

 **EFFECTUATION AND ENTREPRENEURSHIP FACING CRISES:
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ABSTRACT

Objective: To synthesize empirical research results about effectuation responses to crises with the intention of offering results that are already potentially useful for new research and the practice of entrepreneurs.

Methodology/approach: With a systematic literature review (SLR), publications on the subject were mapped, highlighting mainly their contributions, but also registering their research methods, their foundations and the types of crises studied. The treated articles come from the Scopus and Web of Science article databases.

Originality/value: Applying a thematic focus that was not yet used before, but that is necessary, the study contributes for the understanding of the entrepreneurial behavior supported on effectuation in crisis contexts.

Main results: The SLR identified 14 articles dealing with three types of crises (financial, regarding health and natural crises) responded using effectuation indicating a tendency to the growth of the number of publications about the focused subject. Research needs and paths were characterized to be exploited in new researches.

Theoretical/methodological contributions: Central contributions are the description of relations between the effectual principals (bird in hand, affordable loss, crazy quilt, lemonade, and pilot in the plane) and effectuation use in response to three types of crises and the synthetic characterization of relevant publications about the focused subject, which constitutes a facilitator for more researchers interested in the same subject.

Social/management contributions: Social actors and managers can use the contents of this article to better understand how the response to crises using effectuation is being carried out in real situations studied in the identified articles of the SLR. This way, their repertoire of useful knowledge to more successfully act in entrepreneurship in the face of crises will be broader.

Keywords: entrepreneurship, effectuation, crisis.

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EFFECTUATION E EMPREENDEDORISMO ENFRENTANDO CRISES: UMA REVISÃO

RESUMO

Objetivo: sintetizar resultados de pesquisas empíricas sobre as respostas da efetuação a crises com a intenção de oferecer resultados já potencialmente úteis a novas pesquisas e à prática dos empreendedores.

Metodologia/abordagem: com uma revisão sistemática de literatura (RSL), foram mapeadas as publicações sobre o tema destacando-se principalmente suas contribuições, mas registrando-se também seus métodos de pesquisa, seus fundamentos e os tipos de crise estudados. Os artigos tratados vêm das bases de artigos Scopus e Web of Science.

Originalidade/valor: empregando um recorte temático não utilizado anteriormente, mas necessário, o presente estudo contribui para o entendimento do comportamento empreendedor apoiado na efetuação em contextos de crise.

Principais resultados: a RSL identificou 14 artigos tratando de três tipos de crise (financeira, de saúde e naturais) respondidas com o uso da efetuação, mostrando tendência de ampliação do número de publicações sobre o tema focado. São caracterizadas necessidades e caminhos a serem explorados em novas pesquisas.

Contribuições teóricas/metodológicas: são contribuições centrais a descrição das relações dos princípios efetuais (pássaro na mão, perda aceitável, colcha de retalhos, limonada e piloto no avião) com o uso da efetuação na resposta aos três tipos de crise e a caracterização sintética de publicações relevantes sobre o tema focado constituindo um facilitador para mais pesquisadores interessados no mesmo tema.

Contribuições sociais/gerenciais: atores sociais e gestores podem usar os conteúdos do artigo para melhor entenderem como tem sido realizada a resposta a crises com a efetuação em situações reais estudadas nos artigos levantados na RSL, de modo a ampliarem seu repertório de conhecimentos úteis para agirem mais acertadamente no empreendedorismo frente a crises.

Palavras-Chave: empreendedorismo, *effectuation*, crise.

EFFECTUATION Y EMPRENDIMIENTO ANTE CRISIS: UNA REVISIÓN

RESUMEN

Objetivo: sintetizar los resultados de la investigación empírica sobre las respuestas de la *effectuation* a las crisis con la intención de ofrecer resultados ya potencialmente útiles para futuras investigaciones y la práctica de los emprendedores.

Metodología/enfoque: con una revisión sistemática de la literatura (RSL), se mapearon las publicaciones sobre el tema enfocado, destacando principalmente sus aportes, pero también registrando sus métodos de investigación, sus fundamentos y los tipos de crisis estudiados. Los artículos tratados provienen de las bases de datos de artículos Scopus y Web of Science.

Originalidad/valor: empleando un enfoque temático no utilizado anteriormente, pero necesario, el presente estudio contribuye a la comprensión del comportamiento empresarial apoyado por la *effectuation* en contextos de crisis.

Principales resultados: la RSL identificó 14 artículos que trataron de tres tipos de crisis (financiera, de salud y natural) respondidas con la *effectuation*, mostrando una tendencia hacia el aumento del número de publicaciones sobre el tema enfocado. Se caracterizan necesidades y caminos a explorar en nuevas investigaciones.

Aportes teóricos/metodológicos: los aportes centrales son la descripción de las relaciones entre los principios de *effectuation* (pájaro en la mano, pérdida aceptable, colcha de retazos, limonada y piloto en el avión) con el uso de la *effectuation* en respuesta a los tres tipos de crisis y la caracterización sintética de publicaciones relevantes sobre el tema enfocado constituyendo un facilitador para más investigadores interesados en el mismo tema.

Aportes sociales/empresariales: los actores sociales y los gestores pueden utilizar los contenidos del artículo para comprender mejor cómo se ha llevado a cabo la respuesta a las crisis con la *effectuation* en situaciones reales estudiadas en los artículos identificados en la RSL, con el fin de ampliar su repertorio de conocimientos útiles para actuar más correctamente en el emprendimiento frente a las crisis.

Palabras clave: emprendimiento, *effectuation*, crisis.

1 Introduction

Effectuation, as an entrepreneurial behavior, proves to be useful in crisis situations, in which it is not possible for the entrepreneur to carry out predictive actions to overcome difficulties (Sarasvathy & Dew, 2005). The idea that effectuation allows entrepreneurs to find new ways, seek solutions and achieve their goals, even in contexts of extreme resource constraints, using their effectual means (who they are, what they know and who they know – Sarasvathy, 2001), makes effectuation gain prominence and arouse interest in society, being a viable path applicable to overcoming crises. In this sense, deepening and disseminating knowledge about how to cope with crises is a way for entrepreneurs and their ventures to be resilient and continue to meet the needs, income and development of societies.

In the recent past, several countries, their populations and their entrepreneurs faced different types of crisis, from different origins. The coronavirus pandemic and the migration and economic crisis caused by the war between Russia and Ukraine are the most recent crises. At the beginning of the 21st century, there was the so-called “ dot-com ” bubble burst, its impact on stock exchanges around the world and the consequent global economic contraction. On September 11, 2001, a terrorist attack on the twin towers in New York City triggered a war against terrorism, destabilizing world peace and its markets. In January 2011, an unprecedented natural disaster in the mountainous region of Rio de Janeiro caused destruction and death, impacting communities and many enterprises (Nelson & Lima, 2020; Wenzel *et al.* , 2021) .

In early 2020, the World Health Organization (WHO) declared a pandemic due to the new coronavirus responsible for Covid-19. Worldwide, by the end of 2022, more than 656 million cases with 6.6 million deaths had been confirmed. In Brazil alone, more than 36 million cases of the disease have been confirmed, with approximately 693,000 deaths (Saúde, 2023).

Measures of crisis prevention, containment and remediation can directly impact the people’s movement, consumption and income generating economic problems (Nicola *et al.* , 2020). In Brazil, there was a need to maintain social distancing measures. These measures meant that small organizations were affected in their revenues, with serious consequences such as the closure of shops and industries, as well as the reduction of the number of jobs.

Effectuation is useful in situations of crisis and uncertainty, since effectual practice is used by the entrepreneur not as an actor who takes predictive actions in order to reach a predetermined goal, but as an entrepreneur who builds a future in the course of his entrepreneurial action (Dew et al., 2009; Nelson & Lima, 2020). Therefore, this article aims to answer the following research question: How do entrepreneurs use effectuation to undertake and overcome difficulties in crisis situations?

To answer the question, we performed a systematic literature review (SLR). The objective of the SLR was to synthesize results of empirical research on effectuation responses to crises with the intention of facilitating new empirical research and offering already potentially useful results for further research and the practice of entrepreneurs. Publications on the subject were mapped, highlighting mainly their contributions, but also registering their research methods, their foundations and the types of crisis they studied. The mapped publications were empirical research articles retrieved from the Scopus and Web of Science databases from searches using the keywords “effectuation”, “cris *s”, “covid*”, “difficult*” and “entrepren *”.

The present study contributes to clarifying about the subject by characterizing the evolution of effectuation in an environment that is still little explored by academia, as well as identifying new paths for further research addressing effectuation in crisis contexts.

2 Theoretical Framework

2.1 Entrepreneurship in a crisis context

Entrepreneurship as a field of research has been gaining momentum with the quality and multiplication of publications in recent years. It has also been maturing as a science, attracting the interest of researchers from other areas, contributing to the solidity and legitimacy of the field (Lima & Lopes, 2019). Additionally, in the pre-Covid-19 period hitherto crossed, one of the greatest economic crises ever experienced in Brazil (Lima & Lopes, 2019), causing migration of workers disconnecting from organizations in crisis and becoming mostly self-entrepreneurs (IBGE, 2020), seeking new opportunities for income generation and economic growth

A crisis is related to systemic, unexpected changes that can vary in their intensity (Buchanan & Denyer, 2013). Ansell and Boin (2019, p. 1081) defined crisis as following: When a group of people, an organization, a community or society perceives a threat to shared values or life support systems that requires an urgent response in conditions of profound uncertainty.

In this sense, the crisis is a phenomenon that brings with it a force capable of creating a rupture or has the potential for a future organizational rupture, with the risk of affecting its profitability, its growth and possibly its very existence (Lerbinger, 2012). The crisis and its definition are necessarily associated with temporal factors, such as time, place and scope (Kraus *et al.* , 2020).

Ratten (2020) divides crises into six types: natural crises, technological crises, organizational crises, health crises, political crises and financial crises. Natural crises are phenomena of the nature, an action of force majeure, without human interference or fault. Examples of natural crises are hurricanes, tornadoes, earthquakes, floods, landslides, among others. As explained by Ratten (2020), technological crises are phenomena that have associated human interference, as they result from the manipulation of resources present in their environment. By surrounding oneself with technology, the individual increases the possibility of a risk that did not exist, such as, for example, problems in nuclear power plants, mining companies, the use of smartphones for banking operations and autonomous cars. Companies are normally held accountable for this type of crisis.

Organizational crises, on the other hand, occur when groups, individuals or even competing companies use illegal actions to damage the reputation of another organization. They can also occur due to illegal or immoral acts carried out by managers or members of the company's senior management. Counterfeiting, attacks on the production line, rumors, invasion and subtraction of confidential data are some examples of this type of crisis. Involvement in fraud, bribery, theft are other examples of organizational crises.

The health crisis is caused by a disease that is difficult to trace, such as the Covid-19 and SARS. Health crises occur sporadically and surprisingly. Thus, health crises strongly impact the individual and his/her routine, as it requires a new way of living. Political crises relate to competitive tensions between different countries causing conflicts and wars. Its effects can cause both economic and social damage. At the international level, the Russian invasion of Ukrainian territory started a war between the two countries and one of the biggest migratory crises of our times. In the Brazilian context, it is possible to associate the political crisis with party tensions and conflicts between institutions and national powers. We can use as an example the crisis motivated by the impeachment or the institutional crisis between the legislative and executive powers.

Financial crises are events and situations in which there is a sudden devaluation of financial assets and/or institutions. Financial crises have the power to impact several sectors and companies, such as the 2008 financial crisis, which had its origins in the US mortgage

system and affected several other sectors of the economy, causing company failures and an increase in the unemployment rate.

In this context of crisis, it is necessary to make decisions about the type of actions needed and the resources to use (Milstein, 2015). Thus, in times of crisis, resources become scarcer, decisions can be planned, unplanned, or, alternatively, they can be mixed, including some predictive actions with actions taken as the crisis occurs (Ratten, 2020). Thus, effectuation as a way of undertaking gains adherence in entrepreneurial actions in crisis contexts.

2.2 Effectuation

Sarasvathy (2001) proposed the effectuation theory after finding a limitation in theories presented in the literature and which were unable to address all phenomena, including complex phenomena, that involve the field of entrepreneurship. This new theory emerged as the opposite of the causation approach. Causation considers the actions predetermined and planned by the entrepreneur and that, until the emergence of the effectuation theory, was extensively linked to entrepreneurship.

Noting that some entrepreneurs made decisions for their ventures not based on previously determined data and previously determined factors, the need for a new approach to this entrepreneurial behavior was perceived. The entrepreneurial attitude, which identifies or recognizes an opportunity, and then performs tasks to develop and exploit this opportunity, is characterized as causation (Sarasvathy, 2001).

The elaboration of a business plan, the carrying out of market research, the study of its area of activity and the undertakings that participate in it, the acquisition of resources for the execution of the business plan, the adaptation of this plan to the reality in the course of the time to create and sustain a competitive advantage are causation behaviors. In causation, when starting a new business, the entrepreneur would arm himself with information, data, research and planning to achieve a defined end (Sarasvathy, 2001; Sarasvathy & Dew, 2005).

In the effectuation approach, the entrepreneur does not necessarily start his project by identifying an opportunity. The entrepreneur, at first, identifies the means available at the moment through reflection on: Who am I? What do I know? Who are my relationship networks? and in a continuous act combines these means and initiates entrepreneurial action. In the effectuation approach, the entrepreneur identifies and seizes the means at his disposal to envision, design and implement future plans according to them (Dew, 2003; Sarasvathy, 2001).

Effectuation involves a dynamic decision-making process that enables entrepreneurial action by using the means around it to create new ventures in an uncertain environment (Scazziota *et al.* , 2020). Therefore, the entrepreneur who uses the effectuation approach sees the possibility of an undertaking and performs a set of actions, using available means, to achieve his/her objective. In the effectuation approach, the entrepreneur may be uncertain about the success of his business or product in the market in which he/she operates or even has doubts whether this market really exists (Dew, 2003; Sarasvathy, 2001; Sarasvathy & Dew, 2005).

There are five effectual principles:

- 1) Bird-in-hand: Starting with the resources available by asking: Who am I? What I know? Who do I know? Instead of finding new ways to reach the ends proposed in the effectuation, it is suggested: What can be created with the means at my disposal?
- 2) Affordable loss: Spending only what you can afford to lose. In the causation approach, the entrepreneurial strategy aims at maximizing profits, while in effectuation it is suggested to determine the acceptable amount of loss and develop strategies with the limited resources available.
- 3) Crazy quilt: Using alliances and human resources from people who are interested in participating in the project in order to reduce or even eliminate entry barriers.
- 4) Lemonade: Dealing with unexpected contingencies along the journey making lemonade out of lemons.
- 5) Pilot in the plane: Focus on activities that you have control over to co-create the future. If it is possible to control the future, it is not necessary to predict it (Archer *et al.* , 2009; Sarasvathy, 2001; Sarasvathy & Dew, 2005).

3 Methodology

In the present study, we carried out a qualitative exploratory research. The SLR - systematic literature review was used as a research method for using organized, transparent and replicable procedures during the research process (Littel *et al.* , 2008). Its purpose is to map and evaluate the available scientific production on the addressed topic, allowing the researchers to visualize networks of thoughts and concepts (Tranfield *et al.* , 2003). SLR has been frequently used in the field of entrepreneurship for knowledge of scientific publications, the scope of empirical studies and their deepening (Dvouletý *et al.*, 2020).

We elaborated a research protocol and carried out the planning for the execution of this systematic review. We base ourselves on the research question itself to determine the keywords and define additional search criteria, refining the search filters. The keywords determined were: effectuation, crisis and entrepreneurship, and their variations.

We used two of the main scientific databases of applied social sciences to survey the articles, Scopus (Elsevier) and Web of Science. These databases were chosen because they bring together a series of scientific productions in all disciplines and worldwide. As a reference, only Scopus indexes more than 24,600 publications from 5,000 publishers, offering the possibility of a more comprehensive search.

In Scopus database we carried out a first search with the parameters of the “Start exploring” page, selecting the item “documents”. In the field “Search documents” we added the following keywords: “effectuation” and “cris*s” and “entrepren*”. The database was asked to perform the search in the following fields: “Article Title, abstract and keywords”. In the tab “Refine results” we selected in the field “Document type” just the item “Article”. A second search was carried out, with the same parameters above, only replacing the keyword “cris*s” for “covid*”, and a third search replacing the keyword “cris*s” for “difficult*”

In the Web of Science database, the parameters were: On the main search page, the database “Main Collection of Web of Science” was selected. In the “Basic search” field, the following keywords were added: “effectuation” and “cris*s” and “entrepren*”. In the “Filter results” tab, we only used the “Article” item in the “Document types” field. The database was asked to carry out a search in the following field: “Topic”. A second search was carried out with the same parameters above, only replacing the keyword “cris*s” for “covid*”, and a third search replacing the keyword “cris*s” for “difficult*”. For both databases, there were no restrictions on the year of publication, thus seeking a greater number of articles to be analyzed in this SLR. Note that we added the asterisk as a symbol to get all possible variations of each keyword; for example, searching for the keyword “entrepren*”, it is possible to identify all publications that contain the words “entrepreneurial”, “entrepreneurship”, “entrepreneur”, among others.

Conducted in February and March 2022, searches in the databases were performed by two researchers on alternate days. When carrying out the research, a total of 27 articles were found, 10 on the Scopus platform and 17 on the Web of Science platform. At the end of the search in the databases, we obtained the files with extension .csv, for filtering and further analysis in Excel, and also in .bib, for using the information in the Mendeley reference

management program by Elsevier. These files contained the name of the authors, title of the articles, date of publication, journal name, authors' affiliation and abstracts.

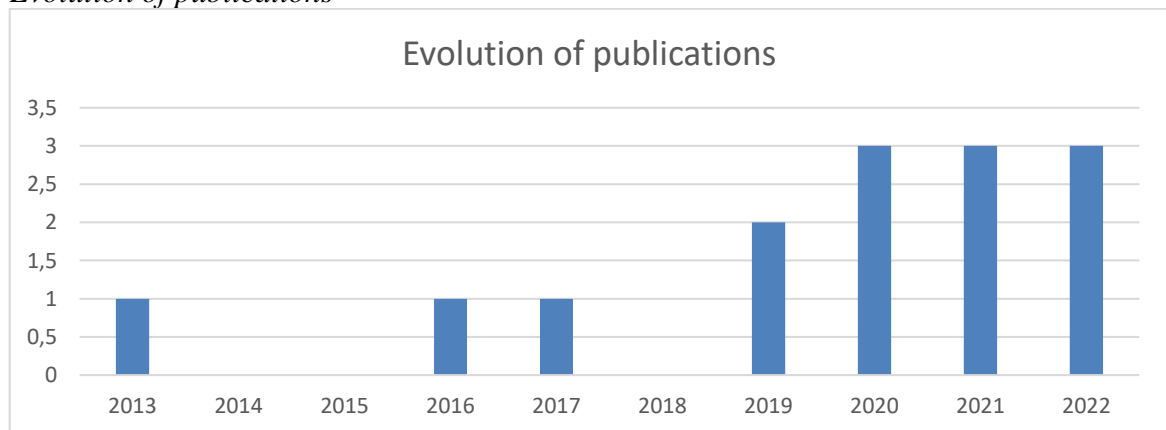
After gathering these data, we started the process of filtering the articles. The first exclusion criterion was duplicated articles, which appeared in both databases. In total, 8 duplicated articles were excluded. Then, the summaries of the 19 resulting articles were read, with the exclusion of another 5 articles that did not make direct references to the effectuation and overcoming of crises by entrepreneurs, thus leaving 14 articles from the original database, object of in-depth reading and analysis. These articles are presented in Table 2 in the results and analysis section.

4 Results and Analysis

The results, extracted from the analysis of the selected articles according to the previously established protocol, show (figure 1) the evolution of the publications on effectuation and entrepreneurship to overcome difficulties in a context of crisis, published and indexed in the reference bases. In figure 1, it is noted that the evolution of the publications associating effectuation, entrepreneurship and crisis is still timid, despite showing a growth trend, confirmed with the 3 publications of the year 2020, 2021 and 2022. With the extension of the pandemic motivated by Covid-19 and its reflections in the field of entrepreneurship, only in the first three months of 2022, the publication of the same number of articles observed in 2020 and 2021 was observed, which leads to the observation of a trend in the growth of these publications.

Figure 1

Evolution of publications



Source: Prepared by the authors (2023).

Using the Atlas.ti qualitative data analysis system, we extracted a “word cloud” (figure 2) using the Analysis – Word Cruncher function. This report helps to visualize the most frequent words in the 14 analyzed articles.

Note the emphasis on the words entrepreneurship, entrepreneurial, effectuation and causation, indicating the constant fundamentals in the analyzed articles. It is also possible to observe the emphasis on the words crisis, disaster and economic, thus showing some types of crises studied together with the effectuation. The words resource, performance and making are highlighted in the word cloud indicating that the articles studied, for the most part, have an approach on resources, performance and the action of making enterprises to overcome crises.

Figure 2

Word cloud

action analysis approach based bricolage **business** case causal causation
 conditions context **crisis** decision development disaster during economic
 effectual **effectuation** emerging **entrepreneurial**
entrepreneurs entrepreneurship environmental eo firm firms growth
 high impact important innovation international journal learning level literature local
logic logics making management market means model opportunities opportunity
 orientation **performance** process **research** resource **resources** risk rm rms
 sarasvathy small smes social strategic study survival table theory time two uncertainty
 vol

Source: Prepared by the authors (2023).

In this work, we adopted six possible types of crises according to Ratten (2020), cited above. In the texts that make up the present work, we identify the association of effectuation in contexts of four types of crises. In Table 2 we observe that seven articles addressed the financial crisis as part of their studies. Five articles addressed health crises and two articles addressed natural crises. It is possible to observe that, among the three articles published in the year 2022, all addressed the health crisis, in particular the one originating from the Covid-19 pandemic. Among the three articles analyzed in the year 2021, two refer to the Covid-19 pandemic. There was no mention in the publications of political, technological and organizational crises.

Table 2
Title of articles by type of crisis

<i>Article</i>	<i>crisis context</i>	<i>Authors</i>	<i>Year</i>
<i>A dynamic model of growth phases and survival in international business-to-business new ventures: The moderating effect of decision-making logic</i>	<i>Financial crisis</i>	Gabrielsson & Gabrielsson	2013
<i>Entrepreneurship as re-sourcing: Towards a new image of entrepreneurship in a time of financial, economic and socio-spatial crisis</i>	<i>Financial crisis</i>	Korsgaard et al .	2016
<i>Logics and rationalizations underpinning entrepreneurial decision-making</i>	<i>Financial crisis</i>	Vershinina et al .	2017
<i>Expect the unexpected: examining the shaping role of entrepreneurial orientation on causal and effectual decision-making logic during economic crisis</i>	<i>Financial crisis</i>	Laskovaia et al .	2019
<i>Logic of an Effectuating Hyperlocal: Entrepreneurial processes and passions of online news start-ups</i>	<i>Financial crisis</i>	Tenor	2019
<i>Effectuations, social bricolage and causation in the response to a natural disaster</i>	<i>Natural crisis</i>	Nelson & Lima	2020
<i>Navigating the emerging market context: Performance implications of effectuation and causation for small and medium enterprises during adverse economic conditions in Russia</i>	<i>Financial crisis</i>	Shirokova et al .	2020
<i>Understanding informal volunteer behavior for fast and resilient disaster recovery: an application of entrepreneurial effectuation theory</i>	<i>Natural crisis</i>	Monllor et al .	2020
<i>Effectuation and causation configurations for business model innovation: Addressing COVID-19 in the gastronomy industry</i>	<i>Health crisis</i>	Harms et al .	2021
<i>Facilitating entrepreneurship in the failing Cuban economic model?</i>	<i>Financial crisis</i>	Felzensztein & Gimmon	2021
<i>“Dodging the bullet”: are effective managers better off in a crisis? A case of Ghanaian agricultural SMEs</i>	<i>Health crisis</i>	Aggrey et al .	2021
<i>Ecosystem effectuation: creating new value through open innovation during a pandemic</i>	<i>Health crisis</i>	Radziwon et al .	2022
<i>The effect of effectuation and causation approach on entrepreneurial orientation in the presence of leader dominance and self-efficacy</i>	<i>Health crisis</i>	Jun et al .	2022
<i>Crisis and arbitrage opportunities: The role of causation, effectuation and entrepreneurial learning</i>	<i>Health crisis</i>	Khurana et al .	2022

Source: Elaborated by the authors (2023).

As the subject of effectuation in crisis situations has not yet been deeply explored by the academy, it was expected in this analysis that the qualitative approach would be presented as the main research method of the publications – which is confirmed when analyzing Table 3. In it, it is possible to verify that most of the articles (57.14%) used the qualitative approach as a research method. By using this method, the researchers studied the phenomenon from the perspective of the interviewees. It is thus evident that the theme, effectuation in crisis contexts,

is still little explored, thus requiring a better understanding of the phenomenon. Quantitative articles add up to 35.71%, and only one article (7.14%) used the mixed method.

Table 3

Articles by research methods and journals

<i>Article</i>	<i>Method</i>	<i>Journal</i>
<i>A dynamic model of growth phases and survival in international business-to-business new ventures: The moderating effect of decision-making logic</i>	Qualitative	<i>Industrial Marketing Management</i>
<i>Entrepreneurship as re-sourcing: Towards a new image of entrepreneurship in a time of financial, economic and socio-spatial crisis</i>	Qualitative	<i>Journal of Enterprising Communities</i>
<i>Logics and rationalizations underpinning entrepreneurial decision-making</i>	Qualitative	<i>Strategic Entrepreneurship Journal</i>
<i>Expect the unexpected: examining the shaping role of entrepreneurial orientation on causal and effectual decision-making logic during economic crisis</i>	Quantitative	<i>Entrepreneurship and Regional Development</i>
<i>Logic of an Effectuating Hyperlocal: Entrepreneurial processes and passions of online news start-ups</i>	Qualitative	<i>Journal of Small Business and Enterprise Development</i>
<i>Effectuations, social bricolage and causation in the response to a natural disaster</i>	Qualitative	<i>Small Business Economics</i>
<i>Navigating the emerging market context: Performance implications of effectuation and causation for small and medium enterprises during adverse economic conditions in Russia</i>	Quantitative	<i>Strategic Entrepreneurship Journal</i>
<i>Understanding informal volunteer behavior for fast and resilient disaster recovery: an application of entrepreneurial effectuation theory</i>	Qualitative	<i>Disaster Prevention and Management</i>
<i>Effectuation and causation configurations for business model innovation: Addressing COVID-19 in the gastronomy industry</i>	Quantitative	<i>International Journal of Hospitality Management</i>
<i>Facilitating entrepreneurship in the failing Cuban economic model?</i>	Mixed	<i>Journal of Entrepreneurship in Emerging Economies</i>
<i>“Dodging the bullet”: are effective managers better off in a crisis? A case of Ghanaian agricultural SMEs</i>	Quantitative	<i>Journal of Enterprising Communities</i>
<i>Ecosystem effectuation: creating new value through open innovation during a pandemic</i>	Qualitative	<i>R&D Management</i>
<i>The effect of effectuation and causation approach on entrepreneurial orientation in the presence of leader dominance and self-efficacy</i>	Quantitative	<i>Journal of Entrepreneurship in Emerging Economies</i>
<i>Crisis and arbitrage opportunities: The role of causation, effectuation and entrepreneurial learning</i>	Qualitative	<i>International Small Business Journal: Researching Entrepreneurship</i>

Source: Prepared by the authors (2023).

5 Discussion

In order to better structure the discussion of the findings, we categorized the topics according to the principles of effectuation. When conducting a series of surveys with entrepreneurs, Dew *et al.* (2009) identified a series of peculiarities observing these entrepreneurs from the perspective of effectuation. These particularities were defined as the principles of effectuation, which are: bird-in-hand, pilot in the plane, affordable loss, crazy quilt and lemonade. The principles of effectuation were identified in the articles studied and served as tools for entrepreneurs to overcome crises.

The crazy-quilt principle aims at building partnerships and the participation of stakeholders even before clarifying exactly what the product markets and other goals for the enterprise will be (Dew *et al.* , 2009). This principle and the use of stakeholders were observed in the articles by Tenor, (2019) and Nelson and Lima, (2020) and in the article by Radziwon *et al.* , (2022). In the article by Tenor (2019), the crazy quilt was used to create strategic alliances, instead of entrepreneurs carrying out competitive analyses. Entrepreneurs formed alliances, creating commitments with advertisers and partners in advance, generating security in the generation of revenue for their ventures. In the article by Nelson & Lima (2020), the crazy quilt was observed in the spontaneous connection of several actors, in order to promote a better quality of life for the members of the Córrego d'Antas community. When observing the creation of new ecosystems within the studied organization, Radziwon *et al.*, (2022) highlighted the sense of urgency found in the crazy quilt principle as the creation of new environments involved actors who are already in the organization's main ecosystem such as partners, customers or suppliers.

In the affordable loss principle, the entrepreneur is aware in advance of what he/she accepts to lose in his/her venture. During difficult times, the affordable loss principle minimizes the risk of the enterprise, sometimes the entrepreneur decides to allocate only some of his/her resources, increasing the possibility of survival of the enterprise in uncertain environments (Fisher, 2012). This principle was observed in the article by Gabrielsson & Gabrielsson (2013) in which entrepreneurs did not have clear objectives for overcoming the crisis that took place, but were based more on intuition than on calculations of return on investments. In the study by Khurana *et al.* (2022), the affordable loss was observed in the entrepreneur who closed the disinfectant bottles by hand, so as not to have to invest his capital in new equipment for the manufacture of a line of products that was considered as temporary.

The pilot in the plane principle focuses on the activities one has control over for the co-creation of the future. Entrepreneurs prefer to influence the environment to carry out their plans rather than adapting to the environment (Nelson & Lima, 2020). This principle was observed in the study by Tenor (2019) in which entrepreneurs defined the amount of hours dedicated to the venture, thus being able to direct another part of their time to other activities, generating new forms of income. In the article by Radziwon *et al.* (2022), the principle of the pilot in the plane was observed both figuratively, through the use of existing actors to do new things, and literally, since some of these resources were reused – in the example of AirAsia, they were in fact airline pilots. In the study by Nelson & Lima (2020), some actors, during the first critical days after the natural disaster, leveraged contingency and recreated new futures as central agents of their destinies and of the community impacted by the crisis.

The bird in hand principle is media-led action. Thus, the emphasis is on creating something new with existing means (Who am I? Who do I know? What do I know?) (Sarasvathy, 2009). The use of these effective means to overcome crises was observed in the articles analyzed in this SLR. For Vershinina *et al.* (2017), entrepreneurs in a crisis context seek their intuition (Who am I?) and their relationship network (Who do I know?) to seek solutions and mitigate the effects caused by the crisis. In another research, through a single case study of a low-cost airline, it was possible to observe the use of effectual means during the crisis caused by Covid-19 to reach new objectives and markets (Radziwon *et al.*, 2022). The use of effectual means to create new markets in a crisis environment was also observed in the article by Khurana *et al.* (2022) in which eight North American distilleries temporarily changed their markets, launching a new line of disinfectants with the raw material that were used in the manufacture of alcoholic beverages.

However, effectual means are not always available in all crisis contexts, or when they are available, they may not be used as observed by Nelson & Lima (2020) in their research on the natural disaster that occurred in 2011 in the neighborhood of Córrego d'Antas in the state of Rio de Janeiro. In a pre-crisis environment, in which causation and effectuation were present, in the immediate phase following the natural disaster, individuals, even having the means to act to combat the crisis did not use them (diseffectuation) among other reasons because they were frozen under the psychological impact of the disaster.

Applying the lemonade principle, the entrepreneur recognizes and takes ownership of the contingency, taking advantage of bad surprises instead of trying to avoid them, overcome them or adapt to them (Sarasvathy, 2009). For Radziwon *et al.* (2022), the actors, when faced

with the Covid-19 pandemic, developed an ecosystem of transformation and innovation within the organization. What was initially a survival plan turned into a recovery plan as the company prepared for the “new normal”. According to Nelson & Lima, (2020), in the face of a disaster, the rupture of a pre-established environment and the advent of suffering in the event of a disaster are widely publicized, stimulating pro-social feelings and a sense of urgency that involves the population, generating voluntary contributions and creating opportunities for new actions bringing improvements – that can go even beyond the pre-crisis conditions. In the study by Khurana *et al.* (2022), while facing the crisis caused by the Covid-19 pandemic, the emergence of new opportunities was observed, directing entrepreneurs to change the focus of manufacturing their products, temporarily putting aside the manufacture of distillates to successfully focus on the production of disinfectants. Thus, the recognition and development of new business opportunities arising from a crisis became evident.

6 Conclusion

Effectuation has fruitful application in crisis contexts with entrepreneurs using the effectual means at their disposal to manage contingencies and overcome difficulties. This way, to understand how publications associate effectuation with crisis contexts, we used the following research question: How do entrepreneurs use effectuation to undertake and overcome difficulties in crisis situations?

To answer this research question, a SLR was carried out as an approach recommended when one intends to delve deeper into the subject in existing publications, such as in helping to build new networks of thoughts and concepts on the subject. We used the *Scopus* and *Web of Science* databases selecting 14 articles for in depth consideration. The analysis showed a clear advance in the publications about the subject. It was also identified that most articles (57.14%) used the qualitative method as a methodological approach. In the articles studied, the use of effectuation and causation was observed in the same environment and at the same time, indicating that in crisis contexts entrepreneurs can also use available effectual means to achieve a previously defined objective.

Finally, due to the reduced number of articles located in the chosen databases and because it is still a recent research subject in the academy, as a proposal for future studies, it is suggested to carry out a new review including other databases and conference proceedings in order to increase the number of publications on the topic to serve as a basis for new research.

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AUTHORS' CONTRIBUTIONS

Contribution	Bosatto, F. S.	Lima, E.
Contextualization	X	X
Methodology	X	X
Software	X	X
Validation	X	X
Formal analysis	X	X
Investigation	X	X
Resources	X	X
Data curation	X	----
Original	X	X
Revision and editing	X	X
Viewing	X	X
Supervision	-----	X
Project management	-----	X
Obtaining funding	-----	-----

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