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Crisis leadership: A review and future research agenda

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ABSTRACT

The past few decades have witnessed numerous crises that have drawn increasing attention to the study of crisis leadership. However, research in this field remains fragmented and existing reviews often adopt a subjective approach to identify and synthesize the findings of relevant articles. These limitations make it difficult for scholars to appreciate the progress made in the literature, to derive comprehensive and objective insights, and to forge a path ahead. This study synthesizes theoretical insights and empirical findings in the crisis leadership literature using bibliometric techniques. We first review the intellectual structure of the crisis leadership literature by conducting co-citation and bibliographic coupling analyses. We then map the major conceptual themes in the crisis leadership literature via a co-word analysis. To supplement the findings of the bibliometric analyses, we review the key methodological approaches adopted by crisis leadership researchers. Based on the integrative insights, we propose a research agenda highlighting opportunities for theoretical and methodological advancements in crisis leadership research.

Introduction

The true test of leadership is how well you function in a crisis.

– Brian Tracy (2021)

Over the past few decades, we have witnessed several major crises, such as the Chernobyl nuclear disaster, the Asian Financial Crisis, the tsunami in the Pacific region, the 2008 Global Economic (or Financial) Crisis, the Sichuan earthquake, the Eurozone Debt Crisis, and the COVID-19 pandemic. These crises have significant implications for economies and organizations, and require effective leadership from political and business leaders to address the heightened demands and expectations from stakeholders (Boin & t'Hart, 2003; Heifetz et al., 2009). Context can shape leadership behaviors (Liden & Antonakis, 2009; Oc, 2018; Stoker et al., 2019), and the mindsets, personal characteristics, and actions of leaders during a crisis can significantly impact organizations and their internal and external stakeholders (James et al., 2011; König et al., 2020; Littlefield & Quenette, 2007). As such, it is important to examine the topic of crisis leadership to help guide leaders to better deal with crises.

While many scholars have expended efforts to examine the topic of crisis leadership, research in this field remains fragmented, making it difficult to gain a comprehensive understanding into the current state of the field and to forge a path ahead. As of now four related reviews

have been published. However, they have important limitations in providing insights into crisis leadership. As Table 1 shows, three existing reviews (Bundy et al., 2017; James et al., 2011; Pearson & Clair, 1998) discuss crisis management more broadly, and do not focus on leadership specifically. Crisis management covers crisis leadership (James et al., 2011), but also a variety of topics that are not necessarily related to leadership. Because of the broad scope of those reviews, they do not provide comprehensive insights into many aspects of crisis leadership, such as: (1) the effects of crises on the behaviors and perceived attributes of leaders, their leadership styles, and leadership processes, (2) the types of leader characteristics, behaviors, and leadership styles that have been most frequently examined in the crisis context, and (3) how specific levels of leaders, such as top management teams (TMT), respond to crises. A fourth review by Boin and t'Hart (2003) focuses on leadership during crises, but their study only examined leadership in the public sector, without addressing the role of leadership in other important organizational contexts.

The existing reviews are also limited in that they do not include the latest literature on crisis leadership. Three of them were written about a decade ago, and hence, do not include the latest research. In fact, 65 percent of the articles included in our review were conducted over the past decade. Although one review was conducted more recently (Bundy et al., 2017), it focused on crisis management more broadly, only incorporated studies published between 1998 and 2015, and

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Table 1
Comparisons of reviews of crisis leadership and crisis management.

Dimension	Time frame	Scope	Focus
Pearson and Clair (1998)	Unspecified	Multidisciplinary	Reviewing crisis management from the perspectives of psychological, social-political, and technological-structural research perspectives.
Boin and t'Hart (2003)	Unspecified	Public leadership	Reviewing challenging issues associated with crisis management that are relevant particularly to public and political leaders.
James et al. (2011)	1980–2010	Organizational leadership	Establishing a typology of business crises and reviewing the tactical roles of organizational leaders in terms of crisis framing and handling emotional and behavioral response.
Bundy et al. (2017)	1998–2015	Multidisciplinary	Proposing an integrative framework of crises and crisis management that focuses on both the internal and external perspectives across pre-crisis prevention, crisis management, and post-crisis management based on research in strategy, organizational theory, organizational behavior.
The present review	1970–2020	Multidisciplinary leadership	Adopting bibliometric techniques to yield comprehensive and objective insights into crisis leadership in terms of conceptualization, intellectual structure, conceptual structure, and methodological approaches.

Table 2
A summary of the definitions of crisis in the literature.

Article	Construct	Definition
Hermann (1963)	Business crisis	An organizational crisis (1) threatens high-priority values of the organization, (2) presents a restricted amount of time in which a response can be made, and (3) is unexpected or unanticipated by the organization (p. 64).
Marcus and Goodman (1991)	Crisis	A crisis is an emotionally charged event that can be a turning point for better or worse (also see Carroll, 1989, p. 492) (p. 284). Two features are important to crises: (1) Victims - their effect on any victims they might have, and (2) Deniability - what can be plausibly said about their causes.
Pearson and Clair (1998)	Organizational crisis	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).
Pillai and Meindl (1998)	Crisis	Crisis is defined as “work situations causing stress and anxiety”.
Rosenthal et al. (2001)	Crisis	Crisis is defined as “a serious of threat to the basic structures or the fundamental values and norms of a system, which under time pressure and highly uncertain circumstances necessitates making critical decision” (p. 10). Several characteristics assist in defining a crisis: (1) the cause, (2) the locus of responsibility, (3) the emergency response, (4) the size, and the length of the crisis (cf. Heath & Millar, 2004).
Coombs (2007)	Crisis	Crisis is defined as “the perception of an unpredictable event that threatens important expectancies of stakeholders and can seriously impact an organization's performance and generate negative outcomes” (p. 2).
Lee and Makhija (2009)	Economic crisis	An economic crisis is defined as “an unanticipated significant downturn in the economy” (p. 537)
James and Wooten (2010)	Crisis	Crisis is “a rare, significant, and public situation that creates highly undesirable outcomes for the firm and its stakeholders... and requires immediate corrective action by firm leaders” (p. 17) [Note: the authors concluded 3 elements featuring crises, including “ambiguity”, “high stakes”, and “perceived urgency”].
James et al. (2011)	Business crises	The authors proposed several characteristics that define crises: rarity, significance, and impact on stakeholders.
Bundy et al. (2017)	Organizational crisis	An event perceived by managers and stakeholders to be highly salient, unexpected, and potentially disruptive (p. 1663). The authors propose 4 characteristics of crises: (1) crisis are sources of uncertainty, disruption, and change, (2) crises are harmful or threatening for organizations and their stakeholders, (3) crisis are behavioral phenomena, and (4) crises are parts of larger processes, rather than discrete events.
Williams et al. (2017)	Crisis	Crisis is “a process of weakening or degeneration that can culminate in a disruption event to the actor's (i.e., individual, organization, and/or community) normal functioning.” (p. 739)

did not cover research from the past five years, which accounts for 42 percent of the articles in our review. Taken together, these limitations highlight the necessity for a comprehensive and updated review of research on crisis leadership.

The present study contributes to crisis leadership research by providing an updated review of the theoretical perspectives and empirical findings included in recent articles. Different from existing reviews that are narrative and subjective in nature, we adopt bibliometric techniques to synthesize research on crisis leadership, and examine the major methodological approaches used by researchers in the literature. In doing so, we go beyond a descriptive review of existing research and offer a useful theoretical guide for researchers to advance crisis leadership research.

Conceptualizations of crisis and crisis leadership

Scholars across disciplines have adopted different conceptualizations of crises. Based on our review of the major definitions of crisis in the literature, as illustrated in Table 2, crises can generally be understood as events that are perceived by leaders and organizational stake-

holders as unexpected, highly salient, and potentially disruptive (cf. Bundy et al., 2017; Pearson & Clair, 1998). Specifically, the first characteristic that differentiates crises from other organizational events is their unexpectedness, as crises are often referred to as unusual and abnormal events that occur infrequently, for which organizations and leaders have little preparation and experiences in managing. For example, crises such as the COVID-19 pandemic, financial crises, and environmental disasters (e.g., the BP Gulf oil spills) generally have a low probability of occurrence, compared to other adverse organizational events such as machinery malfunctions, human errors, and customer complaints that occur on a more regular or even daily basis. Considering the rarity and unexpectedness of crises, one important role of leaders is to reduce the likelihood of crisis occurrence and enhance the preparedness of their organizations and organizational stakeholders for crisis events.

A second characteristic that differentiates crises from other organizational events is their salience. Salience can be defined by two more specific attributes: (1) the perceived significance of the impact, and (2) the perceived urgency of the response. While crises often engender objectively salient outcomes, the detection and appraisal of crises is a subjective and socially constructed process because they are associ-

ated with artefacts that trigger the breakdown in collective sensemaking (Turner, 1976; Weick, 1988). Examples include the COVID-19 pandemic, which has imposed substantial changes on the way companies operate and maintain relationships with stakeholders; scandals and operational accidents that can damage a firm's reputation and the environment; or the introduction of a novel technology that results in the loss of a firm's competitive advantage. If organizational leaders fail to detect the significant threats associated with crises and act swiftly in addressing the immediate risks, these crises may quickly worsen, threatening the survival of organizations and leading to an irreversible impact on stakeholders. Given the perceived significance and urgency of crises, leaders are often confronted with significant time pressure, risks, and uncertainty in their decision-making.

Crises are also distinct from other organizational events in terms of their significant potential for causing disruption to organizations and their stakeholders. Stakeholders are entities that can both influence, or be influenced by, organizations' activities and their success or failure in attaining their goals (Freeman & Reed, 1983; Post et al., 2002), and may include individuals, groups, or constituencies that are internal or external to the focal organization, such as employees, customers, investors, and the general public. Crises can potentially engender detrimental impact and heavy emotional toll on different stakeholders and hence create conflicting demands on organizations (Bundy et al., 2017; Pillai & Meindl, 1998).

Importantly, scholars have recognized the potential for crisis events to become turning points for positive changes through creating opportunities when they are well managed (James et al., 2011). For instance, the COVID-19 pandemic has significantly disrupted the normal functioning of business operations and individuals' lives, causing a sudden decline in customer orders and revenues in some businesses, and increasing the risk of bankruptcy and the need to cater to social distancing rules. At the same time, the pandemic also offers opportunities for new ventures to address novel demands that have emerged in the market, and for organizations to demonstrate their adaptability and positive aspects to stakeholders (Donthu & Gustafsson, 2020; Kniffin et al., 2020). Therefore, a crisis can be more challenging than other organizational events, as it often requires leaders to develop and exercise their skills in not only minimizing potential disruptions, but also capitalizing on opportunities for positive change while balancing competing demands from stakeholders.

Given the unexpected nature of crises, coupled with their salient and potentially disruptive implications for organizations and the broader community, effective crisis leadership is critical for organizations' survival and competitiveness. In this study, we define crisis leadership as a process in which leaders act to prepare for the occurrence of unexpected crises, deal with the salient implications of crises, and grow from the disruptive experience of crises (cf. Bundy et al., 2017; Firestone, 2020; James et al., 2011). Hence, our conceptualization of crisis leadership refers to a leadership process *around* times of crisis, including times immediately prior to crises, the duration of crises as they unfold, and times immediately after the acute consequences of crises.

Our conceptualization is consistent with Antonakis and Day's (2018) view on the overall nature of leadership, which is "a formal or informal contextually rooted and goal-influencing process that occurs between a leader and a follower, groups of followers, or institutions" (p. 5). In addition, our conceptualization of crisis leadership is also aligned with a process view of crisis management more broadly that involves attempts to "reduce the likelihood of a crisis, work to minimize harm from a crisis, and endeavour to reestablish order following a crisis" (Bundy et al., 2017, p. 1663). However, crisis leadership can also be differentiated from the broader concept of crisis management in that crisis leadership focuses specifically on the processes of how a crisis influences leaders, how leaders exert influence on the affect, cognitions, and behaviors of different stakeholders

around times of crises, and why some leaders are more effective than others in crisis contexts.

Despite the crucial role of leadership in the context of crisis, studies on this topic are scattered and have garnered insufficient recognition as an important domain of leadership research. Indicatively, although a comprehensive literature review of the leadership discipline identified 66 different leadership domains and highlighted the importance of establishing a framework about different social contexts addressed by emerging leadership theories, crisis leadership was not one of the leadership domains within established theories nor was it formally discussed within the framework of social context in which leadership processes operate (Dinh et al., 2014). This limitation could be due to the challenges of understanding whether there are specific roles, behaviors, characteristics, and leadership processes that constitute effective crisis leadership. Moreover, one may argue that the contingency or contextual theories of leadership cover leadership in times of crises; however, crises are also different from contextual factors due to the unique characteristics of varied crisis contexts (James et al., 2011). Therefore, we propose that crisis leadership should be regarded as an important domain within leadership research. It is our hope that this review will encourage more researchers to formally recognize the importance of studying crisis leadership, and to engage in systematic efforts that will illuminate how leaders can surmount the challenges resulting from crises.

Method

We first used the Web of Science (WoS) database to identify relevant articles. We combined two categories of search terms relating to leadership and crisis. Search terms in the leadership category included "manager*", "leader*", "CEO*", "supervisor*", "top management team", and "board*". Search terms in the crisis category included "cris*s", "disrupt*", "radical", "bankrupt*", "failure*", "event*", "accident*", "disaster*", "pandemic*", "war*", "recall*", "strike*", "massacre*", "terroris*", "scandal*", "turbulen*", "bad times", "shock", "jolt", and "death". We used these terms to search fields including titles, abstracts, and keywords (using topic [TS] as the field tag for searching) of articles from journals with a social science citation index that were published from 1970 to July 2020, resulting in more than 31,000 articles.

To narrow down the scope, we selected articles by: (1) disciplines, including business, management, economics, psychology, psychology social, psychology applied, psychology experimental, psychology multidisciplinary, political science, and public administration; and (2) the quality of journals in which they were published, restricting articles to those that were published in "A*" or "A" journals, as ranked by the Australian Business Deans Council (ABDC), with a Clarivate Analytics Web of Science 2-year impact factor (2019) higher than 2.0. The ABDC list encompasses scholarly outlets that span across different disciplines, such as management, accounting, economics, information systems, business law, political science, public administration, and sociology. This filtering resulted in 5,659 articles. We then screened the title and abstract of each article to evaluate their relevance to the scope of this review. We also performed a manual search to identify articles in press that are highly relevant to our topic. To be included, an article needed to include both crisis and leadership as important components of the research questions examined. In total, we identified a final sample of 168 articles for bibliometric analyses and content coding. Fig. 1 presents the procedure of the literature search, and Table 3 illustrates the major outlets in which the included articles were published.

We then performed bibliometric analyses to gain insights into the status quo of the crisis leadership literature. Bibliometric analysis is a scientific mapping approach that visualizes the spatial representation

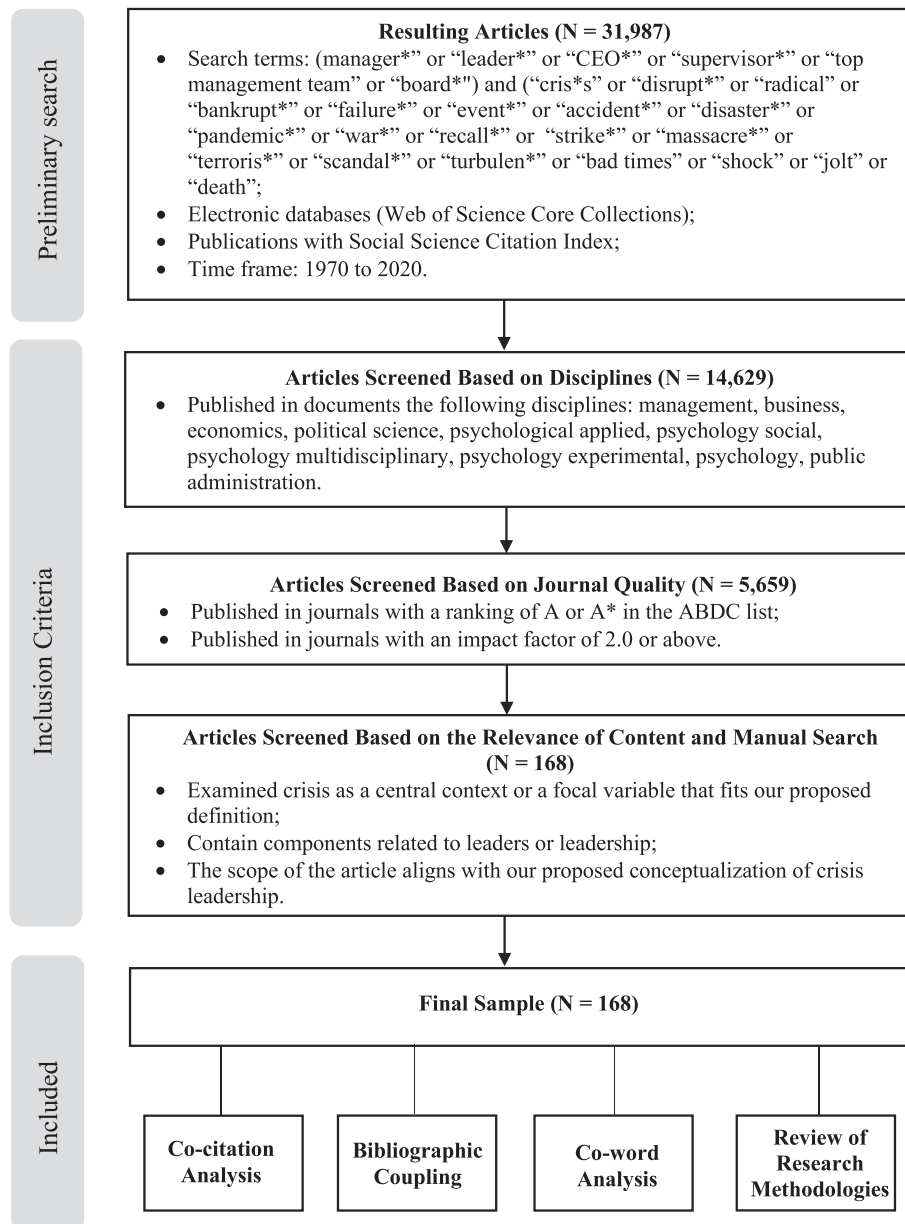


Fig. 1. Flow diagram for the search and inclusion criteria for studies.

of the interconnectedness or distinctiveness among articles, their theoretical perspectives, topics, and findings in a format that resembles geographic maps (Small, 1999; Zupic & Čater, 2015). Compared to the more traditional approach of qualitative review, bibliometric approaches provide relatively objective insights based on the text corpus and citation data of the primary articles in our sample and the secondary documents being cited therein. We conducted three sets of bibliometric analysis: (1) co-citation analysis, (2) bibliographic coupling analysis, and (3) co-word analysis.

Both co-citation and bibliographic coupling analyses are conducted to visualize the intellectual structure of the crisis leadership literature (Zupic & Čater, 2015). The co-citation analysis focuses on the secondary documents cited by the 168 primary documents in our sample; whereas bibliographic coupling focuses on the primary documents sharing the set of secondary documents (i.e., cited documents) are older than primary documents (i.e., citing documents), results from the co-citation analysis reflect the *knowledge base* of the

crisis leadership literature, and results from the bibliographic coupling analysis reflect the *research front* of the crisis leadership literature. However, both analyses are citation-based and hence, they help reveal the intellectual structure of the crisis leadership literature (Zupic & Čater, 2015). Co-word analysis, on the other hand, is a content analytic approach that focuses on the primary documents. By mapping the connections among keywords based on their co-occurrence in the titles and abstracts of the primary documents, the co-word analysis helps demonstrate the conceptual structure of a field (Bhattacharya & Basu, 1998; Zupic & Čater, 2015).

To complement our bibliometric analyses, we also manually coded the 168 primary documents to review the major research methods in the literature. Specifically, we coded the basic details (authors, year of publications, publication outlet), type of papers (empirical, non-empirical), and methodological approaches (archival data, content analysis, interviews, case study, experiment, field survey, conceptual paper, review paper, mixed methods, others). Below we first report the detailed procedure and findings of bibliometric analyses, followed

Table 3

Number of crisis leadership articles published in SSCI journals (1970–2020).

Journal	Number of articles
The Leadership Quarterly	26
Journal of Business Ethics	13
Journal of Management	10
Strategic Management Journal	9
Academy of Management Journal	7
Journal of Applied Psychology	7
Public Relations Review	6
British Journal of Management	4
Journal of Business Research	4
Organization Science	4
Academy of Management Review	3
Harvard Business Review	3
Human Relations	3
International Studies Quarterly	3
Journal of Financial Economics	3
Journal of Personality and Social Psychology	3
Organization Studies	3
Personnel Review	3
Technological Forecasting and Social Change	3
Academy of Management Annals	2
Administrative Science Quarterly	2
European Journal of Social Psychology	2
European Journal of Work and Organizational Psychology	2
Group and Organization Management	2
International Journal of Human Resource Management	2
Journal of Conflict Resolution	2
Journal of Experimental Social Psychology	2
Journal of Management Studies	3
Long Range Planning	2
Organizational Behavior and Human Decision Processes	2
Psychology of Women Quarterly	2
Public Administration Review	2
Other journals with 1 count only	24
Total	168

by the findings of our review on the research methodologies in the crisis leadership literature.

Co-citation analysis: Knowledge base of the crisis leadership literature

Procedure

We first conducted a co-citation analysis using the *Visualization of Similarities Viewer* (VOSviewer) 1.6.5 software to examine secondary documents that have been frequently cited together in the reference list of the primary articles and to illuminate the intellectual structure of the crisis leadership literature. Secondary documents that have a high weight in terms of co-citation link strength are frequently co-cited by the primary articles. These secondary documents are in different formats, such as journal articles, books, book chapters, and conference proceedings. Secondary documents that are nested within a cluster share higher levels of textual similarity, and provide insights into the formation of profiles of “invisible colleges” (Vogel, 2012, p. 1023) and the major schools of thought that shape a literature (Pasadeos et al., 1998; Small, 1973). Overall, as shown in Fig. 2, we identified four co-citation clusters. The details (author, year, description, weight) of the top five most important documents in each co-citation cluster are presented in Table 4.

Co-citation cluster 1 (red): Theoretical perspectives on cognitive processes

Cluster 1 (red) includes 30 secondary documents and is the largest in size. Documents in this cluster focus on a variety of theoretical perspectives on cognitive processing, such as sensemaking theory, sensegiving theory, attribution theory, decision making models, and situational crisis communication theory. These perspectives help

advance the understanding of leaders' cognitive processing and decision making during crises, such as leader's appraisal of crisis as a threat or opportunity (Brockner & James, 2008; Jackson & Dutton, 1988), leader sensemaking (Weick, 1988), leader decision making (Arthaud-day et al., 2006; Dutton, 1986; Lant et al., 1992), and leader problem sensing (Kiesler & Sproull, 1982).

For example, sensemaking perspectives posit that an organizational leader's sensemaking can influence both the crisis occurrence and its severity after outbreaks (Weick, 1988, 1993). Organizational leaders, such as the CEO, play a primary role in not only sensemaking, but also facilitating sensegiving in implementing strategic changes through disseminating their vision to other organizational stakeholders (Gioia & Chittipeddi, 1991). Informed by these perspectives, Carrington, Combe and colleagues (Carrington et al., 2019; Combe & Carrington, 2015) examined how cognitive consensus developed through sensemaking and learning processes over time within management teams during organizational crises.

Co-citation cluster 2 (green): Strategic management perspectives

Cluster 2 consists of 27 secondary documents that focus on theoretical perspectives from strategic management such as the threat rigidity hypothesis, agency theory, expected utility theory, and prospect theory. Specifically, such perspectives have been adopted to help understand the key issues involved in leaders' organizational decision making during crises, such as agency problems (e.g., Jensen & Meckling, 1979), heuristics and perceptual biases in leaders' judgments (Tversky & Kahneman, 1974), and how the traits, communication, prestige, power, and leadership styles of leaders are linked to crises and organizational outcomes (e.g., Buyl et al., 2019; Dowell et al., 2011; Fralich & Papadopoulos, 2018; Stoker et al., 2019).

For instance, the threat rigidity hypothesis asserts that external threats and adversity lead to increased organizational control (Staw et al., 1981). Drawing on the threat rigidity hypothesis, Stoker et al. (2019) examined the impact of the 2008 financial crisis on changes in directive leadership within organizations. They argued that the financial crisis served as a control-reducing threat which prompted leaders to be more directive in order to maintain control. Results from over 20,000 leaders from 980 organizations across 36 countries supported their hypothesis that the financial crisis led to an increase in directive leadership.

Co-citation cluster 3 (blue): Gender and role theories

Cluster 3 includes 22 secondary documents that focus on the role of leader gender in influencing leadership attribution (Kulich et al., 2006; Meindl et al., 1985), perceived leader suitability (Haslam & Ryan, 2008), and the likelihood for one to be appointed as a leader (Ashby et al., 2006; Lee & James, 2007; Ryan & Haslam, 2005; Ryan et al., 2007). Among the top five documents, four are review papers authored by Eagly and colleagues (Eagly & Carli, 2003; Eagly & Johnson, 1990; Eagly et al., 1992, 2003) that adopt a quantitative approach to meta-analyze how leader gender or sex, gender-associated characteristics (e.g., masculinity, femininity), and leadership styles (e.g., transformational leadership, transactional leadership, laissez-faire leadership) influence the way one is perceived as a leader (or not). These quantitative reviews showed that female leaders are evaluated less favorably when they work in a male-dominated context, practice stereotypically masculine leadership styles, and receive ratings from male evaluators (Eagly & Carli, 2003; Eagly et al., 1992). These studies also reveal that when females are in a leadership position, they are more likely to adopt transformational and democratic leadership, as opposed to transactional and autocratic leadership. This is because some aspects of these preferred leadership styles are congruent with their gender roles, and allow them to avoid being perceived as masculine (Eagly & Johnson, 1990; Eagly et al., 2003). Three other

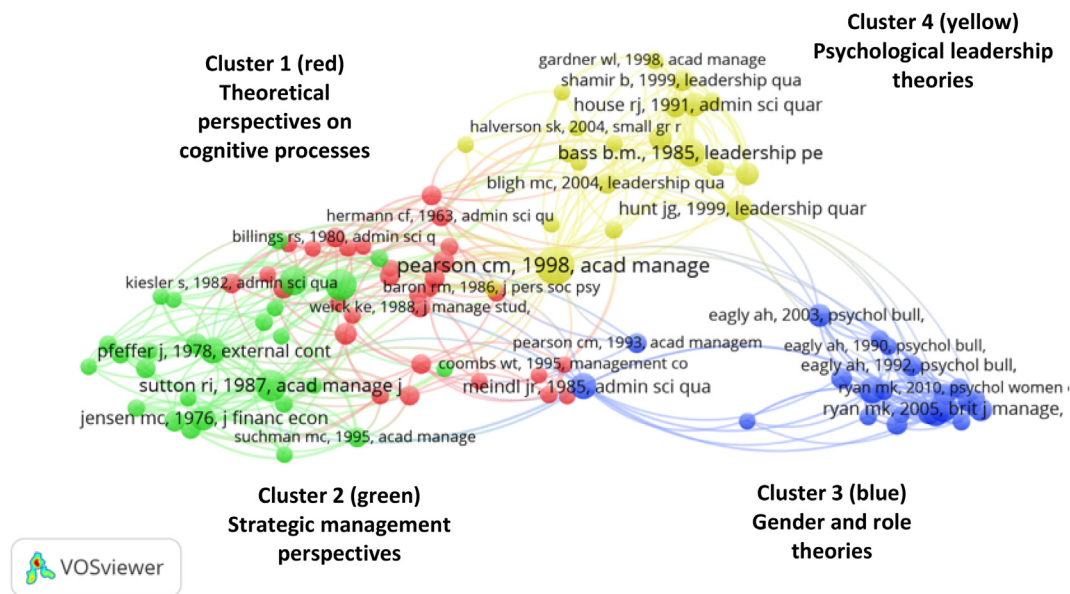


Fig. 2. Citation network of top 100 secondary documents in four co-citation clusters. *Note:* The map presents the top 100 co-cited secondary documents generated based on the fractional counting methods with a 5-count threshold (Perianes-Rodriguez et al., 2016). Documents presented in varying sizes represent the frequency with which the secondary documents are cited in the primary documents in our sample, such that large documents were cited more frequently than small ones. Four major clusters were identified in our analysis. The proximity of the secondary documents on the map indicates their co-occurrence as references in the data, whereas the centrality of the secondary documents on the map indicates those that most frequently co-occur with other documents in the map (Van Eck & Waltman, 2010). The colors of the terms denotes “clusters” such that similar documents share a common color. Cluster 1 (red): theoretical perspectives on cognitive processes; Cluster 2 (green): strategic management perspective; Cluster 3 (blue): gender and role theories; Cluster 4 (yellow): psychological leadership theories. (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

reviews take a qualitative approach to discuss the role of leader gender in influencing others' evaluation and endorsement of leaders from the perspectives of role congruity theory of prejudice (Eagly & Karau, 2002), the glass cliff phenomenon (Schein, 2001), and gender stereotypes (Heilman, 2001).

Co-citation cluster 4 (yellow): Psychological leadership theories

Cluster 4 is the smallest cluster which consists of 21 secondary documents. Major theoretical perspectives discussed in these documents include research on charismatic and authentic leadership (Avolio & Gardner, 2005; Conger & Kanungo, 1987; Hunt et al., 1999; Pillai, 1996), leader categorization theory (Lord et al., 1984), and self-concept theory (Shamir et al., 1993). This cluster includes three meta-analytic reviews that are commonly cited in the crisis leadership literature. The first one is a meta-analysis conducted by Judge et al. (2004) to examine the association between intelligence and leadership from the perspectives of implicit leadership theory and cognitive resource theory. The second one, also conducted by Judge et al. (2002), focuses on the relationship between leaders' Big-Five personality traits and leadership. The third one, conducted by Dirks and Ferrin (2002), examined the relationships between trust in leadership, and its antecedents and outcomes.

Summary

Overall, results of the co-citation analysis yield important insights into the intellectual foundations of the crisis leadership literature, and demonstrate that the literature draws heavily upon four major schools of thought. Despite the strong theoretical bases of the crisis leadership literature, we suggest that other relatively overlooked theoretical perspectives may further enrich the crisis leadership literature, which we will elaborate on in our Future Research Agenda section. In the following section we present results from bibliographic coupling

analysis that inform the research priorities in the crisis leadership literature.

Bibliographic coupling analysis: Research front of the crisis leadership literature

Procedure

Bibliographic coupling is a valuable yet frequently neglected bibliometric mapping technique with significant potential to be adopted in future management research (Zupic & Čater, 2015). It assesses the extent to which the primary documents in our sample co-cited the same secondary documents (Batistič & van der Laken, 2019), which informs the similarity in terms of citation proximity among the primary documents. Primary documents with higher coupling strength, or weight, have a larger number of same secondary documents cited in their reference lists and inform the major research priorities of the literature (Zupic & Čater, 2015). Because bibliographic coupling focuses on the degree of overlap in the references of primary documents and the references cited in published articles do not change over the years, its results are free from the problem of (over)emphasis on documents that become popular on the basis of absolute citation count and tend to be more stable over time (Batistič & van der Laken, 2019). We conducted a bibliographic coupling analysis based on the 168 primary articles in our final sample using a fractional counting method. To yield meaningful insights based on primary articles with a relatively high number of overlapping references, we applied a 30-citation count minimum threshold that yielded a total of 69 articles nested within six clusters. Fig. 3 and Table 5 present a graphical presentation and a summary of the six clusters.

Coupling cluster 1 (red): Leader charisma

Cluster 1 is the largest comprising 15 articles, the majority of which are empirical and investigate the effects of crisis occurrence and crisis

Table 4

Top 5 most important documents for each cluster in the co-citation analysis.

Cluster	Author and year	Document description	Weight
Cluster 1: Theoretical perspectives on cognitive processes (red; total items: 30)	Dutton (1986)	An empirical study that examined the strategic issues emerging during crises and how organizations engaged in a decision making process that is distinct from that in non-crisis contexts.	62
	Brockner and James (2008)	A conceptual paper that proposed a framework of executives' perceptions of crisis as an opportunity that illustrates the conditions under which leaders come to perceive crises as sources of opportunity.	57
	Jackson and Dutton (1988)	An empirical study that investigated the issue characteristics that are associated with threat and opportunities and that influenced managers' inferences about threat and opportunities with a combination of survey and experimental approaches.	57
	Weick (1993)	A study that re-analyzed a case study conducted by Maclean (1992) on the Mann Gulch fire disaster in Montana. The author suggested that there exist four potential sources of resilience that make groups less vulnerable to disruptions of sensemaking of the event, including improvisation, virtual role systems, the attitude of wisdom, and norms of respectful interaction	57
	Weick (1988)	A conceptual paper that discussed the concept of sensemaking in the context of crises, factors that may influence sensemaking during crises and the severity of crises, and how enactment is linked to the likelihood of crisis occurrence.	54
Cluster 2: Strategic management perspectives (green; total items: 27)	Sutton and Callahan (1987)	An empirical study that examined the negative implications of Chapter 11 of the Federal Bankruptcy Code to top managers' and firms' image, managers' career, and organizational survival/death. The authors also proposed some stigma-management strategies to help repair the damaged reputation of managers and firms.	70
	Staw et al. (1981)	A conceptual paper that proposed a framework of threat-rigidity cycles and built a multilevel theory of individual, group, and organizational response to threat.	67
	Hambrick and Mason (1984)	An empirical study of a matched sample of companies that either experienced bankruptcies or survived through corporate failure demonstrated four major factors linked to the decline and failure of organizations, including domain initiative, environment carrying capacity, slack, and performance.	66
	Pfeffer and Salancik (1978)	A book about resource dependence theory which emphasize the importance of the external environment and the resources it provides for understanding organizational behaviors.	56
	Kahneman and Tversky (1979)	A theoretical paper that critiques expected utility theory for being a descriptive model that focuses on decision making under risks and proposes prospect theory an alternative model that takes both losses and gains into consideration.	52
Cluster 3: Gender and role theories (blue; total items: 22)	Meindl et al. (1985)	An empirical paper that demonstrated leadership as an explanatory mechanism for making sense of organizational events based on archival and experimental studies.	69
	Pearson and Mitroff (1993)	A conceptual paper that discusses types, phases, systems, and stakeholders as the major elements in a crisis management framework that facilitates crisis preparedness.	67
	Eagly and Karau (2002)	A paper that proposed a theory of prejudice against female leaders based on a review of relevant research paradigms and an analysis of studies on wages and promotion, hiring decisions, agentic behaviors displayed by men and women, the emergence of leaders, and leader effectiveness.	51
	Scheil (1973)	An empirical study on people's perceptions of the characteristics, attitudes, and temperaments ascribed to men and women in general.	48
	Eagly et al. (2003)	A meta-analysis of transformational, transactional, and laissez-faire leadership styles across gender of leaders, and other moderators such as the measurement instruments, publication source, type of organization, nationality of leaders, and identity of raters.	47
Cluster 4: Psychological leadership theories (yellow; total items: 21)	Pearson and Clair (1998)	A theoretical paper that built on a multidisciplinary perspective to propose an integrative framework of crisis management processes, and discussed crisis management success and failure outcomes.	90
	Hunt et al. (1999)	An empirical study that adopted an experimental approach to examine the effects of visionary and crisis responsive behavior – two forms of charismatic leadership under crisis conditions – on follower outcomes, including task performance, commitment to leader, trust in leader, leader attributed charisma, performance beyond expectations, follower self-esteem, and task meaningfulness.	63
	Bass (1985)	A book with chapters that cover different leadership styles and their elements (e.g., transformational leadership, the emotional component of leader charisma, inspirational leadership, transactional leadership).	58
	Pillai and Meindl (1998)	An empirical study conducted based on group-level data to examine the relationships among contextual factors (i.e., organic structure and collectivistic cultural orientation), subjective crisis perceptions, and charismatic leadership, and work unit performance.	57
	Lord et al. (1984)	An empirical study that tested a categorization-based model of leadership perceptions to understand the internal structure of leadership categories, prototypical leader behaviors associated with leadership judgments, and categorized ascription of leadership perceptions.	51

perceptions on leaders' exhibition of charisma. Heading this cluster is Williams et al. (2009) which adopted an event-based design to show that individuals' perception of crisis was negatively (positively) related to their perception of the incumbent political leader's (challenger's) charisma and decisiveness, which ultimately influenced their voting behavior. Other major documents in this cluster investigate the link between crisis situations and leader charisma from a slightly different perspective—by exploring and demonstrating the positive influence of crisis occurrence on leaders' use of charismatic rhetoric in public communication (Bligh et al., 2004; Davis & Gardner, 2012).

Documents in this cluster showed that scholars have been particularly interested in how crises serve as breeding grounds for the emergence of actual or perceived charismatic leadership, as people look for and attribute qualities to leaders that may bring desirable changes dur-

ing a crisis (Weber, 1968; Pillai & Meindl, 1991). While most findings in the literature are consistent in supporting this assertion, one of the top articles in this cluster, Pillai and Meindl (1998) found a negative correlation between crisis perceptions and followers' perceptions of leader charisma. The authors reasoned that their findings did not necessarily contradict the mainstream findings, nor did they discount the value of leader charisma in a crisis context. Rather, the inconsistent result patterns may suggest the perceptions and attribution of leader charisma as a dynamic temporal process, with individuals' perceptions and need for leader charisma peaking during the crisis outbreak and then declining once the acute phase of a crisis has passed. For leaders to sustain high levels of perceived charisma after the acute stage of crises, successfully resolving the crises is a necessary condition to be met.

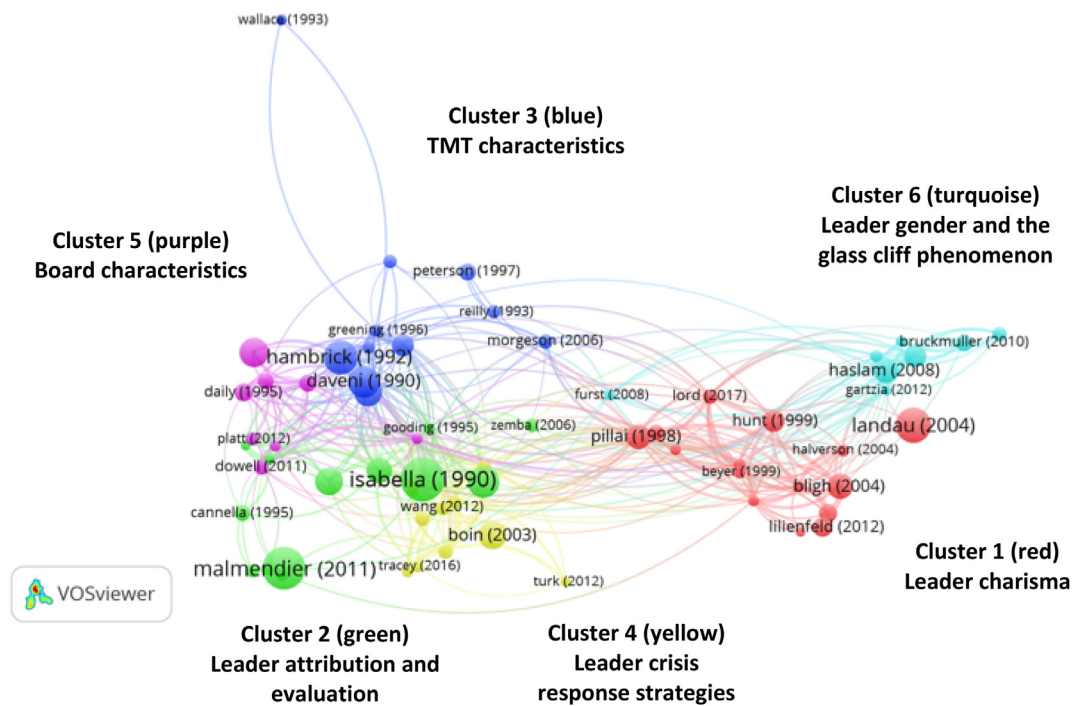


Fig. 3. Research priorities in six clusters based on bibliographic coupling. *Note:* The map presents the 69 primary documents based on the bibliographic coupling analysis using a fractional counting method with a minimum of 30 citation count threshold. Six major clusters were identified in our analysis. Documents presented in the same clusters are more similar to each other in terms of their frequency in citing the same secondary documents in their reference list. Cluster 1 (red): leader charisma; Cluster 2 (green): leadership attribution and evaluation; Cluster 3 (blue): TMT characteristics; Cluster 4 (yellow): leader crisis response strategies; Cluster 5 (purple): board characteristics; and Cluster 6 (turquoise): leader gender and the glass cliff phenomenon. (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

Coupling cluster 2 (green): Leader attribution and evaluation

Cluster 2, the second-largest cluster that comprises 13 articles, shows that leadership attribution and evaluation is another major theme in the crisis leadership literature. This cluster consists of a mixture of empirical and conceptual papers that investigate both leaders' and other stakeholders' evaluative and appraisal processes in the crisis context of firm failure, such as bankruptcy. Heading this cluster is [Davidson et al. \(1993\)](#) which empirically examined the effects of CEO succession announcements on the stock market responses after a bankruptcy announcement, and found that investors evaluated post-bankruptcy CEO succession more favorably, especially when the position was assumed by an outsider CEO who signals the possibility of exerting change.

[Davidson et al.'s \(1993\)](#) findings were seemingly contradictory to the results of their earlier study ([Worrell & Davidson, 1987](#)) in the same cluster, with the earlier study suggesting that the stock market reacted more positively to an insider CEO replacement (as opposed to an outsider) following the announcement of the death of a CEO. However, it seems plausible that the moderating role the background characteristics of the new CEO depends on the type of crisis faced by the organization. As discussed by [Worrell and Davidson \(1987\)](#), the death of an existing CEO may heighten investors' urge to seek signals from a new executive who can restore normalcy and maintain stability. In the case of bankruptcy, however, investors may look for leader qualities that are more change-oriented, which explains the distinct reactions from the stock market to different CEO successors.

[Wiesenfeld et al. \(2008\)](#) established a model to explain the process by which organizational failure is associated with the professional devaluation of corporate elites (leaders) through a stigmatization process. The model asserts that observers evaluate and assign blame to corporate elites differently—based on their social categories, economic relationships with the observers, and legal responsibilities. This evalu-

ation and attribution process is coarse and heuristic by nature, as observers tend to assign blame for the failure of organizations to those associated with stigmatized (and hence blameworthy) categories.

Two other major studies in this cluster focus on leaders' sensemaking and attribution of crisis events. [Isabella \(1990\)](#) developed a model to theorize how leaders construe organizational events as an evolving process involving four interpretive stages—anticipation, confirmation, culmination, and aftermath—all of which are linked to the process of change. The author highlighted that the interpretational role of leaders may influence the understanding of others during organizational events and the need for researchers to consider the collective interpretation of organizational events. A subsequent study conducted by [Gooding and Kinicki \(1995\)](#) further enriched the understanding of the leader attribution process in a crisis context by showing that the valence of event outcomes affected leaders' locus of attribution, such that leaders were more likely to attribute internal causes to positively valenced events and external causes to negatively valenced events.

Coupling cluster 3 (blue): TMT characteristics

Cluster 3 consists of 12 articles, the top five of which are all empirical studies published in the 1990s. Researchers are mainly concerned with the TMT characteristics that influence the propensity for organizations to survive or face bankruptcy. The most important work in this cluster is [Hambrick and D'Aveni \(1992\)](#), which drew on a dataset compiled from all publicly traded firms filing bankruptcy to show that TMTs with shorter tenures, lower team compensation, smaller team size, and fewer external directors showed a higher likelihood of experiencing bankruptcy. The authors argued that TMT plays an essential role in influencing organizational performance by engendering voluntary departures for better rewards and stigma avoidance, purposive attempts to modify the team, and scapegoating among TMT members as the key mechanisms for explaining corporate failure.

Table 5

Top 5 most important documents for each cluster based on bibliographic coupling.

Cluster	Author and year	Document description	Weight
Cluster 1: Leader charisma (red; total items: 15)	Williams et al. (2009)	An empirical study that examined the relationship between respondents' perceptions of a crisis, the perceived charismatic leadership of an incumbent U.S. presidential candidate and a challenger respectively, and voting behavior.	46
	Bligh et al. (2004)	An empirical study that examined whether there is a change in the rhetorical content of President George W. Bush's public speeches before and after the terrorist attacks of September 11.	46
	Davis and Gardner (2012)	An empirical study that investigated the influence of crises on leaders' use of charismatic rhetoric and the influence of charismatic rhetoric on perceived leader effectiveness based on U.S. presidents' speeches and radio addresses.	44
	Lord et al. (2017)	A conceptual paper that reviewed the major streams of leadership research. Articles reviewed that are relevant to crisis leadership focused on the effectiveness of leadership styles and leader behaviors (e.g., directive leadership, empowering leadership, leader preparation and coaching) during events that were disruptive and traumatic.	40
	Pillai and Meindl (1998)	An empirical study that explored the associations between contextual factors (e.g., organic structure, collectivistic cultural orientation, and perceptions of a crisis) in organizations and charismatic leadership.	39
Cluster 2: Leader attribution and evaluation (green; total items: 13)	Davidson et al. (1993)	An empirical study that investigated internal and external stakeholders' responses to CEO succession after firms' bankruptcy.	40
	Wiesenfeld et al. (2008)	A theoretical paper that established a framework to explain how corporate failure leads to the professional devaluation of individual elites through a stigmatization process.	32
	Isabella (1990)	A qualitative study that unfolded four stages of managers' interpretation of events, such as a crisis and the process of change: anticipation, confirmation, culmination, and aftermath.	26
	Gooding and Kinicki (1995)	An empirical study that adopted a field experiment approach to examine how role categorization and attribution processes play a role in managers' causal attribution of events with distinct valence.	25
	Worrell and Davidson (1987)	An empirical study that showed how the stock market responded positively towards the announcement of internal CEO succession following the death of CEO predecessors.	24
Cluster 3: TMT characteristics (blue; total items: 12)	Hambrick and D'Aveni (1992)	An empirical study that investigated TMT characteristics that are related to major corporate failures based on a dataset from 57 pairs of firms that had either experienced or not experienced bankruptcy.	44
	Greening and Johnson (1996)	An empirical study that demonstrated how organizations with TMT members who have a higher level of functional team heterogeneity, higher levels of education, shorter organizational tenure, and higher tenure heterogeneity, tended to be more effective in avoiding crises. The authors suggested that top management team characteristics played an essential role in influencing the cognitive and social processes that help prevent adverse events such as crises from happening.	42
	D'Aveni and MacMillan (1990)	An empirical study that examined the differences in managers' focus of attention to the internal and external environment during normal and crisis circumstances.	30
	D'Aveni (1990)	An empirical study that examined the effects of TMT perceived prestige at the time of failure and prestigious managers on the bankruptcy versus the survival status of a firm.	27
	Keck (1997)	An empirical study that investigated how TMT characteristics (e.g., functional heterogeneity, fluctuations in team tenure, stratification of TMT structure) influenced firm performance during stable and turbulent contexts.	23
Cluster 4: Leader crisis response strategies (yellow; total items: 11)	Williams et al. (2017)	A review paper that proposed two new perspectives of crisis—crisis-as-an-event and crisis-as-a-process—and established an theoretical framework that integrates insights from the crisis and resilience literatures. The authors proposed four concepts as critical for understanding resilient organizational responses to adverse events such as a crisis: (1) capabilities for durability, (2) organizing and adjusting, (3) responding to major disturbances, and (4) a feedback loop from these experiences.	71
	Bundy et al. (2017)	A review that proposed an integrative framework of crises and crisis management that focuses on both the internal and external perspectives across pre-crisis prevention, crisis management, and post-crisis management based on multidisciplinary perspectives.	66
	James et al. (2011)	A review that summarized a typology of business crises and explored issue framing and deviance as two concepts that are critical for understanding the tactical roles of leaders in responding to business crises.	62
	Westphal et al. (2012)	An empirical study that focused on the relationships between impression management support reciprocated among corporate leaders and favorability of journalists' coverage of firms following a negative earnings surprise.	28
	Tracey and Phillips (2016)	A qualitative study that examined the relationship between organizational stigmatization and organizational identity using a case study of a social enterprise in the UK.	21
Cluster 5: Board characteristics (purple; total: 11 items)	Withers et al. (2012)	A conceptual paper that seeks to understand how directors' individual, relational, and collective identities at work explain their voluntary exit from a board that faces an organizational crisis based on an integrative perspective of social identity and agency theories.	45
	Daily (1995)	An empirical study that investigated the relationships between board characteristics (e.g., the proportion of outside versus independent directors, the independent leadership structure) and the likelihood of a firm pursuing reorganization versus experiencing liquidation.	36
	Gales and Kesner (1994)	An empirical study that focused on the relationship between firms' bankruptcy status and changes in board characteristics (e.g., size of the board and trajectory of change in board size) on survival through the post-bankruptcy period.	23
	Dowell et al. (2011)	An empirical study that investigated the associations between board and top leader characteristics (e.g., board independence, size of board, and CEO power) and the probability of firm failure, and the moderating role of the level of financial distress experienced by a firm.	22
	Daily and Dalton (1995)	An empirical study that examined the effects of CEO turnover, board of directors turnover, change in board composition, and structure on firms' bankruptcy versus non-bankruptcy status.	20

(continued on next page)

Table 5 (continued)

Cluster	Author and year	Document description	Weight
Cluster 6: Leader gender and the glass cliff phenomenon (turquoise; total items: 8)	Ryan et al. (2011)	An empirical study that adopted an experimental approach to demonstrate how manager traits (masculinity, femininity, and gender) interacted with context (successful versus unsuccessful companies) to influence observers' description of managers and perceived desirability of the qualities possessed by an ideal manager.	45
	Haslam and Ryan (2008)	An empirical study that adopted an experimental approach to test the glass cliff hypothesis. Findings of the study showed that female leaders were evaluated more positively than male leaders when company performance was declining due to higher levels of the perceived stressfulness of leadership positions.	34
	Gartzia et al. (2012)	An empirical study which showed that exposure to instrumental versus expressive male leadership role models could influence one's selection of female and interpersonally oriented leaders for an organization in crisis, and that such a relationship is moderated by one's sexist attitude.	33
	Ryan et al. (2016)	A conceptual paper that provided a review summary of findings in the literature on the glass cliff phenomenon, possible explanatory mechanisms and proposed moderators that influenced the likelihood of the occurrence of the phenomenon.	32
	Mulcahy and Linehan (2014)	An empirical study that used an archival dataset to test the glass cliff hypothesis. Results showed support for the existence of the glass cliff as a structural barrier to the advancement of women in leadership positions. Gender diversity significantly increased in firms that experienced a period of severe financial loss (as opposed to those experiencing small loss situations and those in the control sample), indicating women being allocated to leader roles in precarious situations.	31

Other key documents in this cluster further investigated the role of TMT characteristics, such as TMT team heterogeneity (Greening & Johnson, 1996; Keck, 1997), prestige and social resources (D'Aveni, 1990), and the focus of attention conveyed by senior managers' communication with investors and other stakeholders (D'Aveni & MacMillan, 1990), in affecting organizations' susceptibility to the occurrence of a crisis in the form of bankruptcy, and organizational behaviors or performance in crisis contexts. These studies posit TMT characteristics as proxies of the quality of organizational leaders' decisions, cognitive complexity, retrenchment of faculty assumptions, stamina inflexibility, diversity in beliefs (Greening & Johnson, 1996), vulnerability to threat rigidity, and adaptability (D'Aveni & MacMillan, 1990), the likelihood of experiencing team conflict (Keck, 1997), the organization's financial health and the likelihood of maintaining high performance in times of adversity (D'Aveni, 1990)—all of which are critical for the survival and competitiveness of organizations.

Coupling cluster 4 (yellow): Leader crisis response strategies

Cluster 4 consists of 11 articles, of which the five most important were published within the last decade, thus providing insights into the more recent issues examined by scholars and emergent themes of interest. Among the key studies, three are critical reviews published on the topics of crisis and crisis management. Williams et al. (2017) provide integrative insights into the major factors linked to resilient organizational responses to crisis events, namely: capabilities for durability, organizing and adjusting, responding to major disturbances, and a feedback loop from the crisis experiences. The authors propose two important perspectives in the crisis management literature: crisis-as-event and crisis-as-process. The two perspectives emphasize the need for researchers to examine crises at the event level, and treat them as a dynamic process that could change throughout the incubation, acute, and resolution phases.

Williams et al.'s (2017) perspectives are consistent with and advance the proposed frameworks of two earlier review studies within the same cluster, including James et al. (2011), which summarized a typology of business crises and the role of leaders in framing issues arising from the crisis events and approaches for coping with deviance; and Bundy et al. (2017), which established a framework to address the internal and external factors that influence management effectiveness across pre-crisis, crisis, and post-crisis phases. Common to Bundy et al. (2017) and James et al. (2011) are the emphasis on more specific leader roles in the crisis management process, such as preventing a crisis

from occurring, identifying and resolving the problems arising from crises, effective issue framing, making fast and ethical decisions, managing stakeholders' emotions and behaviors, leading others out of the crises, and seeking opportunities for bringing new and positive changes in the aftermath of a crisis.

Two other empirical studies have been identified among the top five in this cluster. Westphal et al. (2012) drew on social exchange theory to demonstrate that CEO impression management support for journalists—communications including positive statements about a CEO's leadership and organizational strategies, and content associated with external attribution for unfavorable corporate events—was associated with more positive media coverage during crises. Tracey and Phillips (2016) also conducted an inductive empirical study to show that leaders play a crucial role in reframing the meaning that organizational members attach to the stigma engendered by corporate initiatives in favor of stigmatized people in society, thereby leading the organization and its members out of a crisis that threatens organizational identity. These studies demonstrate that, among all the leadership responsibilities and crisis management skills, communication is of particular importance.

Coupling cluster 5 (purple): Board characteristics

Cluster 5 is in the same size as Cluster 4, including 11 articles, of which the top five are all empirical studies focusing on bankruptcy. Three of these articles focus on what board characteristics account for a firm's bankruptcy and non-bankruptcy status. The boards of firms that faced bankruptcy exhibited several common characteristics prior to their collapse, including a lower proportion or loss of external and independent directors, a decline in overall board size, a higher turnover rate prior to bankruptcy, and, in some cases, attempts to separate the job of board chairman and CEO (Daily, 1995; Daily & Dalton, 1995; Gales & Kesner, 1994). These characteristics imply a loss of resources during the crisis incubation phase which accounts for a "downward spiral" driving companies into insolvency. These empirical findings are also consistent with the threat rigidity hypothesis, which suggests that organizations often become increasingly conservative, resistant to making changes, and focused on centralization and formalization (Daily & Dalton, 1995; Staw et al., 1981; Stoker et al., 2019).

More recent articles in this cluster attempt to advance the understanding of why and how these board characteristics may exacerbate crisis situations and result in organizational failure. Dowell et al. (2011) drew on agency theory to theorize that the relative costs and benefits of board characteristics, such as board independence and

board size, would change during a crisis, detrimentally influence the effectiveness of corporate governance and monitoring, and, in turn, the probability of survival and insolvency of an organization. A subsequent empirical study conducted by Withers et al. (2012)—the most important article in this cluster—drew on social identity theory to further unpack the psychological processes that explain resource loss in the form of the voluntary exit of external directors during a corporate crisis. They proposed that external directors' perceptions of the source and cause of an organizational crisis will influence their interactions at different levels of identity (such as their individual, collective, and relational identity), and in turn, their voluntary exit.

Coupling cluster 6 (turquoise): Leader gender and the glass cliff phenomenon

As the smallest cluster, cluster 6 includes eight articles focusing on the role of leader gender and the glass cliff phenomenon, whereby women are more likely to be selected and ascend to leadership positions that involve risks and are inherently more precarious (Ryan et al., 2016). The top five key documents in this cluster were all published in the last decade, suggesting the role of leader gender and the presence of the glass cliff phenomenon in crisis contexts as an emerging research theme. Most of these key articles are empirical studies that adopted either an experimental approach or field survey design. Two of these major empirical studies were authored by Ryan and colleagues, supporting the existence of the glass cliff phenomenon by identifying the effect of leaders' gender and perceived traits of masculinity and femininity (Haslam & Ryan, 2008; Ryan et al., 2011). Gartzia et al. (2012) advanced this stream of research by exploring the contextual predictors of the glass cliff. They found that the exposure to instrumental (male) leadership role models was associated with lower acceptance of people-oriented and female leaders, particularly among observers who held sexist attitudes.

The glass cliff phenomenon also received support from studies that adopted alternative methodological approaches extending beyond the experimental context. One of the major empirical studies in this cluster conducted by Mulcahy and Linehan (2014), based on an archival dataset compiled from companies publicly listed on the UK stock exchange, shows that gender diversity on boards significantly increased after the firm experienced severe losses. The empirical evidence accumulated over the past decade is comprehensively reviewed and critically discussed by Ryan et al. (2016), who summarized the empirical findings, major explanatory mechanisms, and boundary conditions underlying the glass cliff phenomenon. The authors proposed four underlying processes that explain the emergence of this research, selection bias, stereotypes and implicit theories of leadership, strategic need for organizational change, and women's choice.

Summary

Overall, the 168 primary articles were grouped into six clusters based on their shared citations. The clusters inform the emerging knowledge bases in the crisis leadership literature. That is, similar to co-citation clusters, these coupling clusters are reflective of the intellectual structure of the crisis leadership literature; meanwhile, different from co-citation clusters, these coupling clusters can better demonstrate the current research front of the literature (Boyack & Klavans, 2010). Next, we discuss the procedure and findings from the co-word analysis. Different from the co-citation and bibliographic coupling analyses, the co-word analysis is not citation-based; rather, it is a content analysis technique that informs the conceptual structure of the crisis leadership literature by visualizing the connections among key concepts that tend to appear in the same titles and abstracts of the articles in our sample (Zupic & Cater, 2015).

Co-word analysis: Conceptual structure of the crisis leadership literature

Procedure

Co-word analysis rests on the assumption that the conceptual structure of a field can be abstractly represented and visualized by major keywords that signal its core content (Zhang et al., 2012). This analysis is based on the text corpus including all the text presented in the titles and abstracts of articles in our sample. We adopted a minimum frequency of five as the threshold and adopted the default binary counting approach. To reduce bias in our findings, we have excluded non-content related keywords from the analyses and standardized keywords with the same meanings—even if they were presented in different formats in the titles and abstracts of the primary documents (see Zhao & Li, 2019 for a similar approach). For instance, we manually coded “CEO” to represent “chief executive officer” and “CEO”, and used “financial crisis” to represent “global financial crisis”, “GFC”, and “financial crisis”. After excluding non-content-related keywords, we retained 46 keywords that fell into five clusters, graphically presented in Fig. 4. In Table 6, we also present the keywords and sample studies included in each cluster.

Co-word cluster 1 (red): Leader characteristics, behaviors, and leadership styles

“Leader characteristics, behaviors, and leadership styles” is the largest cluster in terms of the number of co-occurring keywords in the map, comprising 14 keywords generated from the titles and abstracts of 37 articles. The findings suggest that the central emphasis of the crisis leadership literature has been on the associations among leader characteristics (e.g., “power”, “value”, “charisma”; Grover & Hasel, 2015), “behavior” (Halverson et al., 2004), leadership styles (e.g., “charismatic leadership”, “transformational leadership”; Bligh et al., 2004; Zhang et al., 2012), and stakeholder reactions (e.g., “perception” of crisis or leaders, “expectation” held by stakeholders; Birkeland et al., 2017). Contexts in these studies included “terrorist attack” and elections of “president” (e.g., Birkeland et al., 2017; Williams et al., 2009).

Several leadership styles, such as charismatic and transformational leadership, have been examined in the context of crises. There is evidence showing that a certain level of charismatic leadership is needed during a crisis to produce desired perceptions of leader effectiveness among followers. However, above the minimal level, charismatic rhetoric is no longer effective (Davis & Gardner, 2012). Similarly, Hunt et al. (1999) found that two components of charismatic leadership—being visionary and crisis-responsive—were effective in times of crisis. However, in the absence of a crisis, the effectiveness of the crisis-responsive form of charismatic leadership erodes faster than that of the visionary form of charismatic leadership. However, it should also be noted that in the wider leadership literature some researchers have criticized research on charisma and charismatic leadership as suffering from theoretical and empirical issues. For instance, Antonakis et al. (2016) pinpointed the fact that many definitions of charismatic leadership have been obscured by either including keywords related to its antecedents and outcomes or by referring to it as a general relational process that overlaps with other leadership concepts. Antonakis and colleagues have also criticized the measurement of charismatic leadership and suggested scholars capture markers of leader charisma with more objective and unobtrusive measures.

Transformational leadership is another commonly investigated leadership style linked to leadership effectiveness in times of crises (Sommer et al., 2016; Zhang et al., 2012). According to Zhang et al. (2012), the utility of transformational leadership in times of crisis pertains to its power to transform followers' perceptions and promote

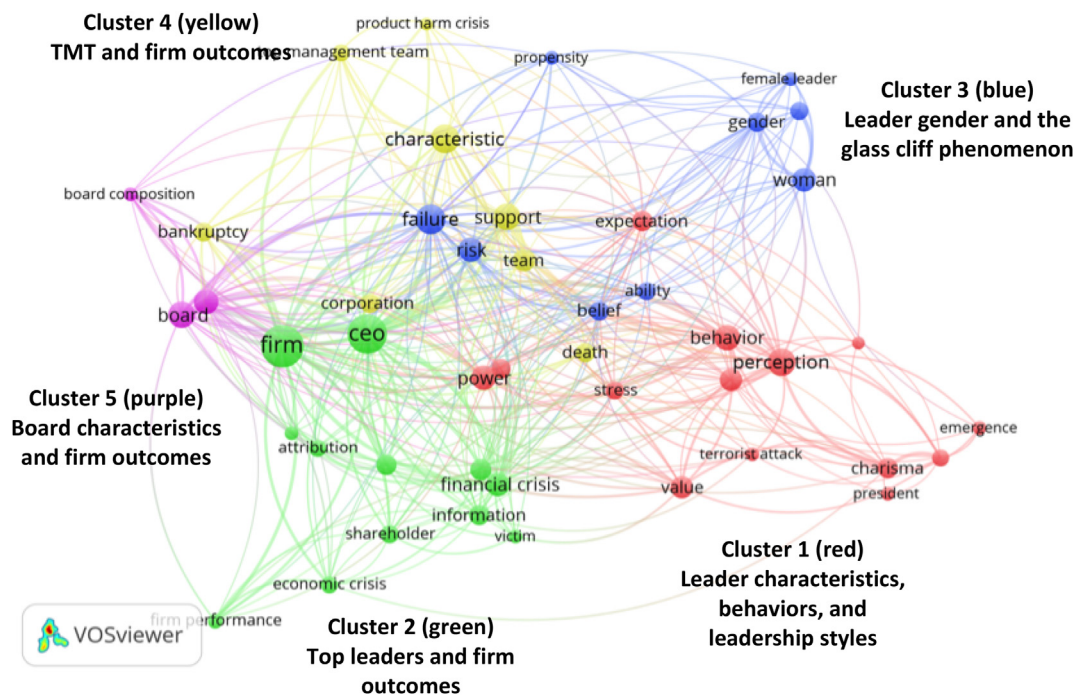


Fig. 4. Co-occurrence mapping of top 100 keyword in five co-word clusters. *Note:* The map presents the top 100 keywords yielded from text data based on the titles and abstracts of the papers in our final sample ($N = 168$) using the default binary counting methods with a 5-count threshold and excluding non-content related terms. Terms presented in varying sizes represent the frequency of their observation in the data, such that larger terms appear more often than small ones. Five major clusters emerged from our data. The proximity of terms on the map indicates their co-occurrence in the data, whereas the centrality of terms on the map indicates terms that most frequently co-occur with other terms in the map. The color of the terms denotes “clusters” such that similar terms share a common color. Cluster 1 (red): Leader characteristics, behaviors, and leadership styles; Cluster 2 (green): Top leaders and firm outcomes; Cluster 3 (blue): Leader gender and the glass cliff phenomenon; Cluster 4 (yellow): TMT and firm outcome; and Cluster 5 (purple): Board characteristics and firm outcomes. (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

their agreement with the leader’s goals and value system, thereby promoting followers’ perceived value congruence. Indeed, transformational leadership is positively associated with observers’ perception of an organization adopting more constructive crisis response strategies (e.g., corrective actions and mortification; [Hwang & Cameron, 2009](#)). In addition to fostering positive perceptions from stakeholders, transformational leadership has also been found effective in promoting positive affect, reducing negative affect, and enhancing followers’ resilience in times of crisis ([Sommer et al., 2016](#)). However, similar to charismatic leadership, research on transformational leadership has also drawn criticism in the wider leadership literature. Critiques on the conceptualization and measurement of transformational leadership include the challenges in differentiating transformational leadership from other leadership constructs, a lack of theory that explains each of its subdimensions, and disconnection between its measurement and conceptualization ([Van Knippenberg & Sitkin, 2013](#)).

Co-word cluster 2 (green): Top leaders and firm outcomes

The second largest cluster focuses on the theme of “top leaders and firm outcomes” and consists of 12 keywords generated from 31 articles. Articles in this cluster focus on top leaders (such as “CEO”; [Cowen & Montgomery, 2020](#); [Daily & Dalton, 1995](#)) and crises emerging in the external environment (“financial crisis”, “economic crisis”; [Fralich & Papadopoulos, 2018](#); [Ho et al., 2016](#)). Studies in this cluster characterize crises as a “challenge” to leaders, and examined the consequences of crises on firm-level outcomes, such as “firm performance” and “shareholder” reactions (e.g., [Patel & Cooper, 2014](#); [Sun et al., 2015](#)).

Researchers have examined the role of top leader characteristics, such as the nature of the strategies they adopt, their insider–outsider

status, and their risk appetite and confidence ([Antes & Mumford, 2012](#); [Connelly, Ketchen, Gangloff, & Shook, 2016](#); [Feng & Wang, 2019](#); [Ho, Huang, Lin, & Yen, 2016](#)) in the context of crisis. Accumulated findings showed that the top leaders who adopt more balanced strategies (as opposed to positive or negative strategies), have outsider status, lower levels of risk appetite, and a lower tendency to experience overconfidence, were better able to prevent crises from happening and effectively lead their organizations through crises ([Antes & Mumford, 2012](#); [Connelly et al., 2016](#); [Feng & Wang, 2019](#); [Ho et al., 2016](#)). However, findings on the role of CEO power have been mixed. Some research finds support that for organizations in financial distress, more powerful CEOs can decrease the probability of failure because concentrated power allows the organization to respond more rapidly to the crisis ([Dowell et al., 2011](#)), whereas others demonstrate that during times of financial crisis, CEO power constrains acquisition premiums received by organizations ([Fralich & Papadopoulos, 2018](#)).

CEO succession has been identified as a major organizational crisis response and a key factor that accounts for organizational outcomes in times of crisis. Findings of papers citing the keywords in this cluster suggest that top leaders and executives play an increasingly important role during crises because of their significant influence on stakeholder perceptions, and the crisis response strategies of their organizations ([Quigley et al., 2017](#)). Moreover, they examined the effect of CEO succession on organizational outcomes, and found that the effectiveness of CEO succession following an organizational failure depended on the type of failure and who the successor is ([Connelly et al., 2016](#)).

Co-word cluster 3 (blue): Leader gender and the glass cliff phenomenon

The third cluster focuses on leader gender and the glass cliff phenomenon and includes nine keywords generated from 13 articles.

Table 6
Co-occurrence mapping of top 100 keyword in five co-word clusters.

Cluster	Keywords (No. of keywords)	No. of articles that consist of the co-occurring keywords	Sample Articles that Consist of the Co-occurred Keywords
Cluster 1: Leader characteristics, behaviors, and leadership styles (red)	Perception, behavior, power, value, charisma, expectation, stress, threat, charismatic leadership, group, terrorist attack, transformational leadership, emergence, president (14)	37	Birkeland et al. (2017); Bligh et al. (2004); Buchanan and Hällgren (2019); Davis and Gardner (2012); Grover & Hasel (2015); Halverson et al. (2004); Islam (2009); Landau et al. (2004); Lilienfeld et al. (2012); Williams et al. (2009); Williams et al. (2012); Zhang et al. (2012)
Cluster 2: Top leaders and firm outcomes (green)	Firm, CEO, financial crisis, responsibility, challenge, shareholder, economic crisis, firm performance, information, attribution, victim, self (12)	31	Elliott and Stead (2018); König et al. (2020); Palvia et al. (2015); Patel and Cooper (2014); Patelli and Pedrini (2014); Rink et al. (2012); Rink et al. (2013)
Cluster 3: Leader gender and the glass cliff phenomenon (blue)	Failure, risk, gender, woman, belief, propensity, ability, glass cliff, female leader (9)	13	Cowen and Montgomery (2020); Kulich et al. (2015); Kulich et al. (2018); Mulcahy and Linehan (2014); Ryan et al. (2010); Ryan et al. (2011)
Cluster 4: TMT and firm outcomes (yellow)	Support, characteristic, bankruptcy, team, corporation, top management team, death, product harm crisis (8)	14	D'Aveni (1990); Greening and Johnson (1996); Hambrick and D'Aveni (1992); Kashmiri and Brower (2016)
Cluster 5: Board characteristics and firm outcomes (purple)	Board, director, board composition (3)	14	Chaganti et al. (1985); Daily (1995); Gales and Kesner (1994); Gomulya and Boeker (2016); Salmon (1993); Simpson and Sariol (2019); Withers et al. (2012)

The focus on leader gender, particularly “female leaders”, has been motivated by scholars’ motivation to understand the causes and implications of the “glass cliff” phenomenon (e.g., [Rink et al., 2012, 2013](#)). The glass cliff phenomenon suggests that female leaders are more likely to rise to leadership positions in times of crisis than in times of success ([Bruckmuller & Branscombe, 2010](#); [Ryan & Haslam, 2005, 2007](#)). For instance, [Furst and Reeves \(2008\)](#) drew on creative destruction and gender role theories to establish propositions concerning why women are more likely to obtain a top management position during times of uncertainties and turbulence. Empirical studies advancing the understanding of the glass cliff phenomenon have demonstrated that males are more likely than females to be selected to leadership positions in successful organizations, while females are seen as more suitable for leader positions and be evaluated favorably during crises ([Bruckmuller & Branscombe, 2010](#); [Haslam & Ryan, 2008](#)).

Prior studies have discussed several explanations for the glass cliff phenomenon. One account concerns followers’ status quo bias, which leads them to select a non-typical (non-male) leader who could transform the status quo and turn around the undesirable situation ([Bruckmuller & Branscombe, 2010](#)). As women are stereotypically perceived to possess more feminine characteristics that are non-typical leader attributes, appointing female leaders during a crisis can signal to stakeholders that the organization is embracing change ([Ryan & Haslam, 2007](#)), which may increase stakeholders’ positive attitudes and perceptions toward the organization. An alternative explanation is derived from implicit theories of leadership, which posits that people’s beliefs about what constitutes a good leader would change in times of crisis ([Bruckmuller & Branscombe, 2010](#)). Because females are stereotypically perceived as more feminine, empathetic, warm, and sensitive to others’ needs and welfare ([Eagly & Karau, 2002](#); [Heilman et al., 1995](#)), female leaders enjoy the advantages of being seen as more capable and willing to address the needs of victims, to implement policies focusing on diversity, and to tackle the unprecedented challenges associated with crisis situations ([Ryan et al., 2011](#)). Finally, another explanation is that women are expected to take the blame for failure and help improve an undesirable situation. Appointing a female leader in difficult times may serve the purpose of having a non-typical leader to blame if things go wrong and justify the appointment of a typical (male) leader afterwards ([Ryan & Haslam, 2007](#)). Supporting this account, [Ryan et al. \(2011\)](#) found that ideal managers of unsuccessful companies were associated with female stereotypes, not because they were expected to improve the situation but because they were seen as good people who could be held accountable for failure.

Other empirical studies in this cluster have begun to explore the conditions under which the glass cliff phenomenon becomes more or less salient. For example, [Rink et al. \(2013\)](#) found that the high likelihood of females being selected was attenuated when male candidates could demonstrate their availability of social resources in the form of gaining support from internal stakeholders (e.g., shareholders, board members). Moreover, to increase the relevance of findings and insights to leaders particularly in the corporate settings, studies have increasingly focused on the context of organizational “failure”, such as bankruptcy, product failure, and an unusual and sudden downturn in firm performance (e.g., [Almandoz & Tilcsik, 2016](#); [Connelly et al., 2016](#); [Gartzia et al., 2012](#); [Montgomery & Cowen, 2020](#)).

Co-word cluster 4 (yellow): TMT and firm outcomes

The fourth cluster which we labelled as “TMT and firm outcomes” consists of eight keywords generated from 14 articles. Studies in this cluster focus on crises encountered by “corporation” (e.g., “bankruptcy”, “death” of leaders, “product harm crisis”) as focal crisis contexts, and examine the “characteristic” of the “top management team” (or “TMT”) in shaping firm outcomes (e.g., [Morgeson & DeRue, 2006](#)). A closer look at the studies in this cluster revealed that researchers commonly examine TMT characteristics in relation to power and status, and focus on how those characteristics help reduce the likelihood of encountering crises.

For instance, drawing on a sample of 116 S&P 500 firms across the period of 2006 to 2011, [Kashmiri and Brower \(2016\)](#) demonstrated that the TMT members’ influence and quality of corporate governance, such as level of managerial ownership in the organization and marketing functions with a higher influence in the TMT, explained why some firms had a lower likelihood of experiencing corporate crises such as product harm crises. In another example, [Greening and Johnson \(1996\)](#) found that TMTs with higher degree of functional and tenure heterogeneity, higher education levels, and shorter organizational tenure tended to be more effective in avoiding crises. In addition to the role of TMT characteristics in predicting firms’ propensity to experience crises, researchers have also investigated TMT behaviors and structure, such as the pattern of turnover among CEO and members on the board, beyond and after crises (e.g., [Daily & Dalton, 1995](#)).

Co-word cluster 5 (purple): Board characteristics and firm outcomes

The final cluster, which addresses topics related to “board characteristics and firm outcomes”, consists of three keywords generated

from 14 articles. Research in this cluster focuses on the “boards” of firms, such as “boards of directors”, and investigated how various characteristics of board, such as “board composition”, shapes firm outcomes (e.g., [Chaganti et al., 1985](#); [Platt & Platt, 2012](#)). A board plays an important role in providing objectives, policies, quality governance and directions for decision making, and delegation ([Chaganti et al., 1985](#)), all of which could influence the vulnerability of an organization to crisis occurrence ([Gales & Kesner, 1994](#)), and cushion the detrimental effects of crisis on firm outcomes ([Iaquinto et al., 2017](#)).

Articles in this cluster generally focus on two major questions: (1) whether board characteristics influence firm survival and effectiveness during crises, and (2) whether and under what circumstances crises influence board characteristics. Board size has been commonly examined but related findings are mixed. While some found a positive relationship between board size and firm performance in the post-crisis period (e.g., [Mangena et al., 2012](#)), others found that the greater the level of financial distress, the higher the probability of failure of firms with large boards (e.g., [Dowell et al., 2011](#)). Board composition is another frequently examined factor. The proportion of directors who are independent outsiders or have functional expertise in boards is related to more positive firm outcomes in times of crisis and uncertainty, such as successful reorganization, lower likelihood of liquidation, and higher levels of firm mortality ([Almandoz & Tilcsik, 2016](#); [Daily, 1995](#)).

Another stream of work in this cluster has examined how crises influence board characteristics. For instance, [Gales and Kesner \(1994\)](#) demonstrated that firms experienced a loss of outsider directors and a decline in board size in the period following bankruptcy declaration. [Gomulya and Boeker \(2016\)](#) further found that incumbent CEOs became less likely to appoint board members who were insiders after events of financial misconduct to avoid the probability of CEO replacement.

Summary

By examining the connections among the key terms in the titles and abstracts of our primary documents which resembles a content analysis technique, our co-word analysis has identified five clusters in the conceptual structure of crisis leadership literature. The five clusters cover topics related to organizational leaders across levels and substantially overlap with clusters obtained from the co-citation and bibliographic coupling analyses. However, it is important to mention that the findings of the co-word analysis should be interpreted with caution because the same keywords could sometimes be used variably to refer to different concepts across documents, and the keywords used by scholars in their article titles and abstracts might not fully capture all the relevant aspects of their content, resulting in biases induced by the so-called “indexer effect” ([Zupic & Čater, 2015, p. 435](#)). Thus, to gain a more comprehensive view of the structure of crisis leadership literature, one should rely on and interpret findings of all three bibliometric analyses in a concerted manner.

Emergence of meta-clusters from three bibliometric analyses

An overview of all our findings reveals connections among the clusters resulting from the three bibliometric analyses. Specifically, as shown in [Table 7](#), we identified three meta-clusters that cover clusters that emerged from the co-citation, bibliographic coupling, and co-word analyses, including leader psychological and behavioral responses in crisis, strategic leadership in crisis, and gender in crisis leadership.

Meta-cluster 1: Leader psychological and behavioral responses in crisis

Findings of the three bibliometric analyses have revealed leader psychological and behavioral responses in crisis contexts as a common

Table 7

Meta-clusters emerging from bibliometric analyses.

Meta-cluster	Co-citation analysis	Bibliographic coupling	Co-word analysis
1: Leader psychological and behavioral responses in crisis	Cluster 1: Theoretical perspectives on cognitive processes Cluster 4: Psychological leadership theories	Cluster 1: Leader charisma Cluster 2: Leader attribution and evaluation Cluster 4: Leader crisis response strategies	Cluster 1: Leader characteristics, behaviors, and leadership styles Cluster 2: Top leaders and firm outcomes Cluster 4: TMT and firm outcomes Cluster 5: Board characteristics and firm outcomes
2: Strategic leadership in crisis	Cluster 2: Strategic management perspectives	Cluster 3: TMT characteristics Cluster 5: Board characteristics	Cluster 3: Leader gender and the glass cliff phenomenon
3: Gender in crisis leadership	Cluster 3: Gender and role theories	Cluster 6: Leader gender and the glass cliff phenomenon	

theme in the crisis leadership literature. This theme covers a few clusters, some of which are the largest in their respective category, including co-citation cluster 1 (theoretical perspectives on cognitive processes), co-citation cluster 4 (psychological leadership theories), coupling cluster 1 (leader charisma), coupling cluster 2 (leader attribution and evaluation), coupling cluster 4 (leader crisis response strategies), and co-word cluster 1 (leader characteristics, behaviors, and leadership styles). These clusters answer questions concerning how organizational leaders make sense of crises and how crises could change the way leaders act and lead in response to the uncertainties, risks, and potentially significant losses associated with crises.

Meta-cluster 2: Strategic leadership in crisis

Meta-cluster 2 relates to strategic leadership. This meta-cluster covers co-citation cluster 2 (strategic management perspectives), coupling cluster 3 (TMT characteristics), coupling cluster 5 (board characteristics), co-word cluster 2 (top leaders and firm outcomes), co-word cluster 4 (TMT and firm outcomes), and co-word cluster 5 (board characteristics). Strategic leadership focuses on “the people who have overall responsibility for the organization and includes not only the titular head of the organization but also members of what is referred to as the top management team or dominant coalition” ([Boal & Hooijberg, 2000, p. 516](#)). Strategic leadership usually involves TMT members and company boards performing diverse functions such as making strategic decisions and engaging with external stakeholders ([Shrivastava & Nachman, 1989](#); [Samimi et al., 2020](#)). Therefore, this meta-cluster answers questions concerning how characteristics and behaviors of top leaders (e.g., CEOs), TMTs, or boards of directors influence important organizational outcomes around times of crises.

Meta-cluster 3: Gender in crisis leadership

Meta-cluster 3 centers on gender in crisis leadership. This meta-cluster covers the co-citation cluster 3 (gender and role theories), coupling cluster 6 (leader gender and the glass cliff phenomenon), and co-word cluster 3 (leader gender and the glass cliff phenomenon). A crisis, featured with high risks and uncertainties, is regarded as a precarious

condition (or a “glass cliff”) in which leaders are subject to higher risks of failure in general (Ryan & Haslam, 2005). In glass cliff situations, women tend to be selected to leadership position. Thus, this meta-cluster answers questions concerning why women, compared to men, are more likely to be endorsed to be leaders in times of crises.

Research methodologies in the crisis leadership literature

In this section, we review the research methods used to study crisis leadership, the majority of which are empirical in nature (86% of the articles in our sample). Fig. 5 provides a more detailed view of these methodological approaches. Among all the articles included in our review, a significant proportion adopted archival data (count = 42) for empirical investigation, followed by a qualitative approach that encompassed the use of content analyses, interviews, and case studies (count = 38), experiments (count = 34), conceptual and review work (count = 23), surveys (count = 16), mixed methods (count = 10), and others (count = 5).

Archival studies

The use of archival data is common in the economics and strategy disciplines. This methodological approach is most commonly applied to examine leader or TMT-related characteristics that are linked to firm outcomes and leadership effectiveness (e.g., changes in stock prices, firm innovation, risks of insolvency and probability of default, exit and appointment of executives, and changes in the composition of the board of directors). Studies using this methodological approach frequently apply a matched sample technique to compare their target organizations with a group of control organizations (e.g., Cannella et al., 1995; Daily & Dalton, 1995; Gales & Kesner, 1994; Hambrick & D'Aveni, 1992). This mitigates systematic variations in the unobservable attributes of the organizations.

Qualitative approaches

A substantial proportion of empirical studies on crisis leadership have adopted qualitative methods. Researchers often use interviews, case studies, ethnography, and historical textual data or narratives to explicate the intrapsychic and cognitive processes underlying leaders' decision-making and crisis responses (e.g., Combe & Carrington, 2015; Guttieri et al., 1995). The qualitative approach is recognized as useful in part because crises have sudden, intense—yet sometimes short-lived—impacts on individuals' complex psychological processes and behaviors. These include sensemaking, construction of meaning, internal conflicts, and tensions experienced by individuals (Combe & Carrington, 2015; O'Kane & Cunningham, 2014). These psychological

processes and behaviors are often difficult to fully capture using quantitative methods. Therefore the purpose of qualitative studies is often to obtain a deeper understanding of the phenomenon of leadership in times of crisis, rather than generalizing findings across contexts and samples.

Experiments

Another popular methodological approach is the use of experiments. In laboratory experiments, researchers often directly elicit a perception of crisis among participants and manipulate the characteristics or behaviors of leaders using hypothetical scenarios (e.g., Halverson et al., 2004; Stam et al., 2018) or small group paradigms (e.g., Tjosvold, 1984). However, the findings from these studies can be subject to two potential threats. First, because these studies often use samples of students, findings may not be generalizable to organizational crisis scenarios. Second, hypothetical scenarios may not fully reflect crisis situations in real-life settings. Recent experimental research attempts to address these challenges by conducting field experiments with employees (e.g., Marques-Quinteiro et al., 2019). Field experiments are valuable because they can provide realistic contexts to study crisis leadership and have a rigor similar to laboratory experiments. However, it is not always possible for researchers to conduct randomized experiments in the field because of practical or ethical constraints.

Field survey studies

Early field survey studies were often cross-sectional in nature (e.g., Pillai & Meindl, 1998). In the last decade, however, scholars have begun to adopt more sophisticated research designs and more rigorous methodological approaches, such as longitudinal surveys (e.g., Birkeland et al., 2017), multi-level research, and cross-cultural comparisons (e.g., Stoker et al., 2019). Studies have also increasingly used event-based designs (Carsten et al., 2019) because of the nature of crises as being unpredictable and acute. Although field surveys are often conducted in realistic crisis contexts to examine leadership, they suffer from endogeneity problems that can seriously jeopardize the validity and causal inferences in their findings (Antonakis et al., 2010, 2014).

Mixed methods

Because each methodological approach has its own merits and limitations, researchers have increasingly combined different methods to enhance the rigor and validity of their findings. The most common approach in prior work was to combine surveys and interviews (e.g., Morgeson & DeRue, 2006; Sommer et al., 2016). Other researchers

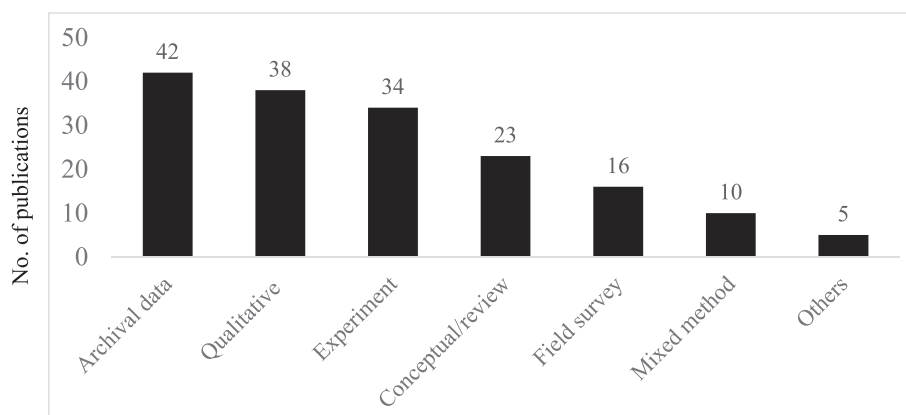


Fig. 5. Crisis leadership publications by methodological approach.

have combined archival data and experiments. For example, [Stam et al. \(2018\)](#) examined the consequences of leaders' promotion- versus prevention-oriented communication by analyzing archival data collected from inaugural speeches of political leaders, and subsequently replicated their findings in two experiments.

Overall, we find it encouraging that researchers have used a variety of methodological approaches to examine the role of leaders in crisis contexts. However, we also note the important limitations of these methods. One major problem that exists across different methodological approaches is endogeneity, which arises when the effects of independent variables on dependent variables cannot be interpreted due to causes such as omitted variables, omitted selection, simultaneity, common-method variance, and measurement error ([Antonakis et al., 2010](#)). For example, [Selart et al. \(2013\)](#), in a correlational study, concluded that crisis preparation by leaders led to lower perceived risks among employees and a higher degree of employee well-being. However, the relationships found could have been due to other omitted variables associated with both the independent and dependent variables, causing endogeneity problems. Drawing on the latest methodological articles advocating for more robust and rigorous methods in leadership and management research ([Antonakis et al., 2010](#); [Bastardo et al., 2017](#); [Sieweke & Santoni, 2020](#)), we suggest solutions for addressing endogeneity and other methodological issues in the methodological advancements in crisis leadership section in our future research agenda.

Future research agenda

This review adds to the existing literature on crisis management. More importantly, it advances knowledge of crisis management by focusing on crisis leadership. By adopting a bibliometric methods, we demonstrate there has been significant progress in the crisis leadership literature as a promising domain of leadership research. Despite the progress made, we also identified several opportunities for diversifying and enriching research topics and theoretical perspectives, based on our bibliometric analyses and the identified meta-clusters (please refer to [Table 7](#)). In this section, we highlight the limitations of extant research and provide guidance for future research. In addition, we recommend rigorous methodological and analytical approaches in future research to help address the methodological limitations in the literature.

Theoretical advancements in crisis leadership

Research direction 1: Leader emotion management in crisis contexts

As highlighted in our discussion of meta-cluster 1 (leader psychological and behavioral responses in crisis), the crisis leadership literature seems to have placed an emphasis on cognitive and behavioral processes, such as leaders' sensemaking, threat-and-challenge appraisal, attribution and evaluation in crisis situations. What is relatively overlooked is a focus on the emotions of leaders and key stakeholders, particularly the emotion management process through which leaders can mitigate the negative emotions and restore the positive emotions of stakeholders during crises. This overlooked area is surprising, because crises have a heavy emotional toll on both leaders and other organizational stakeholders, and thus, it is important for leaders to gain knowledge regarding how they may effectively and strategically manage negative emotions (e.g., anger, anxiety, fear) that arise during crises.

We suggest that emotion management and regulation theories (e.g., [Gross, 1998](#); [Williams, 2007](#)), provide a useful framework for understanding how leaders can manage employees', other stakeholders', and regulate their own emotions to achieve positive outcomes during crises. For example, crisis leadership scholars may look to existing

research on leader interpersonal emotion management strategies and leader emotion helping for insights (e.g., [Little et al., 2016](#); [Toegel et al., 2013](#)). Future research can examine what emotion management strategies leaders should use for maintaining morale, protecting mental health, and leading employees out of crises. This line of inquiry can be extended to address leader emotion management strategies used to not only mitigate negative emotions and accompanying unfavorable outcomes experienced by other stakeholder groups, but also elicit positive emotions (e.g., hope, pride, attentiveness) that promote functional coping, resilience, and the well-being of organizational stakeholders.

Research direction 2: A process view of crisis leadership

Organizational leaders often perform diverse roles in shaping their organizations' strategic decisions, policies, negotiations, and interactions with different stakeholders ([Samimi et al., 2020](#)). During the course of a crisis, the importance of varied leadership roles and leadership processes may change due to the evolving demands of various stakeholders throughout different phases of a crisis ([Tokakis et al., 2019](#)). As indicated in our bibliometric findings with regard to the meta-cluster 2 (strategic leadership in crisis) in particular, however, crisis leadership research usually focuses on examining how the characteristics and roles of organizational leaders influence outcomes in a specific stage of a crisis. Crisis management scholars have identified this limitation and called for researchers to examine a crisis as a process that comprises of multiple phases. For example, in their recent review, [Bundy et al. \(2017\)](#) present a framework that specifies crisis management as consisting of three primary stages, including the pre-crisis, in-crisis, and post-crisis stages.

Although existing literature has not clearly defined nor distinguished between these three stages, we believe that it is important to do so to advance future research endeavors. We refer to a pre-crisis stage as a period of time from some cues of abnormality that have a potential to result in a crisis to the perceived or declared occurrence of a crisis event. We use the COVID-19 pandemic as an example of a public health crisis. The pre-crisis stage for a particular country can be seen as the period of time when a few sporadic infected cases are detected without a clear trend of increasing transmission. An in-crisis stage refers to a period of time immediately after the perceived or declared occurrence of a crisis until the highly salient and disruptive impact comes to an end. In the COVID-19 example, the in-crisis stage may be seen as starting from the time a health authority (e.g., the World Health Organization or a health authority in a particular country) declared COVID-19 to be a pandemic until there is a very low number of infected cases. Finally, the post-crisis stage refers to a period of time when some lingering impact of the crisis still exists but does not pose a major threat to organizations or the public anymore until the situation completely recovers to normal. For the COVID-19 health crisis, the post-crisis stage can be seen as the stage at which the virus has been brought under control with only minimal number of infections until the virus has been completely eradicated. Despite these definitions and examples, we acknowledge that it is challenging to draw clear lines between the three stages.

Our review shows that the field of crisis leadership has yet to formally incorporate such a process-oriented view. Based on our definition of the three stages of crises, we coded the 168 articles included in our sample and found that only 19.64% of studies, mainly in clusters focusing on strategic leadership, explicitly examined pre-crisis prevention (e.g., [Salmon, 1993](#)) and the post-crisis period (e.g., [Simpson & Sariol, 2019](#)). We suggest that crisis leadership researchers should align closely with the broader crisis management research by adopting a process view. This process view can help leaders understand the necessary measures they need to take to prevent crises from occurring and learn from crises that have already occurred, in addition to dealing with ongoing crises.

Such a process view also helps scholars address more novel questions concerning the dynamic leadership processes and the role of leader gender in influencing preferences or selection of leaders around times of crises to advance work in meta-clusters 1 and 3. For example, in relation to meta-cluster 1 (leader psychological and behavioral responses in crisis), future research can investigate how leaders should act at the pre-crisis, in-crisis, and post-crisis stages respectively, to minimize the likelihood of crises, reduce the loss incurred during a crisis, and maximize the learning after a crisis. In relation to meta-cluster 2 (strategic leadership), future research should further examine the optimal characteristics of top leaders, TMTs, and corporate boards at different stages of a crisis. In relation to meta-cluster 3 (gender in crisis leadership), future research can also adopt a process view to investigate questions, such as whether the likelihood of the glass cliff phenomenon remains high across all three stages of a crisis, and both the short-term and longer-term career impact on women who ascend to leadership positions at different stages of a crisis.

Research direction 3: Leadership across crisis contexts

Research in some clusters within the meta-cluster 2 (strategic leadership in crisis) has also revealed several major crisis contexts that have commonly attracted the attention and interests of organizational scholars, such as the global financial crisis and other economic crises, corporate bankruptcies, death of leaders, and product harm crises. Although there seems to be consensual understanding about the conceptualization and the major characteristics of crises in the literature, James et al. (2011) pointed out that each type of crisis is unique as they pose different threats and challenges to organizations and leaders.

Crises can also differ in terms of the common characteristics proposed by crisis management researchers, such as their probability and frequency of occurrence, significance, and magnitude of impact on stakeholders (James & Wooten, 2010). A handful of studies in our sample proposed some typologies of crisis (e.g., Coombs, 1995; Gundel, 2005; Jackson & Dutton, 1988; James et al., 2011; Marcus & Goodman, 1991; Pearson & Mitroff, 1993), based on the type of victims involved, organizational deniability, threat-and-challenge consistency and discrepancy, locus of control and intentionality of organizations, degree of severity, and domains (e.g., technical, economic, human, social). Despite the diversity of crisis typologies available in the literature, there has been a lack of research that applies these typologies to support theory advancement on crisis leadership.

We suggest that future research should pay more attention to differences across crisis contexts. More specifically, future research may examine whether there are certain leader psychological and behavioral responses (meta-cluster 1) or certain characteristics of strategic leadership (meta-cluster 2) that constitute effective crisis leadership and that generally predict positive outcomes across crisis contexts, or if these psychological and behavioral responses and strategic leadership are more effective in specific stages and/or types of crisis situations. Examining leader responses or strategic leadership in different types of crisis contexts is important, because it helps researchers and organizational leaders identify the most effective crisis response strategies and leadership practices to better handle different crises, understand the stakeholder groups that are most vulnerable to specific crises, and enact optimal resource allocation to prepare for and resolve the crisis (Coombs & Holladay, 2002; Pearson & Mitroff, 1993).

Research direction 4: An evolutionary perspective to crisis leadership

Our findings revealed leader gender as an important meta-cluster. Research in this cluster has drawn on different theoretical perspectives to examine the glass cliff phenomenon. However, what is missing is an evolutionary perspective to understand the role of gender and other physical attributes in explaining leadership preference and selection around times of crisis.

According to the evolutionary perspective, human beings evolve to survive and thrive based on a group living strategy. To be effective in social coordination, they must identify, follow and coordinate with a leader that helps them best adapt to the challenges and demands they face in the environment (Van Vugt, 2006; Wilson et al., 2008). Other than gender, a number of other physical attributes (e.g., facial structure, appearance, voice pitch and tone) may serve as essential cues for shaping the appraisal, adaptive, and context-sensitive psychological processes experienced by followers (Tigue et al., 2012; Van Vugt & Grabo, 2015). Hence, crisis leadership scholars should pay attention to these additional cues in explaining the glass cliff phenomenon and other research questions related to leader appraisal and selection in crises.

Moreover, we also see opportunities for investigating whether perceptions and evaluations of leaders based on leader physical attributes may differ across contexts. For instance, depending on the unique features and demands posed by different crisis contexts, followers may place different weights on the distinct physical traits of leaders which influence their preferences and selection of leaders. In crisis situations, where limited resources can be allocated such as in wars, people may prefer leaders whose physical attributes signal their ability and strength to protect resources, whereas in other crises situations such as terrorist attacks and natural disasters, leader physical attributes associated with qualities such as higher empathetic concern and willingness to care for others may be prioritized when people evaluate and select their leaders. These research questions warrant future investigation.

Methodological advancements in crisis leadership

Our review shows that existing studies have adopted a range of methods to explore the topic of crisis leadership. However, we also noted flawed research designs and analytical methods in the crisis leadership literature. In particular, some common empirical approaches such as interviews, ethnographic research, and cross-sectional survey studies may be restrictive in examining the role of leaders and leadership as a dynamic process throughout different stages of a crisis. Even though the use of archival data is common, few studies have incorporated designs to adequately address the issue of endogeneity. Endogeneity can be particularly salient in the context of crises and results in omitted variable biases because different crises may create unique challenges for leaders and are associated with random variations (James et al., 2011; Sieweke & Santoni, 2020).

Moving forward, we suggest that natural experiments can be a valuable method to address existing methodological problems. Natural experiments are recognized as an ideal method to examine naturally occurring events such as crises (Sieweke & Santoni, 2020). The standard natural experiment that resembles randomized experiments by having treatment and control groups with multiple observations per group. In natural or quasi-experiments, scholars may adopt specific statistical approaches to address issues with regard to endogeneity and causality of the proposed relationships. We discuss three recommended methodological approaches that help address these concerns, including the propensity score method, the regression discontinuity (RD) design, and the difference-in-differences (DID) design. However, when natural experiments are not feasible or are inappropriate in crisis contexts, researchers should consider adopting the use of instrumental variables (Antonakis et al., 2010; Sajons, 2020).

Standard natural experiment

The standard natural experiment is a powerful tool to examine crisis leadership, given that this design has a high degree of realism and resembles the design of a randomized experiment. The success of such a design depends on the extent to which treatment is random or as-if random (Sieweke & Santoni, 2020). For example, Birkeland et al. (2017) examined the impact of workplace terrorist attacks on

employees' perceptions of leadership. The authors compared a group of employees who were directly exposed to the terrorist attack with a carefully matched control group of employees not directly exposed to the terrorist attack. In their study, the treatment can be considered as-if random, and thus a causal relationship can be inferred with confidence. As each crisis poses unique challenges and creates novel opportunities for leaders and organizations (James et al., 2011), we encourage future research to further investigate the role and processes of leadership in the contexts of other types of crisis using a standard natural experiment design.

Propensity score matching

One statistical approach for scholars to enhance causal inference in natural or quasi experiments is the propensity score method, which involves matching subjects in treatment groups and untreated subjects who hold similar value of the propensity score. It captures the probability of participants receiving a treatment based on certain observed characteristics and is coupled with matching algorithm to reconstruct counterfactuals in observational data and estimate the unbiased effect (Li, 2013). This approach has been increasingly welcomed by management researchers for handling issues of not only causality but also endogeneity (e.g., Boivie et al., 2016). For instance, by matching firms run by spousal entrepreneurs with firms run by sibling entrepreneurs, Bird and Zellweger (2018) examined whether familial relationships within the entrepreneurial teams explain firms' relational embeddedness and their subsequent growth advantages. Future studies interested in how leaders who experienced a specific crisis behave and perform may identify a counterfactual (i.e., a similar leader in the organization who did not experience the crisis) for each of their focal leader participants. Then, a prediction model can be built with each observation in a larger sample, for instance, leaders involved in a crisis and leaders not involved in a crisis).

Regression discontinuity (RD) design

The RD design is another statistical approach that may help improve causal inference in crisis leadership research through enhancing random assignment. When the assignment of treatment in experiments is not random, traditional designs such as analysis of variance or similar forms (e.g., regression with dummy variables) will produce biased estimates because the grouping factors are not exogenous (Bastardo et al., 2017). However, the RD design can resolve this problem by explicitly modeling the selection process. The RD design involves capturing the casual effects of an intervention on outcomes by assigning subjects to a threshold point above and below a continuous variable that represents the intervention (Bastardo et al., 2017; Sieweke & Santoni, 2020).

For instance, Calvo et al. (2019) examined the effect of oversights on issues such as delays and overruns in public projects. By adopting the RD design, the authors exploited the simplified acquisition threshold which influences the levels to which a project is subject to the problems of oversight and compared delays and overruns of project just below and above the simplified acquisition threshold points. Similarly, crisis leadership scholars may enhance the causal conclusions for their findings by adopting the RD design and identifying a certain threshold on a continuous variable to determine the treatment group of subjects. Such a design allows researchers to exploit an almost random assignment of subjects into treatment and control groups and enhance causal inferences for their findings.

Difference-in-differences (DID) design

Finally, DID design, as a special case of quasi-experimental design, can also be used for estimating and testing treatment effects in field settings where random assignment is not possible (Wing et al., 2018). This

approach rests on an important assumption of common and unobservable confounds being time invariant (Imbens & Wooldridge, 2009). That is, the time series of the outcome variables in both groups should vary by a fixed amount in each period and have a common set of period-specific changes. According to Imbens and Wooldridge (2009), the simplest DID design may involve two groups being observed across two time periods. In the first period, both the treatment and control groups were exposed to the control condition. In the second period, the treatment group was exposed to the treatment but not the control group. Researchers may then observe changes in outcomes across the two groups after the second period. For example, Yang et al. (2019) adopted a DID design to examine the effect of female directors on firm performance in the period before and after an exogenous shock using firms from Norway as the treatment group and firms from Sweden, Denmark, and Finland as the control group. Future research may adopt DID design to examine how crisis leadership may influence the temporal change in leadership processes, leadership effectiveness, and other leader or top management team characteristics throughout different crisis stages by comparing samples from various industries or geographic contexts.

Use of instrumental variables

To tackle concerns regarding endogeneity, we recommend future research to adopt the use of instrumental variables in their model estimation. Instrumental variables are exogenous variables that do not depend on other variables or disturbances in the system of equations (Antonakis et al., 2010). These variables can be included or identified in correlational studies. Leadership scholars have increasingly advocated for the adoption of instrumental variables in studies (Sieweke & Santoni, 2020) because such a design helps address the problem of endogeneity and enhances causal inferences. As we discussed earlier, leadership concepts commonly examined in the context of crises, such as charismatic leadership and transformational leadership, are often assessed using subjective measures provided by followers and may often suffer from the threat of endogeneity and biases (Antonakis et al., 2016). As an example illustrating the application of exogenous variables to empirical investigations, Flammer et al. (2019) studied the relationship between corporate social responsibility (CSR) contracting and increase in firm-level outcomes such as long-term orientation, firm value, and social and environmental initiatives. The authors used the enactment of state-level constituency statutes as an instrumental variable for CSR contracting, as such a factor could affect the propensity of a firm's directors to consider stakeholders' interests in their decision-making and yet was unrelated to the concerned outcomes. Future research on crisis leadership should consider adopting this design in order to make stronger causal inferences.

Conclusion

In this review, we demonstrate that research on crisis leadership has grown exponentially in the past decade. Results from bibliometric analyses revealed the intellectual and conceptual structures of the crisis leadership literature. We also found that a variety of methods have been adopted by crisis leadership scholars. Despite the progress made in the crisis leadership literature, further investigation is required to advance the field and to better inform leaders of effective means for handling future crises. We call for future research to build upon our insights to enhance knowledge concerning the role of leaders across different crisis stages and contexts by applying more novel theoretical perspectives and advanced methodological approaches.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.leaqua.2021.101518>.

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