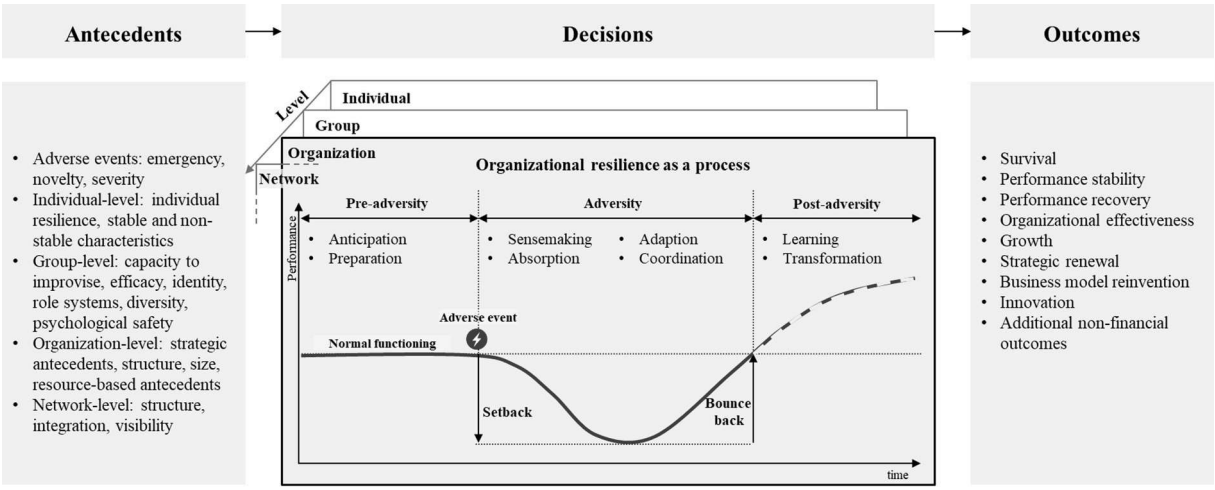

Fig. 3. Conceptual framework of organizational resilience—antecedents, decisions, and outcomes (ADO).

Transformation is associated with the notion of innovation leading to strategic renewal and improved performance (Buliga et al., 2016; Wenzel et al., 2021).

5. Antecedents of organizational resilience

An organization's decisions and actions along the resilience process are determined by a set of antecedents. Indeed, the above-discussed actions in the pre-adversity phase (i.e., anticipation and preparation) can be considered as processual antecedents to organizational responses during adverse events. In the following, we focus on five categories of antecedents. First, we examine how the form of adversity influences the organization's response and resilience. In the remaining four categories, we discuss various antecedents at the individual, group, organizational, and network levels by explaining how they contribute to organizational resilience.

5.1. Adverse events

Every adverse event exhibits a unique manifestation, trajectory, and set of impacts. Although researchers encourage the study of different types of adverse events (Conz & Magnani, 2020), few studies examine the relationship between adverse events and resilient responses (Mithani, 2020; Olekalns et al., 2020). This exacerbates the transferability of knowledge gained from these experiences to various kinds of future adversity. To provide an overview of the different forms of adverse events and the corresponding responses, we use three differentiation criteria: *emergence*, *novelty*, and *severity* (see Table 4).

Emergence. Some crises emerge suddenly and have an unprecedented impact, while others creep in slowly without a clear, noticeable onset (Bonanno et al., 2015; Kahn et al., 2018). Olekalns et al. (2020, p. 8) distinguish between "gradual drift," which they define as the accumulation of small, low-salience stressors beyond a tolerable threshold, and "abrupt shocks," which are sudden, highly salient events. Gradually emerging adversity often remains undiscovered in the early stages and becomes more salient as the impacts successively spread across the organization (Kahn et al., 2018). The stressors can be ordinary but overwhelming in number (Rudolph & Repenning, 2002). Abrupt shocks emanate from more sudden events with low probability but high intensity that instantly trigger a significant setback for entire organizations (Stoverink et al., 2020). In psychology, these are referred to as acute events (e.g., terrorist attacks) that are traumatic (i.e., high impact) and relatively short (Bonanno et al., 2015).

Gradual and acute adversities are addressed differently in the pre-adversity phase. When an adversity arises gradually, it may be prevented from causing a serious setback if organizations are mindful of and sensitive to warnings, and if monitoring systems are in place (Rudolph & Repenning, 2002; Weick et al., 1999). In contrast, abrupt shocks often hit unexpectedly and have an immediate impact, leaving little chance for anticipation and avoidance. In such cases, preparation can focus on building general knowledge and skills useful for any kind of unexpected event (Duchek, 2020). Furthermore, gradual and acute adversities are often not equally perceived by the entire organization,

Table 4
Forms of adverse events.

Differentiation criteria	Forms and properties	Examples	Implication for resilience
Emergence *How quickly and visibly does the adversity unfold?*	Gradual: creeping, accumulated, ordinary	Capacity overload	likely to be anticipated owing to monitoring and warning systems; collective response requires synchronization (Kahn et al., 2018)
	Acute: sudden, unexpected, traumatic, high impact	Terrorist attack, natural disaster	Low chance of being avoided; collective response facilitated by a shared sense of fate (Olekalns et al., 2020)
Novelty *Do knowledge and solutions already exist?*	Non-novel: controllable circumstances, existing solutions	Floods in coastal regions	Absorptive response based on predefined processes and routines (Huang et al., 2018; Rudolph & Repenning, 2002)
	Novel: usual circumstances, no existing solutions	New diseases	Time-consuming sensemaking; tendency for adaptive response (Dutta, 2017; Turner et al., 2020)
Severity *How severe is the adversity (i.e., is it a matter of life and death)?*	Livelihood-threatening: economic loss, impact on business survival, discriminate	Financial crisis	Rational response based on existing or new resources (Mithani, 2020)
	Life-threatening: impact on physical and emotional well-being, indiscriminate	Natural disasters, war	Collective, emotional response; rational response not fully applicable (Mithani, 2020)

which leads to differences in certain aspects of the adversity phase, such as sensemaking and coordination (Kahn et al., 2018). For instance, natural disasters are collectively experienced with the same onset by all people and organizations in the affected region (Dutta, 2017). Victims of the 2010 Haiti earthquake exhibited a high willingness to create a common frame for the disaster, which facilitated the coordination of collective response (Williams & Shepherd, 2016). A gradual adversity, such as the overcrowding of a hospital's emergency department, emerges locally in a small part of the organization and spreads throughout the organization (Kahn et al., 2018). The fact that some adjacent departments do not perceive the situation as a mutual threat leads to the neglect of the immediate need for support in the focal department and decelerates the mitigation. Furthermore, affected parts of the organizational will first try to absorb the gradually emerging strain until it evolves to a large-scale crisis that requires fundamental modifications within the organization (i.e., adaption) (Kahn et al., 2018). In summary, compared to abrupt events, gradually emerging events are more likely to be anticipated and absorbed to a critical threshold, but they pose a greater challenge for collective sensemaking and coordination.

Novelty. Adversity is considered novel when "an organization does not have an appropriate response within its repertoire" (Rudolph & Repenning, 2002, p. 24). Many adverse events, such as natural hazards in regions with extreme weather conditions, are not novel. Over time, organizations can develop effective countermeasures to non-novel events (Huang et al., 2018). However, organizations face many adverse events with conditions and emergent needs that are not well known or understood (Dutta, 2017).

The novelty of an event influences the response in terms of decisions related to absorption and adaption. In non-novel adverse events, organizations draw from their existing action repertoire, such as contingency plans or elements of the physical infrastructure that have proven effective in the past (Dutta, 2017; Muurlink et al., 2012). When situations are well known and can be controlled with recognized solutions, strict adherence to predefined processes and routines facilitates a quick and appropriate response (Rudolph & Repenning, 2002; Turner et al., 2020). Organizations absorb setbacks by maintaining their routines and deploying slack resources, such as excessive cash (Huang et al., 2018) or spare operational capacities (Kahn et al., 2018).

However, when facing novel events, no appropriate responses are known in advance (Rudolph & Repenning, 2002). As novel events are not fully understood, organizations must engage in a lengthy response process of sensemaking, strategizing, improvisation, and coordination until an effective solution is found (Rudolph & Repenning, 2002). Novel events demand unconventional solutions based on informal and flexible coordination (i.e., adaption), rather than adherence to formal routines (i.e., absorption) (Turner et al., 2020). Heinonen and Strandvik (2021) show that organizations in the service industry innovated in the face of the recent Covid-19 pandemic. Thus, novel events are less likely to be absorbed through existing action repertoires and generally require higher levels of adaption (e.g., innovative solutions).

Severity. Adverse events differ in their severity for an organization. While some events (e.g., financial crises) lead to extensive economic losses, others (e.g., natural disasters) result in immediate harm to human life (Sajko et al., 2020; Williams & Shepherd, 2016). Mithani (2020) differentiates between livelihood-threatening and life-threatening events. The former stem from technological or economic threats, and lead to negative economic effects for specific groups of organizations or industries, although physical and emotional harm can be secondary consequences (Coope et al., 2014; Mithani, 2020). The latter usually affect a large proportion of the population (e.g., a community) in an indiscriminate way, and people are primarily focused on their physical and emotional well-being rather than the economic losses (Mithani, 2020).

The distinction between livelihood-threatening and life-threatening events imposes different requirements on the resilient response. Livelihood-threatening events can be addressed through rational responses based on the right set of resources, skills, and capabilities. In life-threatening events, the physical and emotional capacity of organizations and their members decreases as people are injured and physical infrastructure is destroyed (Mithani et al., 2021). Under such circumstances, effective resources and capabilities are either damaged or cannot be fully deployed (Mithani, 2020). Moreover, in the face of personal panic and fear, people may fail to rationally implement solutions (Weick, 1993). Moreover, rational responses after life-threatening events can be counterproductive if they damage the existing social resources (i.e., emotional ties between people and organizations) that are essential for mutual support and the mobilization of collective responses (Gittell et al., 2006). In short, life-threatening events constrain the rational deployment of essential resources for absorption and adaption.

5.2. Individual-level antecedents

Individual resilience. Individual resilience can (but does not necessarily) lead to organizational resilience. On the one hand, resilient individuals can unify and steer organizational members under adverse circumstance (Chhatwani et al., 2022; Santoro et al., 2020). On the other hand, they can prioritize their own self-interests over the collective interests (Hillmann et al., 2018; Stoverink et al., 2020). The sign of the correlation depends on the individual's stress appraisal and coping ability during adverse events (Riolli & Savicki, 2003).

Organizational-resilience research predominately focuses on the individual resilience of leaders. Entrepreneurs and top managers have a clear impact on organizational resilience owing to their ability to transfer beliefs and feeling to other organizational members, and to drive the entire organization toward growth (Kunz & Sonnenholzner, 2022; Santoro et al., 2020). Thus, the contribution of individual resilience to organizational resilience hinges on the relative influence of specific individuals (leaders).

Stable individual characteristics. Stable individual characteristics, especially personality traits, such as narcissism, greed, and empathy, can predict organizational resilience in times of adversity. Buyl et al. (2019) investigate the effect of CEO narcissism on the performance of U.S. banks during the 2008 global financial crisis (GFC). They find that CEO narcissism was associated with risky strategies and investments, resulting in the depletion of internal resource buffers and, consequently, in slower organizational recoveries. In the context of the 2008 GFC, Sajko et al. (2020) reveal that CEO greed had a negative impact on firms' recoveries as well as an indirect effect on organizational resilience through the reduction of corporate social responsibility (CSR). Social and environmental practices are considered a reliable source of organizational resilience as they provide social connections to various private and public stakeholders and, consequently, increase an organization's ability to anticipate, prepare for, and respond to crises (DesJardine et al., 2019; Ortiz-de-Mandojana & Bansal, 2016). Furthermore, König et al. (2020, p. 130) point to CEO empathy as "a blessing and a curse" as they find a U-shaped relationship between CEO empathy and organizational crisis management. Both crisis management and organizational resilience refer to how organizations anticipate and respond to adversity (Williams et al., 2017). Empathic CEOs can quickly sense crises, provide meaning to various stakeholders, and mobilize a collective response. However, highly empathic CEOs are susceptible to cognitive bias and overload and, therefore, predisposed to respond to false alarms, leading to the misallocation of attention and resources (König et al., 2020).

Nonstable individual characteristics. Other individual-level antecedents are found in more adjustable characteristics, such as self-efficacy, bricolage (improvisation), and a transformative mindset. One essential building block of resilience is self-efficacy, which refers to the belief in one's ability to succeed in adverse situations based on the past mastery of experiences (Bandura, 1997; Sutcliffe & Vogus, 2003). Self-efficacy serves as a buffer for immediate stress and determines whether an