

RESILIENCE AND STRATEGIES OF REGIONAL DEVELOPMENT IN CRISIS TIMES

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Abstract:

Some regions in the European Union, especially those in the south, today face the impact of an economic crisis, which is global and systemic in its size, but has different effects on a regional and local scale, which reinforces inherited spatial inequalities. In this paper is applied the emerging concept of territorial resilience that tries to explain why some areas are capable of renewal and revitalization, while others remain blocked and begin a process of decline. Beyond the structural keys of the capitalist crisis, the text raises the value of accumulated theory and practice in promoting local development and creating innovative environments to better understand the unequal vulnerability of territories to the current recession. This involvement implies on the part of the states the development of economic development policies and the proposal of strategies in terms of increasing resilience.

Key words: Economic crises, vulnerability, resilience, regional development, economic policies.

JEL Classification: O10.

Introduction

In an insecure society, in a global environment in constant motion, the ways of survival, resilience, adaptation and reconfiguration are of increasing practical interest, especially in the conditions of rapid and diverse changes, conditioned by the challenges imposed. Of the paradigm of development, still excessively linked to the idea of growth, of accumulation without a qualitative, essential dynamic support [4].

In a context where the pace of change is growing faster and the pressures on states, societies, communities and individuals are becoming increasingly disruptive, recovery and resilience plans are drawn up in line with the relevant challenges and priorities specific to each issue identified. Thus, the need to move from keeping a crisis under control to a more structural, long-term and non-linear approach to vulnerabilities, with an emphasis on anticipation, prevention and preparedness [1].

In this context, the Concept of Resilience refers to two aspects: the opportunities that disturbances induce, respectively the recombination of evolved structures and

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processes and, consequently, the renewal of the system as well as the emergence of new trajectories. In this sense, it means not only the resistance to change and the preservation of existing structures, but also that adaptive capacity that allows the capitalization of previous experience, self-organization and continuous development, integrating change into systemic functionality. In this context, resilience becomes more than a concept - a framework for thinking, which opens an integrative, dynamic perspective and creates a favorable basis for systemic analysis [6].

Literature review

The origin of the term is found in the respective technical sciences in the strength of materials as a field that initially used it. In English the word was introduced in the seventeenth century from Latin (*resilio*, -ire - to jump back, to retreat, to recover, to return). Today, the technical definition of resilience, which we find in: Materials mechanics is “the ability of a material to absorb and release energy in a certain range of elasticity.”

In the social and economic sciences, resilience has been defined as the ability of human communities to withstand and readjust to external shocks that are the result of social, political, or natural changes [7].

The assessment of social resilience is made in relation to human indicators, respectively to vulnerable groups of people and to the factors that contribute to their vulnerability. Economic resilience is influenced by the forms of administration of the affected region, insufficient or poorly prepared human resources, lacking in public systems, an aspect that predisposes to the vulnerability of human indicators [8].

The general resilience index is composed of indicators from three areas: the economic capacity of the region, the socio-demographic capacity and the cohesion capacity of the communities. Economic capacity is expressed by summing up the following indicators: income equality (calculated as the inverse of the Gini coefficient for income inequality), economic diversification (distribution of income and employment by sectors of the economy), percentage of households spending less than 35% of income on housing, the state of the business environment [2].

Economic resilience has two areas of applicability: the probability of transition from one state to another depending on the decisions of political, socio-administrative actors in terms of consumption and production, but also the ability of the system to withstand market or environmental shocks, without -and loses the ability to allocate resources efficiently [9]. Thus two forms of economic resilience can be identified:

- static economic resilience - the ability of an economic system to maintain its functions when it goes through a shock, to make maximum use of existing capital. It starts from the need to mitigate the crisis by using, in the most efficient way possible, the resources left during the recovery;
- dynamic economic resilience - able to increase the speed of recovery after a shock, through an efficient use of resources for repair and reconstruction, thus by increasing its own capacity.

Table 1 Examples in Hazard classification for which resilience can develop

Natural	Technological	Socio-economic
Drought	Building collapses	Business discontinuity
Earthquake	Chemical leaks	Corruption
Epidemics	Cyber threats	Demographic changes
Extreme temperatures	Fires	Economic crises
Floods	Gas leaks	Unemployment
Infestations	Industrial accidents	Strikes
Storms	Pollutant leaks	Political conflicts
Tsunami	Radiation	Social Conflicts
Volcanic eruption	Poisoning	Crisis of goods
Natural fires	Transport accident	Terrorism
	Systems failure	War

Economic influencing factors refer in particular to the ability of systems to implement resilience and sustainability programs [3]. The general level of income, the initial economic structure or the consumption patterns associated with a large part of the population are all fundamental elements. The most common areas of applicability of resilience and sustainability that are influenced by economic factors are related to sustainable promotion and growth and jobs.

Methodology

Knowing the cyclical phases of resilience that any system goes through is extremely useful in sustainable management and in the spirit of resilience, because it gives us a reference on the appropriateness of interventions, respectively the allocation of resources, which may be effective at times but unnecessary. In this regard, the composition and normality of some cycles were observed [13, 14].

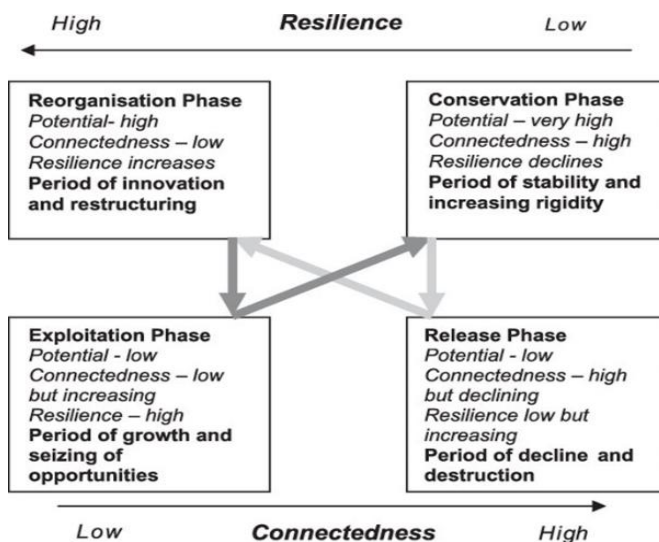


Figure 2. A four-phase adaptive cycle model of regional economic resilience. Source: Adapted from Holling and Gunderson (2002) and Pendall et al. (2008).

- a) The exploitation phase. It is a phase of maximum and rapid growth, in which the elements of the system exploit new resources and opportunities that are made available to them, making the most of each niche. There is a relatively rapid accumulation of structures and an increase in complexity. The exploitation phase is a period of capturing resources and transforming them into systemic structures with specific functions.
- b) Conservation phase. The transition to the conservation phase is gradual. During this phase there is an accumulation and storage of energy and materials, at the same time the system approaching certain limits of exploitability. The connections become more numerous as the growth rate within the system decreases. The system is becoming better defined, but also more rigid, as its internal state is more strictly regulated.
- c) Release phase „creative destruction” The term „creative destruction” was coined by economist Joseph Schumpeter in the 1950s to describe the perturbations that mark the phases of the adaptive cycle, inducing a relatively chaotic operation. When external forces cause disturbances that exceed the system's ability to cope or quickly return to a state of functional equilibrium, the system enters a phase of creative destruction, characterized by the release / loss of accumulated capital and partial or total destruction of system elements. of the systemic organization as a whole
- d) The reorganization or renewal phase. It is the phase in which a new system appears and develops, which will lead to a new period of growth. Reorganization means the transition to an alternative regime, to a period of domination of uncertainty, of randomness, a phase in which all opportunities are open, in which invention, experimentation, resettlement, risk are the order of the day. Novelty can easily triumph, sometimes in the form of seemingly uncoordinated or insignificant events, but which represent original inventions, creative ideas and changing mentalities at the individual and collective level.

Within economic systems, in the case of opportunities that disturbances induce, there are certain active innovative elements and if the company / entrepreneurs exploit the opportunities well, they can develop. They contribute to the emergence and rapid development / progress of large companies. Other examples are the emergence, rapid growth and expansion of new, reorganized societies [10].

But there is also the risk that the longer the preservation period persists, the more insignificant shock can lead to negative, destructive, sometimes extremely fast elements, by exceeding resilience, by destroying vital connections and weakening control capacity. It is manifested by destruction, upheaval, disintegration of previously accumulated forms of capital, as a result of breaking ties, which leads to the leakage of natural, social, economic capital outside the structures of the system [5].

Examples of Resilience

Resilience in case of natural disasters

A very current example of resilience is the current situation following the Covid Pandemic 19.

The outbreak of the COVID-19 epidemic in early 2020 changed the economic, social and budgetary outlook in the Union and in the world, requiring an urgent and coordinated response at both Union and national level to deal with the enormous economic and social consequences, as well as asymmetric effects on Member States.

The European Commission has so far received the official recovery and resilience plans of 13 EU Member States. The latest arrivals in Brussels come from Belgium, Italy, Austria and Slovenia. They set out the reforms and public investment projects that each Member State intends to implement with the support of the Recovery and Resilience Facility (RRF). The economic crisis caused by the pandemic was not long in coming, and in July 2020 the EU was forced to approve a recovery fund called Next Generation EU - a plan for future generations [15]. This recovery fund does not yet have a legal basis as it contains a component, that of „EU own resources”, which not all national parliaments have ratified so far. Thus, the RRF is the key tool at the heart of this Next Generation EU - the EU's plan to get out of the pandemic. It will provide funds to support investments and reforms, the basis of which is the 2018 prices. It is divided into grants totaling EUR 312.5 billion and loans of EUR 360 billion. The fund has another role, namely to ensure the ecological and digital transition - the new European ambitions.

The money is then obtained gradually, project by project, it is borrowed from the financial markets with moderate interest based on the triple A held by the European Commission. Some countries such as Romania and Finland have requested additional time for the analysis compared to the deadline set by Brussels, which was 30 April 2021. Romania has submitted a provisional version of the plan, a version that needs to be improved, as recommended by Brussels.

Romania's National Recovery and Resilience Plan, to be used in the next five years, focuses heavily on building irrigation systems, afforestation and waste management, but also on social and structural reforms (pension reform, private sector investments, etc.) [16].

Resilience and state security

Within the framework of the EU's overall strategy, peace and security are inextricably linked to sustainable and inclusive development, as well as to compliance with global and international rules-based systems. The promotion of this program continues to be at the heart of the EU's external action. But the overall strategy also recognizes that the EU and its Member States are subject to many of the structural pressures that test resilience and expose the vulnerabilities of our partner countries. This is why the strategy identifies EU protection as a key task for the future. Greater resilience of neighboring countries is part of the response. EU foreign policy, including through the CSDP, also has a role to play in directly contributing to the development of resilience within our borders, at a time when the Union has a greater responsibility than ever to contribute to the security of its citizens. This requires better detection of external

pressures and threats, as well as appropriate mechanisms to ensure an appropriate policy response [12].

The EU's work on the security union also places resilience at the heart of its action, while addressing the issue of external non-state actors. In the April 2015 European Security Agenda, the Commission focused on two main pillars: the fight against terrorism and organized crime and the strengthening of the Union's defenses and resilience.

The challenge now is to integrate the internal and external security dimensions of EU policies in a way that strengthens each other, effectively increases the costs of external coercive action and enables the Union to anticipate and adopt early political and operational measures in response. at other types of pressures [11].

The EU will continue to pursue six main areas of concrete action in this regard:

- Resilience against hybrid threats. Building on the Common Framework on Combating Hybrid Threats, a central goal of the EU's efforts will be to strengthen the protection of critical infrastructure, while diversifying energy sources and suppliers and strengthening defense capabilities. Priority will be given to ensuring effective operational cooperation and secure communication between Member States, as well as collaboration with actors from different sectors, using common tools. Cooperation with third countries, especially those in the EU's neighborhood, will be stepped up;

Results and discussions

Resilience involves certain skills / abilities of the system, respectively, of its decision centers, to respond to what is happening, to monitor critical elements, to anticipate potential disruptions and to learn from what has happened in the past.

Understanding resilience factors in a given context can help us better plan our response to unforeseen pressures and situations. This requires a good understanding of the links between the different parts of the complex systems that regulate and support states, societies and communities, and how they react when faced with unexpected shocks or recurrent or long-term pressures.

The ability to respond to moments of rupture and disruption is essential for resilient systems and can be enhanced either by implementing a precise set of responses or by adjusting the operation in relation to what is practically happening in reality.

Ability to control and monitor factors that could become a threat in the near future. Monitoring must cover both what happens in the environment and what happens in the system itself, respectively its own performance. This feature is closely linked to the control over the critical elements of the system. However, knowing the evolution of an indicator cannot give us a complete picture of the phenomena that take place, given that the constituent factors of the system are always in different combinations and configurations.

Conclusion

According to the concept of resilience, a resilient region recovers quickly after moments of crisis (economic, social shocks or natural disasters) and adapts effectively to the changing conditions of the external environment. Although the concept of resilience has become almost as widely used in the scientific literature and documents of

international organizations as that of sustainable development, the mechanisms by which a region becomes resilient still need the attention of researchers. However, following the case studies and bibliographic summaries, several common issues with an important role for regional planning in order to increase resilience emerge:

- assuming the change and uncertainty inherent in complex systems;
- awareness of the dependence of human communities on goods and services;
- maintaining diversity and relativizing competitiveness and optimization;
- receiving disturbances as opportunities to create new development directions;
- creating opportunities for self-organization, experimentation and innovation; streamlining learning processes by combining several sources of knowledge;
- adopting perspectives on the regional system for different time periods and at different spatial scales;
- assuming a flexible way to manage the region.

Planning should be a continuous process of adapting and responding to the feedback of the managed system.

It will not always be possible to address the pressures at the point of origin or to avoid the consequences of an unexpected crisis. But addressing issues when they reach the critical point is important so as not to incur disproportionate costs. Therefore, flexibility and the ability to adapt to change need to be integrated into the design of the resilience program.

In conclusion, we can define resilience as the ability of individuals, societies or states to adapt to major shocks and crises, to maintain their vital functions, to limit their impact on their own functioning, and to improve as a result. Resilience requires flexibility, strength and durability alike.

References

1. Drăgan, M. (2015) 'Resilience in territorial planning – conceptual and methodological issues (Reziliența în planificarea teritorială – aspecte conceptuale și metodologice), *Geographia Napocensis* IX(2): 39-46.
2. "Resilience: a core element of collective defence", în NATO Review, <https://www.nato.int/docu/review/2016/Also-in-2016/nato-defence-cyber-resilience/EN/index>
3. Commission Staff Working Document on a new approach to the European Programme for Critical Infrastructure Protection Making European Critical Infrastructures more secure, Brussels, 2013, <http://ec.europa.eu/transparency/regdoc/rep/10102/2013/EN/10102-2013-318-EN-F1-1.PDF>
4. Benson, C., Clay, E.J., (2004). *Understanding the economic and financial impacts of natural disasters*. World Bank Publications.
5. Pant, R., Barker, K., Zobel, C.W., (2014). *Static and dynamic metrics of economic resilience for interdependent infrastructure and industry sectors*. Reliab. Eng. Syst. Saf., Special issue of selected articles from ESREL 2012 125, 92–102. doi:10.1016/j.ress.2013.09.007
6. Rose, A., Krausmann, E., (2013). *An economic framework for the development of a resilience index for business recovery*. Int. J. Disaster Risk Reduct. 5, 73–83. doi:10.1016/j.ijdrr.2013.08.003

7. Ron Martin, Peter, Sunley *On the notion of regional economic resilience: conceptualization and explanation*, Journal of Economic Geography, Volume 15, Issue 1, January 2015, Pages 1–42, <https://doi.org/10.1093/jeg/lbu015>
8. Perrings, C. (2006). *Resilience and sustainable development*. Environment and Development Economics, 11, 417-427.
9. Pontarollo, N., & Serpieri, C. (2018). *A composite policy tool to measure territorial resilience capacity*, Socio-Economic Planning Sciences.
10. Pike, A., Dawley, S, Tomaney, J., *Resilience, adaptation and adaptability*, in Cambridge Journal Regions, Economy and Society, 2010, nr. 3 (1), p. 59-70.
11. Mehlbye, P., & Böhme, K. (2017). „*More Territorial Cooperation Post 2020? A contribution to the debate of future EU Cohesion Policy*”. Spatial Foresight Brief.
12. Filofteia Repez, Mircea-Dănuț Chiriac, *Reziliența și securitatea umană*, Resilience And Human Security, Journal: Impact strategic, Issue Year: 61/2016 Issue No: 4, Page: 10-18.
13. L.H. Gunderson, C.S. Holling (Eds.), (2002), *Panarchy: Understanding transformations in Human and Natural Systems*, Island Press, Washington D.C. pp. 25-62.
14. Rolf Pendall, Rolf Pendall, Kathryn A. Foster, Margaret Cowell, Margaret Cowell *Resilience and Regions: Building Understanding of the Metaphor*, March 2009, Cambridge Journal of Regions Economy and Society 3(1):71-84 DOI: 10.1093/cjres/rsp028
15. <https://www.europarl.europa.eu/news/en/press-room/20210204IPR97105/parliament-gives-go-ahead-to-EU672-5-billion-recovery-and-resilience-facility>
16. https://ec.europa.eu/romania/news/20210210_mecanism_redresare_rezilienta_ro