

Economic Resilience: A Bibliometric Analysis of the Concept

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Abstract

Resilience is a modern concept that reveals the capacity of an entity to respond and to reshape after a shock or crisis. The main purpose of this paper is to emphasize the main literature stream on resilience and economic resilience, in order to better understand this key process during difficult times. The research question is: What are the main approaches of the concept of resilience and how is this concept surprised in the literature? Based on the identified papers concerning the topic of resilience, even if it is a relative new concept that has a great impact on the newest published articles. The research reveals the importance of this characteristics of phenomena, human beings and not only beings, processes and business through bibliometric analysis and literature review.

Key words: resilience, economic resilience, entrepreneurial resilience bibliometric analysis

J.E.L. classification: A10, A19

1. Introduction

Resilience is a modern concept, although it was first used in engineering in the middle of the last century. The evolution of the concept is interesting, because this concept has gone through an obvious and notable multidisciplinary.

Purpose: The main purpose of this paper is to emphasize the main literature stream on resilience and economic resilience, in order to better understand this key process and human characteristics during difficult times.

Methodology: The research aims at answering to the following research question: What are the main approaches of the concept of resilience and how is this concept surprised in the literature.

The tested hypothesis are:

- There are several important changes in the evolution of the concept of resilience.
- There are different understandings on the concept of resilience.
- There is a big interest on economic resilience concept in the scientific papers.

Findings: The papers identifies that resilience, even if is a relative new concept, has a great impact on the newest published articles. A significant interest of scientist on this regard is was demonstrated through a bibliometric analysis.

Added value of the paper is given by the analytical approach of the paper. The research reveals the importance of this characteristics of phenomena, human beings and not only beings, processes and business. The importance is given not only by the resilience effect in real life, but for the interest of scientists and organisations from last decade in describing it and analysing it in different times and spaces.

Paper type: literature review and bibliometric analysis.

Limits of the study: The present study gathers information only about the main literature stream in the area of resilience concept and methods. The bibliometric analysis refers only the paper indexed

in the Web of Science database in most recent period: 2017-2020. Therefore, the current research may be very well continued with whatever empirical studies.

2. Literature review

Starting the 70s, the concept of resilience has been used during times in different situations and from different perspectives, from engineering to entrepreneurship (Manca, A. R., Benczur, P., Giovannini, E, 2017, pp. 1). The concept is present in technical, ecological, agricultural, social, economics, business administration domains. But it is not a new concept, it came from Latin and generally means “bounce back”. Mainly, the resilience means the capacity of an entity to respond and to reshape after such a shock or crisis.

Figure no. 1. The evolution of the resilience in thinking by characteristics



Source: Manca, A. R., Benczur, P., Giovannini, E

The interest of the scientists is absolutely evident: during times, many shock, crisis, tied situations put stress on the social systems, economic systems and, not only. The possibility of all these systems to recover after shocks like floods and earthquakes, wars and pandemics is very attractive for public authorities in order to better adopt public policies and for entrepreneurs to better decide for their business.

Therefore, authors benchmarked concept from one field to another in order to surprise the capacity of the system to recover and to bounce back after stressors or crisis. The interest became more and more intense and there are authors who named the concept a “buzzword” (Staničková, M., Melecký, L., 2018, pp. 232) after it started to appear more and more in the research papers related with shocks and crisis.

Perrings refers to the resilience as the “capacity of a systems to retain its organizational structure following perturbation of some state variable from a given value” (1994, p. 30).

Whether it is taken into consideration the idea of bouncing back in some state of equilibrium or the idea of recovering after shocks, Reggiani et al. (2002, pp. 211) conclude that “the two different interpretations (engineering and ecological resilience) advocated in the literature are certainly useful for grasping and deepening the resilience concept”.

Thus, one of the approaches is about entrepreneurial resilience, where Korber, S. and McNaughton R. B. (2018, pp 1130-1131) proved that there are several different perspectives: “resilience as a determinant of entrepreneurial intentions, entrepreneurship fosters macro-level resilience, resilience as a response to entrepreneurial failure, adaptive resilience as process of recovery and transformation”.

Figure no. 2. The evolution of the resilience in thinking by definitions

Year	Authors	Understanding the resilience concept
2015	Martin and Sunley	Resilience refers to a capacity to withstand or recover from the market, competitive and environmental shocks
2012	Martin	Capacity of the regional economy to reconfigure, i.e., adapt, its structure (firms, industries, technologies and institutions) so as to maintain an acceptable growth path in output, employment and wealth over time
2010	Gunderson et al.	Resilience concept does not necessarily imply a return to the pre-existing state but could be referred to as the capacity to respond to opportunities which arise as a result of the change
2009	Rose	Process by which a community develops and efficiently implements its capacity to absorb an initial shock through mitigation and to respond and adapt afterwards so as to maintain function and hasten recovery, as well as to be in a better position to reduce losses from future disasters
2008	Cutter et al.	Resilience is the ability of the social system to respond and recover from disasters and includes those inherent conditions that allow the system to absorb impacts and cope with an event, as well as post-event, adaptive processes that facilitate the ability of the social system to reorganize, change and learn in response to a threat
2008	Hill et al.	Ability of the regional economy to maintain a pre-existing state in the presence of some type of exogenous shock; the extent to which a regional or national economy that has experienced an external shock can return to its previous level and/or growth rate of output, employment or population
2008	Norris et al.	Process linking a set of adaptive capacities to a positive trajectory of functioning and adaptation after a disturbance
2006	Foster	Ability of the region to prevent, prepare, respond and 'recover' after a disturbance so as not to stand this obstacle to its development
2006	Perrings	Ability of the system to withstand either market or environmental shocks without losing the capacity to allocate resources efficiently
2004	Coles et al.	Community's capacities, skills and knowledge that allow it to participate fully in recovery from disasters
2004	Walker	Capacity of a system to absorb disturbance and reorganize while undergoing a change so as to still retain essentially the same function, structure, identity and feedbacks
2003	Bruneau et al.	Ability of the system to reduce the chances of shock, to absorb shock if it occurs (abrupt reduction of performance) and to recover quickly after a shock (re-establish normal performance)
2001	Carpenter et al.	Adaptive capacity that allows for continuous development, such as a dynamic interplay between sustaining and developing with change
1997	Reich	Structure of relationships among macroeconomic variables that persists over a long period of time and the economic, political and social institutions that condition this structure
1973	Holling	Amount of disturbance that the ecosystem could withstand without changing self-organized processes and structures, defined as alternative stable states, i.e., a measure of the persistence of systems and of their ability to absorb change and disturbance and still maintain the same relationships between populations or state variables
1958	Eltou	Resilience as the amplitude of changes brought about by both disturbance and dynamics of post-disturbance recovery

Source: Stanícková, M., Melecký, L., 2018, p. 232

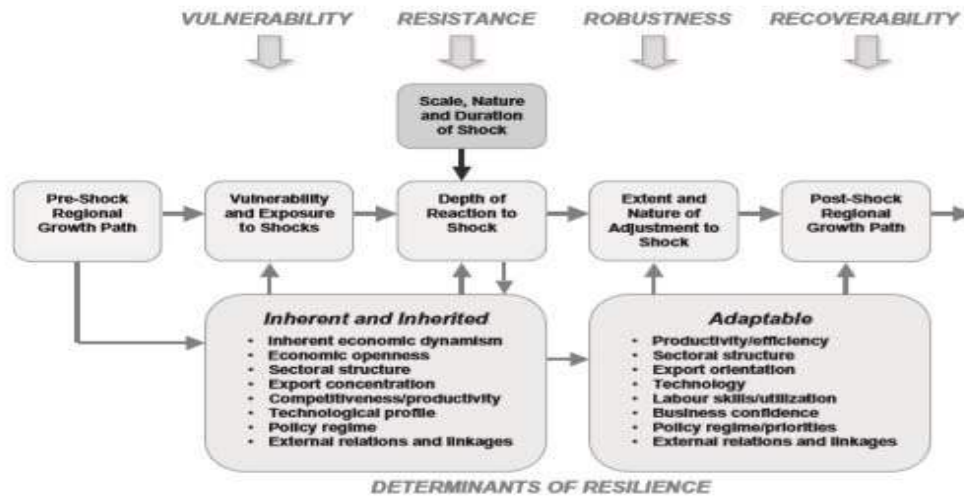
The evolution of the concept is interesting, because this concept has gone through an obvious and notable multi-discipline. Sometimes resilience is very important for entrepreneurial success, and it is on the edge of the exit or escalation decision (Manfield, Newey, 2018). McNaughton and Gray, (2017) discussed about the tendency to focus on the psychological strength of entrepreneurs and managers who face endogenous and exogenous shocks, more likely than to see resilience as a new process than a characteristic. At the same time, there are opinions founded on the following basis: resilience as a factor of economic variability or sustainability of entrepreneurial ventures (Hayward *et al.*, 2010; Jaskiewicz *et al.*, 2015). Still, there is few literature on the common concepts of entrepreneurs and resilience, but more and more articles appear each year, given the importance that the concept receives. For example, modern approaches of entrepreneurial resilience refer to the reactions of the different types of entrepreneurs in the face of the COVID-19 crisis (Ignat and Constantin, 2020). There is not a high interest in research on business resilience (van der Vegt *et al.*, 2015), and, in general business research does not try to demonstrate or even understand the field resilience, but Williams and Vorley (2014) proven the importance that entrepreneurial resilience has in the process of improving resilience of whole community. From this perspective, it becomes very hard to understand why is this lack of interest on the concept, as both resilience and entrepreneurship demonstrate innovativeness, proactivity and flexibility (McNaughton and Gray, 2017).

Thus, Branicki, Sullivan-Taylor, Livschitz, (2018) have proven that small and medium-sized enterprises (SMEs) have pour resilience and a wide range of diverse shocks impacted them differently. This is a very important aspect, given the last four decades economic changes on the global market, based on geopolitical influence, social movements, and reassessments of industries, the IT innovations and even the new coins appearance. According to these approaches, it has a greater significance to better understand the concepts of resilience, entrepreneurial resilience and to carry out research on the SMEs' resilience and their capabilities to surmount any market change, any global influence. Bernard and Barbosa (2016) defined entrepreneurial resilience “as a form of emotional and cognitive ability that is useful for the entrepreneur, particularly when bouncing back after failures connected to their entrepreneurial initiative”.

Stepping forward, we may conclude that there are special behaviors in SMEs resilience which is firstly driven by special strategies in this regard (Conz, E., Denicolai, S., Zucchella, A., 2017, pp. 187), moreover it is given by internal values rather than external factors.

Moreover, in regional resilience, as process, there are opinions that put together the concept of resilience with other characteristics such as: vulnerability, shocks, resistance, robustness and recoverability (Martin, R., Sunley, P., 2015, pp. 13).

Figure no. 3. The regional resilience as process



Source: Martin, R., Sunley, P., 2015, p. 13

Regardless of the definition of the concept, resilience is often approached methodologically and structurally differently. There are guidelines for determining and quantifying resilience, such as the OECD (OECD, 2014, pp. 1) Guidelines for resilience systems analysis, but they also do not provide a set of absolute indicators as clear determinants of regional resilience. The situation is still debatable and debated.

3. Research methodology

In order to better emphasize the scientists' interests about the concept of resilience, a bibliometric analysis was carried out. The query performed on the Web of Science database had the following code: *TOPIC: ("economic resilience")*, *Timespan: 2017-2020*. It took into consideration the topic of economic resilience based on the resources indexed in the Web of Science database, during the most recent period: 2017-2020. The query was performed in order to extract a "ciw" file with all the metadata of the publications concerning economic resilience, with the aim of processing this file in VOSviewer, a specialized tool for bibliometric analysis (Pătărlăgeanu et al., 2020). The "ciw" file contained the metadata of all the 322 publications concerning the topic of economic resilience indexed in the Web of Science database.

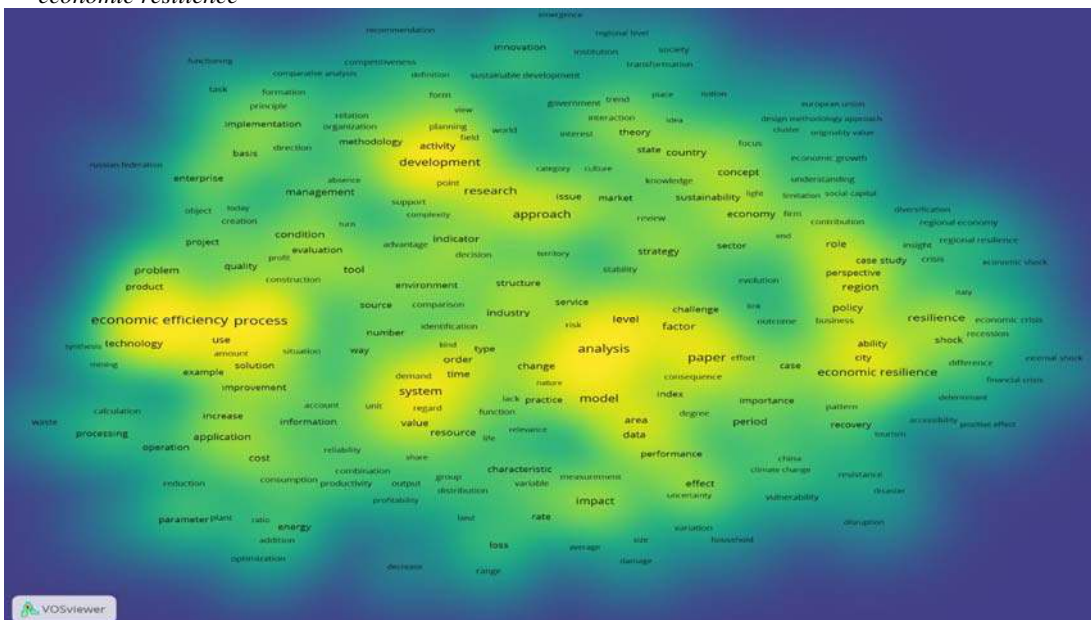
The same methodology was applied in the case the evolution of the links between the keywords and keyword structures previously identified.

4. Findings

When querying the Web of Science database on code: *TOPIC: ("economic resilience")* several interesting results were found.

Figure no. 4 contains the density map of the words and structures associated to the 322 identified papers and it was designed according to the following criteria: Minimum number of occurrences of a word or structure in the title, abstract or keywords of the 322 identified publications: minimum 10 occurrences. Out of the 16,770 identified words and structures, 339 meet the previously mentioned threshold that means 2.02%.

Figure no. 4. The density map of the words and structures associated to the 322 publications concerning economic resilience

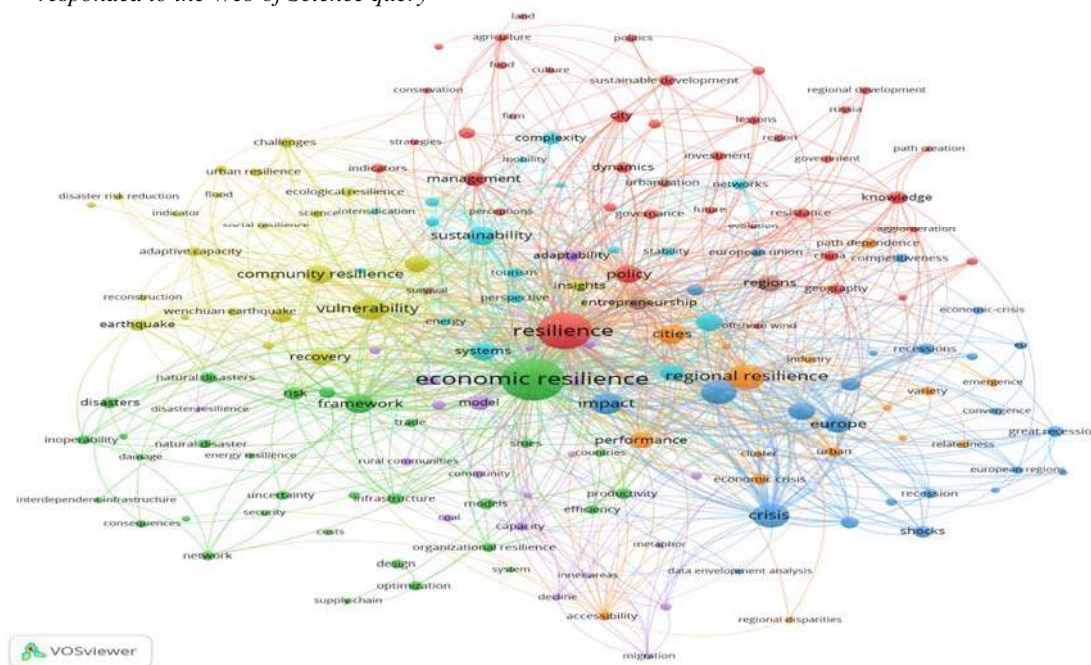


Source: Authors’ VOSviewer processing, based on the raw Web of Science data

Figure no. 5 contains the clusters of the keywords and keyword structures associated to the 322 identified papers and it was designed according to the following criteria:

- Minimum number of occurrences of a keyword or keyword structure associated to the 322 identified publications: minimum 3 occurrences in order for the keyword / keyword structure to be graphically displayed
- Out of the 1,659 identified keywords and keyword structures, 175 meet the previously mentioned threshold that means 10.54%.

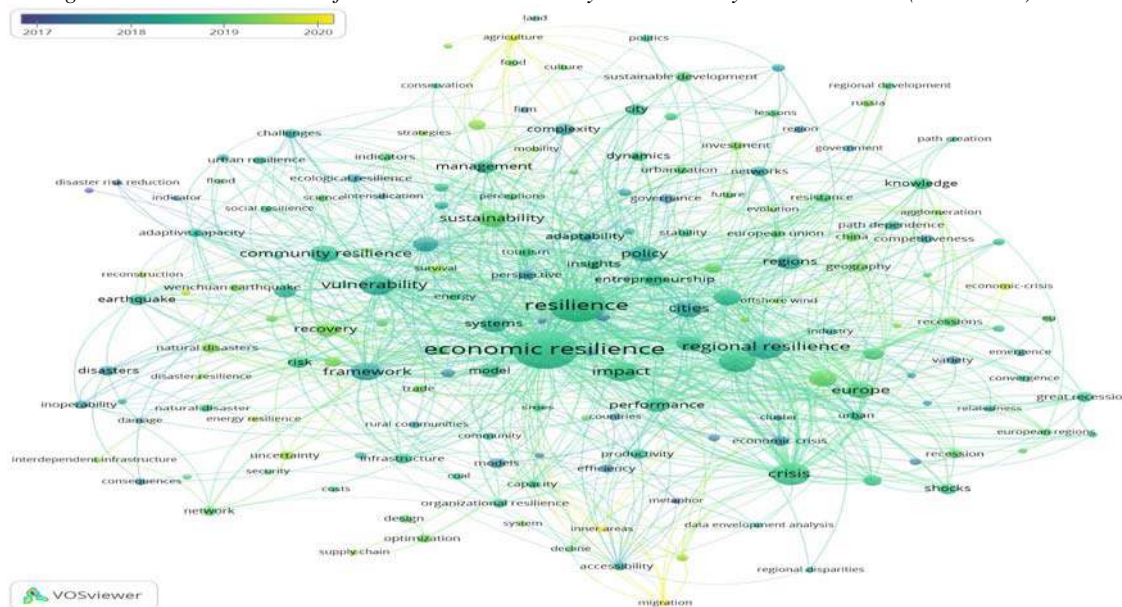
Figure no. 5. Clusters of the keywords and keyword structures associated to the 322 publications that responded to the Web of Science query



Source: Authors’ VOSviewer processing, based on the raw Web of Science data

The same methodology was applied in the case of Figure 6, but it contains the evolution of the links between the keywords and keyword structures previously identified in Figure 5.

Figure no. 6. The evolution of the links between the keywords and keyword structures (2017-2020)



Source: Authors' VOSviewer processing, based on the raw Web of Science data

The interest is obvious. The analyzed concept is usually used together with such words as: sustainability, vulnerability, entrepreneurship, recovery, cities, management, community resilience, performance. Therefore, the interest of the scientists in this regard is given by necessity of finding the best solutions for recovering after shocks, crises and not only.

Still, the limit of this analysis consists in the fact that it took into consideration just the economic resilience concept, while the resilience concept is more comprehensive and covers other domains, too. Not only that, but the bibliometric analysis was also carried out only based on the publications indexed in the Web of Science database during the most recent period: 2017-2020 timeframe.

5. Conclusions

The resilience is the new main topic during the COVID-19 pandemic and it is taken into consideration on every stage, person, and entity. But the scientific interest in this regard is new considering the evaluation of thinking, but somehow old, taking into consideration the decades that the concept is being analysed.

The bouncing back and the recoverability of the entity need to be further developed from methodological perspectives.

Yet, the scientist's interest about the resilience and about the economic resilience is huge, and the bibliometric analysis has already proved this.

The hypothesis: There are several important changes in the evolution of the concept of resilience is confirmed by the changes in the thinking of resilience, from technological approach, to ecological approach and social approach.

The hypothesis: There are different understandings on the concept of resilience is confirmed by the fact that resilience is on the one hand the process of bouncing back into a sort of equilibrium, and, on the other hand, is the capacity of an entity to recover after a shock.

The hypothesis: There is a big interest on economic resilience concept in the scientific papers was confirmed by the bibliometric analysis and the important weight of the papers with this topic and keywords.

Therefore, it is expected to have further scientific steps in developing this concept, with so many possibilities to be implemented into real economy and society.

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