

# The concept of resilience in economics: a comprehensive analysis and systematic review of economic literature

Continuity &  
Resilience Review

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Luigi Capoani  
*Ca' Foscari University of Venice, Venice, Italy*  
Mila Fantinelli  
*Università Cattolica del Sacro Cuore, Milan, Italy, and*  
Luca Giordano  
*Natural Language Processing Researcher and Computational Linguist,  
Alma Mater Studiorum University of Bologna, Bologna, Italy*

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## Abstract

**Purpose** – The article seeks to identify what constitutes economic resilience and how it is conceptualized in economic theory and policy. It explores the nuances of resilience as the ability of an economic system to adapt, reorganize and recover from shocks such as recessions or crises.

**Design/methodology/approach** – The article highlights the use of corpus linguistics methods and content analysis techniques to systematically analyse how economic resilience is discussed in the literature, providing a more objective and data-driven perspective on the topic.

**Findings** – The findings of the review are intended to help deepen the understanding of resilience in economic systems, with a focus on its implications for future research, policy development and economic planning. The authors emphasize the importance of resilience for sustainable and adaptable economies, particularly in light of global economic disruptions.

**Originality/value** – The article's originality comes from its methodological innovation (using corpus linguistics), comprehensive review of economic resilience across multiple theories and its policy-oriented focus on improving economic systems' adaptability to external shocks. It provides a fresh and systematic perspective that enriches the academic discussion on resilience, with clear implications for future research and policymaking.

**Keywords** Resilience, Export diversification, Economic development, Adaptation, Growth

**Paper type** Literature review

## 1. Introduction

Changes happen cyclically, and the capacity of an individual or a system to adapt to them defines their resilience. In an economic system, changes usually occur when external forces cause shocks strong enough to trigger a transition in the system's structure (Pendall *et al.*, 2007). Thus, by resilience we mean the economic system's capacity to withstand crises and recessions, and its ability to recover from them. In today's dynamic global economy, resilience has emerged as a critical element for ensuring stability and sustainable growth. Within this context, being resilient has helped mitigate external shocks such as financial crises and pandemics. For instance, the 2008 financial crisis highlighted the strength of nations with solid fiscal policies and diversified economies. In this regard, to give an example, European regions

**JEL Classification** — O, R1, R11, R12, B00, Q01

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showed significant differences in their ability to develop new industrial paths. Several key factors contribute to a region's resilience (Xiao *et al.*, 2018).

In particular, the coronavirus disease 2019 (COVID-19) pandemic underscored the importance of robust healthcare systems, adaptable labour markets and social safety nets. In that turn of events, the importance of international cooperation for policy and resilience has been highlighted. The interconnectedness of countries and industries has been a source of incredible value creation, knowledge sharing and productivity growth.

To ensure economic stability and growth, considering these crises, research has focused on strategies that enable firms and economies to thrive in uncertainty (Hamel and Valikanga, 2003; Starr *et al.*, 2003; Tompkins, 2007). Moreover, since the world market is made of open economies, in which customers and suppliers can be found both inside and outside of a country's economic boundaries (Izquierdo *et al.*, 2022), recessions, changes and adjustments in a sector may therefore spread outside its borders. When industry-specific shocks are important or are connected across companies with big trading flows, the changes will be greater in magnitude. In this regard, academic fields such as economic geography and regional studies usually adopt the concept of resilience to represent how local and regional economies respond to adversities. Scholars and policymakers have emphasized its importance, leading to programs and indices measuring regional resilience. This growing focus reflects resilience's critical role in shaping economic growth and recovery strategies across spatial and policy dimensions (Zolli and Healey, 2012).

Resilience is also central to fostering innovation and adaptation, particularly in response to rapid technological changes like automation and digital transformation. Indeed, economies that embrace change and invest in innovation turn disturbances into opportunities for growth. Additionally, resilience is vital for addressing climate change challenges (Parsons, 2010; Lee *et al.*, 2013) through sustainable development, renewable energy investments and disaster risk reduction. Concerning this, nations prioritizing green technology and climate-resilient infrastructure are indeed better equipped to handle environmental shocks like rising sea levels and extreme weather.

In this paper, resilience will be treated in all its multifaceted dimensions, offering a unique insight into how systems respond to economic break. Individual, organizational and ecological systems will be presented and examined. This perspective is also relevant to supply chains and organizational contexts. In supply chains, resilience refers to the ability to recover from recession and adapt processes to mitigate future risks, often through strategies like diversification and increased transparency (Christopher *et al.*, 2004). On the other hand, in organizational contexts, resilience is defined as the capacity to adjust, reorganize and sustain performance during crises or changes (Vogus *et al.*, 2007). Whereas in the socio-ecological context, the concept of resilience has been addressed both as a system's ability to quickly return to its pre-shock equilibrium (Holling, 1973) and as a system's capacity to absorb disturbances and make adjustments while maintaining its core functions — potentially settling into a new equilibrium.

Nonetheless, despite its rising prominence, the concept of resilience remains underdefined and variably interpreted across the literature (Martin and Sunley, 2015). This lack of clarity calls for further theoretical and empirical research to establish a cohesive understanding of the term. Without such groundwork, efforts to "build" resilience in regions and cities may lack precision, potentially undermining their effectiveness in addressing economic vulnerabilities and fostering sustainable growth. Furthermore, much of the focus has been on defining and measuring it rather than exploring its real-world applications. Understanding how to make a system resilient can help identify strategies and regional policies for enhancing the recovery mechanism of local and regional economies. By bridging this gap, this study seeks to provide actionable insights that can inform evidence-based decision-making, ensuring that the concept of resilience translates effectively into practice.

For this reason, applying corpus linguistics to resilience specifically provides a powerful toolkit to uncover patterns in how the concept is communicated, framed and interpreted,

mainly in relation to its manifold nuances. The combined use of corpus linguistics and content analysis offers an innovative approach to exploring the linguistic occurrence and, thus, the meaning of resilience by bridging quantitative and qualitative methodologies. Corpus linguistics enables, indeed, the systematic analysis of large textual datasets, uncovering patterns, trends and shifts in discourse that might go unnoticed with traditional methods. Content analysis, on the other hand, provides a nuanced understanding of the contextual meaning behind these patterns, allowing researchers to interpret how resilience is framed and operationalized in policy, media and academic narratives. These methods combined offer a comprehensive perspective, capturing both the broad discursive trends and the underlying conceptual frameworks.

Thus, we may better understand the subtle and complex ways in which economic recovery, adaptation and sustainability are discussed and understood. The two research questions of this study are:

*RQ1.* What defines economic resilience?

*RQ2.* What are the main themes and topics related to economic resilience?

The next section will present a comprehensive overview of the literature on the notion of resilience, its applications and defining features. We chose to collect data between 2019 and 2024 to focus on more recent discussions of economic resilience, a topic that has gained increasing attention especially due to economic shocks related to the COVID-19 pandemic and growing global uncertainty. While the 2008 economic crisis remains a pivotal moment in shaping resilience discourse, narrowing our scope to this more recent period allows us to examine the current state of the concept considering contemporary challenges and policies adopted to address them. The aim is to synthesize current knowledge on how resilience is conceptualized, measured and influenced by both short-term and long-term factors. Additionally, it examines how resilience and resistance interact within markets, shaping their response to disruptions and economic fluctuations. The subsequent methodology section offers a comprehensive overview of the data and the methodological approach employed in the content analysis. Then, results are reported and discussed in the result section together with data visualizations. Results are divided into two strands: antecedents and impacts, based on the role of the factors analysed. Antecedents, such as governance, ecology and economic variables, represent the preconditions that make economic resilience possible, while impacts, such as COVID-19, evolution and geography, illustrate how resilience is not just a theoretical construct but a practical lens for addressing real-world issues. Indeed, COVID-19 served as a critical case study for understanding the outcomes of resilience (or its absence), while, in the socio-ecological field, evolution embodies the response to shocks and the long-term transformation of economies to be more robust and prepared for future crises. Finally, geography highlights the regional and localized impacts of resilience as well as the varying capacities of regions. This approach allows us to distinguish between measures required to prevent or prepare for future crises and the observable effects of those crises. Finally, the main takeaways of our study are reported in the conclusions, which will restate the topic and reinforce the thesis of the paper.

## **2. A brief historical framework of resilience: evolution of key perspectives across different schools of thought**

Applying the concept of resilience to industry productivity and economic growth highlights its intrinsic connection to these elements. Over time, different schools of thought have developed different economic models and theories. In current academic discussion, authors continue to disagree on which of these development models is most resilient to crises and shocks. Debate is particularly heated around specialization and diversification models, and, for this reason, being familiar with these theories is instrumental to fully grasp the concept of resilience and its nuances.

The classical theory of economics, rooted in Adam Smith's *Wealth of Nations* (1776), focuses on aggregate economic outcomes by analysing individual decision-making and market dynamics. It emphasizes the roles of self-interest, competition and the "invisible hand" in guiding efficient resource allocation. Central to this theory is the idea that economic growth and output are driven by the accumulation of capital, labour and technological progress. In particular, Adam Smith's absolute advantage theory posits that a country has an absolute advantage in producing a good if it can do so more efficiently than others. Thus, it connects increasing productivity and economic progress with increased specialization which is further encouraged by lower transportation costs, reducing domestic production in favour of trade (Dornbusch *et al.*, 1977). Generally, this rational efficient behaviour can contribute to resilience, as agents are expected to respond optimally to changes in their environment, helping the economy to adapt and recover. Similarly, the Ricardian theory of comparative advantage argues that countries specialize in economic activities and allocate resources towards the production and export of goods and services in which they exhibit the highest relative efficiency, characterized by a lower opportunity cost compared to other countries (Maneschi, 1998). This allocation enhances economic resilience, enabling economies to adapt to external shocks and shifts in demand by leveraging specialization and trade (Kellmann and Shachmurove, 2011). However, even this theory poses important limitations. According to Balassa's 1965 theory of revealed comparative advantage, a country benefiting from absolute advantages in two considered sectors may have to specialize in the one where its advantages are comparatively lower in relation to the other goods [1], provided that the opportunity cost of producing that good is lower in a second country than in the first one. Consequently, many comparative advantages would remain totally unexpressed, and their realization would require a great deal of international coordination, which is occasionally lacking. While mathematically sound, comparative advantage is not always practical or achievable. In contrast, the Heckscher–Ohlin model, a neoclassical theory which builds on Ricardo's classical theory, overlooks disparities in total factor productivity (TFP) and asserts that all nations within a given industry share identical production functions. According to this model, international trade is shaped by countries' differing endowments. These factors of production are immobile between nations, but goods produced through these factors can be exchanged internationally. As a result, countries will specialize in manufacturing goods that intensively utilize their relatively abundant factors. For instance, a country with a large labour force will produce labour-intensive goods like textiles, whereas a capital-rich country will focus on capital-intensive goods such as machinery (Goldin, 1990).

By leveraging their factor endowments, countries can create robust export sectors that help cushion against economic shocks, fostering greater resilience through trade diversification.

Further critiques of classical and neoclassical theories highlight the imperfect knowledge businesses have of their own demand and production functions. Edith Penrose (1959) argued about the importance of trial and error in the growth of firms, while Sidney Nelson and Winter (1982) also provided an evolutionary theory of economic change, applying principles of natural selection to business practices. Similarly, Friedrich Hayek (2002) theorized his idea of the market as a process of continuous discovery, aligning with what Peter Drucker (1969) defined as a "knowledge economy", where the strategic use of information generates value. Therefore, decision-makers need to be supported in promoting sustainable change, so that the economic system may adapt to different circumstances. At the core of this paradigm is a strong emphasis on intellectual capital, which is regarded as a fundamental driver of growth and innovation, in contrast to traditional factors of production such as physical inputs, natural resources or tangible capital. This approach highlights the crucial role of knowledge, skills and creativity in shaping economic success and enhancing the competitiveness of both firms and nations (Powell and Snellman, 2004). This is particularly relevant to the contemporary economy, contrasting with historical economic practices. Consequently, resilience does not depend solely on the market mechanisms.

Some theories even overlook the role of exports in fostering economic resilience by promoting diversification, access to global markets, innovation and job creation, all of which contribute to a stronger and more adaptable economy in the face of challenges. Solow's (1956) neoclassical model posits that economic growth is driven primarily by the accumulation of capital and labour, with technological progress being determined as an exogenous factor. This framework suggests that trade policies have limited influence on growth differentials over time. In contrast, endogenous growth theories, like Kaldor's (1966) Keynesian-oriented paradigm and Romer's (1990) so-called New Growth Theory (NGT), acknowledge the impact of foreign trade: here, exports create possibilities for enhanced specialization, which leads to higher productivity growth through the process of learning by doing (Grossman and Helpman, 1991; Rivera-Batiz and Romer, 1991). This model highlights the growth effect of trade because of technological or knowledge spillovers between trading partners (Romer, 1986; Grossman and Helpman, 1991; Barro and Sala-i-Martin, 1997), showcasing how trade fosters innovation and resilience. These theories suggest that exports are crucial for economic growth, as they promote specialization and productivity gains. However, exporting implies opening the economy to international trade also introduces challenges. Increased competition from imports may trigger industrial shifts, reallocating workers and resources from established sectors to others, potentially causing instability. From this perspective, also considering knowledge-based economies of scale, a certain degree of protectionism and production differentiation could ensure stability better than a specialization approach based on comparative advantage theory. Indeed, the "infant industry" theory, one of the oldest theories in favour of protectionism, argues for protecting nascent industries until they can compete internationally. These industries rely on high-quality local resources and the ability to export part of their initial output to ensure competitiveness during their development phase.

Nonetheless, the Ricardian concept holds that some activities may encourage growth more than others through their supply-side (for instance, through technology requirements) or demand side (e.g. through price elasticities). As a result, a country's specialization has an impact on its growth performance (Lee, 2011) and on its economic resilience (Buchholz and Bathelt, 2021; Martin and Sunley, 2015; Tsiapa *et al.*, 2018). Specialization, however, institutionalizes disparities in national economies, reflecting Ricardo's (1891) belief that comparative advantage within production systems preconditions economic differentiation. Consequently, specialization models inherently would imply the presence of diverse and independently formed national economies.

Trade theories offer different views on how trade specialization evolves with per capita income. For instance, while some models, like Krugman's (1987), suggest that comparative advantage would not be the only cause of specialization, and other factors, including technological progress, would play a leading role. Starting from Krugman's groundwork, Peretto (2003) states that the economic specialization of a country does not follow a deterministic logic but is influenced by dynamic factors. In this regard, he proposes an economic model dominated by a few large companies (oligopolies) that offer differentiated goods, with which consumers have symmetrical preferences.

Other models, such as Stokey's (1988), posit that as specialization occurs and continues over time, countries only become proficient in the goods they produce, resulting in an increasing pronunciation of the original comparative advantage pattern.

The "natural resource curse" thesis (Ross, 1999; Sachs and Warner, 1996) demonstrates that specializing and over-depending on natural resource exportations is surprisingly detrimental to economic development in the long run and therefore to the economic resilience of an economic system. On the other hand, the Modern Portfolio Theory (MTP) states that a highly diversified sector in a regional economy is more likely to sustain and minimize the negative effects of shocks, while a highly specialized one is much more sensitive to serious recessions. This is because regions that concentrate only on a few industries face greater susceptibility to economic shocks, increasing the likelihood of enduring declines in business and workforce numbers (Davies *et al.*, 2010). In contrast, regions with a varied

industrial composition exhibit better adaptability, as risks are spread across multiple sectors (Conroy, 1975; Dawley *et al.*, 2010).

Glaeser *et al.* (1992) famously posed the question as to which model, between diversification and specialization, brings the most benefit to regions. This, in turn, led Marshall (1890), Arrow (1962) and Romer (1986) to theorize the Marshall-Arrow-Romer (MAR) model of externalities, arguing that the proximity of firms in a single industry, that is, specialization, promotes knowledge spillovers; Jacobs (1969), on the other hand, argued for externalities generated by industry diversification. Furthermore, Frenken *et al.* (2007) proposed that knowledge spillovers within the region are “expected to occur primarily between correlated sectors and only to a limited extent between uncorrelated sectors”. Indeed, their statistical analysis showed a positive correlation between prospects for regional novelty and correlated variety, contrary to the unrelated one. The MAR model provides a valuable framework for understanding the trade-offs involved in managing externalities and their implications for economic resilience. Many studies seem to confirm this hypothesis, although further research on inter-industry differences revealed that the effects of related variety on growth may be specific to only a few sectors, precisely manufacturing and knowledge-intensive sectors (Bishop and Gripaos, 2010; Bosma *et al.*, 2012; Cortinovis and Van Oort, 2015; Hartog *et al.*, 2012). Moreover, according to Hidalgo and Hausmann (2009), studies on how nations or regions develop new industries indicated that if a region or country already hosts industries related to a particular sector, they are far more likely to specialize in that sector. In conclusion, industrial policies play a vital role in directing structural changes within the economy of a region or country. These policies are often linked to government action, which has the ability to influence industrial development by favouring specialization or encouraging innovation in specific sectors that are crucial for the country’s well-being (Di Tommaso *et al.*, 2020). It is therefore necessary for institutions to recognize risks and complexities, and to manage them with innovative and flexible policies and tools. In relation to the importance of flexibility, the concepts of continuity and resilience are closely interrelated, both underpinning a system’s capacity to adapt, survive and thrive in the face of crises or disasters. Continuity emphasizes a system’s ability to sustain essential operations and functions during and after disruptions, ensuring stability and immediate operational viability. In contrast, resilience extends beyond continuity by encompassing the ability to recover, adapt and transform to mitigate future risks and avoid long-term collapse. Paton and Hill (2006) highlight this interconnection by demonstrating how Business Continuity Management (BCM) serves as a strategic framework for managing risks and enhancing organizational resilience. Their work underscores that continuity planning not only ensures operational stability but also builds the foundation for a resilient recovery, fostering adaptability and sustained performance in the aftermath of disruptions. Therefore, policymakers must consider these two concepts in order to identify and manage risks effectively.

### 3. Resilience and its application

The definition of resilience is very broad and takes on different facets depending on the field in which it is discussed. Industrial resilience deals with strategies to keep firms productive in times of crisis (Hill *et al.*, 2012), while macroeconomic resilience, on the other hand, is inevitably linked with two other concepts: instantaneous resilience, dealing with the responsiveness and effectiveness of countermeasures in the face of risk, and dynamic resilience, the ability to recover after a shock (Hallegatte, 2014). Changes in systems often cause not only disruption but also new opportunities: different authors (Bristow and Healy, 2013; Martin, 2012; Pendall *et al.*, 2007) have highlighted the importance of structural changes in the system, viewing them as innovative tools with the potential to enhance resilience and improve its outcomes. It may also differ from one industrial sector to another, just like recessions can strike some markets while boosting others. The critical factor, however, is the time it takes for the system to collapse and return to its former state.

Due to the vague nature of the term, different authors employ various definitions and descriptions. [Martin and Sunley \(2020\)](#), for instance, link the concept of resilience to that of resistance and adaptability in the face of change. Sometimes, this may require significant changes to the industry structure, or even the creation of a completely new growth path ([Boschma, 2014](#)). [Martin \(2012\)](#) has thoroughly discussed the multifaceted nature of economic resilience, highlighting four key properties. The initial aspect is resistance, highlighting the degree to which an economy is affected by a recessionary shock and its immediate response. Next is recovery, which focuses on the speed and extent of the economy's rebound following the break. The third feature is reorientation, which assesses how well the economy adapts, reorganizes and readjusts to new challenges. Lastly, renewal measures the extent to which a regional economy restores its growth trajectory, either by reverting to its pre-recession path or by shifting to a new developmental course.

Sometimes, innovations stemming from crises may contribute to building a new, better developmental path. Other times, the new path may be even worse than the previous one ([Reggiani et al., 2002](#); [Swanstrom et al., 2009](#); [Zolli and Healy, 2012](#)). The rise after a recessionary shock is not a smooth and progressive process, nor do the consequent measures taken by institutions create a stark dichotomy between the previous developmental growth path and the following. Rather, the latter presents both continuity and discontinuity with the former. It is more of an evolution of features, which are supposed to enhance the resilience of regional economies, than an abrupt change ([Martin, 2012](#)). [Rose \(2004\)](#), drawing on the works of [Holling \(1973\)](#) and [Perrings \(2001\)](#), highlights that the features of resilience generally differ in the short and long run. Resilience in the short run is termed "static", whereas in the long run, it is referred to as "dynamic". Static resilience assesses whether resources are being effectively utilized to maintain functionality or compensate for shortcomings, even if it cannot completely restore the capacity that has been destroyed. In contrast, dynamic resilience focuses on the supply side of the function, specifically the "available resources" from an ecological perspective ([Pimm, 1984](#)).

It aims to optimal use of resources in the repair and restoration of the capacity destroyed, aligning with concepts of stability in mathematical or ecological systems. It strives to increase productivity by enhancing the long-term availability of all inputs. Thus, the notion is also tightly connected to one of investments ([Xie et al., 2020](#)), meaning resources allocated with the potential to be used for current consumption to augment future production ([Dormady et al., 2022](#)). Basic macroeconomic rules apply here: in the case of static resilience, the demand side of the function is involved, while all inputs are held constant. One of the first notions taught in Macroeconomics classes is that prices in the short run are not able to adjust. Similarly, increasing inputs within this time frame is also very challenging, and for that reason, it is necessary to maximize the use of existing resources. In some cases, this may involve maintaining productivity with fewer inputs than before. [Rose \(2004\)](#) thus defines static economic resilience as the capacity of an organization or system to maintain a high level of production in the face of shocks. Therefore, resilience rests in the capacity of a system to absorb or cushion against damage or loss. From an evolutionary perspective, [Boschma and Martin \(2010\)](#) emphasize the regions' long-term evolution and their capacity to adapt [2] and reorganize their structures in a restless and dynamic economic system. In this context, management disciplines are vital for building economic resilience. According to [Burnard and Bhamra \(2019\)](#), strategic management ensures adaptability, while risk management mitigates vulnerabilities. Operations and supply chain management strengthen critical processes, and innovation management drives technological adaptation and evolution. Human resource management fosters workforce agility, financial management ensures stability through sound investment, and sustainability management addresses climate-related risks for long-term viability. Together, these disciplines enable proactive navigation of uncertainties, enhancing recovery and sustaining growth in volatile environments. Recognizing resilience as dynamic, future efforts should integrate these fields for more effective strategies.

During the rise of the COVID-19 crisis, the concept of resilience became of particular interest among scholars, especially in 2020. Indeed, the global pandemic put worldwide economies' endurance to a strict test. For instance, supply chain executives reported extended delivery times due to plant closure, long shipping pipelines, as well as a general lack of preparedness. Meanwhile, on the demand side, they denounced short-term peaks in certain product categories with sudden reductions in others, especially in the transportation industry (Van Hoek, 2020). To address these challenges, many corporate practices involve the repurposing of corporate operations and skills to produce more in-demand goods, such as masks and ventilators (Cheema-Fox et al., 2021). On that occasion, some experts insisted on the beneficial effect of what is called Industry 4.0 on production operations (Spieske and Birkel, 2021); others, on the buffering effects of more enhanced industrial capabilities and especially on the positive role of manufacturing industries (Lavopa and Donnelly, 2023). During the pandemic, national and regional industries were struck heterogeneously, causing different reactions across economies. Sectors like tourism and transportation were heavily impacted by reduced demand and restrictions (Archanskaia et al., 2023). As shown by Graziano and Rizzi (2020), regional reactions to recessionary shocks differ, shaping distinct developmental trajectories.

As Martin (2012) explained: "regional output and employment, for example, are obviously the complex outcomes of a range of structural and systemic, and external and internal factors, processes and arrangements, and resilience is but one aspect of a regional economy's growth dynamics".

Thus, due to the different characteristics and features of economic systems and regions, the nature and origin of a crisis can vary significantly. Fluctuations occur across both space and time, causing uneven features and conditions of recessions (Bailey et al., 2020), which eventually determine, *inter alia*, who is affected and the consequent response mechanisms. According to Martin et al. (2016), resilience can be understood as a "multifaceted process", resembling a sequence of interconnected steps. The first step involves vulnerability, referring to how sensitive a company and its workers are to external recessionary shocks, alongside resistance, meaning the immediate impact of the shock on an economy and the degree of its reactive response. The second step is robustness, describing the extent of adjustment required by economic agents to adapt to shocks effectively. Finally, recoverability captures the degree to which an economy restores its growth trajectory, whether by returning to its pre-recession path or shifting to a new developmental course, along with the nature of this trajectory.

Some studies found that recessionary shocks have strong asymmetric impacts on regional labour markets, a topic that appears to be less explored when compared to system shocks or disasters, which, instead, are far better documented (Vale and Campanella, 2005). For instance, in their analysis of the Great Recession, Fogli et al. (2013) showed the asymmetric impact of the crisis on US counties: when a recession begins, unemployment rates usually become more dispersed, meaning that the affected counties are not necessarily close to each other. Therefore, the spatial correlation should decrease. However, in the case of US county crises, as the downturn continues, unemployment clusters have begun to form, amplifying the spatial correlation.

On the other hand, exchange rates are a common example of non-country-specific shock that can still have asymmetric effects across nations in the context of the Economic and Monetary Union (EMU). If we consider the Great Crisis a symmetrical financial shock that hit the European area, empirical evidence indicates that its consequences have shown asymmetrical results.

According to the econometric analysis, one of the main drivers of these asymmetric effects appears to be the structure of regional labour markets. Indeed, disparities in employment and structural development reflect the complexity of modern regional economies. Market saturation and barriers to labour mobility negatively affect the growth of specific sectors and then the whole national economy. The initial shock can lead to a generalized crisis whose effect is usually asymmetrical from a spatial perspective. Local economic frameworks, technical

improvements and human capital supply differences all contribute to the asymmetric consequences of shocks, both between and within nations. Finally, most of the literature on recessions suggests that regions tend not to be “transformed” by them. Rather, regions “recover”, meaning that they simply return to their pre-crisis conditions.

Another particularly relevant concept in understanding economic resilience is sustainability in the context of climate change. Studies have highlighted that changing weather phenomena have been impacting not just natural ecosystems but also human societies and economies. For instance, [Allam and Jones \(2019\)](#) showed that cities and urban areas, which serve as economic “engines” of countries, have been experiencing increasing stresses on energy supply, infrastructure, as well as shortages of food and potable water. Additionally, food security has also been negatively impacted, with climate change affecting its availability, stability, utilization and access. [Tol \(2018\)](#) has also highlighted that poorer countries, particularly those in hotter regions, will also be disproportionately affected due to their large reliance on agriculture and their limited adaptive capacity. These economies often lack access to modern, advanced technology and resilient institutional frameworks, leaving them more vulnerable to extreme weather and global warming.

This section has outlined the foundational definitions and key features of resilience, providing a pedagogical introduction to the term, which is functional for understanding our content analysis. Through this exploration, it is evident that resilience is not just a theoretical construct. Resilience is, most importantly, a practical necessity. As global challenges become more and more interconnected, studies and research on the term will prove to be increasingly crucial. Its relevance cannot be overstated as it spans multiple analytical levels. Although this article focuses primarily on macroeconomic resilience, it also emphasizes the close relationship between resilience at the micro level, particularly in business continuity, and overall economic stability. In this context, the ability of firms and local companies to adapt and recover plays a critical role in relation to the resilience of the entire economy. Disasters, whether natural, financial or health-related, affect both individual firms and the broader economy, making it essential to understand the interplay between micro and macro resilience. At the individual level, for instance, resilience supports decision-makers and employees in adapting to economic disruptions. Second, at the organizational level, it helps businesses develop robust strategies to withstand shocks while maintaining functionality. At the community level, it fosters social and economic cohesion, enabling collective recovery. Finally, at the systemic level, economic resilience enables institutions and policymakers to identify vulnerabilities and craft frameworks and policies to enhance preparedness for future downturns.

#### 4. Methodology

This section provides an overview of the Economic Resilience Corpus (ERC) and outlines the methodological approach employed in our study. After an in-depth data exploration, we delve into the techniques used for the content analysis, explaining how we extracted meaningful patterns and themes from the collected data. Corpus linguistics and content analysis were selected as the primary methodologies for this study due to their capacity to systematically and qualitatively analyse large volumes of text and uncover nuanced linguistic patterns. These methods enable a deeper understanding of how specific terms, such as “economic resilience”, are used within academic discourse. Unlike topic modelling, which is limited to identifying latent topics through probabilistic word clustering, corpus linguistics and content analysis aim to go beyond that, by providing a more context-sensitive approach, directly engaging with the semantic and conceptual dimensions of the text. This focus on meaning and context aligns closely with the research objectives of identifying specific themes and connotations related to economic resilience. The primary aim of this study is to uncover the precise meanings, connotations and usage patterns of “economic resilience” within academic discourse. The chosen methodologies thus enable a more granular examination of textual data, facilitating the

identification of specific disciplinary contexts and themes. This focus on linguistic precision and contextual analysis ensures that the findings are both relevant and actionable, addressing the conceptual and practical gaps in the literature. While corpus linguistics and content analysis offer detailed insights, they are more labour-intensive and less scalable than automated methods such as topic modelling. However, the depth of contextual understanding and the ability to target discipline-specific nuances justify the choice of these methods. The trade-off between scalability and conceptual richness was deemed necessary to achieve the study's objectives, ensuring that the analysis provides meaningful contributions to the discourse on economic resilience.

#### 4.1 Data description

In this section, we present the ERC. It represents the foundation for our analysis and its compilation involved systematic processes of collection and preprocessing. We provide here a thorough data exploration.

The data source for our corpus is CORE (Knoth *et al.*, 2023), a comprehensive bibliographic database of the world's scholarly literature and the world's largest collection of full-text open access research papers. The ERC comprises 307 English research papers on the concept of economic resilience published between 2019 and June 2024, written by 304 different authors. The textual genre distribution is 100% academic; thus, the communication typology is expert-to-expert, characterized by domain-specific terminology, technical jargon and implicit mutual understanding.

Statistics of the corpus can be found in Table 1 and Figure 1. The publication year distribution shows a clear positive trend in the increasing number of yearly publications on this subject, even in the narrow time frame chosen for this study. Interestingly, the biggest leaps happened in 2020 and 2023, possibly related respectively to the beginning of the COVID-19 pandemic worldwide and the discourse regarding its long-term effects on the economy (Maqui and Morris, 2021; Xiang *et al.*, 2021). It is worth noting that the very low number of publications in 2024, the current year at the time of writing, is most probably due to the fact that most research papers will be published after the date when we accessed the database.

Each entry in the corpus contains a unique numerical identifier, the COREid (i.e., an id assigned by the CORE database), the title, the full text, the author(s), the year of publication, the abstract, the DOI (Digital Object Identifier), the language, the publisher and the title-text pair together. The corpus is publicly available [3] for future use and further exploration by the research community.

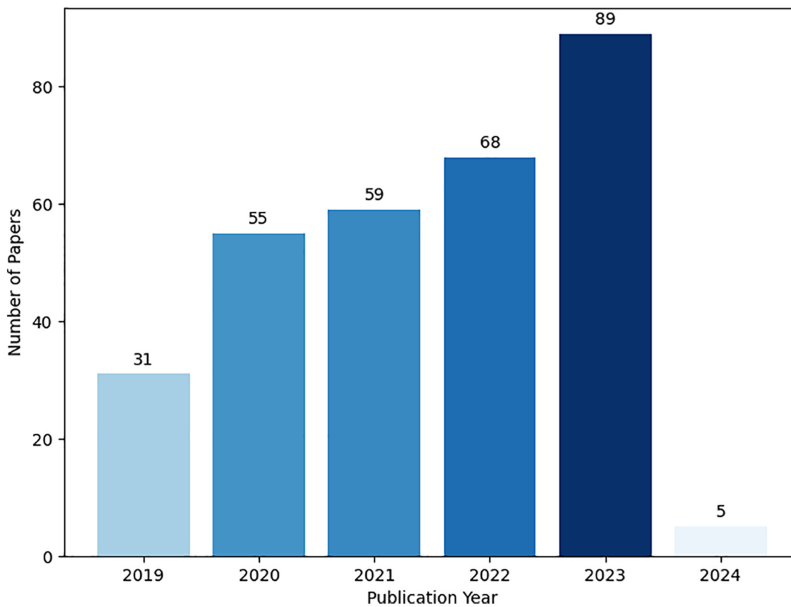
#### 4.2 Content analysis

The aim of this content analysis is twofold, mirroring the two research questions of this study.

The first objective is to identify the patterns that emerge from the data that provide deeper insights into how the available literature broadly defines the concept of economic resilience. As English linguist John Rupert Firth points out in his famous quotation, "You shall know a word by the company it keeps" (Firth, 1957, p. 11). When a lexical item displays a tendency to co-occur with items from one or more particular categories, it is said to display a semantic

**Table 1.** Corpus statistics

Time frame: 2019–June 2024					
#Documents	#Authors	#Tokens <sup>a</sup>	Avg. #Tokens/text	#Characters	Avg. #Characters/text
307	304	2,387,756	7777.7	13,846,093	45101.2
<b>Note(s):</b> <sup>a</sup> Computed with NLTK Punkt word tokenizer before removing stopwords					
<b>Source(s):</b> Authors' own creation					



Source(s): Authors' own creation

Figure 1. Publication year distribution

preference for them (Sinclair, 2004). By manually analysing the collocational profile of the word “resilience” we can describe its semantic preference and highlight the main patterns that define it. Therefore, we generate a list sorted by log-likelihood of the top 100 collocates of the node word “resilience”.

The second objective is to identify the main recurring themes and topics in the published literature related to the concept of economic resilience. In this second section we delve deeper into the analysis, extracting interesting insights by looking at keywords, n-grams, and word clusters. Our aim is to classify recurring, relevant words and phrases into descriptive categories. We start from the top 50 keyword list sorted by log-likelihood, i.e., a list of words that are typical of and characteristically different in the target corpus when compared to a reference corpus. This serves as a good starting point to identify some of the main patterns. Furthermore, we also generate the lists of the top 50 bigrams and trigrams. By analysing these two lists, we gather a more thorough outlook on the recurring themes and topics in the corpus, reinforcing or debunking hypotheses formulated during the analysis of the keyword list. Finally, to further dissipate doubts and reinforce hypotheses during the term extraction process, we also check the usage of specific words and phrases in context by looking at word clusters and by reading the paragraph where the item occurs.

It is worth noting that two further levels of analysis were considered for the content analysis. First, a sentiment analysis was intended to be conducted in order to gain some interesting insights on the perception of economic resilience in the literature, but this level of analysis was later discarded since the corpus contains only scientific papers and the academic genre is rather neutral in its tone, therefore no sentiment or subjective evaluation is usually expressed. Furthermore, a clustering analysis was conducted in order to highlight any similarities and groupings in the data that would then have been further analysed. In our experiments, we tested three commonly employed clustering techniques, i.e. K-means, DBSCAN and hierarchical clustering, and for each technique we optimized its hyperparameters and conducted a Silhouette analysis to test the quality of the clusters.

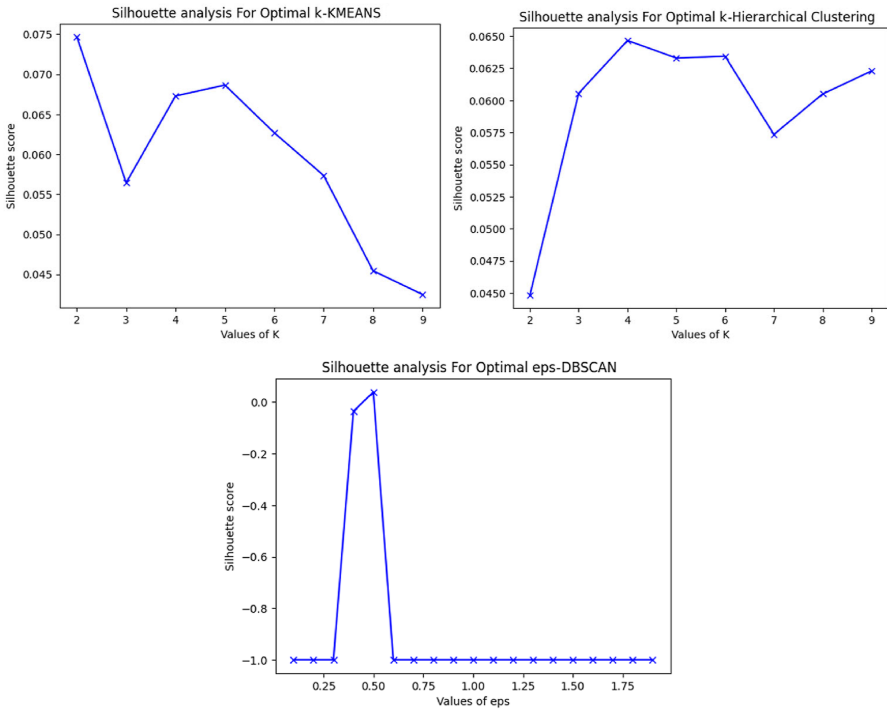
The Silhouette score is a score in a range from  $-1$  to  $+1$  indicating the quality of the clustering results. Values close to  $+1$  indicate a clear and perfect cluster separation, close to  $0$  a strong overlap between clusters and close to  $-1$  a total overlap and confusion between clusters. In all our tests, the Silhouette score for our data is no higher than  $0.07$ , showing that the papers are too similar to each other to reveal significant differences sharp enough to constitute truly separable clusters (Figure 2).

### 5. Results

In this section, we report the results of our content analysis, which provide insights into the literature published on the concept of economic resilience. We also provide several visualizations of the data in the form of word clouds to better support the understanding of our results. In the first subsection are reported the results of the first objective of the content analysis, i.e. to shed light on the definition of economic resilience, while in the second subsection are reported the results of the second objective, i.e. to illustrate the main themes and topics related to economic resilience that emerged from the data.

#### 5.1 What defines economic resilience?

From the analysis of the collocational profile of the word “resilience”, economic resilience emerges as a concept with diverse applications and implications (Figure 3).



Source(s): Authors’ own creation

Figure 2. Silhouette analysis, showing a score never higher than  $0.07$  (x-axis), which indicates that the papers in the corpus are too similar to each other to reveal significant differences sharp enough to constitute truly separable clusters



Source(s): Authors' own creation

Figure 3. Word cloud of the top 100 collocates of “resilience” by log-likelihood

While primarily rooted in the economic domain, it intersects with regional, local, and community dimensions, as highlighted by frequent co-occurrences with terms like “regional”, “local”, “community”, “cities” and “urban” (Figure 4). This indicates the attention economists have paid to spatial and regional dynamics, particularly within complex phenomena like urban settlements (Hill *et al.*, 2012). The concept also overlaps with ecological considerations, evident in its frequent pairing with “ecological”, pointing toward the integration of sustainability and environmental dynamics.

Further complexity arises from its connection to governance and institutional frameworks, suggested by collocates like “organizational” and “institutional”. These terms underline the role of institutional capacity and government intervention in fostering economic resilience at various scales. Additionally, the association with words such as “adaptive”, “evolutionary”, “static” and “dynamic” reflects a fundamental tension within the concept, navigating the interplay between adaptability, stability and transformative capacity, which are key conceptual components of economic resilience.



Source(s): Authors' own creation

Figure 4. Word cloud of the relevant collocates by log-likelihood that characterizes economic resilience in different ways

The literature also strongly emphasizes the importance of measuring and assessing resilience. The frequent co-occurrence of terms like “index”, “framework”, “measuring” “understanding” and “assessing” underscores efforts to establish objective units of analysis and to systematically define the phenomenon. Terms such as “factors”, “components”, “dimensions”, “indicators” and “determinants” further highlight these scientific endeavours to quantify resilience. Particularly noteworthy is the focus on “frameworks”, which reflects broader efforts to postulate theoretical foundations and integrate diverse indices and theories into a cohesive understanding of economic resilience (Figure 5).

However, considering that the data includes papers published as recently as 2024 and 2023, it seems reasonable to assert that such endeavours are yet to fully develop and that a shared, versatile, universally applicable and scientifically sound framework for economic resilience is yet to be postulated. Nonetheless, the semantic preference for objective units of measurement found in the published literature might represent proof of the progress in this direction.

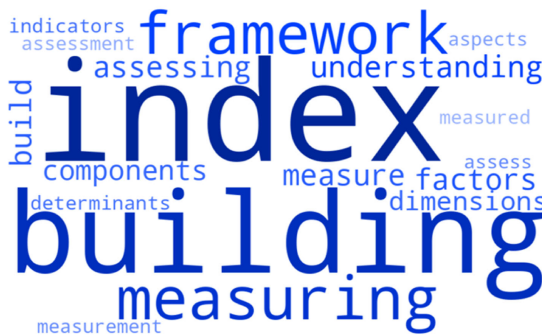
5.2 What are the main themes and topics related to economic resilience?

From the analysis of keywords, n-grams and word clusters, we identify six main themes and topics (Figure 6): COVID-19, ECOLOGY, EVOLUTION, GEOGRAPHY, GOVERNANCE and ECONOMIC VARIABLES. We introduce and discuss each theme in its own subsection, dividing the results into the antecedents of economic resilience and the subsequent impacts. For each example, we report the raw frequency, the range, i.e. the number of documents the term occurs in, and the percentage of documents the term occurs in compared to the total number of documents in the corpus.

6. Antecedents of economic resilience

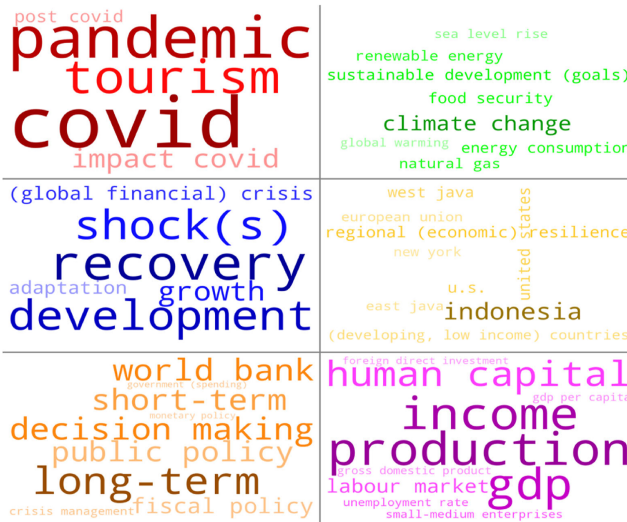
6.1 Ecology

A relevant theme in the published literature on economic resilience can be categorized with the umbrella term of ecology (Figure 6, top right). While the word “ecology” itself does not appear in the keywords, n-grams and word clusters observed, an array of related phrases does. The most prominent example is “climate change”, which occurs 1,030 times across 92 papers (30%), ranking 7th in the top bigrams by frequency. The presence of this phrase in almost 1/3 of the data is a sign of the relevance of the topic of economic resilience. Other examples of the ecological theme are the phrases “sustainable development” (and “sustainable development goals”), “food security”, “energy consumption”, “natural gas”, “renewable energy”, “sea level rise” and “global warming”.



Source(s): Authors' own creation

Figure 5. Word cloud of the relevant collocates by log-likelihood that shows how the literature talks about economic resilience as something that you can (try to) measure



**Note(s):** Top left = COVID-19, top right = ECOLOGY, middle left = EVOLUTION, middle right = GEOGRAPHY, bottom left = GOVERNANCE, bottom right = ECONOMIC VARIABLES

**Source(s):** Authors' own creation

**Figure 6.** Word clouds by frequency representing the six main themes and topics related to economic resilience emerged from the data

It is worth noting that “energy consumption” (224 occurrences in 39 papers, 12.7%), “renewable energy” (188 occurrences in 35 papers, 11.4%) and “natural gas” (201 occurrences in 25 papers, 8.1%) represent a peculiar pattern inside the ecological theme, showcasing how economists consider energy a crucial factor of economic resilience for contemporary socio-economic systems and highlighting the intertwined relationship between energy policies and economic stability.

Moreover, phrases like “sea level rise” (52 occurrences in 11 papers, 3.6%) and “global warming” (38 occurrences in 25 papers, 8.1%) illustrate concerns about the long-term impacts of environmental changes on economic infrastructures and livelihoods.

The concept of “food security” (250 occurrences in 35 papers, 11.4%) further expands the ecological theme, drawing connections between climate change, agricultural productivity, and economic resilience.

Finally, “sustainable development” and “sustainable development goals” (collectively 319 occurrences in 95 papers, 30.9%) point to a growing recognition among economists of the need for development strategies that balance economic growth with ecological preservation. These strategies aim to enhance economic resilience by ensuring that development does not compromise the ability of future generations to meet their own needs.

### 6.2 Governance

Another theme emerging from the data is a subtle one, which manifests itself in terms and phrases related to the actors involved in the economic resilience mechanism: governance (Figure 6, bottom left). As for all the other themes, except for COVID-19, the term “governance” itself does not appear in the keywords, n-grams and word clusters observed. However, an array of related terms and phrases is present.

The most prominent examples are all the forms of “policy”, namely “public policy”, “fiscal policy” and “monetary policy”, which collectively occur 422 times across 89 papers (29%). Furthermore, other relevant terms and phrases are “crisis management” (137 occurrences in 15 papers, 4.9%), “government” and “government spending” (collectively 2,802 occurrences in 236 papers, 76.8%), “decision-making” (263 occurrences across 74 papers, 24.1%), and “world bank” (259 occurrences in 69 papers, 22.5%).

This array of terms highlights the critical role of governance in shaping economic resilience. The frequent references to various forms of policy indicate that the strategic direction provided by public, fiscal, and monetary policy is crucial for mitigating economic shocks and fostering stability. The substantial mention of “government” and “government spending” underscores the active involvement and significant influence of governmental bodies in economic recovery processes. Additionally, the occurrence of “crisis management” points to the importance of preparedness and effective response strategies in maintaining economic resilience during turbulent times. The term “decision-making” emphasizes the need for informed and timely choices by policymakers to navigate economic challenges successfully. Moreover, the reference to the “world bank” signifies the relevance of international financial institutions and their support in bolstering economic resilience across different regions. Collectively, these terms and phrases paint a comprehensive picture of the multifaceted governance mechanisms that underpin economic resilience, highlighting the interplay between various policies, governmental actions, and international cooperation.

Finally, the occurrence of phrases such as “long term” (471 occurrences in 154 papers, 50.2%) and “short term” (200 occurrences in 76 papers, 24.8%) might indicate either different approaches to policymaking in economic resilience or two different levels of analysis on the effects of shocks to the resilience of socio-economic systems (or both).

### 6.3 Economic variables

The last theme that emerges from the data represents some of the economic variables associated with economic resilience, i.e. measures of a country’s economy, measures of business internationalization and concepts related to the labour market (Figure 6, bottom right).

The economic variable most frequently mentioned is the Gross Domestic Product (“GDP”, “gross domestic product” and “GDP per capita” collectively occur 1,234 times in 191 papers, 62.2%), which occurs in almost two-thirds of the corpus. This highlights the central role of GDP in discussions of economic resilience, reflecting its importance as a key indicator of economic health and performance. The frequent mention of GDP suggests that many researchers view it as a fundamental measure for assessing the robustness and stability of an economy in the face of various challenges. Other high-level economic variables include “production” (1893 occurrences in 202 papers, 65.8%), “income” (1,634 occurrences in 185 papers, 60.3%) and “human capital” (216 occurrences in 49 papers, 16%). Particularly interesting is the latter, as it underscores the growing recognition of the importance of education, skills, and workforce quality in fostering economic resilience. This trend suggests that researchers are increasingly considering human capital as a crucial factor in ensuring sustainable economic growth and stability.

Furthermore, “small medium enterprises” are also frequently mentioned, with 151 occurrences across 38 papers, i.e. 12.4% of the corpus. This might be a sign of the focus of some of the published literature specifically on smaller and more vulnerable entities, as a way to analyse economic resilience in contexts where it might be needed the most. In the context of businesses, it is worth noting the repeated occurrence of the phrase “foreign direct investment” (59 occurrences in 16 papers, 5.2%), which might indicate the between international economic integration, business internationalization and economic resilience.

Finally, the occurrences of phrases such as “unemployment rate” (145 occurrences across 50 papers, 16.3%) and “labour market” (172 occurrences in 26 papers, 8.5%) suggest an

interest of the research community in understanding how employment dynamics, labour market performance and stability in the workforce influence economic resilience. These factors are considered essential components in evaluating and enhancing the robustness of an economy.

## 7. Impacts of economic resilience

### 7.1 COVID-19

The COVID-19 pandemic is the most prominent theme emerging from the data (Figure 6, top left), with the term “Covid” ranking third in the keyword list by log-likelihood, with 4,167 occurrences in 177 papers, i.e. more than half of the documents in the corpus (57.7%). Very frequent is also the term “pandemic”, which indeed strongly co-occurs with “Covid”: the phrase “Covid pandemic” ranks 5th in the top 50 bigrams by frequency, with 1,280 occurrences in 146 papers, almost half of the documents in the corpus (47.6%). The COVID-19 pandemic is a pivotal example of economic resilience due to its profound impact on global economies, disrupting supply chains and labour markets while highlighting the necessity for adaptable economic systems. Governments and businesses faced unprecedented challenges, emphasizing the importance of robust contingency planning and adaptive strategies to withstand such shocks. This crisis underscored the need for economies to develop greater flexibility and resilience to sustain and recover from future disruptions. Considering the impact of the pandemic, we show here that the scientific community in the last five years allocated a lot of resources to investigate the phenomenon in relation to the concept of economic resilience.

Speaking of the impact of the pandemic, a term and two phrases emerge from the data as relevant: “tourism” occurs 1,203 times in 87 papers (28.3%), “impact Covid” [4] occurs 261 times in 83 papers (27%) and “post Covid” occurs 241 times in 47 papers (15.3%). This shows that a great deal of attention is dedicated to the long-term effects of the COVID-19 pandemic on the global economic system, with a focus on the tourism sector, one of the driving economic forces of many countries, which suffered greatly as a consequence of travel restrictions due to the spread of COVID-19 globally.

### 7.2 Evolution

The third theme by frequency that emerges from the data is evolution (Figure 6, middle left). It is one of the two main components of the idea of resilience: if the first component is the ability to withstand a shock, minimizing the damage, the second is the ability to recover, adapt, and finally evolve to better resist similar shocks in the future. Similar to ecology, while the word “evolution” itself does not appear in the observed keywords, n-grams and word clusters, a variety of related terms and phrases is present. A noteworthy example is the term “recovery”, which occurs 3,636 times across 218 papers, thus in a remarkable percentage of 71% of all documents, ranking seventh in the keyword list by log-likelihood. Recovery embodies the concept of bouncing forward, rather than just bouncing back, indicating a progression towards improved states that are more capable of withstanding future shocks. This aligns with the broader theme of evolution within economic resilience studies, where recovery is seen as a transformative process leading to adaptive improvement and long-term sustainability. The frequent mention of recovery in the literature thus reflects a consensus on its integral role in any potential theoretical framework for economic resilience, emphasizing that true resilience involves not just survival but also the capacity to emerge stronger and more prepared for future challenges.

Terms somewhat synonymic to “recover” also occur frequently, including “growth” (2,368 occurrences across 215 papers, 70%), “adaptation” (1,460 occurrences across 105 papers, 34.2%) and “development” (3,176 occurrences across 255 papers, 83.1%).

Another relevant example of this theme is the term “crisis”, and in particular the phrase “global financial crisis”, which collectively occurred 2,111 times across 191 papers (62.2%). This example is representative of the first component of the idea of resilience: a crisis, a shock, is necessary to trigger the resilience mechanism, and this applies also to socio-economic systems. Indeed, also the terms “shock” or “shocks” occur frequently, collectively appearing 2,413 times across 200 papers (65.2%). In particular, the occurrence of the phrase “global financial crisis” is potentially symptomatic of the discourse on economic resilience both related to the financial crisis of 2008, whose effects might still linger in scientific economic discourse over the past five years, and the recent financial crisis due to the COVID-19 pandemic.

### 7.3 Geography

The fact that geography is a theme emerging from the data testifies to the increasing interest of the scientific community towards regional economics: phrases/expressions such as “regional resilience” and “regional economic resilience” collectively occur 423 times across 47 papers (15%) (Figure 6, middle right). Although the word “geography” itself does not appear in the keywords, n-grams and word clusters observed, an array of related terms and phrases does.

The main geographical entities mentioned are the “United States” (which, collectively with “US”, occurs 602 times across 141 papers, i.e., 45.9% of the whole corpus), the “European Union” (169 occurrences in 65 papers, 21.2%) and the city “New York” (141 occurrences in 64 papers, 20.8%). This might be a sign of a potentially first-world-centric scientific literature on economic resilience, with case studies focused on the countries and cities of the European Union and the United States.

However, there are phrases and terms that seem to point to a different trend. Examples are “developing countries” and “low-income countries”, which collectively occur 200 times across 65 papers (21.2%). Nonetheless, it is worth noting that such phrases are mainly used in first-world countries to describe other countries (Khokhar and Serajuddin, 2015; Rosling *et al.*, 2018), therefore the recurrent occurrence of these phrases might indeed reinforce the trend of a first-world-centric scientific discourse on economic resilience.

Another, more specific pattern that emerges from the data is a focus on the country “Indonesia” (1756 occurrences in 89 papers, 29%) and its main island Java (“west Java” and “east Java” collectively occur 415 times across 28 papers, 9.1%). With the name of the country occurring in almost one-third of the corpus, there seems to be a specific interest of the research community in Indonesia, either as a case study of economic resilience or, perhaps, as a representative of the discourse on economic resilience in countries outside the first world.

## 8. Conclusions

In this paper, we provided a comprehensive review of the history of economic thought to systematically examine the evolution of resilience, its definitions, its applications and key findings within economic literature. Second, we conducted a corpus-assisted content analysis using the ERC, a collection of academic papers on the concept of economic resilience to extract its definition and the main themes and topics related to it. Our findings reveal that resilience is a nuanced and evolving concept. Indeed, the term has broadened to encompass a wide spectrum of interpretations that include climate change, sustainability, economic growth and long-term structural transformation.

The experimental results show that in the published literature analysed there can be multiple definitions of economic resilience. In fact, it is defined both as a complex, multifaceted concept and as something measurable. Our word cloud revealed that the term is used across multiple scales and sectors, from “regional” to “local”, “organizational” and “institutional”. Moreover, it showed that a great amount of effort is put into developing indexes, metrics and frameworks that can correctly assess and measure resilience.

Thus, the main themes and topics in relation to economic resilience that emerge from the data are COVID-19, ecology, evolution, geography, governance and economic variables, each with its nuances, and several terms and phrases to support further considerations. Based on the function of the factors examined, antecedents and impacts are distinguished. Antecedents, which include governance, ecology and economic variables, represent the prerequisites that enable economic resilience, whereas impacts, which include COVID-19, evolution, and geography, demonstrate how this resilience materializes in reaction to shocks. This method enables the separation of what constitutes the visible consequences of crises from what must be controlled to avoid or get ready for future crises. We analysed the sudden surge of publications during the COVID-19 pandemic, as global socio-economic systems endured an unprecedented crisis and its long-term consequences. We also highlighted the most recent concerns about climate change, sustainability, food security, and, in general, the importance of combining economic policies and sustainable policies. Another important trend that has emerged is the apparent lack of literature on resilience in low-income and developing countries, suggesting the existence of a first-world-centric scientific debate.

To leverage the identified themes, systematic research and practical pathways are essential. Research should investigate how economic resilience frameworks can inform responses to crises such as COVID-19, emphasizing adaptive governance, rapid response mechanisms and the socio-economic impacts of pandemics, while practical applications should include policies that enhance community-level resilience through localized healthcare systems and supply chain diversification. Interdisciplinary studies combining ecological and economic resilience are critical to addressing biodiversity loss, climate adaptation and resource management, with practical steps like green infrastructure projects and sustainable urban planning balancing growth and ecological preservation. Long-term structural transformations necessitate research into the dynamic interactions between economic systems, such as technological innovations or demographic shifts, while practical measures must design flexible policies that adapt to evolving market conditions and societal needs. To this end, industrial policies represent a useful set of tools (Di Tommaso *et al.*, 2023) for making strategic decisions: policymakers need to develop policies to address crises and enhance the resistance of the markets involved, which, in turn, can strengthen the resilience of the entire system.

Furthermore, geography's role in resilience should be explored to reduce regional disparities, alongside promoting regional collaboration and tailored development strategies to strengthen local economies. Governance-focused research must examine how institutional quality and transparency influence resilience, with practical outcomes including robust frameworks integrating resilience metrics into policy planning. Macroeconomic studies should analyse fiscal stability, social safety nets and human capital investments, ensuring policies balance growth, inclusivity and stability. Furthermore, addressing first-world-centric biases requires expanding resilience studies to include low-income and developing countries, with practical collaboration across international organizations to design culturally and contextually relevant strategies for underrepresented regions.

Another significant aspect to emphasize is that continuous contributions and debates on resilience are essential for policymakers. In fact, as Perrings (2001) argues, a necessary condition for the sustainable management of dynamical systems is the understanding of the system dynamics. If they are not, then any feedback control mechanism – like the market or the economic policy process – may be misdirected. Indeed, as time passes, the need for adaptable and robust economic systems in the face of diverse challenges becomes ever more urgent.

Future research should aim to address these gaps by developing more inclusive and standardized approaches to measuring resilience; in particular, we assert a need for interdisciplinary research that integrates insights from economics, environmental science and political science to capture the full complexity of economic resilience.

**Notes**

1. Most international economics textbooks describe the superiority of comparative advantage over absolute advantage by explaining how the former makes it worthwhile even for technologically less advanced countries that have absolute disadvantages in the production of two goods and participation in international trade. However, almost always, only the case, where the technologically more advanced country ends up specializing in the production of the good that among the two knows how to produce better, is reported. Instead, the case, where the more technologically advanced country ends up specializing in the production of the good that relatively between the two considered can produce the worst, while enjoying an absolute advantage over the other country, is not explored. Although less intuitive, the latter is also a possible case of comparative advantage.
2. According to [Simmie and Martin \(2010\)](#), it refers to the ability to respond appropriately to changing situations, while variety is likely to influence regional economic resilience and adaptability in several ways.
3. [Economic Resilience Corpus \(ERC\) on GitHub](#)
4. It is worth noting that one of the preprocessing steps involves the removal of stopwords to highlight terms with a strong semantic relevance. Therefore, the entire phrase would most probably be something such as “the impact of Covid”, but to the aim of the content analysis it is irrelevant.

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**Corresponding author**

Mila Fantinelli can be contacted at: [mila.fantinelli01@icatt.it](mailto:mila.fantinelli01@icatt.it)