

ORGANISATIONAL LEARNING IN CRISIS: A SYSTEMATIC REVIEW OF THE LITERATURE

André Rodrigues, Georgios Kominis, Alvis Favotto, Adina Dudau

Adam Smith Business School, University of Glasgow

ABSTRACT

The importance of learning for an organisation's capacity to handle crises is well documented, but the processes employed by organisations to this aim remain obscure. Our research employs a systematic literature review to synthesise the confounding evidence available on organisational learning taking place in a context of crisis. Our aim is to bring forth the dialogue on this important topic, map the existing empirical work, evaluate the current state of the literature, and propose avenues for future research, as well as contribute to the methodological advancement of systematic literature reviews in management and organisational studies.

I. INTRODUCTION

Research in organisational learning is an established field of study (Easterby-Smith et al., 2000) that has gained momentum in recent years (Bunderson and Reagans, 2011). By definition, crises require organisations to engage in challenging scenarios, which inevitably expose hidden weaknesses and strengths as well as collective organisational capabilities (Lampel et al., 2009). Crisis events are often indicative of the efficacy of the process of learning within an organisation and its capacity to face the disruption caused by the crisis and learn from it (Orth and Schuldis, 2021), so it is important to study the underlying processes that are adopted in this context, and how, through organisational learning, an organisation can enhance its to manage the current crisis

effectively and be prepared for the next.

In this study, we adopt the definition of crisis proposed by Pearson and Clair (1998), who affirm that "an organizational crisis is 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" (p. 60). On its turn, and in order to ensure the reader has an introductory definition of the concepts approached on this paper, organisational learning has been characterised by Argyris (1989) as the "detection and correction of an error" (p. 6) occurring at the organisational level, noting that "an error is any mismatch between our intentions and what actually happens" (p. 6).

The subject of "organisational learning in crisis" is often portrayed in the literature as a fragmented area of knowledge (Elliott and Macpherson, 2010). As Broekema (2017) points out, "so far no generally accepted definition or framework has been developed" (p. 327), and it is "defined and measured in many different ways" (p. 327). These are fair critiques considering the volume of dispersed literature and the fact that there is no dominant theoretical framework or a standardized body of knowledge.

There are very few systematic literature reviews that address learning and crisis. We identified six SLRs that address the topics of learning and crisis. Four of them are focused on the management of crises and approach learning in different extents. Nevertheless, they are focused on niche areas that do not allow for extrapolation to an organisational setting. In case, Salamzadeh and Dana (2022) appoint learning as a recommendation during and after crisis in their review of the literature referring to the management of crisis by small and medium-sized enterprises, Baetzner and colleagues (2022) have performed their SLR on the preparation of medical first responders for crises, Haskell and colleagues (2021) focus their review on social innovation related to ecological

crises, and finally Nohrstedt and colleagues (2018) have studied the collaborative management of crisis, which by default would constraint all other types of approaches to the management of a crisis.

The other two SLRs have a very similar object to the one we intend to research, though their perspective is not as comprehensive. Sætren and colleagues (2024) have performed a SLR on what and how to train for strategic crisis management, therefore approaching the phenomena in a pre-crisis standpoint. Finally, Brzozowski and Cucculelli (2016) have followed a SLR methodology on the topic of learning from crisis, therefore also considering the perspective of learning as a result of a crisis event. Furthermore, we consider that the methodological rigour of the SLR is not satisfactory.

Considering this, we argue that no attempt has been made to date to consolidate the accumulated research in this field in the same extent, comprehensiveness and rigour as this SLR. Such consolidation is key, as it "is a critical first step in priming the pump so that accumulated knowledge is made available for interpretation and use" (Rousseau et al., 2008, p. 507). Thus, it is imperative to consolidate and synthetize the existing research to create a coherent understanding that can advance both theoretical and practical applications in the field.

II. METHODOLOGY

Systematic literature reviews (SLRs) are typically endowed with high levels of reliability that enhances the credibility of the findings and the validity of conclusions. Abiding to the principles of PRISMA-P, the protocol of this SLR, detailing the methodological and analytical approach of the review (Shamseer et al., 2015, p. 3), has been pre-registered and is publicly accessible online (<https://osf.io/d79fy>) to enhance the study's transparency and accountability. Following Tranfield

et al. (2003) and Macpherson and Jones (2010), minor modifications to the protocol, specifically designed to address the particularities of management research, were made to ensure its relevance and applicability to the specific research context.

This SLR follows faithfully the seminal framework proposed by Denyer and Tranfield (2009) (also followed by Adams et al., 2016; Nolan and Garavan, 2016; Zahoor et al., 2020; Rojon et al., 2021), while also taking note of the suggestions made by Macpherson and Jones (2010) and later subscribed to by Jones and Gatrell (2014). It is therefore operationalised in line with the five-step process outlined by Denyer and Tranfield (2009), arguably the most rigorous strategy for conducting a SLR.

a. Question Formulation

This study aims to systematically review the literature regarding the understanding of how organisations learn with and adapt in the context of a crisis. To specify the domain of our SLR and the research question it will address, we have first performed a non-systematic review (Rojon et al., 2021), also called a scoping review (Denyer and Tranfield, 2009), of the topics of organisational learning, crisis management, and especially that of organisational learning in contexts of crisis. Scoping reviews allow researchers to "assess the relevance and size of the literature and to delimit the subject area or topic" (Tranfield et al., 2003), as well as to "make clear the existing basis for the researcher's work and specify where and how the proposed systematic review fits into the current body of knowledge" (Denyer and Tranfield, 2009, p. 683). Deriving from this scoping review, and in line with Denyer et al' (2008), the CIMO logic (Context, Intervention, Mechanism, and Outcome) was followed to establish our research problem and the associated review questions. The overarching question this research therefore aims to address may

be posed as: How do organisations in the context of crises (C) learn and adapt (I) through mechanisms of organisational learning (M) in order to successfully manage these crises and enhance its capacity of managing crises in the future (O)?

Furthermore, the specific review questions (Thomas et al., 2019) that this SLR addresses are:

- i. What are the main theoretical frameworks that contribute to the empirical literature on organisational learning in crises?
- ii. What are the mechanisms through which organisations learn in the context of a crisis event?
- iii. What are the conditions that enhance the capacity of an organisation to learn and adapt in the context of a crisis?

b. Locating Studies

A critical factor for the success of an SLR is to locate "as much as possible of the research relevant to the particular review question(s)" (Denyer et al., 2008).

The general recommendation to not rely exclusively on a single database, as this may inhibit the detection of the totality of articles relevant to the study (Bramer et al., 2017) was followed. Thus, a search was performed on the Web of Science, as it is "one of the most comprehensive databases of peer-reviewed journals in the social sciences" (Crossan and Apaydin, 2010, p. 1157), and on Scopus, generally regarded as "the largest abstract and citation database covering peer-reviewed literature" (Foss and Saebi, 2017, p. 23). In addition, to ensure that all relevant studies would be included in the review, the search through databases was complemented by manual searches on specialised publications and tracking citations (cf. Rashman et al., 2009; Nijmeijer et al., 2014; Adams et al., 2017; Nofal et al., 2018; Calabrò et al., 2019; Rojon et al., 2021).

This allowed the integration of not only additional journal articles but also scholarly book chapters, as these often offer "valuable scholarly work" (Fan et al., 2021, 495), and should be considered as validated knowledge (Klang et al., 2014). Furthermore, we limited our sources to to peer-reviewed journals as these tend to have high impacts in the field and have an associated rigorous review process (Rafi-Ul-Shan et al., 2018) and, by definition, a higher quality-control framework (Calabrò et al., 2019). We also opted to not include in this review "grey literature", considering this is not subjected to the same level of rigour in terms of peer-review processes (Rojon et al., 2021).

Following Tranfield et al. (2003), the next step involved the identification of the most suitable keywords and search terms, which specify the domain and limits of the review. This is key as some terms may have multiple meanings (Crossan and Apaydin, 2010), while often different terms are used to refer to the same concept (Köbis et al., 2021). To avoid any such ambiguities, a systematic keyword identification process was applied to the literature on "learning", and "crisis", in order to assess which keywords are typically used and therefore should be included in our SLR. This process resulted in a variety of key terms, including "rare events" (Christianson et al., 2009; Rerup, 2009; Maslach et al., 2018; Labib et al., 2019; Lee et al., 2020), "failure" (Baum and Dahlin, 2007), "serious errors" (Haunschild et al., 2015), "chaos" (Mintzberg, 2001), "disaster" (Elliott and Smith, 2006; Madsen, 2009; Beck and Plowman, 2014; Oetzel and Oh, 2014; Broekema, 2016; Hunt et al., 2020), "extreme events" (Zhang et al., 2018), "critical incident" (Neal et al., 2006), and "catastrophe" (Park et al., 2013), all used in the literature to describe events associated with the typology of disruption that is generically associated with a crisis. Furthermore, no limits were applied to the date of publication in our literature search, as this could lead to the unwanted exclusion of important studies (Rojon et al., 2021).

These searches resulted in a total of 6401 publications (3108 from Scopus and 3293 from Web of Science), 1139 of which were duplicated and therefore excluded, resulting in a total 5262 publications for the subsequent analysis.

c. Study selection and evaluation

In this study, we have included only articles covering empirical studies, of quantitative, qualitative, or mixed research nature (cf. Sweeney et al., 2019) dealing primarily with organisational learning in the context of crisis, as these are deemed as appropriate to establish scientific knowledge in a field (Jesson et al., 2011). Following previous established practice (Boiral et al., 2018; Nijmeijer et al., 2014; Sweeney et al., 2019; Köbis et al., 2021), articles of a theoretical or conceptual nature, or systematic reviews, meta-analysis and editorial publications were excluded from the review. Following Nijmeijer et al. (2014), Foss and Saebi (2017), Boiral et al. (2018), Dinh and Calabrò (2019) and Fan et al. (2021), only articles written in English have been accepted, as this is the *lingua franca* of scientific literature.

Upon extraction of the articles identified in the database search, all articles were scanned for relevancy (Tranfield et al., 2003; López and Hiebl, 2015; Ueberbacher, 2014), so that only publications with a substantive relevance to the research are included for further analysis (cf. Lane et al., 2006; Newbert, 2007; Klang et al., 2014). All in all, the inclusion and exclusion criteria used for the selection of articles in the review are summarised in Table 1.

<u>Inclusion criteria</u>	<u>Exclusion criteria</u>
Empirical studies	Conceptual studies, systematic reviews, meta-analysis and editorial publications
Peer-reviewed articles and scholarly books,	Publications that could not be accessed by any

written in English language	means at the disposal of the authors
Publications conducted through qualitative, quantitative or mixed research approaches, which clearly state its contribution to the phenomena being studied	Publications dealing strictly with the phenomena of financial crisis, as these constitute an entirely different phenomenon than the one we are interested in
Publications centred on the phenomena of learning at the organisational level	Publications dealing with learning at a level that is not specifically "organisations"
Publications that frame the phenomena of learning clearly considering a context of crisis	Publications dealing with organisational learning without clearly describing the implicit mechanisms of the learning phenomena
The phenomenon of the crisis being researched must be characterised by one of the keywords previously identified, and in line with the definition of crisis provided	

Table 1 - Inclusion and exclusion criteria

A preliminary screening to assess if the articles selected related to the topic being researched (cf. Köbis et al., 2021) was conducted by one of the authors, thereby eliminating all articles that did not meet the defined inclusion criteria (cf. Nijmeijer et al., 2014). 4901 publications were excluded on the basis of not associated with the objectives of this SLR, while 361 publications were selected for further analysis.

A fundamental tenet of a SLR is the relentless pursuit of bias reduction throughout the review process. To control for such bias, all remaining steps of the review were conducted independently by at least two authors. This procedure essentially served as a safeguard against potential biases, minimising the likelihood of relevant publications being overlooked or inadvertently excluded (cf. Edwards et al., 2002). Any conflicts between the reviewing authors' classification were thoroughly discussed between all authors, and inclusion or exclusion decisions were made only after

unanimous agreement by all authors.¹ As a result of this process, from the initial pool of 361 publications, 156 were excluded from this SLR, leaving us with a refined corpus of 205 publications for further analysis.

Subsequent to the preliminary screening, the full text of each publication was screened thoroughly by two independent authors against established inclusion and exclusion criteria. This process ensured that only those publications exhibiting the required relevance and overall quality were selected for inclusion in the SLR (cf. Menghwar and Daood, 2021).

The analysis of the full text of the 205 publications resulted in the exclusion of further 163 publications, for the following reasons:

- i. In 71 cases, the publication were not empirical studies, but rather conceptual studies, systematic reviews, meta-analysis, editorial publications, or others that were not conducted through qualitative, quantitative or mixed research approaches;
- ii. In 60 cases, the publications are not dealing with the phenomena of "crisis" in accordance with the terms of this SLR, either because they were not characterised by one of the keywords previously defined, not in line with the definition of crisis predefined, or because they referred to financial crisis, which have been specifically excluded from the scope of this SLR;
- iii. In 25 cases, the publications are not approaching organisational learning in accordance with the conceptual definition adopted in this SLR, either because the learning phenomena are not

¹ Additionally, to quantify the degree of consensus among authors regarding the selection of studies, we have estimated the Cohen's Kappa (Cohen, 1960) for both the title and abstract screening, as well as the full-text screening processes. Deemed an optimal metric for evaluating the reliability of judgements from different observers assessing the same object (Hayes and Hatch, 1999), Cohen's Kappa serves as a "robust and relatively conservative measure of inter-rater reliability" (Lyngdoh et al., 2021, p. 520). This rigorous approach ensures the validity of our selection process, strengthening the integrity and reliability of our systematic review. The inter-rater agreement for this selection process, quantified through the Cohen's Kappa coefficient, was estimated at 0.63. This value falls within the range classified as "substantial" according to the strength of agreement classification proposed by Landis and Koch (1977). This denotes a robust level of consensus among the evaluators during the evaluation process, thereby underlining its methodological reliability.

being captured at the organisational level, because the learning phenomena are not being captured in a clear context of crisis, or because the organisational learning phenomena are not being described with the required extent; and

- iv. In 7 cases, the full text of the publication could not be accessed by any means at the disposal of the authors.

All disagreements regarding inclusion or exclusion decisions were discussed and resolved in a dedicated meeting attended by all authors.²

Following the described full-text review, the authors implemented a process of hand-searching and citation tracking (Rashman et al., 2009; Adams et al., 2016; Calabrò et al., 2019; Sweeney et al., 2019), to ensure that no relevant publication not captured by the database search had been erroneously excluded from the SLR. All publications identified through this process were subjected to the same stringent inclusion and exclusion criteria applied during the initial screening. This search yielded an additional 190 publications, none of which were deemed suitable for inclusion in the SLR.

In the final phase of this selection and evaluation process, we embarked on a meticulous review of all 42 included publications. The intent was to extract data pertinent to the SLR and to evaluate each study for its general quality as a scientific publication. Quality is defined in this context as "the appraisal of a study's internal validity and the degree to which its design, conduct and analysis have minimized biases or errors" (Tranfield et al., 2003, p. 215).

This aforementioned systematic literature review process is graphically depicted in the PRISMA 2020 flow diagram (adapted from Page et al., 2021b), in Figure 1 below.

² The Cohen's Kappa coefficient for the full-text review process was estimated as 0.66. As per the guidelines set by Landis and Koch (1977), this indicates a "substantial" degree of consensus among the authors.

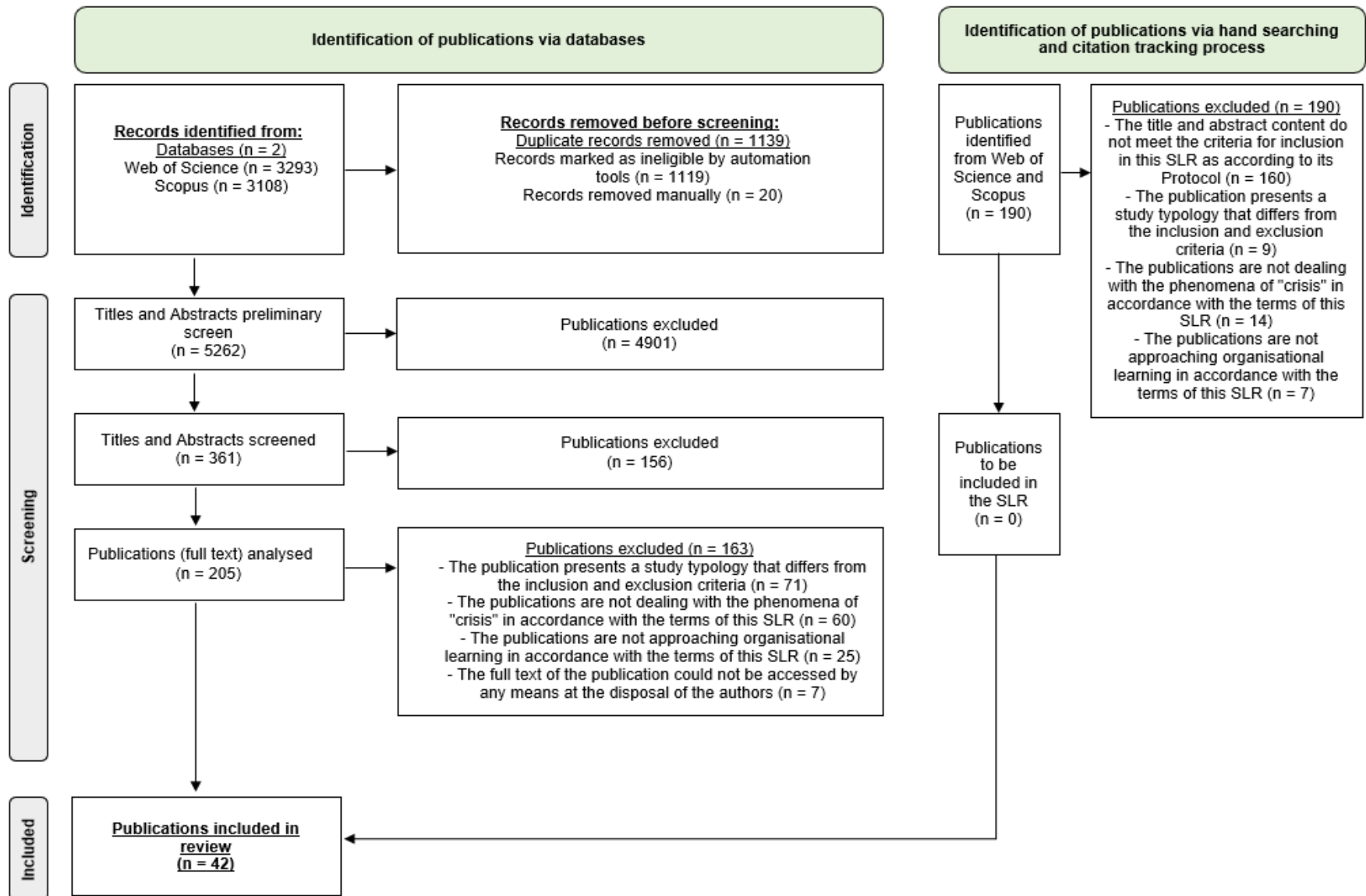


Figure 1 - PRISMA 2020 flow diagram (Page et al., 2021)

IV. DESCRIPTIVE ANALYSIS

All the 42 publications were analytically read and categorised according to the script proposed by Sweeney et al. (2019). Minor modifications to this script were made to adapt it to the needs of our specific review questions. The resultant classification scheme incorporated the identification of the year of publication, author(s), purpose of the study, terms and definitions of relevancy for the SLR, theoretical frameworks, research design and measurement instruments, mechanisms of learning addressed, conditions that enhance learning, mechanisms of adaptation and their effect in organisation capacity, context and sample, audience, as well as key findings (in addition to any already described in the previous categories).

Furthermore, a thorough quality assessment has been performed to all reviewed publications, in which we used the quality criteria defined by Pittaway et al. (2004), slightly adapted to be consistent with the methodology used in this review. The publications' quality was assessed with regards to its elements of theory robustness, implication for practice, methodology and data supporting arguments, generalisability, and contribution to knowledge. These elements were assessed using a four-point scale ranging between "Absent" (0) and "High" (3). Consistent with prior literature (Nag et al., 2007; Keupp et al., 2012), only the articles that obtained a minimum score of "Medium" (2) in all quality categories were included in the SLR. Every publication was analytically reviewed and categorised (cf. Sweeney et al., 2019), as well as evaluated according to its quality (cf. Pittaway et al., 2004) by one author. Unanimous approval of all authors has been required to validate the final categorisation and assessment of all publications.

Out of 42 publications, 5 did not meet such a threshold and were therefore excluded at this stage of our SRL. Consequently, we derived a final set of 37 publications that were subject to in depth analysis, consisting of data extraction, thematic analysis and narrative synthesis.

After thorough analysis of these 37 publications, we have obtained relevant data on how organisations can leverage on organisational learning for successful crisis management and the resulting enhancement of their capacity to do so.

Data extracted from the included publications has been synthesised through a process of findings clustering (cf. Klang et al., 2014; Nijmeijer et al., 2014; Zahoor et al., 2020; Köbis et al., 2021; Menghwar and Daood, 2021), followed by narrative synthesis (Nijmeijer et al., 2014; Zahoor et al., 2020). This synthesis includes the thematic aggregation of the analysed content (cf. Boiral et al., 2018; Hanelt et al., 2020), encompassing theories and methodologies (Nijmeijer et al., 2014).

The thematic analysis, commonly recognised in management and organisational studies for its propensity to encourage theoretical development (Rojon et al., 2021), has been conducted with the support of the NVivo software (cf. Pittaway et al., 2004; Thorpe et al., 2005; Adams et al., 2016).

The final pool of publications deemed pertinent to our study and therefore included in this SLR can be descriptively characterised in the following manner:

- Total count of eligible publications: 37;
- Temporal scope: spanning from 2004 and 2021;
- Publications published in:

Source	Publications
Journal of Contingencies and Crisis Management	3
Learning Organization	3
Organization Science	3
Disaster Prevention and Management	2
Journal of Public Administration Research and Theory	2
Long Range Planning	2
Tourism Management	2
Group & Organization Management	1
Industrial Management & Data Systems	1

Industry and Innovation	1
International Journal of Disaster Risk Science	1
International Journal of Organization Theory and Behavior	1
International Journal of Public Sector Performance Management	1
International Review of Public Administration	1
Journal of Business Research	1
Journal of Homeland Security and Emergency Management	1
Journal of Hospitality and Tourism Management	1
Journal of Risk Research	1
Journal of Sustainable Tourism	1
Journal of Travel and Tourism Marketing	1
Knowledge and Process Management	1
Management Learning	1
Policy Studies	1
Public Management Review	1
Risk Hazards & Crisis in Public Policy	1
SAGE Open	1
Strategic Management Journal	1

Table 4 - Distribution of publications included in the SLR by journal

With regards to the research design of the 37 publications, the body of research presented is quite diverse, with a clear preference for certain research methods and designs. The dominant research design of these 37 publications is deductive ($n = 23$), and the rest is inductive ($n = 14$), coupled with either quantitative ($n = 10$), or qualitative ($n = 27$) methods. With regards to its time span, part of the publications is longitudinal ($n = 5$), but most of them are cross-sectional ($n = 32$). Also, most of them are exploratory ($n = 28$), while others are descriptive ($n = 5$) or causal ($n = 4$) in nature.

Concerning the audience of the considered publications, over 85% of the papers engage with both academic and professional audiences, suggesting an integration of theory and practice, while the remaining papers engage with an academic audience, constituting about 15% of the collection.

V. RESULTS

i. Unpacking the concepts

By delving into the main theoretical frameworks explored in the literature, we seek to provide a clearer and more comprehensive understanding of how organizations adapt and evolve amidst challenging circumstances. The key frameworks under consideration are:

a) Crisis

The term ‘crisis’ “originates from the Greek word *krisis*, which means differentiation or decision” (Ghaderi et al., 2014, pp. 630-631), and in an organisational context it is conceptualised as having the following key elements (Anderson, 2006, p. 1291): (i) “a triggering event, which is so significant that it challenges the existing structure, routine operations or survival of the organization”; (ii) “high threat, short decision time and an element of surprise and urgency”; (iii); “a perception of an inability to cope among those directly affected”; (iv) “a turning point, when decisive change, which may have both positive and negative connotation, is imminent”; and (v) “characterised by 'fluid, unstable, dynamic' situations”.

The events that fall in the categorisation of ‘crises’ are characterised in the literature as being “highly unique and unpredictable situations” (Broekema et al., 2017, p. 326), “largely defined in terms of their low probability of occurrence, high impact, and ambiguity” (Herbane, 2014, p. 2), of a large scale (Min, 2019), with “severe consequences for individuals, organizations and society” (Haneberg, 2020, p. 140), requiring them to take decisions in adverse contexts (Schiffino et al., 2017), undermining the organisational stakeholders “basic assumptions about the system within which they work” (Carmeli and Schaubroeck, 2008, p. 179).

b) Organisational Learning

The concept of organisational learning encompasses “both the institutionalization of knowledge into the collective organizational know how, and the encoding of knowledge into the organizational doctrine or mission” (Keyes and Benavides, 2018, p. 229)., This is seen to be “more than the sum of individual learning within organizations”, a process that “requires lesson-drawing and knowledge dissemination to become embedded throughout the organization” (Deverell and Olsson, 2009, p. 3), which is “generally recognized as a useful way to study the dynamic relation between information and knowledge, on the one hand, and organizational action and change, on the other” (Dekker and Hansen, 2004, p. 131). The concept of organisational learning also appears to refer to “processes of making and updating routines in response to organizational experiences” (Min, 2019, p. 228), systematic in nature (Orth and Schuldis, 2021), with effects on “beliefs, ideas, culture, policies, knowledge, procedures, routines, structures, protocols, legislation and behaviour” (Broekema et al., 2017, p. 328), and aiming to result in “a decrease in the likelihood that an organisation will experience a disaster in the future” (Madsen, 2009, p. 862).

This conceptual definition serves as the theoretical building block upon which other theories and empirical studies are built, including those of learning culture (Moynihan, 2009), interorganisational learning (Haneberg, 2020), multi-level learning (Zhou et al., 2018), knowledge management (Wang, 2009) and knowledge creation (Qadri et al., 2021), all of which emphasise the importance of understanding how organisations learn and adapt during crises.

c) Other theoretical frameworks

Nyman (2019), drawing on research by Gerlak and Heikkila (2011) and Heikkila and Gerlak (2013), introduces us to the collective learning framework (CLF), which suggests that

organisational learning "is part of social learning theory with an emphasis on building organisational memory based on the experiences of individuals both tacit and explicit knowledge, interacting in a team or group" (Nyman, 2019, p. 334). Furthermore, he emphasises that this definition has strong links to the learning loops framework proposed by Argyris and Schön (1978).

Elliott and Macpherson (2010) link organisational learning and crisis management by discussing the role of recursive learning in the context of crisis management. Recursive learning transforms the acquired knowledge into social practices, informed by institutional norms, landscape, and by the utilisation of tools and technologies. This type of learning involves the creation of artefacts symbolising the learning that has taken place, thereby forming a network of connections and exchanges that firmly affect the progression and resolution of events (Elliott and Macpherson, 2010).

On its turn, Deverell posits that "managerial abilities to process information and make reasoned choices are reduced during crises due to analogical reasoning" (2010, p. 685). This constraint in managerial decision making (and, by extension, in the organisation's capacity to learn), is explained through the lens of the threat rigidity hypothesis, which suggests that the conditions of a crisis event make it much more difficult, at least, to experience learning during the crisis (Elliott and Macpherson, 2010).

Another recurring theoretical lens in the literature is 'risk management', which in this context can be defined as "a systematic application of management practices to identifying, analysing, treating, and monitoring uncertainties to better advise crisis management" (Wang, 2009, p. 446). This emphasises the importance of perceiving (Zhang et al., 2018), identifying, assessing, and mitigating the inherent uncertainties and potential hazards that come with crises (Nyman, 2019; Oetzel and Oh, 2021).

This theoretical lens interrelates with the idea of resilience (Rochet, 2007; Elliott and Macpherson, 2010; Nyman, 2019; Bhaskara and Filimonau, 2021; Mithani et al., 2021; Orth and Schuldis, 2021), defined by Mithani, Gopalakrishnan and Santoro as “the ability of a system to retain or return to its normal position after an externally induced shock that threatens its survival” (2021, p. 2). Orth and Schuldis discuss resilience as the “ability to anticipate and absorb external disruptions, learn from them and adapt for future challenges, while still pursuing their core objectives” (2021, 509). Rochet suggests that resilience is “the amount of disruption needed to transform a system from one stable state to another system that will be more complex and stable with a better ability to deal with the issues of its environment” (2007, p. 9) echoing that organisations must cultivate their resiliency to navigate crises effectively (Elliott and Macpherson, 2010).

ii. Decoding the mechanisms

In the academic dialogue on organisational learning during crisis situations, several salient learning mechanisms are repeatedly emphasised. This synthesis brings these perspectives together and explore the similarities and unique insights these may offer.

A crucial phase in navigating a crisis is the process of sensemaking, which can be compared to a "battle over interpretation" due to the possibility of the existence of conflicting interests among different organisations and stakeholders in defining the crisis. Conversely, this sensemaking process could potentially act as an obstacle to efficient crisis management, particularly as it may become a platform for competing interests (Mueller-Seitz and Macpherson, 2014).

In terms of the level as which learning occurs, the literature refers to the fact that organisational learning may occur at three different levels: individual, group and organisational

(Zhou et al., 2018). Considering this composition of learning levels, Ghaderi, Mat Som and Wang argue that “some definitions emphasize individual learning in organizations, others argue that organizational learning is more than individual learning despite the recognition of individuals as active agents” (2014, p. p.628), highlighting the important role of individual learning in the context of organisational learning and the fact that such learning post-crisis is a continuous process that goes beyond the crisis event itself (Broekema et al., 2017). With regards to the first, “individual learning happens among specific employees”, while “group learning takes place across employee groups and/or clusters”, and, in its turn, organisational learning “occurs at an aggregate level of company's leadership” (Bhaskara and Filimonau, 2021, p. 366).

Another theme that is frequently mentioned in the literature is the timespan of learning. Understanding how organisations learn in crises also requires considering the temporal dimensions of learning. In terms of the temporal aspects of learning from crisis, we distinguish between ‘intra-crisis’ and ‘inter-crisis learning’. While the first implies real-time learning by crisis management actors, the latter involves insights from previous crises to inform present crisis management scenarios (Mueller-Seitz and Macpherson, 2014; Lee et al., 2020).

‘Inter-crisis learning’ has a richer information corpus, largely because it is less challenging to document than intra-crisis learning and it is recognised in the literature as being of significant importance (Madsen, 2009; Chebbi and Pündrich, 2015; Schiffino et al., 2017; Currie-Mueller, 2018; Oetzel and Oh, 2021).

Also, the literature is quite consensual in underlining the important of vicarious learning, i.e., learning through the experiences of others (Madsen, 2009; Currie-Mueller, 2018; Min, 2019; Betten et al., 2021; Oetzel and Oh, 2021). This occurs through two major mechanisms. The first mechanism is observation: learning originates from the observing and making sense of how an

event affected a peer. The second mechanism is networking: learning originates from transfers of knowledge between networking partners (Min, 2019). For example, Min discusses learning ‘spillover’, a particular type of learning from networking that occurs when “the knowledge from one firm's experiences can spill over to other firms through interfirm interactions” (2019, p. 228).

Another topic that emerges from the literature is the role of forgetting and unlearning. The potential adverse influence of forgetting on crisis management is noteworthy. Inadequate measures to solidify and preserve experiential knowledge within organisations may diminish preparedness and undermine effective response to subsequent crises (Oetzel and Oh, 2021).

The act of unlearning, which can be described as “the reversible process of intentionally discarding routines based on mental models” (Orth and Schuldis, 2021, p. 510), is instrumental in navigating crises (Ghaderi et al., 2014; Orth and Schuldis, 2021) as it facilitates the detaching of non-adequate frameworks and methodologies that may no longer hold relevance in evolving landscapes, therefore requiring “unlearning of previous beliefs primarily as a way to make room for new knowledge” (Ghaderi et al., 2014, p. 644). The role of unlearning extends beyond an isolated procedure, as it can also increase the assimilation of new insights during transformative phases. Consequently, unlearning is understood to exert broader organisational effects, such as strengthening an organisation's responsiveness to change (Oetzel and Oh, 2021).

In exploring cognitive dimensions of organizational learning, Rerup (2009) advocates for attentional triangulation, wherein three facets of attention—stability, vividness, and coherence—play a crucial role in identifying issues “that have the potential of having critical consequences for the organization” (Rerup, 2009, p. 876). Moreover, through this lens the concept of cognitive learning is emphasised, which encapsulates the evolution of an organisation's fundamental beliefs or assumptions as it assimilates new experiences (Deverell and Olsson, 2009).

Finally, the seminal work of Argyris and Schön (1974; 1978; 1996) on single, double, and triple-loop learning resonates across multiple authors' works (Carmeli and Schaubroeck, 2008; Deverell and Olsson, 2009; Moynihan, 2009; Thompson, 2012; Chekkar-Mansouri and Onnee, 2013; Ghaderi et al., 2014; Chebbi and Pündrich, 2015; Schiffino et al., 2017; Nyman, 2019; Lee et al., 2020; Bhaskara and Filimonau, 2021; Jaaron et al., 2021; Qadri et al., 2021).

The authors underline the need for organisations to move beyond single-loop learning, which is in fact “appropriate for routine, repetitive operations” and “allows organizations to do the same things better” (Moynihan, 2009, p. 189), being therefore a “simple and instrumental process”, supporting the follow-up of “theories-in-use, such as missions, rules, plans, policies or protocols” (Lee et al., 2020, p. 246). It can be described as a straightforward problem analysis framework (Jaaron et al., 2021), such as an error-and-correction process (Carmeli and Schaubroeck, 2008).

With regards to double-loop learning, the literature refers to it occurring when organisational stakeholders “test and change the basic assumptions that underpin their mission and key policies” (Moynihan, 2009, pp. 189-190). Nevertheless, it is “a more reflective process that involves questioning the legitimacy of existing theories-in-use. It focuses on assessing and updating the values and assumptions underlying extant policies in light of new situations and seeking new solutions if necessary” (Lee et al., 2020, pp. 246-247). Also, according to Jaaron, Pham and Cogonon, it requires “system-wide thinking to facilitate profound shifts in business offerings” (p. 1033) and “offers problem analysis and rectification of errors that are associated with a change in the rudimentary beliefs, boundaries, time horizon, goals, and values” (2021, p. 1037).

Triple-loop learning is the one that occurs at a more transformative layer, representing “an upheaval of organizational goals, means, values, and desires” (Nyman, 2019, p. 350)

iii. Conditioning learning and adaptation

In the realm of organizational learning, understanding the factors that facilitate effective learning in the context of a crisis is fundamental. The literature highlights several conditions, supported by empirical findings, that enhance an organization's ability to adapt. The following table summarizes these key conditions:

Categories	Conditions	Authors
Experience and knowledge management	Adopting double-loop learning practices	Moynihan (2009); Lee et al. (2020)
	Capacity to forget and unlearn unsuitable practices or protocols	Ghaderi et al. (2014); Chebbi and Pündrich (2015); Broekema et al. (2017)
	Collective perception and attitude towards crises	Herbane (2014); Zhang et al. (2018); Mithani et al. (2021)
	Establishing clear mandates for individuals to manage problems	Rochet (2007); Nyman (2019)
	Improved signal detection	Paraskevas & Altinay (2013)
	Leveraging crises as audits to identify weaknesses	Christianson et al. (2009)
	Mechanisms to formalise, codify, and share lessons	Paraskevas & Altinay (2013)
	Post-crisis knowledge maintenance	Chebbi & Pündrich (2015); Currie-Mueller (2018)
	Previous experiences with crises (with the impact-fullness of these experiences influencing preparedness)	Christianson et al. (2009); Deverell (2010); Ghaderi et al. (2014); Herbane (2014); Zhang et al. (2018); Zhou et al. (2018); Lee et al. (2020); Betten et al. (2021); Mithani et al. (2021); Oetzel and Oh (2021)
	Routines amplifying learning	Elliott & Macpherson (2010); Ghaderi et al. (2014)
Human Resources and Leadership	Shared vision concerning the management of the crisis and its aftermath	Chebbi and Pündrich (2015)
	Active preparation, engagement, and involvement of staff and leadership	Anderson (2006); Rochet (2007); Carmeli and Schaubroeck (2008); Doerfler and Baumann (2014); Schiffino et al. (2017); Nyman (2019); Betten et al. (2021); Jaaron et al. (2021)
	Continuity of key staff and leadership during crises	Bhaskara & Filimonau (2021)
	Granting staff legitimacy to take action towards managing adversities	Mueller-Seitz and Macpherson (2014); Keyes and Benavides (2018)
	Having staff with previous experience in crises	Ghaderi et al. (2014); Broekema et al. (2017); Zhang et al. (2018)
	Having staff with troubleshooting roles	Rerup (2009)
	Heightened managerial accountability and leadership capacity	Chekkar-Mansouri and Onnee (2013); Herbane (2014); Lee et al. (2020)
	Retaining and empowering leadership and staff experienced in dealing with crises	Anderson (2006); Madsen (2009); Doerfler and Baumann (2014); Schiffino et al. (2017); Zhang et al. (2018); Min (2019); Betten et al. (2021); Bhaskara and Filimonau (2021)
Organisational culture	Attention to processes, details, and interdependencies	Carmeli & Schaubroeck (2008)
	Capacity to communicate effectively	Herbane (2014)
	Centralised structure to manage and prepare for crisis situations	Moynihan (2009); Chekkar-Mansouri and Onnee (2013); Schiffino et al. (2017); Lee et al. (2020)
	Collective and convergent sensemaking efforts	Mueller-Seitz & Macpherson (2014)

	Decentralised crisis management approach	Deverell & Olsson (2009); Chekkar-Mansouri & Onnee (2013)
	Encouraging exploration, error tolerance, and experimentation	Carmeli & Schaubroeck (2008); Nyman (2019)
	Enhanced flexibility and adaptation	Rochet (2007); Deverell (2010); Elliott and Macpherson (2010); Thompson (2012); Herbane (2014)
	High tolerance for failures and psychological safety	Carmeli & Schaubroeck (2008)
	Institutionalisation of explicit knowledge	Oetzel & Oh (2021)
	Nurturing organisational resilience	Nyman (2019); Orth & Schuldis (2021)
	Openness for sharing information	Dekker and Hansen (2004); Broekema et al. (2017)
	Organisational environment prone to knowledge codification	Christianson et al. (2009); Moynihan (2009); Paraskevas and Altinay (2013); Jaaron et al. (2021); Oetzel and Oh (2021)
	Organisational environment prone to knowledge creation	Dekker and Hansen (2004); Paraskevas and Altinay (2013); Chebbi and Pündrich (2015); Zhang et al. (2018); Zhou et al. (2018); Jaaron et al. (2021)
	Suitable organisational culture	Christianson et al. (2009); Thompson (2012); Ghaderi et al. (2014); Broekema et al. (2017); Keyes and Benavides (2018); Zhou et al. (2018); Jaaron et al. (2021); Qadri et al. (2021)
Information Management	Willingness to learn from others	Carmeli & Schaubroeck (2008); Doerfler & Baumann (2014); Oetzel & Oh (2021)
	Capacity to foster data collection to support decision making	Lee et al. (2020)
	Existence and suitability of established tools, infrastructure, and norms	Elliott and Macpherson (2010)
	Reliable and credible information flow	Anderson (2006); Keyes & Benavides (2018)
External and contextual influence	Active interorganisational alliances	Mithani et al. (2021)
	External environmental factors	Broekema et al. (2017); Lee et al. (2020); Jaaron et al. (2021)
	Geographical proximity to the crisis event	Betten et al. (2021); Mithani et al. (2021)
	Leveraging convergent interests	Mueller-Seitz and Macpherson (2014)
	Politicisation of crisis management (may enhance or constrain)	Dekker and Hansen (2004); Deverell (2010)
	Vicarious learning (learning from the experience of other organisations)	Wang (2009); Currie-Mueller (2018); Lee et al. (2020); Betten (2021)

Table 5 – Conditions that enhance learning in crises

VI. DISCUSSION AND FUTURE RESEARCH

This study begins by unpacking the key theoretical frameworks related to organisational adaptation in the face of crises. The components defining a crisis are well-established in the literature, characterised by unpredictability, high impact, and urgent decision-making under adverse conditions (Anderson, 2006; Herbane, 2014; Broekema et al., 2017; Haneberg, 2020). In contrast, organisational learning encompasses a broader conceptualisation, serving as the theoretical foundation for various interconnected frameworks.

A critical insight into organisational learning is that it extends beyond individual knowledge to the institutionalisation of collective knowledge (Keyes and Benavides, 2018), thereby shaping organisational beliefs, routines, and behaviours (Broekema et al., 2017; Min, 2019). This understanding is essential for studying how organisations learn and adapt during crises.

Furthermore, integrating risk management and resilience frameworks underscores the importance of managing uncertainties and adapting to disruptions. These frameworks emphasise the necessity for resilient and adaptive organisational cultures that can thrive during crises (Wang, 2009; Elliott and Macpherson, 2010; Nyman, 2019; Mithani et al., 2021; Orth and Schuldis, 2021).

The sensemaking process during crises is identified as a critical practice where conflicting interests can both aid and hinder effective crisis management (Mueller-Seitz and Macpherson, 2014). Temporal dimensions of learning, distinguishing between intra-crisis and inter-crisis learning, are crucial, with the latter providing richer information for organisational preparedness (Madsen, 2009; Chebbi and Pündrich, 2015; Schiffino et al., 2017; Currie-Mueller, 2018; Oetzel and Oh, 2021). Also, vicarious learning through observation and networking, along with the process of unlearning outdated practices, is essential for organisational adaptation (Madsen, 2009; Currie-Mueller, 2018; Min, 2019; Betten et al., 2021; Oetzel and Oh, 2021).

Finally, we focused our attention on the conditions that enhance the capacity of an organisation to learn and adapt in the context of a crisis. Our synthesis identifies several key factors that foster an organisation's adaptive capabilities, underscoring the urgent need for organisations to cultivate skills in experience and knowledge management, human resources and leadership, organisational culture, information management, as well as external and contextual influence. These conditions collectively enhance the resilience and adaptive capacity of organisations facing crises. Integrating these conditions not only prepares organisations to manage immediate crises but also equips them to anticipate and navigate future disruptions, ensuring sustained performance and growth.

Insights from our study allow us to identify a number of directions for future research, which we encourage the academic community to explore. The first promising area of development is the foundation of methodological standards to the execution of SLRs. There are several brilliantly performed systematic literature reviews in the field of management and organisational studies, as well as seminal publications with methodological guides on how to execute SLRs, but there are still many academic journals publishing SLRs that lack the scientific rigour that should be characteristic of SLRs. In claiming this, we subscribe to Hiebl's argument that "future systematic reviews of management research could be made even more structured, transparent, and comprehensive" (Hiebl, 2023, p. 251). Secondly, we argue that future research could explore further the role of organisational resiliency as a condition for organisational performance, especially in adverse contexts, such as crisis. Organisational resiliency has the potential to be researched empirically through numerous perspectives, and the scientific community would benefit from having further theorisation and methodologies to understand and measure organisational resiliency.

Finally, we argue that there is an increasing need to understand how organisations have changed in the post-pandemic world (referring to the global outbreak of COVID-19). The way organisations operate in this new reality is enormously different from how they used to before the pandemic, therefore further research is needed to assess how several aspects of organisational systems and ways of navigating them have been adapted and developed.

VII. CONCLUSION

We have explored the underlying processes of organisational learning through which organisations enhance their capacity to manage current and future crises. This comprehensive research addresses the fragmented understanding of this relationship. This SLR offers a clear picture of the complexity of our overarching review question, underlining the efficiency of the methodology employed, within which we expect to adhere to the imperative efforts against the increasingly visible “replicability and reproducibility problem in management research” (Hensel, 2021, p. 577). Adhering to stringent SLR methodological guidelines, we collated 6401 publications and read 42 in full, through a systematic approach to reduction.

By meticulously analysing and integrating empirical evidence from established scholars, this synthesis provides a comprehensive framework that outlines how organizations can effectively manage crises. The methodological rigor employed ensures that the insights and recommendations are not only theoretically sound but also practically applicable. This pioneering work sets a new standard in the field, bridging the gap between academic research and practical application, therefore providing a robust foundation for developing resiliency-driven organizational strategies and guiding future academic studies.

Though we have endeavoured to ensure the rigour of this study, it is not without its limitations.

The first limitation refers to the rigour of the SLR itself; because of its rigour, there are chances that highly relevant literature to the phenomena being reviewed has not been included in the study.

Secondly, due to the size of our initial database, the first screening of the article titles and abstracts, aiming to exclude those obviously not meeting the defined inclusion criteria, has been performed by one author. Though we are confident that this has not impacted the conclusions of this study, it is worth mentioning that this may have increased the risk of bias, notably considering that in single abstract screening around 13% of relevant studies are missed (Gartlehner, 2020).

Thirdly, in the course of this SLR, and because we have adopted a conservative approach in the selection of keywords to refer to a phenomenon being studied, we have noted that some papers might not have the most suitable keywords indicated in their metadata, which increases reasonably the difficulty of considering them in the early stages of an SLR. We encourage researchers to make sure their publication's metadata is accurate and extensive enough to be easily detected by whoever might be looking for it.

Finally, it is worth noting that we have constrained our search to English-language publications only, and there are certainly very valuable publications written in other languages, which for that reason have not been included in our SLR.

REFERENCES

- Adams, R., Jeanrenaud, S., Bessant, J., Denyer, D. and Overy, P. (2016). Sustainability-oriented innovation: a systematic review. *International Journal of Management Reviews*. **18**(2), pp. 180-205.
- * Anderson, B. (2006). Crisis management in the Australian tourism industry: preparedness, personnel and postscript. *Tourism Management*. **27**(6), pp. 1290-1297.
- Argyris, C. and Schön, D. (1974). *Theory in practice: increasing professional effectiveness*. London: Jossey-Bass.
- Argyris, C. and Schön, D. (1978). *Organizational learning: a theory of action perspective*. London: Addison-Wesley.
- Argyris, C. (1989). Strategy implementation: An experience in learning. *Organizational Dynamics*, **18**(2), pp. 5-15.
- Argyris, C. and Schön, D. (1996). *Organizational learning II: theory, method and practice*. Wokingham: Addison-Wesley.
- Atewologun, D., Kutzer, R., Doldor, E., Anderson, D. and Sealy, R. (2017). Individual-level foci of identification at work: a systematic review of the literature. *International Journal of Management Reviews*. **19**(3), pp. 273-295.
- Baetzner, A. S., Wespi, R., Hill, Y., Gyllencreutz, L., Sauter, T. C., Saveman, B.-I., Mohr, S., Regal, G., Wrzus, C., & Frenkel, M. O. (2022). Preparing medical first responders for crises: a systematic literature review of disaster training programs and their effectiveness. *Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine*, **30**(1), 76.
- Bakker, R. (2010). Taking stock of temporary organizational forms: a systematic review and research agenda. *International Journal of Management Reviews*. **12**(4), pp. 466-486.
- Baum, J. and Dahlin, K. (2007). Aspiration performance and railroads' patterns of learning from train wrecks and crashes. *Organization Science*. **18**(3), pp. 368-385.
- Beck, T. and Plowman, D. (2014). Temporary, emergent interorganizational collaboration in unexpected circumstances: a study of the columbia space shuttle response effort. *Organization Science*. **25**(4), pp. 1234-1252.
- * Betten, T., Pettersen, K. V. and Albrechtsen, E. (2021). Learning in municipalities after disasters. *Disaster Prevention and Management*. **30**(3), pp. 400-411.

- * Bhaskara, G. I. and Filimonau, V. (2021). The COVID-19 pandemic and organisational learning for disaster planning and management: a perspective of tourism businesses from a destination prone to consecutive disasters. *Journal of Hospitality and Tourism Management*. **46**, pp. 364-375.
- Boiral, O., Guillaumie, L., Heras-Saizarbitoria, I. and Tayo Tene, C. V. (2018). Adoption and outcomes of ISO 14001: a systematic review. *International Journal of Management Reviews*. **20**(2), pp. 411-432.
- Boon, C., Den Hartog, D. and Lepak, D. (2019). A systematic review of human resource management systems and their measurement. *Journal of Management*. **45**(6), pp. 2498-2537.
- Bramer, W., Rethlefsen, M., Kleijnen, J. and Franco, O. (2017). Optimal database combinations for literature searches in systematic reviews: a prospective exploratory study. *Systematic Reviews*. **6**(1), pp. 245.
- Broekema, W. (2016). Crisis-induced learning and issue politicization in the EU: the Braer, Sea Empress, Erika, and Prestige oil spill disasters. *Public Administration*. **94**(2), pp. 381-398.
- * Broekema, W., Van Kleef, D. and Steen, T. (2017). What factors drive organizational learning from crisis? Insights from the Dutch food safety services' response to four veterinary crises. *Journal of Contingencies and Crisis Management*. **25**(4), pp. 326-340.
- Brzozowski, J., & Cucculelli, M. (2016). Learning from crisis: a systematic literature review. Mo. Fi. R. Working Papers, 123.
- Buengeler, C., Piccolo, R. and Locklear, L. (2021). LMX differentiation and group outcomes: a framework and review drawing on group diversity insights. *Journal of Management*. **47**(1), pp. 260-287.
- Bunderson, J. and Reagans, R. (2011). Power, status, and learning in organizations. *Organization Science*. **22**(5), pp. 1182-1194.
- Calabrò, A., Vecchiarini, M., Gast, J., Campopiano, G., Massis, A. and Kraus, S. (2019). Innovation in family firms: a systematic literature review and guidance for future research. *International Journal of Management Reviews*. **21**(3), pp. 317-355.
- * Carmeli, A. and Schaubroeck, J. (2008). Organisational crisis-preparedness: the importance of learning from failures. *Long Range Planning*. **41**(2), pp. 177-196.
- * Chebbi, H. and Pündrich, A. P. (2015). Learning crisis unit through post-crisis: characteristics and mechanisms. *Learning Organization*. **22**(4), pp. 198-214.

- * Chekkar-Mansouri, R. and Onnee, S. (2013). Towards a theoretical understanding of the recurrence of crises embracing the issue of organizational learning: an illustration with the case of two hostile takeover bids faced by *Société Générale* (1988,1999). *Journal of Contingencies and Crisis Management*. **21**(1), pp. 56-68.
- * Christianson, M., Farkas, M., Sutcliffe, K. and Weick, K. (2009). Learning through rare events: significant interruptions at the Baltimore & Ohio Railroad Museum. *Organization Science*. **20**(5), pp. 846-860.
- Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement*. **20**(1), pp. 37-46.
- Crossan, M. and Apaydin, M. (2010). A multi-dimensional framework of organizational innovation: a systematic review of the literature. *Journal of Management Studies*. **47**(6), pp. 1154-1191.
- * Currie-Mueller, J. L. (2018). Pointing fingers across the tracks: an examination of strategic messages in the Lac-Mégantic rail disaster. *Journal of Risk Research*. **21**(10), pp. 1197-1216.
- * Dekker, S. and Hansen, D. (2004). Learning under pressure: the effects of politicization on organizational learning in public bureaucracies. *Journal of Public Administration Research and Theory*. **14**(2), pp. 211-230.
- Delgado García, J. B., De Quevedo Puente, E. and Blanco Mazagatos, V. (2015). How affect relates to entrepreneurship: a systematic review of the literature and research agenda. *International Journal of Management Reviews*. **17**(2), pp. 191-211.
- Denyer, D. and Tranfield, D. (2009). Producing a systematic review. *The Sage handbook of organizational research methods*. Thousand Oaks, CA: Sage Publications Ltd, pp. 671-689.
- Denyer, D., Tranfield, D. and Van Aken, J. E. (2008). Developing design propositions through research synthesis. *Organization Studies*. **29**(3), pp. 393-413.
- * Deverell, E. (2010). Flexibility and rigidity in crisis management and learning at Swedish public organizations. *Public Management Review*. **12**(5), pp. 679-700.
- * Deverell, E. and Olsson, E.-K. (2009). Learning from crisis: a framework of management, learning and implementation in response to crises. *Journal of Homeland Security and Emergency Management*. **6**(1), pp. 1-20.

- Dinh, T. Q. and Calabrò, A. (2019). Asian family firms through corporate governance and institutions: a systematic review of the literature and agenda for future research. *International Journal of Management Reviews*. **21**(1), pp. 50-75.
- * Doerfler, I. and Baumann, O. (2014). Learning from a drastic failure: the case of the Airbus A380 program. *Industry and Innovation*. **21**(3), pp. 197-214.
- Easterby-Smith, M., Crossan, M. and Nicolini, D. (2000). Organizational learning: debates past, present and future. *Journal of Management Studies*. **37**(6), pp. 783-796.
- Edwards, P., Clarke, M., Diguiseppi, C., Pratap, S., Roberts, I. and Wentz, R. (2002). Identification of randomized controlled trials in systematic reviews: accuracy and reliability of screening records. *Statistics in Medicine*. **21**(11), pp. 1635-1640.
- Elliott, D. and Smith, D. (2006). Cultural readjustment after crisis: regulation and learning from crisis within the uk soccer industry. *Journal of Management Studies*. **43**(2), pp. 289-317.
- * Elliott, D. and Macpherson, A. (2010). Policy and practice: recursive learning from crisis. *Group & Organization Management*. **35**(5), pp. 572-605.
- Fan, Y., Potočník, K. and Chaudhry, S. (2021). A process-oriented, multilevel, multidimensional conceptual framework of work–life balance support: a multidisciplinary systematic literature review and future research agenda. *International Journal of Management Reviews*. **23**, pp. 486-515.
- Foss, N. J. and Saebi, T. (2017). Fifteen years of research on business model innovation: how far have we come, and where should we go? *Journal of Management*. **43**(1), pp. 200-227.
- Gerlak, A. K. and Heikkila, T. (2011). Building a theory of learning in collaboratives: evidence from the Everglades restoration program. *Journal of Public Administration Research and Theory*. **21**(4), pp. 619-644.
- Gartlehner, G., Affengruber, L., Titscher, V., Noel-Storr, A., Dooley, G., Ballarini, N. and König, F. (2020). Single-reviewer abstract screening missed 13 percent of relevant studies: a crowd-based, randomized controlled trial. *Journal of Clinical Epidemiology*, **121**, pp. 20-28.
- * Ghaderi, Z., Mat Som, A. P. and Wang, J. (2014). Organizational learning in tourism crisis management: an experience from Malaysia. *Journal of Travel and Tourism Marketing*. **31**(5), pp. 627-648.

- * Haneberg, D. H. (2020). Interorganizational learning between knowledge-based entrepreneurial ventures responding to COVID-19. *Learning Organization*. **28**(2), pp. 137-152.
- Hanelt, A., Bohnsack, R., Marz, D. and Antunes Marante, C. (2020). A systematic review of the literature on digital transformation: insights and implications for strategy and organizational change. *Journal of Management Studies*. **58**(5), pp. 1159-1197.
- Hayes, J. R. and Hatch, J. A. (1999). Issues in measuring reliability. *Written Communication*. **16**(3), pp. 354-367.
- Haskell, L., Bonnedahl, K. J., & Stål, H. I. (2021). Social innovation related to ecological crises: A systematic literature review and a research agenda for strong sustainability. *Journal of Cleaner Production*, **325**, 129316.
- Heikkila, T. and Gerlak, A. K. (2013). Building a conceptual approach to collective learning: lessons for public policy scholars. *Policy Studies Journal*. **41**(3), pp. 484-512.
- Hensel, P. G. (2021). Reproducibility and replicability crisis: how management compares to psychology and economics – a systematic review of literature. *European Management Journal*. **39**(5), pp. 577-594.
- * Herbane, B. (2014). Information value distance and crisis management planning. *SAGE Open*. **4**(2).
- Hiebl, M. (2023). Sample selection in systematic literature reviews of management research. *Organizational Research Methods*. **26**(2), pp. 229-261.
- Hunt, K., Agarwal, P. and Zhuang, J. (2020). Monitoring misinformation on twitter during crisis events: a machine learning approach. *Risk Analysis*. **42**(8), pp. 1728-1748.
- * Jaaron, A. A. M., Duong Thuy, P. and Cogonon, M. E. (2021). Systems thinking to facilitate "double loop" learning in tourism industry: a COVID-19 response strategy. *Journal of Sustainable Tourism*. **31**(4), pp. 1032-1050.
- Jesson, J., Matheson, L. and Lacey, F. M. (2011). *Doing your literature review: Traditional and systematic techniques*. London: SAGE Publications.
- Jones, O. and Gatrell, C. (2014). Editorial: The future of writing and reviewing for IJMR. *International Journal of Management Reviews*. **16**(3), pp. 249-264.

- Keupp, M., Palmié, M. and Gassmann, O. (2012). The strategic management of innovation: a systematic review and paths for future research. *International Journal of Management Reviews*. **14**(4), pp. 367-390.
- * Keyes, L. M. and Benavides, A. D. (2018). Chaos theory, uncertainty, and organizational learning: what the Ebola incident in Dallas teaches us about organizations. *International Journal of Organization Theory and Behavior*. **21**(4), pp. 226-241.
- Klang, D., Wallnöfer, M. and Hacklin, F. (2014). The Business model paradox: a systematic review and exploration of antecedents. *International Journal of Management Reviews*. **16**(4), pp. 454-478.
- Köbis, N., Soraperra, I. and Shalvi, S. (2021). The consequences of participating in the sharing economy: a transparency-based sharing framework. *Journal of Management*. **47**(1), pp. 317-343.
- Kraus, S., Breier, M. and Dasí-Rodríguez, S. (2020). The art of crafting a systematic literature review in entrepreneurship research. *International Entrepreneurship and Management Journal*. **16**(3), pp. 1023-1042.
- Labib, A., Hadleigh-Dunn, S., Mahfouz, A. and Gentile, M. (2019). Operationalizing learning from rare events: framework for middle humanitarian operations managers. *Production and Operations Management*. **28**(9), pp. 2323-2337.
- Lampel, J., Shamsie, J. and Shapira, Z. (2009). Experiencing the improbable: rare events and organizational learning. *Organization Science*. **20**(5), pp. 835-845.
- Landis, J. R. and Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*. **33**(1), pp. 159.
- Lane, P. J., Koka, B. R. and Pathak, S. (2006). The reification of absorptive capacity: a critical review and rejuvenation of the construct. *Academy of Management Review*. **31**(4), pp. 833-863.
- * Lee, S., Yeo, J. and Na, C. (2020). Learning before and during the COVID-19 outbreak: a comparative analysis of crisis learning in South Korea and the US. *International Review of Public Administration*. **25**(4), pp. 243-260.
- Leseure, M. J., Bauer, J., Birdi, K., Neely, A. and Denyer, D. (2004). Adoption of promising practices: a systematic review of the evidence. *International Journal of Management Reviews*. **5-6**(3-4), pp. 169-190.

- López, O. and Hiebl, M. R. W. (2015). Management accounting in small and medium-sized enterprises: current knowledge and avenues for further research. *Journal of Management Accounting Research*. **27**(1), pp. 81-119.
- Lyngdoh, T., Chefor, E., Hochstein, B., Britton, B. P. and Amyx, D. (2021). A systematic literature review of negative psychological states and behaviors in sales. *Journal of Business Research*. **122**, pp. 518-533.
- Macpherson, A. and Jones, O. (2010). Editorial: Strategies for the development of International Journal of Management Reviews. *International Journal of Management Reviews*. **12**(2), pp. 107-113.
- * Madsen, P. (2009). These lives will not be lost in vain: organizational learning from disaster in U.S. coal mining. *Organization Science*. **20**(5), pp. 861-875.
- Maitlis, S. and Christianson, M. K. (2014). Sensemaking in organizations: taking stock and moving forward. *Academy of Management Annals*. **8**(1), pp. 57-125.
- Maitlis, S. and Sonenshein, S. (2010). Sensemaking in Crisis and change: inspiration and insights from Weick (1988). *Journal of Management Studies*. **47**(3), pp. 551-580.
- Maslach, D., Branzi, O., Rerup, C. and Zbaracki, M. (2018). Noise as signal in learning from rare events. *Organization Science*. **29**(2), pp. 225-246.
- Menghwar, P. S. And Daood, A. (2021). Creating shared value: a systematic review, synthesis and integrative perspective. *International Journal of Management Reviews*. **23**(4), pp. 466-485.
- * Min, J. (2019). No pain, yet gain?: learning from vicarious crises in an international context. *Journal of Business Research*. **97**, pp. 227-234.
- Mintzberg, H. (2001). Managing Exceptionally. *Organization Science*. **12**(6), pp. 759-771.
- * Mithani, M. A., Gopalakrishnan, S. and Santoro, M. D. (2021). Does exposure to a traumatic event make organizations resilient? *Long Range Planning*. **54**(3).
- Moher, D., Shamseer, L., Clarke, M., Ghersi, D., Liberati, A., Petticrew, M., Shekelle, P., Stewart, L. and Group, P.-P. (2015). Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic Reviews*. **4**(1), pp. 1.
- * Moynihan, D. P. (2009). From intercrisis to intracrisis learning. *Journal of Contingencies and Crisis Management*. **17**(3), pp. 189-198.

- * Mueller-Seitz, G. and Macpherson, A. (2014). Learning during crisis as a 'war for meaning': the case of the German *Escherichia coli* outbreak in 2011. *Management Learning*. **45**(5), pp. 593-608.
- Nag, R., Hambrick, D. and Chen, M. (2007). What is strategic management, really? Inductive derivation of a consensus definition of the field. *Strategic Management Journal*. **28**(9), pp. 935-955.
- Newbert, S. L. (2007). Empirical research on the resource-based view of the firm: an assessment and suggestions for future research. *Strategic Management Journal*. **28**(2), pp. 121-146.
- Nijmeijer, K. J., Fabbrocetti, I. N. and Huijsman, R. (2014). Making franchising work: a framework based on a systematic review. *International Journal of Management Reviews*. **16**(1), pp. 62-83.
- Nofal, A. M., Nicolaou, N., Symeonidou, N. and Shane, S. (2018). Biology and management: a review, critique, and research agenda. *Journal of Management*. **44**(1), pp. 7-31.
- Nolan, C. T. and Garavan, T. N. (2016). Human resource development in SMEs: a systematic review of the literature. *International Journal of Management Reviews*. **18**(1), pp. 85-107.
- Nohrstedt, D., Bynander, F., Parker, C., & 't Hart, P. (2018). Managing Crises Collaboratively: Prospects and Problems—A Systematic Literature Review. *Perspectives on Public Management and Governance*, **1**(4), pp. 257-271.
- * Nyman, M. R. (2019). Collective learning in organizations-opportunities and constraints: case study of an avalanche blocking a railway line. *Risk Hazards & Crisis in Public Policy*. **10**(3), pp. 332-359.
- * Oetzel, J. and Oh, C. H. (2021). A storm is brewing: antecedents of disaster preparation in risk prone locations. *Strategic Management Journal*. **42**(8), pp. 1545-1570.
- * Orth, D. and Schuldis, P. (2021). Organizational learning and unlearning capabilities for resilience during COVID-19. *The Learning Organization*. **28**(6), pp. 509-522.
- Page, M. J., Mckenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., Mcdonald, S., McGuinness, L. A., Stewart, L. A., Thomas, J., Tricco, A. C., Welch, V. A., Whiting, P. and Moher, D. (2021a). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ*. pp. n71.

- Page, M. J., Moher, D., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., Mcdonald, S., Mcguinness, L. A., Stewart, L. A., Thomas, J., Tricco, A. C., Welch, V. A., Whiting, P. and Mckenzie, J. E. (2021b). PRISMA 2020 explanation and elaboration: updated guidance and exemplars for reporting systematic reviews. *BMJ*. pp. n160.
- * Paraskevas, A. and Altinay, L. (2013). Signal detection as the first line of defence in tourism crisis management. *Tourism Management*. **34**, pp. 158-171.
- Park, J., Seager T., Rao, P., Convertino, M. and Linkov, I. (2013). Integrating risk and resilience approaches to catastrophe management in engineering systems. *Risk Analysis*. **33**(3), pp. 356-367.
- Pearson, C. M. and Clair, J. A. (1998). Reframing crisis management. *The Academy of Management Review*. **23**(1), pp. 59.
- Pedrini, M. and Ferri, L. M. (2019). Stakeholder management: a systematic literature review. *Corporate Governance: The International Journal of Business in Society*. **19**(1), pp. 44-59.
- Phillips, W., Lee, H., Ghobadian, A., O'regan, N. and James, P. (2015). Social innovation and social entrepreneurship. *Group & Organization Management*. **40**(3), pp. 428-461.
- Pittaway, L., Robertson, M., Munir, K., Denyer, D. and Neely, A. (2004). Networking and innovation: a systematic review of the evidence. *International Journal of Management Reviews*. **5-6**(3-4), pp. 137-168.
- Podsakoff, P. , Mackenzie, S., Bachrach, D. and Podsakoff, N. (2005). The influence of management journals in the 1980s and 1990s. *Strategic Management Journal*. **26**(5), pp. 473-488.
- * Qadri, A., Ghani, M. B. A., Parveen, T., Lodhi, F. A. K., Khan, M. W. J. and Gillani, S. F. (2021). How to improve organizational performance during Coronavirus: a serial mediation analysis of organizational learning culture with knowledge creation. *Knowledge and Process Management*. **28**(2), pp. 141-152.
- Rafi-Ul-Shan, P. M., Grant, D. B., Perry, P. and Ahmed, S. (2018). Relationship between sustainability and risk management in fashion supply chains. *International Journal of Retail & Distribution Management*. **46**(5), pp. 466-486.

- Rashman, L., Withers, E. and Hartley, J. (2009). Organizational learning and knowledge in public service organizations: a systematic review of the literature. *International Journal of Management Reviews*. **11**(4), pp. 463-494.
- * Rerup, C. (2009). Attentional triangulation: learning from unexpected rare crises. *Organization Science*. **20**(5), pp. 876-893.
- * Rochet, C. (2007). Making crisis a momentum for change within public services. *International Journal of Public Sector Performance Management*. **1**(1), pp. 5-28.
- Rojon, C., Okupe, A. and Mcdowall, A. (2021). Utilization and development of systematic reviews in management research: what do we know and where do we go from here? *International Journal of Management Reviews*. **23**(2), pp. 191-223.
- Rousseau, D., Manning, J. and Denyer, D. (2008). Evidence in management and organizational science: assembling the field's full weight of scientific knowledge through syntheses. *Academy of Management Annals*. **2**(1), pp. 475-515.
- Sætren, G. B., Vaag, J. R., & Lund, M. S. (2024). What and how to train for strategic crisis management: A systematic literature review. *Journal of Contingencies and Crisis Management*, **32**(2), e12568.
- Salamzadeh, A., & Dana, L. P. (2022). A systematic literature review of crisis management in and by small and medium-sized enterprises. *Small and Medium Sized Enterprises and the COVID-19 Response*, **1**, pp. 38–61
- * Schiffino, N., Taskin, L., Donis, C. and Raone, J. (2017). Post-crisis learning in public agencies: what do we learn from both actors and institutions? *Policy Studies*. **38**(1), pp. 59-75.
- Shamseer, L., Moher, D., Clarke, M., Gherzi, D., Liberati, A., Petticrew, M., Shekelle, P. and Stewart, L. (2015). Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. *BMJ : British Medical Journal*. **349**, pp. g7647.
- Sweeney, A., Clarke, N. and Higgs, M. (2019). Shared leadership in commercial organizations: a systematic review of definitions, theoretical frameworks and organizational outcomes. *International Journal of Management Reviews*. **21**(1), pp. 115-136.
- Thomas, J., Kneale, D., Mckenzie, J. E., Brennan, S. E. and Bhaumik, S. (2019). Determining the scope of the review and the questions it will address. In: Higgins, J., Thomas, J.,

- Chandler, J., Cumpston, M., Li, T., Page, N. and Welch, V. (eds.), *Cochrane Handbook for Systematic Reviews of Interventions*. 2nd ed. Chichester: John Wiley & Sons, pp. 13-31.
- * Thompson, D. (2012). Leveraging learning to improve disaster management outcomes. *International Journal of Disaster Risk Science*. **3**(4), pp. 195-206.
- Thorpe, R., Holt, R., Macpherson, A. and Pittaway, L. (2005). Using knowledge within small and medium-sized firms: a systematic review of the evidence. *International Journal of Management Reviews*. **7**(4), pp. 257-281.
- Tranfield, D., Denyer, D. and Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*. **14**(3), pp. 207-222.
- Ueberbacher, F. (2014). Legitimation of new ventures: a review and research programme. *Journal of Management Studies*. **51**(4), pp. 667-698.
- Van Der Vegt, G. S., Essens, P., Wahlstrom, M. and George, G. (2015). Managing risk and resilience. *Academy of Management Journal*. **58**(4), pp. 971-980.
- Vergne, J. and T. Wry (2014). Categorizing categorization research: review, integration, and future directions. *Journal of Management Studies*. **51**(1), pp. 56-94.
- * Wang, W. T. (2009). Knowledge management adoption in times of crisis. *Industrial Management & Data Systems*. **109**(4), pp. 445-462.
- Williams, T. A., Gruber, D. A., Sutcliffe, K. M., Shepherd, D. A. and Zhao, E. Y. F. (2017). Organizational response to adversity: fusing crisis management and resilience research streams. *Academy of Management Annals*. **11**(2), pp. 733-769.
- Xiao, S. and Nicholson, M. (2013). A multidisciplinary cognitive behavioural framework of impulse buying: a systematic review of the literature. *International Journal of Management Reviews*. **15**(3), pp. 333-356.
- Zahoor, N., Al-Tabbaa, O., Khan, Z. and Wood, G. (2020). Collaboration and Internationalization of SMEs: insights and recommendations from a systematic review. *International Journal of Management Reviews*. **22**(4), pp. 427-456.
- * Zhang, F., Welch, E. and Miao, Q. (2018). Public organization adaptation to extreme events: mediating role of risk perception. *Journal of Public Administration Research and Theory*. **28**(3), pp. 371-387.

- * Zhou, S., Battaglia, M. and Frey, M. (2018). Organizational learning through disasters: a multi-utility company's experience. *Disaster Prevention and Management: An International Journal*. 27(2), pp. 243-254.

Note: *All the publications included in the systematic literature review are preceded by “*”.*