



FRAGILITY - RESILIENCE AND ROBUSTNESS - ANTIFRAGILITY: NECESSITY, CHOICE, OPPORTUNITY OR SOMETHING ELSE IN MANAGEMENT?

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Modern organisations are constantly, even permanently, exposed to unexpected, and often destructive, events. The level of volatility and uncertainty currently faced by both individuals and businesses is so high that the traditional risk-based approach to action planning has become useless (Aven, 2014, Gorzeń-Mitka, 2018). The discussion of organisational resilience in the context of disruptions occurring unexpectedly in the organisation's environment (Covid-19 pandemic, energy crisis, geopolitical uncertainty) has recently become one of the dominant themes in management (e.g., Wieczorek-Kosmala et al., 2022).

Management science is primarily concerned with research related to and benefiting from the experience of business practice. Hence, the search for optimal solutions, often takes place on the 'living fabric' of organisations. The current situation is no different. On the one hand (in the face of geopolitical instability in Europe), we observe the fragility of organisations or hitherto applied solutions (acute disruptions: of supply chains - e.g., of highly processed goods; of services - e.g., related to global links in the banking system; or related to reorientation in the energy system). The need for rapid (often radical) change in the organisation proved to be a condition for its survival. On the other hand, we note a number of effects indicating the high competence of companies, operating mainly in highly developed economies (such as Europe), in terms of their flexibility and resilience to highly volatile disruptions (which are undoubtedly present in Europe). The search for effective ways/methods to increase organisations' level of preparedness for future crises and build its capacity to turn crises into opportunities has become more important than ever.

Undoubtedly, SMEs are a group of companies that are very sensitive to the impact of risk and volatility in the environment. Many of them, especially small companies, have had to change their business model. Paradoxically, the crisis has become an opportunity for some of them to move toward more value-added activities. Research and innovation processes have played a special role in the reorientation of models (Corvello et al. 2022; Sipa, 2019). As Corvello et al. (2022) point out, the implementation of these processes, especially in cooperation with research institutions, proved to be of great importance in building the antifragility of small entities.

As Munoz et al. (2022) point out, when faced with unexpected changes in an organization's environment, they can experience three different outcomes:

(1) resilience - manifested by an improvement in organisational performance after a previous decline,

(2) robustness - understood as the organisation's insensitivity to uncertainty (being, along with resilience, an element of organizational stability), and

(3) antifragility - manifested by an improvement in organisational performance following adversity.

The concepts of fragile and antifragile were proposed by Taleb (2012, 2013) who pointed out, among other things, that under crisis conditions the reactions of complex systems can be reduced to three possibilities: the system will break (fragile), it will endure without change (robust), or it will improve (antifragile). A fragile system cannot cope under stress/crisis conditions and the response is failure of the whole system or a significant part of it. In contrast, stress/crisis factors do not induce changes/breaks in a robust system. However, prolonged stress/crisis factors can cause damage to systems. In the other hand, systems described as resilient are characterised by their adaptation to stressful/crisis situations. This is due to their nature i.e., systems designed with stress/crisis response mechanisms in mind. However, they do not take into account the element of learning i.e., a change in the intensity of the stressor does not involve learning the system (the system returns to its original form). As a result, it is necessary to strive for a state of systems/organisation that is characterised by antifragility, i.e., the ability of the system to produce a response in which the benefits outweigh the damage resulting from the stress/crisis situation (so-called convex response) (Taleb, 2012). Thus, antifragile systems develop under stressful conditions and, using them, create added value for the system/organisation. While it is true that Taleb (2012) argues that resilience and robustness are similar concepts, a number of studies take a different view on this topic (Bridge, 2021; Tokalić et al., 2021). Emphasising the co-existence of these three outcomes is the result of their view of organisational resilience through the lens of knowledge from uncertainty, risk and its management and systems theory (Aven, 2014; Größler, 2020).

Undoubtedly, many, both practitioners and researchers, are troubled by the question: how to keep organization robustness? How do you build antifragility? What variables/factors stimulate it. An attempt to find an answer was made by Corvello et al. (2022) by studying the behaviour and actions of small and medium-sized service companies. They identified resources and capabilities that support the development of the capacity to counter fragility in the organisation. They pointed out the importance of resources such as insufficient financial resources, numerous and diverse research and innovation partners, operational agility, speed, and creativity. In contrast, they identified entrepreneurial orientation, contextual insight, and operational agility as components of antifragility capabilities. Antifragile philosophy is the key to improving the management of companies based on research and development projects. It may result in improving the management of this area and, consequently, its development. As a result of a study by Mardaras et al. (2021), it was verified that the characteristics of an ideal research institute system with an anti-fragile philosophy are multidisciplinary and autonomous teams and their ability to react and adapt quickly to changes in the environment.

The discussion on how to pursue organizational antifragility has undoubtedly gained momentum. These few remarks, of course, do not exhaust the subject matter, but we hope that they can become a signal of the current intensive needs and research quests in management.

Definitely, we live in stormy times. A sequence of complex disruptions and the co-occurrence of unprecedented phenomena undoubtedly pose unprecedented challenges to individual organisations, economies, regions, or even the world as a whole. At the same time, this situation creates unprecedented opportunities for researchers, among others, being a source of unique collections of information about them. We are undoubtedly at a turning point in the discussion of approaches to managing a business in an unpredictably volatile environment. The successive economic and geopolitical turbulences and disruptions we are observing seem to confirm Beck's statement, who described the 21st century as the age of risk (Beck, 2009). The question of whether fragility, resilience, robustness or antifragility are a necessity, a choice, an opportunity or something else in the management of modern organizations remains open.

I believe that the articles proposed to you in the current issue of PMC, make one's contribution to building knowledge to 'arm' managers with the necessary skills for stormy times.

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