

RESILIENCE

Title:	The economic resilience of regions: towards an evolutionary approach	A typology of 'innovation districts': what it means for regional resilience	Pittsburgh's evolving steel legacy and the steel technology cluster
Author(s):	Simmie, James and Martin, Ron	Clark, Jennifer et al	Durkin Treado, Carey
Journal:	Cambridge Journal of Regions, Economy and Society	Cambridge Journal of Regions, Economy and Society	Cambridge Journal of Regions, Economy and Society
Year:	2010	2010	2010
Publication data:	3, p. 27-43	3, p. 121-137	3, p. 105-120
Purpose	<p>The review of different definitions of resilience and their potential application in explaining the long-term development of regional economies. The understanding of the concept from an evolutionary perspective.</p> <p>Discussion of different perspectives and focus on the adaptive cycle model from panarchy theory.</p>	Engagement with regional resilience empirically and theoretically. Theoretical approach on discussions about regional development in evolutionary economic geography.	The discussion on the issue of regional economic development policy and its relationship to path dependence.
Methodology	Literature review and empirical exploration of two case studies.	<p>Use of a specific framework for analysis from USA.</p> <p>Extended survey with data retrieved from USA, Japan and Europe to measure regional innovation (9,060 patents were used).</p>	Case study approach
Findings	<p>The evolutionary adaptive cycle model inspired from panarchy may be the framework for analysing regional economic resilience.</p> <p>There is no space for equilibrist approaches.</p> <p>Organisations that comprise regional economies are continually changing and adapting to their economic environments. Such changes are driven by the creation, acquisition and commercial exploitation of the new knowledge. These processes are never in equilibrium.</p> <p>Adaptation and change are the key processes in the development of regional economies. These are the bases of regional economic resilience.</p> <p>The panarchy model, adapted from ecological science, and its characteristics may borrow practices to economic resilience.</p> <p>The authors developed a four-phase adaptive cycle model of regional economic resilience inspired from the panarchy model.</p>	<p>Resilience is the first point in the time series related to a moment of transition or change usually due to an exogenous shock. Growth and competitiveness does not require such deliberate selection.</p> <p>Regional resilience is a complex of technological capacities, path dependancies and institutional factors including coordination and control routines.</p> <p>Resilience is a characteristic of firms that are sticked to the global economy.</p> <p>Exogenous economic shocks are related to the degree of resilience of firm rather than to its growth and competitiveness.</p> <p>Natural systems models are frameworks for understanding economic growth and distribution.</p> <p>There is a relation in the ability to react in short term exogenous shocks and long run transitions in the market.</p>	<p>Location, labour and legacy was three main factors of the metallurgy cluster. Expertise and long tradition were the ultimate source of cluster's success and region's resilience.</p> <p>Regional economic development policy has a direct relationship to path dependence.</p> <p>An ultimate source of regional resilience is the surviving expertise of the regional workforce.</p> <p>There is importance in the region to have the ability to identify its own assets</p> <p>Location plays a significant role in the shaping of cluster. Although there is a number of scholars who claim that globalisation creates a flat world there are others who insist on the specialties that each region has.</p>

<p>This postulated that adaptation in regional economies follows a sequential cycle of (a) innovation and restructuring, (b) growth and the seizing of opportunities, (c) stability and increasing rigidity, and (d) decline and destruction.</p>	<p>Regional resilience has a close relation to innovation capacity and geoeconomy.</p>
<p>Each phase of the cycle is associated with different degrees of resilience, connectedness and capital accumulation or release.</p>	<p>Sometimes within industry clusters there are power asymmetries mostly between firms including entrepreneurs and inventors and the research and development infrastructure focusing in university-based centres.</p>
<p>The first case study demonstrated that a local high-tech economy, which was under evaluation, have gone through only the three of the four phases, avoiding the phase of decline, having developed its resilience through the making use of endogeneous created new knowledge by the local entrepreneurs.</p>	<p>In addition there is a contradiction between the co-existence of big and small firms in the same region.</p>
<p>This was done through the exploitation of science parks and incubation units on land owned by different academic institutes. This first case was the successful one.</p>	<p>Nevertheless, regional production and innovation based on the model of big companies-dominators is more sustainable.</p>
<p>The second case referred to an extractive industry which experienced decline due to recession. The shock of the recession exposed the weakness of relying on exogenous knowledge generated by multinational companies.</p>	<p>Resilience highlights the importance of embedded regional capacities and the role of policy investments in order to mitigate the progressive deterioration.</p>
<p>The case studies revealed that endogenous sources of new knowledge combined with market driven and conscious entrepreneurial decisions could be among the key factors for understanding regional economic resilience. The co-evolution of fascilitating institutional environments is also significant.</p>	<p>The process of returning to equilibrium appears to be anything but natural.</p>
<p>Regional economies may be analogous to ecosystems in certain respects but they are quite different in others.</p>	<p>Lessons from physical world reveals that a ball never bounces back from the level it falls.</p>
<p>The adaptive cycle model may be a useful way of conceptualising and analysing regional economic resilience.</p>	

Contributing thoughts to
the paper

Resilience does not mean growth or creating increased numbers. It is a matter of retainment and preserving the brand equity for sustaining in the period of flux.



Regional resilience: a promising concept to explain differences in regional economic adaptability?	Regional resilience: theoretical and empirical perspectives	Creating Economic Resilience: Harnessing Entrepreneurship, Work and Enterprise in the Sheffield City Region
Hassink, Robert	Christopherson, Susan et al	Rodgers, Peter et al
Cambridge Journal of Regions, Economy and Society	Cambridge Journal of Regions, Economy and Society	CREED, ICOSS Centres
2010	2010	2011
3, p. 45-48	3, p. 3-10	

This conceptual paper aims at critically assessing whether regional resilience contributes to our understanding of regional economic adaptability and its contribution to evolutionary economic geography.	This paper illuminates the diversity of our understanding on regional resilience
--	--

Literature review	Conceptual analysis	Research
-------------------	---------------------	----------

Regional resilience is a conceptual framework.	Regional resilience originated from environmental studies and social sciences. The term is popular due to its malleability as it can mean different things to different people.	Resilience is an emerging concept which has no yet a universally agreed definition.
A resilient region is the one where markets and local political structures continually adapt to changing environmental conditions and only when these processes fail, the system is forced to alter the big structures.	Three different definitions: (1) It is a process that refers to biological capacity to adapt and thrive under adverse environmental conditions; (2) In terms of economics, resilience is the return to a fixed and narrowly defined equilibrium or multiple equilibria; (3) In terms of social science it is the regional adaptation so it has close connections with evolutionary economics and evolutionary economic geography.	People, organisations, regions, countries are all subject to a diverse and evolving environment and resilience is required in order to respond positively to external shocks.
Resilience is distinguished from adaptation since this is a characteristic of a system that is capable of continues to function in the face of unpredictable change.	The process of regional resilience encompasses rebound, adaptation and recovery.	Regional resilience is related to regional economic development
Resilience is adjustment of structures rather than adaptation and renewal.	Environmental disasters and financial crisis can shake up our thinking and make us question some of our basic assumptions and measures of success and failure.	A region should consider its strengths and build on them its economic development strategies.
There is an intriguing question in economic geography which is why some regional economies renew themselves whereas others remain locked in decline.	Regional resilience is linked in how we treat time, space and process.	The new governance arrangements and strategies should be implemented carefully based on partnership arrangements that exist. Stakeholders should remain together.
Resilience has emerged building upon concepts of ecology, psychology and disaster studies.	The idea of space is constructed via human action and social relations. Regions are manifestations of those actions and are in a constant process of transition.	The notion of civic leadership is a key concept to maintain in the region. The development of joint-up vision and its delivery to regional members is of top priority.

<p>Although resilience is most often used in connection with sudden shocks and disasters it can be applied to slowly developing challenges.</p>	<p>The success of a region can be measured by current and past economic growth in overall. Measures of success: adjustment, adaptation, convergence, equilibrium.</p>	<p>Governance should focus in fostering effective partnership arrangements by bringing together different groups with realistic visions.</p>
<p>There are interesting links between resilience in natural and human systems.</p>	<p>Which are the factors that enable a region to adjust and adapt over time: (1) a strong regional system of innovation, (2) the strength in factors that create a learning region, (3) a modern productive infrastructure, (4) a skilled, innovative and entrepreneurial workforce, (5) a supportive financial system providing patient capital, (6) a diversified economic base, not over-reliant on a single industry.</p>	<p>Universities should be harnessed more effectively to ensure that regional economy benefits from the knowledge within higher education.</p>
<p>Resilience is hide in diversity since it focuses in the need for diverse economies that will be less vulnerable to shake-ups. A number of studies have proved that resilience demonstrates 4</p>	<p>For socio-ecological systems resilience requires the consideration of three properties: (1) the amount of change that a system can undergo while retaining its structure and functions, (2) the degree to which, it can reorganise, and (3) the degree to which it can create and sustain the capacity to learn and adapt.</p>	<p>Academic institutes need to become more outward so that can work closely with the regional stakeholders.</p>
<p>dimensions: (a) the engineering version of resilience which is the "back to normal" equilibrium meaning for a company that returns back to its trajectory after the shock, (b) the ecological equilibrium which is the a flip from one equilibrium to another, (c) the path dependent elements equilibrium, meaning a consequence of cumulative decisions taken over a long period of time, (d) the long-term equilibrium, meaning the long time needed to recover from disasters.</p>	<p>The most effective strategies for regional resilience rely on acquired levels of civic capital and the existing endowment of regional institutions to chart new paths forward.</p>	<p>A region is obliged to communicate its successes internally and externally so as to distribute the positive outcome and affect others to take action. Communication of positive messages may inspire and attract outsiders to invest while create a more resilient-friendly attitude and high-responsiveness to new opportunities</p>
<p>Another important issue is that evolutionary thinking related to regional economic adaptability shows serious concern for history and geography recognising the importance of place-specific elements and processes to explain broader spatial patterns of technology evolution.</p>	<p>The notion of path dependence resilience. Regions make their own resilience but they do not make it as they please but rather under existing circumstances existing already, given and transmitted from the past.</p>	<p>A local shared leadership embeds the local ownership mentality.</p>
<p>We are discussing about evolutionary economic geography which deals with the economic landscape and its transformation over time.</p>	<p>Regional resilience should not be seen through the lens of regional competitiveness.</p>	<p>A clear civic leadership is expected to link together key components such as: (a) economic resilience, (b) economic structure, © a skilled workforce, (d) enterprise, (e) economic inclusion, (f) places and population, (g) infrastructure and connectivity.</p>
<p>From evolutionary thinking the following concepts are essential to regional economic adaptability: (a) path dependence, (b) lock-ins, © path creation, (d) related variety, (e) co-evolution, (f) sunk costs, (g) cluster life cycles, and (h) the learning region.</p>	<p>Resilience from the evolutionary economics framework explores the implications to governance structures and the formulation of policy.</p>	<p>Clear leadership is the key to success.</p>
<p>Path dependent process is one whose outcome evolves as a consequence of the system's own history.</p>	<p>The concept of resilience enhance our understanding of the forces influencing the development of regions and the scope of appropriate policy responses.</p>	
<p>Lock-ins are obstacles that undermine a region. Regional lock-ins may be (a) the functional lock-ins, (b) the cognitive lock-ins, and © political lock-ins.</p>		
<p>Clusters proved to be inadequate in securing sustainability. They were not enough to support regions in changing circumstances.</p>		
<p>The main concept of evolutionary economic geography is the learning region.</p>		
<p>Learning regions are based on a regional innovation strategy where a broad set of innovation related regional actors are strongly and flexibly connected with each other under a set of policy principles.</p>		
<p>Resilience implies the understanding of regional dynamics. It brings the advantages of diversity for a regional economy.</p>		
<p>Nevertheless, more focus should be given in regional economic adaptability and more tests should be performed in terms of social capital, sunk costs, related and unrelated variety and path creation.</p>		
<p>Regional economic adaptability should be scrutinised instead of looking for alternative theories such as the resilient framework.</p>		

Regional stakeholders should be part of a broaden knowledge infrastructure scheme to facilitate knowledge among them and academic institutes

Governance is the key to success

Regions could be considered as neighbourhoods as part of a municipality corresponded to the global society

Globalisation does not damage the identity and the specialties of a region

Academic institutes can participate in the leadership initiative.



Resilience, adaptation and adaptability	Resilience and regions: Building understanding of the metaphor	Resilient regions: re-placing regional competitiveness	Resilient regions in an uncertain world: wishful thinking or a practical reality?
Pike, Andy et al	Pendall, Rolf et al	Bristow, Gillian	Hudson, Ray
Cambridge Journal of Regions, Economy and Society 2010 3, p. 59-70	Cambridge Journal of Regions, Economy and Society 2010 3, p. 71-84	Cambridge Journal of Regions, Economy and Society 2010 3, p. 153-167	Cambridge Journal of Regions, Economy and Society 2010 3, p. 11-25

Contribute in explaining the resilience of places.	To examine the potential of resilience as a useful metaphor in regional analysis.	This paper explores the complex relationships that exist between competitiveness and resilience.	Review on existing concepts of resilience and the dominant neoliberal concepts of regional development.
--	---	--	---

Literature review and conceptual analysis	Literature review	Conceptual approach	Critical review on regional development concepts
---	-------------------	---------------------	--

Regional development encompasses the notion of relative regional resilience meaning the responding to a diverse array of external shocks and transitions.	This paper claims that a region merits a label of resilient only if it maintains or improves its performance on outcomes regardless of effort.	Regional development policies are tied to competitiveness which creates an agenda of business activities that neglect environmental and social objectives.	Resilience denotes the capacity of ecosystems, individuals, organisations or materials to cope with disruption and stress and retain or subsequently regain functional capacity and form.
Resilience underlines the need for intelligent institutional leadership with a heightened sensitivity and preparedness for rapid and pervasive changes.	Given the myriad factors shaping regional impacts and responses regional resilience is inevitably high complex. It varies by scale and time.	Regional competitiveness' hegemony was given in terms of economic growth	Resilience is an interdisciplinary context of understanding relations between people and nature resulting in the concept of co-evolving social ecological system.
The construction of regional advantage which should be based on diversified specialization meaning balance specialization with sufficient diversification to prevent over-dependence upon narrow economic bases.	The different nature and magnitude of various challenges complicate the assessment of regional resilience.	Regional Resilience is defined as: the region's ability to experience positive economic success that is socially inclusive, works within the environmental limits and which can ride global economic punches.	Resilience requires consideration of three properties: (1) the amount of change that a system can undergo while retaining its structure and functions, the degree to which it can reorganise, and the degree to which it can create and sustain the capacity to learn and adapt.
Adaptation and adaptability implies coordination of multiple actors.		Resilience is an idea around localities and regions who experience the peculiarly powerful combination of transformative pressures from below and various catalytic, crisis-induced imperatives for change from above. It features strongly in policy discourses around environmental management and sustainable development.	
Economic geographies are marked by diversity and variety and are emphasizes in the path-dependent unfolding of trajectories of change.		The recent credit crunch have revealed the resilient economies which were less dependent upon globally footloose activities, having greater economic diversity and having a determination to prioritise and effect more significant structural change.	
Evolution does not proceed along a single grand avenue toward perfection but along multiple paths which do not all lead to optimal change.		Resilience is defined as the capacity of a system to absorb disturbance and reorganise while undergoing change, so as to still retain essentially the same function, structure and feedbacks.	

Economic geography emphasizes the integral role of socio-spatial relations between the social agents of capital, labour, the state and civil society and power and politics in shaping and in turn being shaped by pathways of change.

Resilience is the ability of an ecosystem, people and communities depend on it, to withstand external shocks and to adapt and respond to these rather than wither and die.

Paul Krugman asserted that regions initially develop, grow and prosper as a consequence of particular path-dependent processes.

An evolutionary approach in studying regions has placed attention in the cultural, institutional and social contingencies of a region that determine their ability to adapt to changing marketing conditions, the emergence of new technologies and competitors and thus their capacity to create new development trajectories.