

**Editorial**

## Coping with crises in entrepreneurship and effectuation


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### Abstract

**Objectives:** This theoretical essay examines the processes by which crises are experienced and managed by entrepreneurs, with a particular focus on the role of effectuation. **Problem:** The nature, intensity, and duration of crises vary, exerting pressure on organizations and entrepreneurs. In order to respond effectively, it is necessary to develop quick, ingenious solutions that are adapted to the context of uncertainty and lack of resources. However, there is a lack of clarity regarding the occurrence of crises for entrepreneurs and the strategies they employ to cope with them. **Originality:** The study, based on a characterization of crises and their diversity, delves more profoundly into the ways in which entrepreneurs cope with crises and the extent to which effectuation is (or fails to be) useful in such coping. It illuminates the micro and macro levels of crises and the nuances in responses to them. **Social/management contributions:** In addition to presenting new research results, the essay proposes a research agenda for prospective publications that seek to address humanity's grand challenges.

**Keywords:** Entrepreneurship. Crises. Coping with crises. Effectuation.

## Enfrentamento de crises no empreendedorismo e *effectuation*

### Resumo

**Objetivos:** Este ensaio teórico explica como as crises ocorrem e são enfrentadas por empreendedores, inclusive com o uso da efetuação (*effectuation*). **Problema:** As crises são variadas em natureza, intensidade e duração, exercem pressão sobre as organizações e os empreendedores. Exigem respostas rápidas, engenhosas e adaptadas ao contexto de incertezas e de falta de recursos. Contudo, falta o esclarecimento de como ocorrem para os empreendedores e como estes enfrentam-nas. **Originalidade:** A partir de uma caracterização das crises e de sua diversidade, o estudo aprofunda a explicação do enfrentamento das crises no empreendedorismo e de como a efetuação é (ou não consegue ser) útil em tal enfrentamento, destacando-se os níveis micro e macro das crises e variações de respostas a elas. **Contribuições sociais/para gestão:** Além de novos resultados de pesquisa, o ensaio oferece uma agenda para futuras publicações promissoras em busca de soluções para grandes desafios da humanidade.

**Palavras-chave:** Empreendedorismo. Crises. Enfrentamento de crises. *Effectuation*.

## INTRODUCTION

Human beings and entrepreneurs live under mounting threats, partly of their own making. The world is a place of crises with increasing frequency, as has been seen for years (Eshghi & Larson, 2008), affecting humanity and the entrepreneurs, who besides being affected, must help to overcome them. These crises include disasters, pandemics, and even terrorism and wars (Bendell et al., 2020; Shepherd & Williams, 2020; Tanzi, 2022).

Crises are varied, occurring in forms such as natural disasters, including floods, hurricanes, earthquakes, and tsunamis. An earthquake with tsunamis caused more than 200,000 deaths in Asia at the end of 2004, mainly affecting Indonesia (Suppasri et al., 2015). There have also been dramatic pandemic episodes, such as the Spanish flu in 1918, the H1N1 flu in 2009, and Covid-19 in 2020 and 2021 (Sampath et al., 2021). With recurring human failures, these crises are usually more serious than would be expected, especially due to the lack of adequate prevention and response, as recorded in the case of the floods that affected the state of Rio Grande do Sul in 2024<sup>1</sup>. There are also man-made disasters. These include the Brazilian disasters involving the collapse of mining dams in Mariana in 2015 and Brumadinho in 2019 (Freitas & Silva, 2019), as well as the Indian calamity caused by the Union Carbide gas leak in Bopal in 1984 (Pauchant & Mitroff, 1990).

These crises fall under the umbrella of humanity's grand challenges, which need to be addressed by the collaborative and coordinated efforts made possible by management (George et al., 2016) and, in particular, by entrepreneurship (Ricciardi et al., 2021). Studying how entrepreneurship is affected by crises and, above all, how it helps to overcome them contributes to solving these challenges and reducing suffering in societies.

For organizations and entrepreneurship, a crisis refers to "a low-probability, high-impact event that threatens the viability of the organization and is characterized by ambiguity of cause, effect, and means of resolution, as well as by a belief that decisions must be made swiftly." (Pearson & Clair, 1998, p. 60). A crisis, such as that caused by a disaster, gives little time to respond (Quarantelli, 1988), has a low probability of happening, even though it severely threatens the existence of organizations and their stakeholders (Shrivastava et al., 1988). With these characteristics, a crisis exacerbates resource constraints for entrepreneurs and their organizations.

The crises faced by entrepreneurs manifest themselves on at least two levels. At the macro level, there are problems afflicting the communities or populations in which the entrepreneurs and their stakeholders operate. At the micro level, the entrepreneurs' organizations, taken individually, have their existence threatened or already closed down due to the crisis. However, there are entrepreneurs whose organizations thrive by the increase of its demand and/or importance due to a macro crisis or to a micro crisis of other organizations. One example is organizations that are still 100% operational during the crisis and making more money during disasters and pandemics, such as private hospitals providing care to those affected. A construction company, on the other hand, could win more contracts after a disaster, but lose a lot in a pandemic.

It can be seen that the consequences for an enterprise vary according to the characteristics of the crises, the organizations and their sectors, and can be positive or negative. Among the negative ones, there are restrictions on time and resources, limiting the possibilities of solutions, especially those that use rational ways of thinking and acting (Lima, 2022). How entrepreneurs cope with micro and macro crises need to be studied, particularly the non-rationalizing solutions, which are less affected by unpredictability and diffuse problems, as is the case with effectuation. Considering the two levels, this essay addresses various types of crises and

entrepreneurial responses. It focuses mainly on effectuation (Sarasvathy, 2001) as a form of resourcefulness that allows to do a lot with little (also characteristic in bricolage and bootstrapping - Michaelis et al., 2020).

The study of effectuation in crises has been explored in greater depth due to its attractiveness and important power to respond to crises (Nelson & Lima, 2020; Osiyevskyy et al., 2023) as it is an alternative to rationalization because it focuses on using what you have, doing a lot with a little, which is necessary because crises restrict resources (Lima, 2022). Therefore, this essay aims to explain how crises occur and how entrepreneurs cope with them, including through the use of effectuation.

Positioning itself as a journal that defends and encourages a plurality of themes and methodological approaches, since its first edition in 2012, REGEPE - Entrepreneurship and Small Business Journal - has already published articles on crises which we would like to complement. Due to the widespread integration between countries and the repercussions of events, even local crises have the potential to have an international impact, affecting people with no connection to the event or place that caused it. Therefore, understanding crises and how to deal with them helps to prevent their new occurrences and repercussions.

## REGEPE'S CONTRIBUTIONS

Aware of the importance of the links between crises, entrepreneurship and small organizations, REGEPE<sup>2</sup> has published around a dozen studies on the subject (Table 1).

**Table 1**

*REGEPE's publications on crises*

N	Title	Reference
1	Are Entrepreneurs and Small Businesses Prepared for Contextual Adversities? A Reflection in the Light of the Covid-19 Pandemic.	Nassif, Corrêa et al. (2020)
2	Entrepreneurship and small business in the context of post Covid-19: there is light at the end of the tunnel.	Nassif, Armando et al. (2020)
3	Entrepreneurial responses of coping Catastrophic events and crisis situations.	Nassif, Rossetto et al. (2020)
4	Entrepreneurial behaviour and education in times of adversity.	Rocha et al. (2022)
5	Entrepreneurship in non-Schumpeterian (or alternative) ways: Effectuation and Bricolage to overcome crises.	Lima (2022)
6	Entrepreneurial expectations towards the beginning of the COVID-19 pandemic: Empirical evidence in Brazil.	Souza et al. (2023)
7	Procylical and countercyclical strategies in MSMEs performance in a crisis context: A study based on the COVID-19 pandemic.	Ferreira et al. (2023)
8	Dribbling Covid-19: Challenges and dilemmas of an entrepreneur.	Grezole and Bueno (2023)
9	Entrepreneurship by necessity in times of pandemic: Entrepreneurial motivation and the regulatory focus in explaining the intention to undertake.	Mesquita et al. (2024)

Note: Elaborated by the authors.

In 2020, with the first events of the Covid-19 pandemic and the health measures in response to it, the journal's authors and editors were already reflecting on the actions of entrepreneurs and organizations facing of adversity: would small businesses be prepared for major contextual changes? Since they are more fragile in the face of restrictions and impacts, such as a drop in demand, how would they fare? (Nassif, Corrêa et al., 2020) Would they survive? (Nassif, Armando et al., 2020). Would that crisis situation be an opportunity to generate more individual and organizational resilience that could help to respond to other crisis situations? (Nassif, Rossetto et al., 2020).



Publications provided answers. Officially, the pandemic lasted 1,150 days, until May 5, 2023 (World Health Organization, 2023). It led to specific, gradual and some profound changes. REGEPE has shown that more flexible and iterative ways of doing entrepreneurial activities are well suited to the challenges of a crisis such as dynamic conditions and resource constraints (Rocha et al., 2022). Two of these approaches are effectuation and bricolage (Lima, 2022).

In 2023, REGEPE publications also dealt with entrepreneurs' responses to the current crisis by seeking recovery (bounce-back), but integrated discussions on possible advances that would take entrepreneurship to a better condition than simply overcoming the crisis (bounce-forward - Muñoz et al., 2019). The authors pointed out, for example, that the destabilized emotional and social conditions of entrepreneurs and their employees require responses with affective support and more empathy in the organizational environment (Souza et al., 2023). Layoffs to alleviate the crisis in companies have had undesirable effects for the parties involved, including the companies themselves (Ferreira et al., 2023). Widespread adherence to forms of remote work, online interaction and meeting, has led to the institutionalization of new professions and activities, such as those of social media entrepreneur-influencers, opening up new fronts for entrepreneurship (Grezole & Bueno, 2023).

Once the worst phases of the pandemic are over, new concerns and research interests are developing more intensely, such as: the consequences of climate change, social inequality, more types of crisis and other grand challenges that humanity is facing (George et al., 2016; Ricciardi et al., 2021). The condition of small organizations, entrepreneurs and entrepreneurship in the face of these challenges and their responses to them are also of interest to REGEPE. This way, the journal is increasingly positioning itself, once more, as a space for advancing and disseminating knowledge that is useful in understanding and responding to the adversities and needs of human, economic and social development.

## ENTREPRENEURSHIP IN MICRO AND MACRO CRISES

Entrepreneurs' organizations face crises at the micro level (e.g. financial problems and lack of demand for a business) which often derive from a macro crisis (e.g. Covid-19 crisis or disaster). A micro crisis is faced by a specific organization, while a macro crisis affects multiple organizations and/or communities, in one or more geographical areas. The derivation of the micro crisis from the macro crisis can occur due to various isolated or combined factors impacting an organization, including interruption or considerable drop in demand or supply (of goods, services, raw materials, etc.), compromised infrastructure, and/or logistics and unavailable manpower for the organization. Whether or not the organization is in the geographical area affected by the macro crisis, it suffers from the crisis at the micro level.

Crisis happen in different ways. For example, a pandemic tends to take hold and cause health and socio-economic problems gradually over a period of months. It may also be that the same pandemic or natural disaster crisis occurs aggressively, quickly and with many victims and financial losses in a densely populated region and softly and slowly in a sparsely populated region. The possibilities for solving the same crisis also tend to vary according to the characteristics (capacities, resources, interests, etc.) of the people involved, the entrepreneurs, their organizations and their contexts. Thus, there is a great deal of variation in the characteristics of crises and possible solutions for entrepreneurs at the micro and macro levels. The same crisis in the same region can have very different solutions, even from entrepreneurs in collaboration.

There are specificities to consider when it comes to social entrepreneurship. It can be defined as entrepreneurship that takes advantage of opportunities to create social value, i.e. to solve social needs, and is particularly important and beneficial for

disadvantaged communities (Mair & Martí, 2006). It focuses more on social value than on profit and growth, often without a profit objective (Mair & Martí, 2006). Non-profit organizations (NGOs) depend mainly on donors, funders and/or membership fees and therefore have little financial autonomy. Social entrepreneurship also includes social enterprises, which are a hybrid in that they focus on creating social value and generating revenue for self-financing and, potentially, for profit (Battilana & Lee, 2014).

The National Association for Studies in Entrepreneurship and Small Business Management (ANEGEPE) is an example of a hybrid organization. It is the sponsor of REGEPE. Founded in 2011, it was very dependent on membership fees in the early years. Its directors made it hybrid by sponsoring the biannual EGEPE congress ([www.egepe.org.br](http://www.egepe.org.br)), which generated self-financing for the association and REGEPE. But it became insufficient later on, especially in the face of the setbacks caused by the Covid-19 pandemic, which led to online events that were less profitable. Aware of the possibility of other income, in 2022 the directors diversified their services with the operationalization of the Global Entrepreneurship Monitor - GEM studies in Brazil, an initiative that increased the need for professional administration, more commitment from the directors and dealing with a lot of bureaucracy. However, it has strengthened ANEGEPE financially, as well as made it more useful to its members and to the country<sup>3</sup>.

Social entrepreneurship organizations - being social enterprises or not - tend to have an increased demand for services in macro crises, as they will need to help their beneficiaries overcome them. But they won't necessarily get the extra conditions to meet more demand - more people, infrastructure, timely reorganization, funding, etc. At the same time, these organizations are faced with the micro crisis, caused by the restriction of their resources, and the macro crisis, in helping their beneficiaries. On the other hand, an organization without a social mission would be less dedicated to solving the macro crisis by helping people outside of it, unless its leaders are sympathetic and embrace the goal of helping such people (mission drift - Muñoz & Kimmitt, 2019). An example of this is the restaurant converted into a community kitchen serving free food in the aftermath of the disaster in Nova Friburgo - RJ in 2011 (Nelson & Lima, 2020).

A social organization can also deviate from its mission by prioritizing aid to its community during a crisis. An example of this is the social organization Mensageiros da Esperança<sup>4</sup>: with new collaborations for donations and volunteer work, its school for young people started distributing food to people who lost their jobs during the Covid-19 pandemic. This temporary mission shift has improved the quality of life in their community during the crisis.

## FACING CRISES WITH A SOCIAL FOCUS

In crisis scenarios, it is not uncommon for entrepreneurs to redouble their efforts to cope, increase their solidarity and seek more self-sufficiency, given that other people and organizations, also affected by the crisis, find it difficult to help them. As a result, they tend to exploit their own resources more and do a lot with little, including effectuation, as explained below. It is common for them to change their products, processes, and business models (Sharma & Rautela, 2022) in the crisis. Although they are entrepreneurs in profit-focused organizations, they also often help out in their community (Kaufman et al., 2007). Therefore, they generate solutions for themselves and the community, without expecting solutions to come only from the actions of other actors, such as governments and public agencies. Their proactive profile drives them to survive and be decisive in community recovery, behaving like social entrepreneurs (Zahra et al., 2009).

One consequence of crises that has been identified is the strengthening of the sense of community among entrepreneurs. Notwithstanding their own need for assistance, they provide aid to others in need (Dinger et al., 2020), thereby demonstrating skills



associated with social orientation. For example, in crises such as the major floods in Rio Grande do Sul in 2024, the citizen initiative of different people, especially entrepreneurs because they have greater capacity for action, multiplies the social entrepreneurship, even if only temporarily. This initiative promotes community resilience and local sustainability, as entrepreneurs with a social mission transcend selfish interests and the profit motivation (Kaufman et al., 2007; Zahra et al., 2009).

In emergency situations, entrepreneurs tend to adapt their traditional profit logic and articulate a solution to urgent needs. Serious situations often lead people, including non-entrepreneurs, to engage in pro-social behavior (Lewis, 2013), involving, for example, the coordination of relief efforts, the distribution of essential supplies and the provision of emergency services, etc. Complementing this role, governments can act with activities, programs and public policies that facilitate recovery in crises (Bustamante et al., 2022). Public initiatives and intermediary agents are important (Cunha et al., 2012) and help social entrepreneurs to serve communities (Barki et al., 2020). By articulating forces, they promote various forms of solution, including partnerships with public authorities, inter-organizational cooperation and corporate philanthropy.

### EFFECTUATION IN DEALING WITH CRISES

As proposed by Sarasvathy (2001), effectuation can be defined as a way of doing entrepreneurial activities that emerges from the potential effects of the available (effectual) means which are available to the entrepreneur regarding who she/he is (identity), who she/he knows (network), and what she/he knows (knowledge). The entrepreneur then considers the potential objectives that could be achieved through the utilization of these means, seeking to achieve one of them using only her/his effectual means, with risks limited to acceptable losses (Sarasvathy, 2001). It is the means that define the objectives, rather than the other way around, which would be another mode of entrepreneurship called causation (Sarasvathy, 2001).

In contrast to effectuation, causation is a concept that is commonly applied in the context of strategic planning. It is a widely used concept and is regarded as a rational formula for generating optimal solutions in the entrepreneurial process. An illustrative example of this is Schumpeter's (1934) dominant perspective, which describes and prescribes the entrepreneurial process on the basis of causation. This perspective supposes that entrepreneurship occurs in a linear progression of four stages: (1) identifying an opportunity in market needs, (2) setting objectives focused on the opportunity, (3) obtaining resources to undertake and (4) undertaking using these resources to achieve the objectives (Carter et al., 1996). However, rationality is significantly constrained in circumstances of resource scarcity, ambiguity of causes and effects, and lack of time for reflection and action (Ariely, 2010). These are conditions typical of crises (Akinboye & Morrish, 2022) and conducive to non-Schumpeterian approaches, such as effectuation (Lima, 2022; Nelson & Lima, 2020).

The characteristics of effectuation allow economic and confident undertaking in uncertain situations (Sarasvathy, 2001), which are inherently characteristic of crises (Liu et al., 2016). The theory of effectuation places emphasis on the ability to control the actions and outcomes of a situation through the utilization of one's own effectual means (the bird in the hand principle), the avoidance of predictions (the pilot in the plane principle), and the co-creation of artifacts and solutions with self-selected collaborators. In the context of uncertainty, the relationship network (the crazy quilt principle) is of particular importance. Not using predictions comes from the impossibility of knowing the future and control of events with the use of own means and capabilities (Dew et al., 2015; Townsend et al., 2018). Two other principles help to summarize effectuation theory: the principle of acceptable loss (the preference

for limiting losses to an acceptable level rather than considering possible returns) and the principle of lemonade (the exploitation of setbacks as resources, turning lemons into lemonade) (Sarasvathy, 2001).

There are notable similarities between effectuation and entrepreneurial bricolage. Both are forms of resourcefulness enabling the use of limited resources to do much with very little (Michaelis et al., 2020). However, the process of bricolage does not begin with the identification of resources or the formulation of objectives. Instead, it is initiated by the entrepreneur's encounter with a novel problem or opportunity, which prompts them to utilize their own resources in response. This entails the adaptation of existing resources in conjunction with suboptimal solutions to address emerging challenges and seize opportunities (Baker & Nelson, 2005).

A crisis has a profound impact on the capacity of entrepreneurs to make decisions about their organizations, given the intensifying uncertainties in the context, rendering any predictions challenging (Sarkar & Osiyevskyy, 2018). Accordingly, the application of effectual principles facilitates prompt adaptation, particularly when the current solutions lose efficacy or become useless (Sarasvathy, 2001; Silva et al., 2023). The advent of the new reality demands a greater degree of creativity, a reinvention of the prevailing approach, and even a rethinking of long-held strategies. Effectuation, in particular, has been identified as a valuable tool for achieving these ends (Shirokova et al., 2020).

These statements appear to be inapplicable to unexpected, violent, and rapid disasters, which disrupt the effectual means. As Nelson and Lima (2020) observe, Weick (1993) has demonstrated that first responders may experience a compromise of their identity and function in the context of an unexpected disaster. The authors also highlight that an actor (e.g., a disaster relief social entrepreneur, doctor, or nurse) may find their effectuation potential undermined by the disruption of their network of relationships or the urgency of needs for which their knowledge is not applicable.

The early morning torrential rain disaster studied by Nelson and Lima (2020) had a significant impact on the ability of entrepreneurs to act, as it resulted in the destruction of homes, loss of life, injury, confusion, and homelessness. In the wake of the disaster, new social entrepreneurs arose who employed improvisation and making do in the initial stages - a way of doing aligned with bricolage. As a new normal was established, effectuation and causation became applicable. The aforementioned study illustrates the significance of employing a processual methodology to comprehend the ways of doing entrepreneurial activities in crises, paying particular attention to the potential transitions between these ways and to the importance of using them in the various phases of the crises. Additionally, the study underscores the necessity for further investigation into the complementarity between effectuation and bricolage.

It is also necessary to consider the types of crises in question. It appears that effectuation remains a viable approach in crises that unfold gradually, without an immediate and catastrophic impact on the entrepreneurs' ability to utilize effectual means and take action. In the context of the global pandemic, even causation proved to be a crucial element from the outset, with forecasts and forward planning playing a significant role in enabling nations to implement effective coping strategies, including the rapid expansion of medical capacity in both traditional and field hospitals. In the context of effectuation, a variety of actors developed solutions, including the creation of a new business or the adaptation of an existing one. This was exemplified by the redesign of the business model in many enterprises even after the lockdown and months without billing (Scheepers et al., 2024). During the pandemic, there was a notable shift from in-person businesses, such as bars and restaurants, to delivery-based models.



In his recent doctoral research on seven ventures, Borsatto (2024) identified effectual solutions to address crises in lifestyle entrepreneurship during the pandemic in Brazil. This form of entrepreneurship is strongly influenced by the identity of the entrepreneurs, who pursue entrepreneurial activities to ensure the sustainability and better ways of living their lifestyle, which is essential for their well-being (Lima, 2022). Such a profound sense of identity provides them with an enhanced capacity for perseverance in the face of adversity. To cease pursuing their passion would, in their perception, constitute a painful self-denial.

The following is a summary of the key effectual responses to crises (Borsatto, 2024), some of which involved redesigning the business model (Table 2):

**Table 2**

*Effectuation responses to crises*

Response	Examples
Use of temporary ventures	The exploitation of means related to their lifestyle allows entrepreneurs to identify another opportunity and initiate new ventures, which serve as a further source of income to overcome the crisis and resume their previous ventures.
Creating something new with the effectual means	Mobilization of the means to identify and develop new paths or opportunities to continue the operations and overcome the crisis.
Establishing the acceptable loss	To consider the venture, the phase of development they are currently experiencing, their circumstances, and to determine the extent and/or nature of the losses they are willing to accept in order to facilitate their recovery.
Collaboration with stakeholders assuming advance commitments	Co-creating value with the network of relationships, building partnerships and new ways of adding resources. Through collaboration, entrepreneurs enable recovery and the desired outcomes
Turning misfortunes into opportunities (lemonade principle)	Taking advantage of misfortune to develop new products and services, implying diversification to help overcome crises.
Acting like the pilot in the plane	Encouraging the creation of opportunities and favourable conditions through the human agency of entrepreneurs, who remain active, interacting and intervening in their environment to shape reality.

Note: Adapted from Borsatto (2024).

Studying emerging markets, Welter and Smallbone (2011) identified six behavioral strategies for overcoming crises. While the list of strategies was not related to any specific modes of entrepreneurship, it offers insight into alternative coping mechanisms and their potential relationship with effectuation. Readers may wish to consider the similarities between the items on the list and the responses to crises proposed by Borsatto (2024).

The six strategies, as outlined by Welter and Smallbone (2011), are as follows: (1) Exploring possibilities for change and innovation, implying more organizational flexibility; (2) Identifying legal and informal strategies for challenging existing institutions and evading or shrinking from tax obligations (this is reminiscent of the refusal of limitations and challenges to rules and standards pointed out by Baker and Nelson, (2005)); (3) Financial bootstrapping, defined as the practice of reducing expenses and securing cost-free or low-cost resources without relying on external financing, represents a strategy for achieving significant outcomes with limited resources. This approach is analogous to effectuation and bricolage (Michaelis et al., 2020); (4) diversification and portfolio entrepreneurship - which includes the creation of new things from effectual means; (5) The formation and exploitation of business networks and personal contacts, based on the utilization of existing connections with friends and acquaintances, the reciprocal exchange of favours,

and the formation of collaborative relationships with stakeholders. (6) Adaptation which entrepreneurs employ in order to navigate the complexities of bureaucratic processes and the administrative burden they entail.

## FUTURE RESEARCH

To facilitate further research on the aforementioned subjects, we present a research agenda below. New publications have the potential to integrate the study of grand challenges in dealing with crises with research of significant value to both academic and societal contexts.

As has been observed, one common response by entrepreneurs to crises—often employing effectuation—involves significant alterations in their activities, including mission drift, changes in business model, and/or the introduction of temporary ventures. Such changes can have a significant impact on the capacity of individuals, communities, and societies to navigate and overcome crises. Such changes are implemented with the intention of enhancing the aforementioned conditions; however, there is a possibility that they may inadvertently exacerbate existing issues and give rise to unintended consequences. Furthermore, these changes are best implemented through a coordinated effort across a broad network of entrepreneurs and other stakeholders, including the state, to ensure a significant and sustained impact that extends beyond the immediate scope of micro-crises, neighborhoods, and cities.

In this regard, some questions appear to be particularly promising for new publications. (1) How might effectuation be more effectively employed in crisis responses? (2) How can we promote changes in response to crises while minimizing risks or, at the very least, limiting them to an acceptable degree of loss? (3) In light of the fact that even minimal acceptable losses in a crisis can have a significant impact on human lives and the environment, what ethical and moral principles should be upheld in order to define these limits? (4) How should the diverse actors in a given society collaborate to develop more effective and comprehensive responses?

In this regard, contributions to the search for answers may be found in the work of Doh et al. (2019, p. 5). In their study, the authors present the concept of collective environmental entrepreneurship, which can be defined as a process in which "companies, government, and NGOs work as partners to leverage and combine their sector-specific competencies and discover, develop, and scale innovative adaptive responses to environmental challenges." It would be prudent to develop responses to these four challenging questions before the next major crisis occurs, thereby establishing preventive lines of action.

Furthermore, inquiry may be directed towards the rationale behind entrepreneurs, including those who are relatively new to social action, engaging in voluntary efforts to address crises and assist others despite the potential for financial loss. In instances where individuals assist one another in perilous circumstances, sometimes at the risk of their own lives, some may posit that the solidarity observed among humans reflects an instinctual drive for the preservation of the human specie. Such an investigation would result in an intriguing intersection between the domains of entrepreneurship, biology, and human evolution. Nevertheless, an initial investigation into this phenomenon could be conducted with a more modest objective, namely, to examine the origins of prosocial behavior as documented in the literature on social entrepreneurship. In the case of entrepreneurs from contexts under recurrent threat, the concept of entrepreneurial preparedness (Muñoz et al., 2019) may also prove useful. The term denotes the capacity to respond in an assertive manner to challenges or threats with which one has prior experience.



It is also possible to propose further questions to extend the list: (5) Why do entrepreneurs, particularly those who do not typically engage in social entrepreneurship, utilize personal resources and those of their organization to assist a community or population in overcoming a crisis? (6) How might entrepreneurs structure their respective organizations, whether oriented toward ad hoc and ephemeral activities or others, in ways that not only facilitate their own advancement but also that of the communities they serve?

Additionally, Nelson and Lima (2020) and this editorial have highlighted the complementarity between effectuation, bricolage, and causation in crisis response. In this study, the focus is on effectuation as one of the three modes of undertaking. It would be beneficial for future complementary publications to address bricolage in greater detail in response to crises, particularly in instances where effectuation cannot work. In this regard, it would be beneficial to extend the analysis beyond the contributions of Nelson and Lima (2020). As previously suggested, the level of rapidity and intensity of the impact of crises on entrepreneurs appear to differentiate the utility of effectuation and bricolage in the initial stages of a crisis. However, the empirical evidence supporting this proposition is currently insufficient.

Additional questions appear to yield fruitful results: (7) Is it really the rapidity and intensity level of impact that distinguishes the utility of the two forms of entrepreneurship? (8) What is the rationale that elucidates the conditions under which each mode of entrepreneurship (namely, effectuation, bricolage, and causation) is more effective? (9) What is the optimal combination of the three modes, and how can it be determined according to the circumstances of each crisis? As previously proposed by Nelson and Lima (2020), the presence of effectuators and bricoleurs capable of spearheading social initiatives within a community facing a disaster can be a defining factor for many individuals. So, in that same direction, (10) what recommended preparation and preparedness protocols involving the three modes of entrepreneurship should be implemented by organizations and communities to more effectively cope with crises?

#### Endnotes

- 1 There are records at national and international level warning of the possible serious impacts of climate change in the region, including increased precipitation and rainfall (e.g. Calvin et al., 2023).
- 2 REGEPE is maintained by the National Association of Studies in Entrepreneurship and Small Business Management (ANEGEPE). Other means of publishing and disseminating scientific studies are under the management of this association, such as the *Conferece on Entrepreneurship and Small Business Management Studies (Encontro de Estudos sobre Empreendedorismo e Gestão de Pequenas Empresas - EGEPE)*, which has also published on dealing with crises.
- 3 The information presented in this paragraph regarding ANEGEPE and its associated events is based on direct communication with the association's directors and the participation of some of the authors as directors of this association.
- 4 For further information, please refer to Video Case 1, entitled "Effort against Poverty, Violence and Crisis," which can be accessed on the ANEGEPE website: <https://anegepe.org.br/parcerias/projeto-sass/video-case-1-efetuacao-contra-pobreza-violencia-e-crise/>.

#### Conflict of interest statement

The authors declare that there is no conflict of interest.

#### Authors' statement of individual contributions

Roles	Contributions			
	Lima E. O.	Moreira Silva J. P.	Lopes R. M. A.	Cunha J. A. C.
Conceptualization	■			
Methodology			N. A.	
Software			N. A.	
Validation	■	■	■	■
Formal analysis	■	■	■	
Investigation	■	■	■	■
Resources			N. A.	
Data Curation	■			
Writing - Original Draft	■	■	■	■
Writing - Review & Editing	■	■	■	
Visualization	■			
Supervision			N. A.	
Project administration			N. A.	
Funding acquisition			N. A.	

Note: Acc. CRediT (Contributor Roles Taxonomy): <https://credit.niso.org/>

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