Review

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Abstract

This article explores the conceptual and theoretical foundations of disaster resilience to understand its full complexity and multidisciplinary nature. The first section traces definitions from their etymological origins and early scholarly interpretations to modern perspectives that view resilience as a dynamic mechanism for overcoming risk and crisis. It highlights the concept's adaptable and transformable qualities, as well as the role of learning in establishing stability—i.e., resilience. The second section organizes the conceptual framework of disaster resilience and its multiple dimensions. Resilience is seen as a combination of physical, social, institutional, and economic aspects, with particular focus on social cohesion and a culture of safety. The analysis emphasizes resilience as fundamental to sustainable development and societal strength. The third section examines different resilience dimensions, noting that there is no universal set; these vary depending on context and methodology. It considers biophysical, social, institutional, and local aspects, along with the importance of prevention, education, infrastructure standards, and international cooperation in enhancing resilience. The fourth section discusses the leading actors in resilience—individuals, communities, and institutions—focusing on psychological skills at the individual level, social capital and solidarity at the community level, and the importance of institutional coordination and global initiatives that foster a culture of resilience. The discussion links these findings to existing research and points out the absence of universal indicators and standardized methods for measuring resilience. In conclusion, the article asserts that disaster resilience is an evolving process involving multiple dimensions and active participation from actors across all levels. A holistic approach, combined with new analytical tools, is crucial for accurate measurement and practical implementation in risk management, thereby establishing clear connections between local capacities, institutional policies, and international resilience efforts.

Keywords: disaster resilience; resilience concept; resilience dimensions; social resilience; resilience actors; risk management

1. Introduction

Community resilience is conceptually grounded in counteracting hazardous impacts and reducing the likelihood of disaster occurrence. The earliest usage described a system's capacity to absorb change and disturbance while maintaining the same relationships among populations and state variables (Holling, 1973, p. 14). A key attribute of the resilience concept is its multidimensionality, which contributes to the construct's abstract character in the context of disaster

response. Resilience entails a society's ability to adapt effectively to conditions imposed by a disaster and to mitigate its adverse consequences (Alexander, 2013). Traditional disaster-management models have focused primarily on prevention and effective action during the response phase, as well as on recovery after the event. As a result of this conceptual limitation, much of the existing research on disaster resilience has concentrated predominantly on retrospective analyses of outcomes, emphasizing the dynamics and efficiency of recovery and the degree of loss reduction (Cimellaro, Reinhorn, & Bruneau, 2010).

Contemporary scholarship, however, increasingly shifts attention to social and individual resilience, foregrounding "individual and collective capacities that are essential for confronting and adapting in times of crisis" (Manyena, 2006, p. 438). Such capacities encompass a range of factors—including social cohesion, trust in institutions, local knowledge, and the ability to collaborate—that together constitute the foundations of social resilience. Although resilience has become central in modern approaches to disaster management, it retains flexibility because there is no uniform set of concrete indicators by which to measure resilience, nor its dynamic aspects, such as the speed and extent of post-disaster recovery. These operationalizations are necessary both for the technical validity of indicators and for the applicability of strategies in specific local contexts; they also delineate the boundaries of normal functioning after a crisis (Milenković, Cvetković, & Renner, 2024).

2. Conceptual Delineation of Resilience

The concept of resilience remains insufficiently explored and fully understood, even though in recent decades it has become the subject of extensive interdisciplinary debate and analysis. Recent scholarly work indicates that the term is no longer used exclusively in technical-scientific or ecological domains, but increasingly across numerous other areas, including national and international security, climate-change policy, the design of measures and protocols for responding to natural disasters, critical infrastructure protection, epidemics and pandemics, as well as the prevention of and response to terrorist attacks (Walker & Cooper, 2011). Broadly speaking, these critical events—where people face the consequences of hazards that can lead to pain, suffering, and loss of life—have become a central field of inquiry in contemporary studies.

Etymologically, the term *resilience* derives from the Latin *resilio*, meaning "to spring back" or "to return to a prior state." According to the Oxford English Dictionary, resilience is defined as "the act of rebounding or springing back" (Cvetković & Filipović, 2018). Since the 1970s, however, the term has been used in a broader, metaphorical sense to denote the capacity of complex systems that, although exposed to stress and disturbances, can recover and return to equilibrium.

Today, resilience is regarded as a desirable attribute of both natural and social systems (Klein, Nicholls, & Thomalla, 2003). In its earliest scholarly applications, the term denoted the ability of a material or physical system to revert to its original state once external forces cease to act (Gunderson, 2000). In modern interpretations, however, the concept encompasses a broad spectrum of phenomena: hazards, adversity, vulnerability, disasters, and associated preventive and other mechanisms. In this sense, resilience can be understood as an integrative response to social vulnerabilities—one that entails flexibility, creativity, the empowerment of individuals and communities, and lifelong learning as a mode of adaptation (Endress, 2015).

Any consideration of resilience necessarily acknowledges its dynamic character and the complex evolution of social and natural systems. Within this perspective, three key, interrelated concepts stand out: resilience, adaptability, and transformability. Resilience denotes a system's ability to adjust and change while remaining within its critical thresholds, without crossing a point of no return. By contrast, adaptability is understood as the capacity of social and natural systems to modify their responses to external changes and internal processes in order to ensure their continued development. Finally, transformation—primarily at lower levels—can enable stability at higher levels, as disasters become sources of innovation and progress. This framing illustrates the relevance of resilience not only in ecological and health contexts, but also in economic, social, and broader security domains (Cutter et al., 2008).

One of the first scholars to employ the term *resilience* to describe a system's ability to absorb change and disturbance while retaining functionality was Holling (1973). Subsequent research yielded numerous definitions shaped by disciplinary perspective, purpose, or geographic context. In the broadest sense, disaster resilience may be defined as the capacity of a system to withstand stress, absorb shocks, and continue to function under conditions of uncertainty (Perrings, 1998). The term applies to both physical and social systems, which should be able to recover effectively from the impacts of disasters.

In line with the foregoing, resilience reflects the capacity of people and communities to adapt to new realities and leverage the opportunities they present; at the regional scale, it denotes the ability to anticipate risks, prepare adequately, respond effectively, and recover from disruption. In essence, resilience is the potential of a system to absorb shocks and disturbances before its fundamental structure or functioning becomes compromised (Paton & Johnston, 2017).

At the level of local communities, resilience is defined as the capacity of communities to overcome external stressors that threaten their social infrastructure (Adger, 2000). Its essence lies in learning to respond to unforeseen hazards only after they manifest—i.e., to "bounce back" from crisis (Wildavsky, 1988). Local resilience also implies a community's ability to withstand extreme natural events without significant losses and with minimal external assistance. Taken together, these definitions suggest that community-level resilience involves effective recovery and a return to pre-disaster conditions (Mileti, 1999).

Within the resilience framework, participants may be individuals, groups, or entire communities that—supported by individual and collective resources—manage to overcome chronic or sudden shocks and crises, finding in them opportunities for growth and improvement (Pavićević, Bulatović, & Ilijić, 2019). At the national level, the legal framework in the Republic of Serbia defines resilience as the capacity of risk-exposed communities to respond in a timely and effective manner and to recover while preserving and restoring essential functions (Milenković, 2025). Internationally, the United Nations defines resilience as the ability of a system or community exposed to hazards to resist, absorb, and respond promptly to their effects while maintaining and restoring key functions (UN ISDR, 2009). At the European level, the Internal Security Strategy for the European Union identifies natural and technological disasters among the top five central threats, emphasizing the importance of strengthening resilience in its implementation action plans (Internal Security Strategy for the European Union – Towards a European Security Model, 2010).

Confronted with the need for measurement and standardization, numerous public institutions and organizations seek to define appropriate instruments for assessing resilience (Milenković, 2025). Models that conceptualize resilience as a dynamic process—conditioned by initial state, disaster intensity, the spacing of events, and the influence of exogenous factors—are particularly focused on local communities, providing a framework for the comparative analysis of community resilience (Cutter et al., 2008).

3. Conceptual Definition of Disaster Resilience

In contemporary academic literature, resilience is increasingly recognized as a multidimensional concept of fundamental importance, encompassing a wide array of factors and aspects and emerging as one of the most salient areas of current research (Cvetković & Šišović, 2024). The term is no longer viewed solely through the lens of individual capacities; it now routinely incorporates social, institutional, and economic components, thereby shaping a more complex and comprehensive analytical framework (Tariq, Pathirage, & Fernando, 2021). In this way, resilience is cast as a universal category that offers both theoretical and practical foundations for understanding how challenges are overcome and how adaptation to dynamic environmental conditions is achieved (McCubbin, 2001). In modern societies, the notion increasingly functions as a key determinant in confronting uncertainty and complex global risks—particularly evident in resource economics, where system dynamics and equilibrium under perturbation are analyzed (Kennedy & Linnenluecke, 2022). Thus, resilience is not merely a survival mechanism; it is an essential instrument for achieving long-term sustainability and

prosperity despite crisis conditions. Following this evolution, the meaning of resilience has moved beyond classical interpretations, becoming indispensable not only for individual and family strategies but also within broader social and economic contexts (Cvetković & Filipović, 2018). This contemporary understanding increasingly shapes how complex challenges are conceived and governed, providing theoretical and practical guidance for building more stable and resilient communities and institutions.

Historically, a pivotal moment in the development of the concept occurred in 1973, when resilience acquired a new dimension of meaning. From then on, it was interpreted not merely as the persistence of a system under external influences but as its notable capacity to absorb disturbances, adapt to change, and simultaneously maintain the coherence of its internal dynamics (Assarkhaniki, Rajabifard, & Sabri, 2020). This conceptual shift enabled systems to be viewed as active entities that not only preserve stability but also develop capacities to manage change—an idea featured prominently in works laying the theoretical foundations of modern resilience thinking (Holling, 1973).

The diversity of perspectives identified in the literature shows that resilience does not possess a single, universally accepted meaning; instead, it is perceived in several ways depending on disciplinary and contextual frames (Bhamra, Dani, & Burnard, 2011). This situation further underscores the need for deeper scientific inquiry capable of integrating existing approaches and advancing a more comprehensive, multidisciplinary understanding of the term.

One of resilience's defining features is its multidimensional character—ranging from notions such as rebirth, adaptability, and human ingenuity to the elasticity and durability of materials like steel (Parker, 2020). This multidimensionality allows resilience to be understood simultaneously as an individual psychological capacity, a social resource of communities, and a physical property of systems.

From a social-science perspective, resilience is often associated with the ability of individuals and communities to survive, adapt, and function amid unpredictability and crisis, particularly evident in the capacity to recover quickly from adverse or traumatic experiences (Cvetković, Bošković, & Öcal, 2021; Hochrainer-Stigler et al., 2021). In addition, the concept encompasses the potential for transformation and growth through the process of confronting difficulties, rendering resilience a dynamic and developmental process. In this sense, resilience cannot be understood as mere passive survival; it operates as an active mechanism of personal and collective development that fosters a deeper understanding of oneself, others, and the broader socio-environmental context.

From the vantage point of materials science, when discussing the resilience of materials such as steel, priority is given to their capacity to retain form and structural integrity under external forces (Ma, Zhou, Deng, & Xu, 2023). This physical characteristic frequently serves as a metaphorical frame for describing how individuals, communities, or entire societies can maintain stability and functionality under intense pressures or prolonged stressors. Such comparisons translate material properties into socio-psychological and organizational categories, thereby expanding the interdisciplinary comprehension of resilience.

At its core, the idea of resilience is closely tied to the capacity for adaptation, continuous recovery, and preservation of system integrity—whether that system is an individual's psychological makeup, a community's collective strength, or a material property (Bronfman et al., 2023). This integrative view, which unites physical, social, and psychological dimensions, enables a multifunctional and holistic approach. It thereby facilitates a deeper grasp of the interweaving of human psychology, social dynamics, and technical characteristics of materials—factors that jointly shape resilience across different contexts and operational conditions.

In contemporary literature, resilience is increasingly interpreted as a key parameter that determines a system's capacity to withstand stressors and unforeseen challenges while maintaining stability and continuity of functioning in dynamic and often chaotic environments (Perrings, 1998). This understanding extends beyond a passive ability to preserve core functions; it emphasizes the

complex interaction among system components that collectively adapt, absorb shocks, and minimize the negative consequences of unpredictable events.

In parallel, resilience is increasingly examined as the capacity of physical and human systems to respond effectively to natural disasters and crises—demonstrating not only functional elasticity but also the ability to act in an integrated manner under high-risk conditions. This interpretation highlights adaptability as a prerequisite for persistence, achieved through synergy among human resources, infrastructure capacity, and material assets that together form the foundation of overall system resilience.

Some studies further expand the definition by treating resilience not only as the ability to survive and adapt, but also as a measure of active adaptation by people and communities to changing circumstances, while simultaneously leveraging new opportunities that challenges present (Cvetković, 2017). In this sense, resilience is construed as a dynamic process in which societies do not remain passive recipients of shocks but transform into proactive actors who use crises as catalysts for development and capacity building.

In a broader theoretical context, resilience is often defined as a system's capacity to absorb disturbances or extreme shocks before radical or irreversible changes occur in its structure (Adger, 2000). This approach highlights the central role of adaptation, where changes to specific processes and variables governing system behavior ensure the preservation of integrity and continued functioning under new conditions. Such an understanding underscores resilience's essential importance as a dynamic and multilayered concept that connects stability, adaptability, and transformation into a coherent whole.

Within theoretical analyses, the concept is also understood as a system's ability to confront unforeseen hazards after their occurrence, with an emphasis on learning from unexpected events and developing strategies for timely and effective response (Wildavsky, 1988). This view suggests that resilience lies not solely in preventive measures but also in the capacity for continuous adaptation and the assimilation of new experiences in crisis management. Adaptability and rapid response thus emerge as key determinants shaping the overall level of resilience and enabling its long-term sustainability.

Contrary to this macro-level framing, some authors emphasize the local dimension of disaster resilience, stressing that a community must be able to withstand extreme natural events without significant material losses, infrastructure degradation, drops in production, or deterioration of living standards—and without relying on substantial external assistance (Mileti, 1999). This approach directs attention to the specific resources, capacities, and constraints of a locality, underscoring that genuine resilience involves autonomy, self-sufficiency, and the capacity for community self-organization. In this way, the local level is understood as the key arena for building resilience: it constitutes the first line of defense against catastrophic impacts and most directly shapes the dynamics of recovery.

Regional resilience can be defined as a region's ability to anticipate risks, prepare promptly, respond adequately, and recover successfully from diverse disruptions, thereby highlighting the central role of regional entities in resilience building. The regional approach thus conceives resilience as a collective and institutionalized capacity for foresight and rapid intervention (Foster, 2007).

At the level of national policy and regulation, the notion of resilience in the Republic of Serbia is formally articulated in the Law on Disaster Risk Reduction and Emergency Management, which positions the concept as a foundational pillar of the modern system for public safety and population protection ("Official Gazette of the RS," No. 87/2018). Based on this normative framework, resilience is interpreted as the integrated capacity of communities exposed to potential hazards to provide an adequate response during crises. This capacity involves not only timely and effective action but also systematic recovery from consequences, while preserving essential functions and gradually restoring them to the level required for normal societal functioning. More broadly, the national definition underscores the importance of stability, continuity, and institutional coordination in risk governance,

indicating that long-term resilience is inseparable from sustainable development, institutional functionality, and the capacity to adapt to unforeseen challenges (Milenković, 2025).

Globally, the concept of resilience is articulated through international strategic frameworks for disaster risk reduction, which emphasize its universal applicability and significance for the stability of communities worldwide. Within these frameworks, resilience is defined as the capacity of systems, communities, and societies to effectively withstand, absorb, and respond to the effects of diverse hazards. The definition is not exhausted by reactive measures; it also encompasses the capacity to restore vital structures and functions that secure continuity of life and work in post-crisis conditions. Special emphasis is placed on the preventive and proactive character of resilience, enabling communities not only to survive the immediate consequences of disasters but also to develop mechanisms that support long-term stability and sustainability. Consequently, international strategies focus on the global cultivation and enhancement of resilience to foster societies capable of anticipating and mitigating risks and responding effectively to global challenges arising from natural and anthropogenic disasters. In this sense, resilience is treated at the international level as a foundational precondition for ensuring the stability and sustainable development of contemporary societies (UN ISDR, 2009).

Today, contemporary societies—or social communities—can be defined as groups of individuals with diverse social, cultural, and demographic characteristics who are connected through social relations, share common perspectives, and participate actively in joint actions within particular geographic units or environments (Ostadtaghizadeh, Ardalan, Paton, Jabbari, & Khankeh, 2015). This concept highlights a community's collective ability to organize and collaborate in activities aimed at reducing disaster risk by mobilizing accumulated knowledge, experience, and resources to achieve a common goal: the construction of a resilient and sustainable social framework. The geographic aspect of the concept spans populations identifiable across administrative units such as municipalities, settlements, neighborhoods, cities, or regions, underscoring the term's flexibility and adaptability to different spatial scales.

Particular emphasis is placed on social cohesion—that is, a community's capacity to reduce disaster losses through joint action and pooled resources. In this context, shared values, mutual understanding, and solidarity serve as core mechanisms that enable communities to elevate their collective resilience. The focus on collaborative efforts and cooperative approaches further highlights interdependence among individuals and their ability to act synergistically for the common good. Meanwhile, geographic delineations—from smaller, tightly knit local communities to larger administrative units—illustrate that the notion of community is both inclusive and adaptable, allowing risk-reduction measures to be tailored to the distinctive characteristics, resources, and challenges of each area. In this way, the concept of community provides an analytical frame for a holistic approach to resilience building, one that accounts for the various scales, contexts, and dynamics in which resilience is realized.

The disaster resilience of social communities is increasingly recognized as a key social and developmental priority, which has significantly oriented the attention of scholars and policymakers across sectors. Contemporary literature frequently emphasizes that the concept is not merely of security or technical relevance; it is integral to sustainability and social cohesion, attesting to its multidisciplinary character. An analytical review of relevant sources reveals a set of structural and conceptual gaps that require further research and methodological refinement (Cvetković V. M., 2023). Among the most pressing deficiencies are the insufficient exploration of social identity's influence on resilience-building processes and the absence of consensus concerning the concept's scope and content, its dimensions, and relevant indicators. Also apparent are the lack of clearly defined measures and scales of resilience, the limited development of instruments for reliable measurement, and the absence of a universal analytical framework that can be adapted to diverse social contexts.

Particularly problematic are underdeveloped procedures for designing and validating tools intended for resilience assessment, as well as the insufficiently examined systematic effects of social identity on a community's capacity to resist and recover after disasters. Some existing frameworks

are devised exclusively for specific disaster types or narrow geographic areas, which significantly limits their applicability. Moreover, current approaches rarely culminate in comprehensive strategies, recommendations, and programs aimed at the practical enhancement of community resilience. Additional challenges include the lack of methodologies that would systematically support community engagement and empowerment, as well as the difficulty of achieving scientific and political consensus on the core characteristics of resilient communities (Cvetković V. M., 2023). These obstacles are compounded by the limited availability of reliable local data, which in turn reduces scholarly interest in analyzing the role of social identity in resilience building. Ultimately, methodological diversity and disciplinary orientations contribute to fragmentation in scholarly discourse, thereby diminishing the prospects for developing an integrated and applicable contemporary conceptual and substantive model of community disaster resilience.

4. Dimensions of Disaster Resilience

The dimensions of disaster resilience constitute one of the key pillars for building a sustainable, secure, and long-term stable future. The term encompasses a complex, multidimensional set of interdependent and interacting factors whose purpose is to develop social, institutional, and infrastructural capacities for effectively confronting risk. A detailed examination of these dimensions enables a deeper understanding of how societies respond to natural disasters, pandemics, technological failures, and other unforeseen crises. At the same time, such analysis opens possibilities for systematic planning, the design of preventive measures, and the development of strategies that contribute to long-term strengthening of resilience (Cvetković et al., 2020).

In the study of disasters, attempts to master fully the concept and understanding of resilience have led to differentiated lines of inquiry. Four core foci stand out: (1) the biophysical characteristics of resilience; (2) social resilience; (3) the resilience of socio-ecological systems; and (4) place-based (local) resilience specified in relation to a clearly defined environment (Zhou, Wang, Wan, & Jia, 2010).

Despite extensive scholarly investigation, there is no clearly established number of resilience dimensions. The dimensions arise from clusters of factors that influence resilience and often overlap, since in contemporary societies, very few factors are isolated or can be assigned unambiguously to a single category. Consequently, resilience dimensions should be understood as broad groupings of elements whose boundaries cannot be drawn with precision.

Within approaches that treat resilience as a biophysical attribute, researchers focus primarily on diverse biophysical, technical, and technological systems. These studies examine the properties of natural and built systems and emphasize biodiversity as a particularly important factor, insofar as it supports ecological stability and accelerates adaptation after destabilizing events. Biophysical approaches thus underscore the importance of natural mechanisms and technological capacities that affect overall system robustness (Chapin III et al., 1997).

In studies that conceptualize resilience as a social attribute, the emphasis is on the capacities of individuals, groups, and communities to cope effectively and positively with the consequences of disasters and to recover quickly thereafter. Research in this vein centers on behavioral responses and adaptation mechanisms while taking into account economic, demographic, and institutional dimensions. The economic dimension is particularly salient, with indicators such as the nature of economic growth and income levels exerting a strong influence on societal resilience. At the same time, indicators of social vulnerability include poverty prevalence, educational attainment, access to protective capacities, and intangible dimensions such as social capital, trust, social networks, and collective memory (Adger, 2000).

A further line of development concerns the resilience of socio-ecological systems. This approach seeks to understand the complex mechanisms of co-existence between people and nature under persistent disaster exposure. It proceeds from the premise that individuals and communities must learn to live with uncertainty and continually enhance their resilience capacities. Key factors in this model include: the ability to function in unstable environments while cultivating "disaster memory"

and moving beyond traditional notions of stability; policies that foster diversity to broaden the repertoire of risk-management options; the use of plural knowledge systems to stimulate innovation and learning; creation of preconditions for self-organization; and the strengthening of local management and co-governance of resources (Folke et al., 2010).

The final focus relates to resilience as a place-based attribute. From this perspective, geographic areas that are continuously exposed to extreme lithospheric, biospheric, atmospheric, and other hazards develop the capacity to withstand and overcome disaster impacts independently, without reliance on external assistance. This perspective highlights the role of spatial characteristics and local resources in shaping resilience (Cutter, Ash, & Emrich, 2014).

In contemporary societies, the delineation of resilience dimensions is conditioned by clusters of relatively independent indicators such as: prevention, preparedness, and infrastructure; global cooperation and social cohesion; advanced technologies and the environment; and individual and community resilience.

The foundational step in building a resilient society is investment in prevention and comprehensive preparedness. This entails systematically defining relevant dimensions and adopting state-of-the-art technological solutions for each; developing educational programs oriented toward a culture of safety; organizing disaster simulations; and regularly updating crisis-response protocols. Particular importance attaches to strengthening the infrastructural dimension to ensure robustness against multiple risk types. Enhanced building codes and rigorous design and construction standards reduce material losses and casualties. Societal agility is likewise crucial for mitigating disaster impacts: agile economic models, adaptable health systems, and technologies that enable timely response are prerequisites for effective action under crisis conditions (Milenković, Cvetković, Ivanov, & Renner, 2024).

Because disasters frequently transcend national borders, global cooperation is essential for an effective response. The exchange of information, technologies, and resources among states and organizations substantially increases societal capacity to address diverse natural and anthropogenic threats. International initiatives for joint research, experience sharing, and coordinated exercises contribute to global resilience. Social cohesion within communities plays an equally important role: cultivating responsibility, solidarity, and mutual support enhances crisis governance and reduces the risk of social tensions in emergencies (UN ISDR, 2009; Bendell, 2022). Moreover, the development and enhancement of international cooperation presuppose the prior cultivation of social cohesion: societies must appreciate and anticipate the importance of connectedness and cooperation. Building collective awareness of responsibility for all community members—regardless of social status or origin—is crucial for effective crisis management. This aspect also involves strengthening mutual solidarity and support, which contribute to stability and a swifter post-disaster recovery at all levels (Tierney, 2014).

The conservation of natural resources and ecosystems is directly linked to building disaster resilience. Ecosystem sustainability supports climate stability, reduces the risk of extreme weather events, and lowers the likelihood of natural disasters. In this sense, biodiversity conservation and sustainable agricultural practices should be regarded as long-term mechanisms for strengthening societal stability (Chakma, Hossain, Islam, Hasnat, & Kabir, 2020). In parallel, the development of innovative technologies represents one of the most effective mechanisms for enhancing resilience. Advances in disaster monitoring and forecasting, communications technologies, medical research, and renewable energy substantially reduce risk and enable timely interventions (Lizarralde, Chmutina, Bosher, & Dainty, 2015). Resilience is often analyzed across multiple scales, from technological systems and critical infrastructure to entire social communities. At more minor scales, attention focuses on technical aspects of system functioning—innovation, safety mechanisms, and the sustainability of key infrastructure units. Technology thus plays a central role in risk reduction and disaster-loss mitigation (Renschler et al., 2010).

Social resilience to disasters may also be viewed as the capacity of communities and social groups to withstand disasters and regain prior functionality. This dimension manifests through three

key processes: resistance to immediate impacts, rapid recovery, and adaptation to new circumstances (Norris, Stevens, Pfefferbaum, Wyche, & Pfefferbaum, 2008).

Research shows that different social groups possess differing levels of resilience. For example, older populations often experience greater difficulty in adaptation and recovery, which lowers overall resilience. Socio-demographic characteristics and access to available resources thus directly shape community capacity. Beyond material aspects, cultivating community psychological resilience is vital. Education on mental health, provision of psychosocial support, and strengthening coping mechanisms enable societies to overcome the consequences of unforeseen events more effectively (Fuchs & Thaler, 2018). Social resilience can be measured at multiple levels—from individuals and families to entire communities. Core elements include planning capacities, availability of economic and human resources, and the existence of infrastructural support (Buckle, 2006).

Because identifying and structuring resilience dimensions is an ongoing process, measurement remains a particular challenge. Among numerous methodological approaches, the "place-based resilience" model stands out, incorporating demographic and socioeconomic characteristics of communities and their ability to maintain well-being during disasters. This approach improves understanding of how different population segments respond to crises, enabling the tailoring of strategies to strengthen resilience. A multidisciplinary approach that integrates economic, health, social, and infrastructural analyses offers a holistic view of the challenges facing contemporary societies. In turn, it provides a comprehensive foundation for enhancing resilience capacities and planning long-term risk-management policies (Cutter et al., 2008).

Disaster resilience thus constitutes a multidimensional framework encompassing dimensions such as prevention, infrastructural safety, global cooperation, natural-resource conservation, technological innovation, psychological stability, and social cohesion. A holistic approach that integrates these elements enables societies not only to survive crises but to emerge stronger and more functional. The evolution of theoretical and practical models demonstrates that resilience is a dynamic, evolving process that requires continual advancement. Only through a multidisciplinary and integrated approach can effective mechanisms be created for confronting increasingly frequent and intense disasters.

5. Key Resilience Actors

The concept of resilience encompasses specific actors—first and foremost, individuals, various social groups, and the community as a whole. All of these actors draw on the resources available to them, both individual and collective, in efforts to overcome chronic or sudden threats to life. In doing so, they not only seek pathways for adaptation and recovery, but also identify opportunities for self-improvement, transformation, and social development under crisis conditions—thereby linking resilience directly to processes of empowerment and progress (Pavićević, Bulatović, & Ilijić, 2019).

A complex interplay of internal and external factors conditions individual resilience. Internal factors include the person's own characteristics—physical, psychological, and otherwise—which, to a positive extent, make the individual more resistant to the impacts of disasters (Cvetković, 2020). An empirical study conducted in Australia sought to identify the traits of "resilient people" living in rural areas. Respondents highlighted resourcefulness, acceptance of change, a positive outlook, adaptability and flexibility, innovativeness, creativity, goal-setting or a future vision, readiness for a new start, persistence, and "grit," diligent work, the use of humor as a defense mechanism, as well as hope and faith. It was found that, with increasing life experience and age, individuals are more likely to adopt and develop these traits, thereby strengthening their personal resilience (Maclean, Cuthill, & Ross, 2013). Conversely, excessive fear or denial of disaster threats can yield adverse consequences that directly reduce a person's readiness for preventive action (Hegney et al., 2007; Mavrodieva, Budiarti, Yu, Pasha, & Shaw, 2019).

Beyond identifying traits associated with "resilient individuals," a sizable body of research examines factors that increase resilience itself. Findings indicate that people who have previously experienced a disaster or accident, as well as those with greater knowledge of and information about

risks, are better able to prepare, recover, and mitigate crisis impacts. Such individuals also exhibit a lower likelihood of depression or post-traumatic stress disorder (Maduz, Prior, Roth, & Käser, 2019). Research further points to the concentration of economic and financial resources in urban areas, the unequal distribution of natural assets, and structural inequalities in urban development. Urban residents enjoy a certain degree of protection compared to those in rural regions. Insufficient or ineffective resilience at one social level can have negative repercussions for other levels, destabilizing the broader system (Boon, Cottrell, King, Stevenson, & Millar, 2012).

A central principle underlying strategies that enable individuals and groups to cope with unpredictable and ever-changing situations is captured by the concept of *habitus*. Habitus is defined as a set of internalized skills and dispositions that guide behavior in specific social situations, often without conscious planning or deliberation. In other words, it enables individuals to make the "right move" intuitively within a given context. As such, habitus functions as a form of social inculcation through which a group systematically orients its members, fostering reflexes that contribute to faster and more effective responses in crises, thereby reducing negative consequences and elevating collective resilience (Bourdieu, 1990).

Social resilience refers to the capacity of diverse societal actors—individuals, groups, communities, and organizations—to respond adequately and successfully to problems and crises. It includes the composite set of collective capabilities that constitute social resilience, as well as recovery capacities, and encompasses all actions undertaken to overcome disasters and mitigate their impacts (Maguire & Hagan, 2007; Keck & Sakdapolrak, 2013; Guo & Kapucu, 2019).

Creativity within a community, as a distinct dimension of social resilience, is reflected in the ability to implement an effective and efficient recovery process across social levels, ultimately restoring functioning to pre-crisis conditions. At the same time, community capacity represents the essential power to overcome the consequences of disaster and to transform negative experience into an opportunity for strengthening cohesion (Maguire & Hagan, 2007). A society that can attain such functioning—ensuring a healthy, safe, and fulfilling life for its members—may be regarded as genuinely successful (Hall & Lamont, 2013).

Globally, resilience to natural and climate-related hazards has attracted considerable attention since the early twenty-first century. Multiple United Nations–sponsored conferences mapped and defined mechanisms for strengthening resilience. They also specified expected outcomes and set goals, including the enhancement and empowerment of institutions, tools, and capabilities across sectors, with particular emphasis on the local community. In addition, these efforts highlighted the use of scientific advances and the adoption of innovations to cultivate a culture of safety and resilience across all social strata (Cvetković, Filipović, & Gačić, 2018).

Social resilience can be improved by strengthening various economic indicators, such as income growth and higher living standards, but also by enhancing communication mechanisms, increasing population preparedness for crises, building interpersonal trust, and improving the education system and access to protective resources. Collectively, these dimensions foster communities capable of acting preventively, recovering more rapidly, and developing a culture of resilience as a lasting social value (Cutter, 2024).

7. Conclusions

This article analyzed the conceptual and theoretical foundations of disaster resilience to capture the concept's full complexity and multidisciplinary scope. It began by surveying diverse conceptions of resilience—from etymological origins and early scholarly interpretations to contemporary views that treat resilience as an integrative mechanism for overcoming risk and crisis. Emphasis was placed on the concept's dynamic character and its connections to adaptability and transformability, underscoring the importance of adjustment and learning in resilience-building processes (Milenković, Cvetković, Ivanov, & Renner, 2024).

Subsequently, the paper examined the conceptual delineation of disaster resilience, highlighting its multidimensional nature. In synthesis, resilience is presented as a construct that integrates

physical, social, institutional, and economic dimensions, with particular emphasis on social cohesion and a culture of safety. A review of current literature indicates that resilience is not merely a technical or security term but a core determinant of sustainable development and societal robustness (Milenković, Cvetković, & Renner, 2024).

The second half of the paper analyzes the dimensions of resilience. It stresses that there is no single, canonical set of dimensions; instead, they evolve depending on research approach and context. Biophysical, social, institutional, and local dimensions are investigated as key factors in building capacities for effective response and post-disaster recovery. The analysis underscores the role of prevention, education, infrastructure standards, and global cooperation in strengthening overall societal resilience.

Finally, the paper addresses the key actors of resilience. It considers the roles of individuals, communities, and institutions in resilience-relevant processes. At the individual level, psychological and social competencies are highlighted; at the collective level, solidarity, social capital, and institutional coordination are emphasized. Particular attention is given to global initiatives and strategies that foster a culture of resilience across diverse social contexts.

Based on the analysis, disaster resilience is a multilayered and dynamic process that simultaneously encompasses physical, social, institutional, and psychological dimensions. Historically, the concept has evolved from a technical and material construct into an integrative framework that includes the social and economic aspects of sustainability.

The dimensions of resilience point to the need for a systematic approach that integrates prevention, education, infrastructure, and global cooperation. Without the development of standards in these areas, community resilience remains constrained and insufficiently robust. At the same time, the significance of actors lies in the synergistic interaction among individual characteristics, collective resources, and institutional mechanisms, which together create the conditions for adequate recovery and long-term stability.

The paper demonstrates that disaster resilience is a dynamic process that requires the integration of multiple dimensions and the active engagement of actors at every level—from individuals to the international community. The complexity of the concept calls for a holistic approach and the development of new analytical tools that would enable reliable measurement and practical application in risk governance.

A key implication of this review is the need to direct future research toward the development of universal methodologies that integrate multiple disciplines. Particular attention should be devoted to the roles of social identity, cultural values, and institutional coordination, as these constitute the foundation for building sustainable and resilient communities. In practice, this entails the development of local and national policies that encourage solidarity, innovation, and active citizen participation in risk-governance processes to enhance disaster resilience.

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