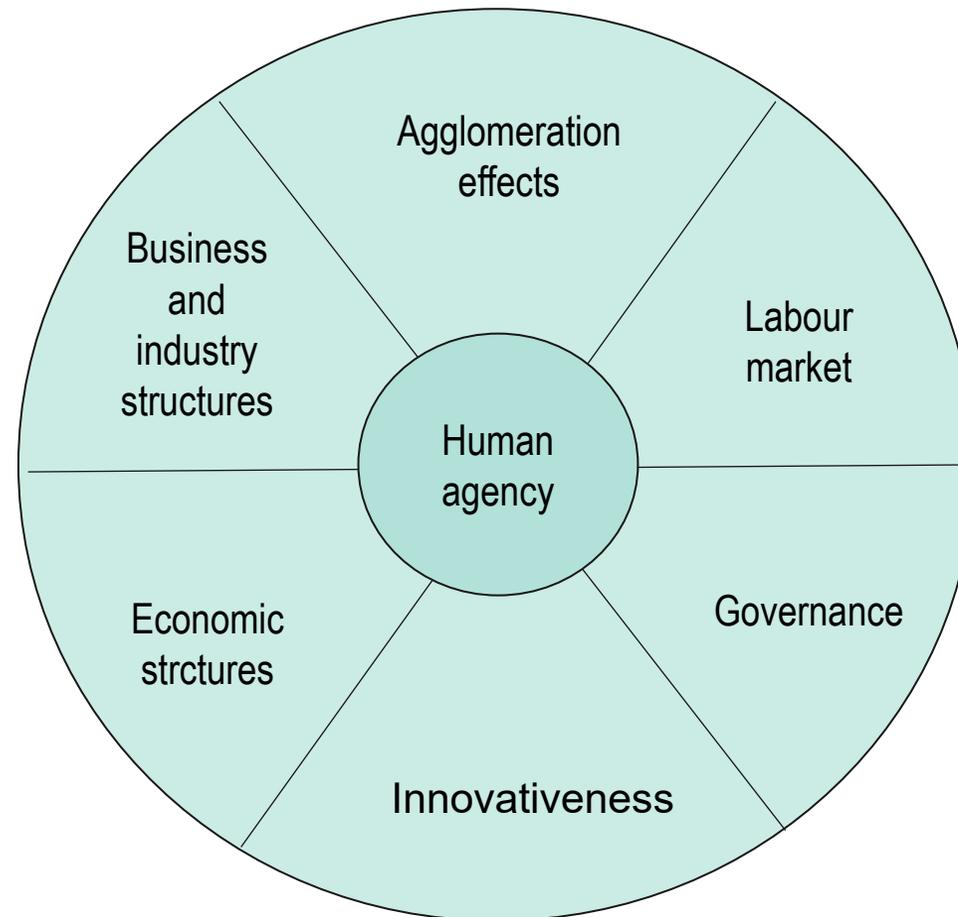
- Crises at different **spatial scales** (local – global).
 - From regions' point of view endogenous or exogenous
- Crises for **different reasons**: global economic crisis, technological development (creative destruction), commodity prices, demand changes, politics and regulation, geopolitics and conflicts, environmental crises, local events (like closures of large employers), pandemics etc. Also unexpected reasons!
- Resilience usually refers to situations related to **instant shock**, not "slow-burn" stress factors (like aging population)
- Crises are different, so are the reactions and ways to cope with them
- **Crises** may also create opportunity for **renewal**. When some doors close new ones may open:
 - *When a social entity (individual, group, organisation, industry, economy, country, etc) is faced with a constraint, it finds new ways of operating, because away-from-equilibrium (established norms) systems are forced to experiment and explore their space of possibilities, and this exploration helps them discover and create new patterns of relationships and different structures. (Mitleton-Kelly (2003, 30)*

Different shocks call for different types of resilience capacities



What makes regional economy resilient?

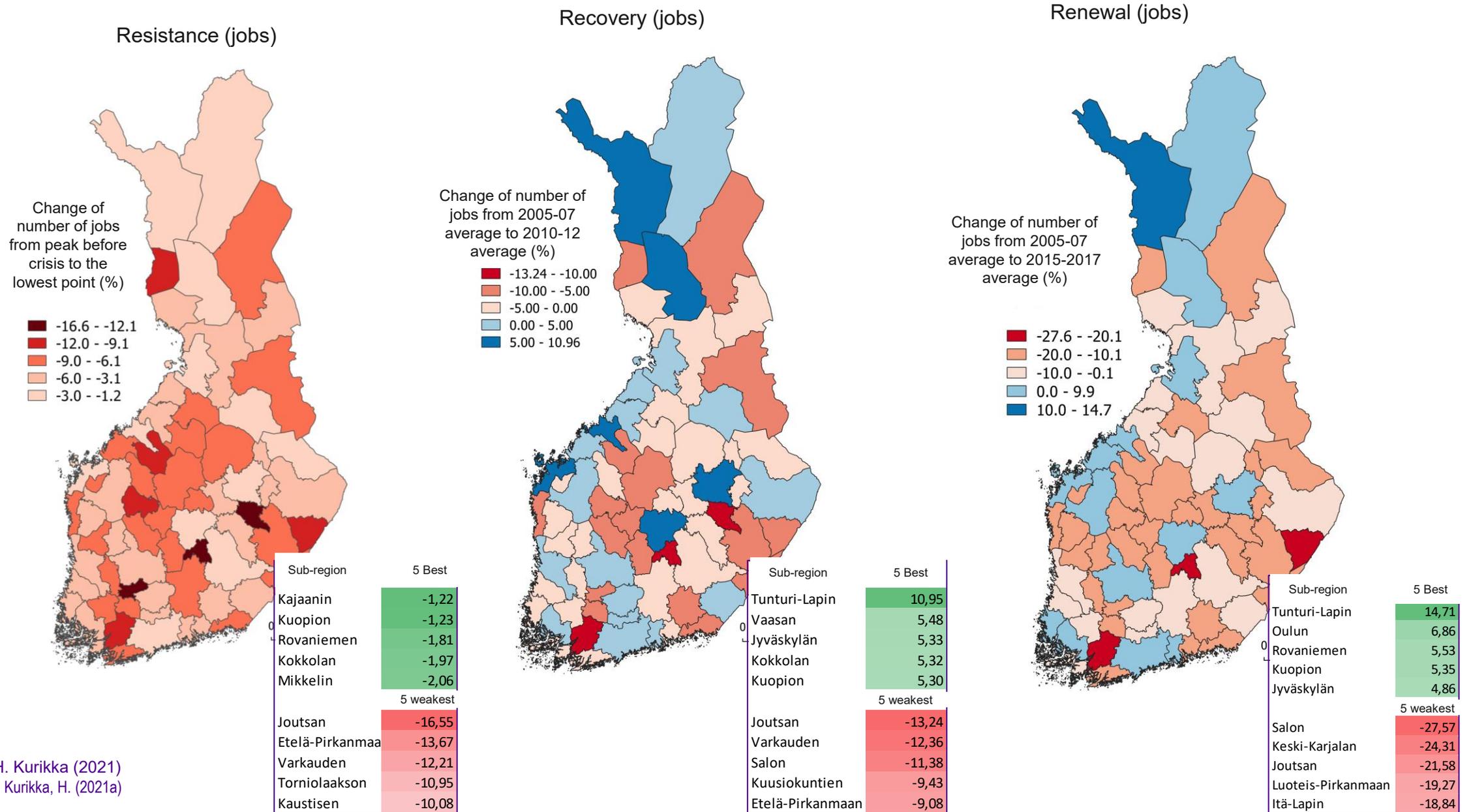
- Main groups of factors shaping regional economic resilience



- Examples
 - Higher level of innovation activities created better resistance and recovery
 - Large urban regions were more vulnerable in 2008 recession in EU NUTS 2 regions

(Muštra V. et al. 2020).

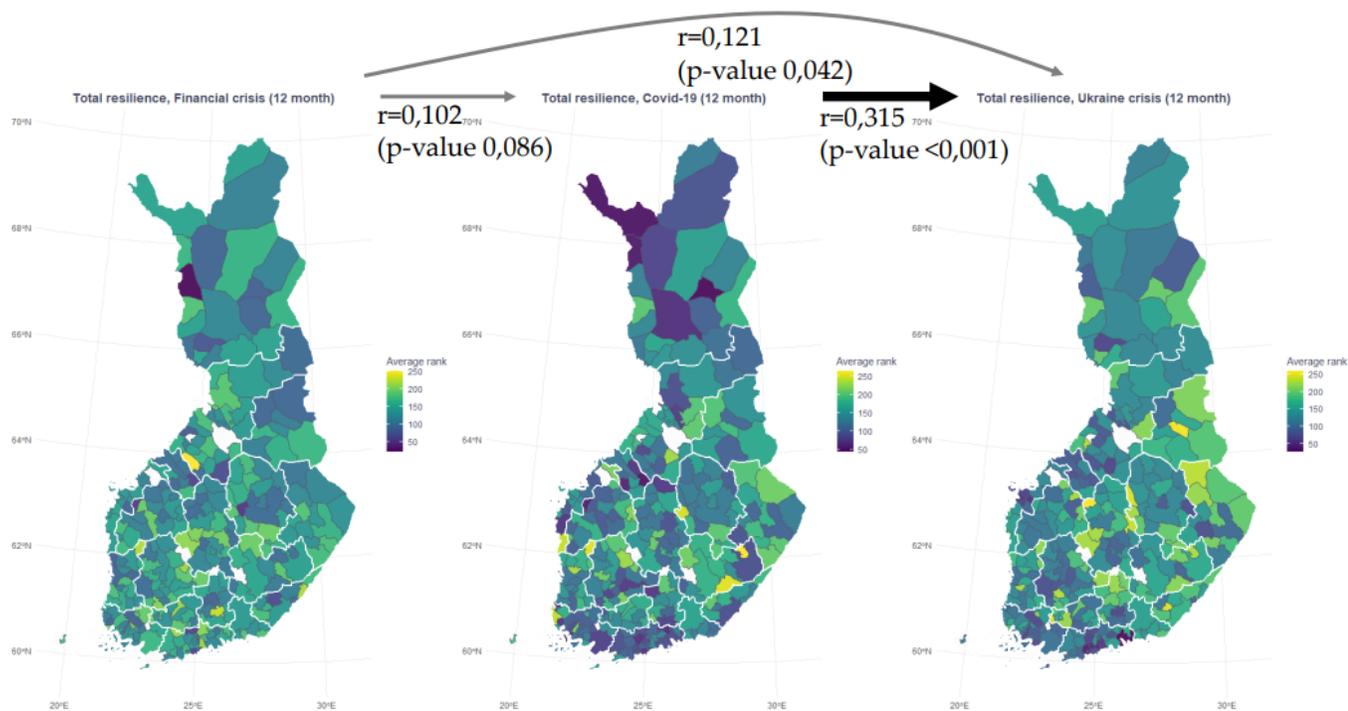
Empirics – Finland and "the Great recession"



Three different crises – a spatial comparison



Total resilience, long-term (12 months)



Correlation with short-term resilience $r=0,349$ ($p\text{-value} <0,001$)

Correlation with short-term resilience $r=0,563$ ($p\text{-value} <0,001$)

Correlation with short-term resilience $r=0,798$ ($p\text{-value} <0,001$)

The long-term resilience results resemble short-term resilience.

Short-term and long-term resilience significantly correlate with each other during crises.

Financial crisis of 2008-2009, covid and war in Ukraine?

Lehtonen, O., Makkonen, T., Kurikka, H. & Halonen M. (2024). Measuring Municipal Resilience: A Comparative Analysis of Crisis Impacts Using Monthly Data. Presentation in Finnish Geography Days 2024.

Economic resilience and agency

How can resilience be developed?

Agency

- **Agency** refers to **action or intervention to produce a particular effect**. It is a temporally embedded process of social engagement, informed by the past but also oriented toward the future as well the present capacity to interpret past habits and future projects within institutional arrangements of the moment (Emirbayer & Mische 1998)
- Possibility for individuals to act out of **free will**. (Gregory, D. et al., 2009). Note: can also mean groups of people.

→ To make it simple: Ability to get desired things done!

- Most studies of regional economic resilience have studied resilience on system level. Role of agency is increasingly gaining attention. (Bristow & Healy 2014)

Structures and agency – what matters for regional resilience?

- The **acute reaction** to crisis (=resistance) is usually mostly about region's **structural conditions** + nature of the **crisis**
 - E.g. 2008 global economic crisis: manufacturing, real estate, financial sector etc. Finland had simultaneous national issues with forest industry profitability and Nokia mobile phones' reducing market shares → In the case of Finland many Industrial locations were hit hard
 - In Covid-19 crisis especially regions with strong tourism industry or service sector have suffered
- **Recovery** and especially **long-term renewal** require more **agency**, especially change agency.

Change agency and resilience

- Trinity of Change Agency: three types of agency that are essential for regional industrial change (Grillitsch & Sotarauta 2020)
 1. **Place leaders** (place-based leadership) mobilise and coordinate other actors and collective resources in support of new opportunities and to achieve common goals.
 2. **Innovative entrepreneurs** aim at transforming existing or creating new economic activities through novel combinations of knowledge and resources.
 3. **Institutional entrepreneurs** work to change regulations, normative expectations and/or social filters framing the thinking of other actors as well as network constellations.

Vs. **reproductive agency /maintenance agency** = supporting the continuation of existing structures

→All of these forms of agency are required for regional resilience

Resilience policies

Resilience policy instruments

- **Examples of policy instruments** at different spatial levels
 - EU monetary policy: Aim: low inflation and price stability, means: interest policy (regulation, incentive)
 - EU's recovery plan “Next Generation EU” is channeled mainly through REACT-EU programme (Recovery Assistance for Cohesion and the Territories of Europe). Aim: recovery and renewal (transition towards a digital and green economy and infrastructure providing)
 - Business funding in Covid-19 crisis in Finland
 - Direct compensation for businesses that were temporarily closed to support continuation (state funding, implemented by regions and municipalities)
 - Development funds for businesses to support renewal (state funding, implemented mostly by regions)
- Need for instruments that **support continuation** over the hard period but also instruments that **create renewal** and therefore long-term resilience



Resilience vs. competitiveness?

	De-contextualised competitiveness strategy	Resilience strategy
Diversity	Heavy dependence on narrow set of globally competitive , mobile firms and labour; attraction of inward investment .	Highly diverse range of producers, institutions and sources of energy; strongly localised supply chains; ethical and sustainable production and consumption.
Dispersion	Strong external control over business assets; small number of dominant sectors and business interests; centralised control over economic systems; strategies geared to external audiences, investors and visitors with high profile for speculative development.	Strong degree of local ownership and control over businesses, energy supplies and strategic resources; businesses adapted to strengths and capacities of local environment; greater number of smaller scale businesses.
Mutuality	Growth-first logic ; emphasis on productivity of firms and the microeconomic environment; regions as containers for firms; policy focused on region's institutional capacities; self-positioning approach to strategy; agendas geared to narrow economic definitions of quality of life and place.	Strong emphasis on territorial justice and development logic focused on rights to satisfaction of human needs ; emphasis on cultural emancipation and political and social empowerment; strong supporting networks of family, community and civil society; strong values of care, co-operation and collaboration.
Modularity	Heavy dependence on imported 'one-size-fits-all' model of regional development success; heavy dependence on government subsidies, external trade, transport and travel ; rivalrous strategies; limited focus on flows between regions and power relationships.	High capacity to be self-sufficient in the event of economic or environmental shocks; strong degree of international and inter-regional networking for information sharing, learning and interacting; highly localised social and business interactions; regional governance acting as hubs for localised initiatives and for connecting to upper tiers of government and business coalitions.

Bristow (2010, table 1)

- Resilience and competitiveness can be seen as opposite strategies if we use a narrow definition for competitiveness.
- But if we mean sustainable long-term competitiveness, it is pretty much the same than long-term resilience. Both are based on adaptive capacity.

Empirical evidence

Five resilience stories from Finland

Pietarsaari (Jakobstad) subregion – a quick recovery from global economic crisis

- **Structural characteristics:** ca. 50 000 people (small growth or quite stable), versatile industrial mix, middle-sized growth companies, family ownership, export orientation, industrial jobs, Swedish speaking, entrepreneurship, immigrants, practical orientation (vocational school)
 - Extremely low unemployment rate
 - **Shock**
 - Downturn of the Finnish economy in 2008 and time of slow growth afterwards.
 - **Outcomes:** Shock was not bad, good resistance and recovery. Structural factors can't explain growth of employment in 2012-2015 period. Lot of economic activity, investments and infrastructure projects.
- **Good resilience but WHY?**



- Industries: Food, yachts, pulp & paper, mechanical engineering, agriculture etc.
- Biggest companies: Snellmann, UPM, BillerundKorsnäs, Mirka, Walki, Nautor, Baltic Yachts, Beamex, Fresh Servant etc.



Kuva: Wikimedia Commons (CC 3.) Tomisti.
https://commons.wikimedia.org/wiki/File:Jakobstad_pedestrian_street_1.jpg

Agency supporting regional resilience in Pietarsaari subregion

- **Key actors:** **Business networks are the core**, public actors support → common agenda for actions
- **Endogenous growth logic** (establishing companies): Entrepreneurial agency has created a strong SME sector
- **Wide strategy:** not too exclusive regional strategy → a versatile industrial mix → less vulnerable
- **Time scale:** Companies are **embedded** and prioritise **long-term sustainability** over profit maximizing → stable jobs
- **Networks within the region:** **Strong local scale** networks between companies (Swedish-speaking sub-culture and social networks), social cohesion and community support
- **Networks outside the region:**
 - **Collaboration** with external resource holders → good resourcing
 - **International trade orientation** creates some risks but also supports quick recovery + provides impulses for renewal
- **Incremental + proactive development logic:** Continuous development processes. “doing things better all the time” → Ability to cope in difficult situations and ability for renewal (adaptive capacity)
- **To sum up: Strong agency** with active **key actors** (taking responsibility, self-organizing) contributes to achieving projects and investments

Eastern Lapland – a slow journey to recovery after local shocks

- **Structural characteristics:** very peripheral, about 17 000 people (heavy decreasing), used to have pulp industry, electronics and medicine manufacturing, low number of SME's, growing tourism
 - High unemployment and outmigration
 - **Shock**
 - Closing up of the Orion pharmaceutical factory in 2002, Salcomp electronics factory in 2004 and paper factory Stora Enso in 2008.
 - **Outcomes:** Difficulties to find replacing jobs. Resistance and recovery have been challenging.
- **Problems with resilience**

- **Seeking new path**

- Local efforts to get a modern 900 mill. € bio refinery by attracting foreign and domestic investments + efforts to create a wood-based business ecosystem.
- Tourism development (e.g. Pyhä, Suomu and Salla ski resorts + National parks)



Picture from Wikimedia Commons (CC SA 3.) by BishkekRocks
https://commons.wikimedia.org/wiki/File:Kemij%C3%A4rven_sellutehdas.JPG

The closed pulp mill in Kemijärvi

Agency and resilience in Eastern Lapland

- **Key actors:**
 - **Public actors** are expected to take development actions.
 - **Large corporations** used to locate their manufacturing in the region.
- **Exogenous growth logic:** Supporting **importation of jobs** to the region. Pursuing state resources and big international corporations establishments. Few growth-oriented SME's, ownerships of biggest employers outside the region (**not embedded**) → high risk because decisions are made elsewhere
 - **The agency has been shaped by the history** and the old Finnish state industrialization and regional policies that imported the industry to the region since the 1960s
- **Focused strategy:** forest industry is the core, tourism second → vulnerable to industry-specific difficulties
- Pursuing **radical** massive projects that have **long time scale** (Sokli mine, a new railway track, massive bio refinery...) → big risk that they do not come true
- **Reactive** development logic: **Civil-society mobilization** (protests) occurs in a crisis if a strong leading figure (place leader) exists → activation occurs too late
- **Networks within the region:** **thin business networks** locally, public networks are functioning well → it is hard to exploit business opportunities with thin local business networks
- **Networks outside the region:** Extra-regional owners and customers → **Dependency** relationships to outside actors
- **To sum up:** local agency has not been very active in supporting renewal. The development has been the hands of extra-regional actors → weakened resilience.
 - Lately **signs of new more active local agency**

Up and down with Nokia mobile phones

- Nokia once held a 40 % share of the world's mobile phone market, and accounted for 4 % of Finnish GDP in 2000, one-third of R&D expenditure and 20 % of exports in its heyday (Ali-Yrkkö 2010; Ali-Yrkkö et al. 2016)
- Massive local development impacts to cities where it had its units
 - Growth, human capital, jobs and wealth
 - Deep structural changes with downsizing / closures
- Signs of difficulties from around 2007. In 2009 “voluntary resignation packages”, 2012-2014 many layoffs and outsourcing, Salo's mobile phone manufacturing was closed in 2012.
- In 2014 Nokia Mobile Phones sold to Microsoft that closed the development unit in Salo in 2015, and all the mobile phone business in 2016

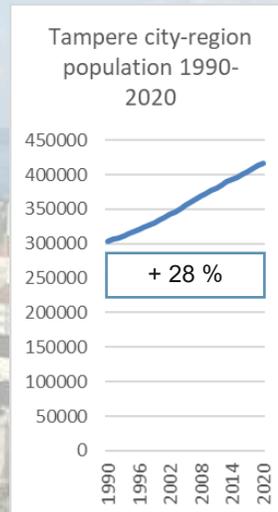


Two different Nokia stories

- Tampere and Salo both faced path delocalisation in the crisis of Nokia / Microsoft. Why was the outcome different?
- Both relied heavily on Nokia-driven development. Regional development "lock-in".

Tampere city region

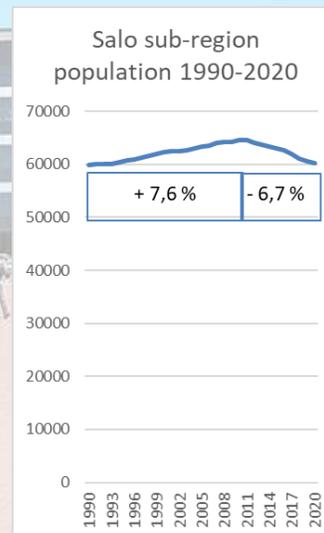
- Experienced a heavy strike, but recovered
 - New firms, retraining, employment to existing (also traditional industry) firms and software development growth firms
- **staying** in Tampere region, boosting the industrial renewal and, universities R&D partnerships widened
- Why?
 - Structural factors: Enough critical mass, more opportunities for business and career and people appreciated Tampere as a place to live
 - Agency factors: local cooperation networks in crisis management was wide, active and trust-based
 - Now: a more versatile and resilient business ecosystem



Statistics Finland (2021)

Salo sub-region

- Heavy strike, permanently lower growth path
- Rather low number of new firms and employment opportunities in Salo, low commitment to the region → Massive **outmigration** and **brain drain**
- Why?
 - Structural factors: Small town's narrow business and career opportunities
 - Agency factors: the business support systems were underdeveloped. The city used to be just a basic service provider. Public-private development cooperation had to be learned.
- Now: Efforts for IoT business, growing manufacturing (car batteries)



Statistics Finland (2021)

To conclude

- Regional economic resilience
 - Resistance of crisis impacts, recovery from crisis, renewal and reorientation
 - Resilience is measured as change to regional economic output (usually GDP/employment)
- Regions don't have "general" resilience: is abouts 1) nature of crisis, 2) regional structural factors, 3) regional response (agency)
- Resilience and competitiveness
 - Resilience concept is good for crisis situations
 - In the long run they have the same basis
- Regions that rely on one or very few industries and have a low capacity for renewal are most vulnerable
 - Risk is especially high for small regions
 - The largest growing city-regions often have the capacity for renewal resulting from the agglomeration advantages
- Structures and agency in regional resilience
 - The acute response of the regional economy, the resistance to the crisis, is most based on structural resilience.
 - The short-term recovery also required maintenance agency aimed at securing the continuation
 - Repairing the impacts of the crisis is a long-lasting process calling for new development paths, which presents resilience as renewal requiring change agency



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Thank You!

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