

Reconceptualizing Leadership Resilience in Complex Adaptive Management Systems: A Qualitative Inquiry

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Abstract

This study aimed to reconceptualize leadership resilience as an adaptive, relational, and system-level capability within complex adaptive management systems. This qualitative inquiry was conducted using semi-structured interviews with 24 senior and middle-level managers working in technology-intensive, service, manufacturing, financial, and public-sector organizations in Tehran, Iran. Participants were selected through purposive sampling based on managerial experience, exposure to organizational disruption, and direct involvement in strategic decision-making under uncertainty. Data collection continued until theoretical saturation was reached after the twenty-second interview, with two additional interviews conducted to confirm saturation. Interviews lasted between 45 and 75 minutes and focused on managers' experiences of uncertainty, disruption, adaptive decision-making, team coordination, and resilience-building practices. All interviews were transcribed verbatim and analyzed using thematic analysis supported by NVivo software. Coding proceeded through open coding, axial categorization, and theme development. Credibility was enhanced through member checking, peer review, code comparison, and maintenance of an audit trail. The analysis generated four main categories: adaptive sensemaking under uncertainty, distributed resilience through relational coordination, balancing control and emergence, and learning-based renewal after disruption. The findings showed that leadership resilience was not perceived merely as individual endurance or psychological toughness. Instead, participants described it as a dynamic capability through which leaders interpret weak signals, sustain collective confidence, mobilize cross-functional networks, tolerate temporary ambiguity, and transform disruption into organizational learning. Interview narratives indicated that resilient leadership emerged most strongly when formal authority was combined with participatory interpretation, rapid experimentation, and flexible coordination. The study concludes that leadership resilience in complex adaptive management systems should be understood as a multi-level adaptive process rather than a fixed leader trait. Resilient leaders do not simply absorb pressure; they create conditions through which organizational actors can make sense of uncertainty, coordinate distributed responses, and regenerate strategic capacity after disruption.

Keywords: leadership resilience; complex adaptive systems; adaptive leadership; management systems; qualitative inquiry; organizational resilience; Tehran; thematic analysis

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1. Introduction

Contemporary organizations increasingly operate under conditions of turbulence, nonlinearity, interdependence, and persistent uncertainty. In such environments, management systems can no longer be adequately explained through linear assumptions of prediction, control, and hierarchical command. Instead, organizations increasingly resemble complex adaptive systems composed of interacting agents, feedback loops, emergent patterns, and evolving relationships among people, technologies, routines, and institutional pressures.



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Complexity leadership theory has therefore shifted attention from leadership as the behavior of heroic individuals to leadership as an emergent dynamic that enables learning, adaptability, and innovation within complex adaptive systems (Uhl-Bien, Marion, & McKelvey, 2007). This shift is particularly important in management systems exposed to rapid technological change, economic volatility, resource constraints, and institutional ambiguity, because leaders are required not only to make decisions but also to enable collective interpretation, adaptive coordination, and system renewal.

The concept of resilience has become central to organizational and leadership studies because disruption is no longer exceptional; it is a normal feature of organizational life. Organizational resilience has been conceptualized as the capacity to anticipate threats, cope with adverse events, and adapt or transform after disruption (Duchek, 2020). Earlier approaches often described resilience as recovery, robustness, or the ability to return to a previous state. However, in complex adaptive systems, returning to the previous state may be neither possible nor desirable. A resilient organization may need to reconfigure routines, redistribute authority, reinterpret strategic priorities, and develop new capabilities. In this sense, resilience is not only a defensive capacity but also a generative capability through which organizations learn from adversity and develop new forms of functioning (Lengnick-Hall, Beck, & Lengnick-Hall, 2011). Leadership resilience, therefore, requires reconceptualization beyond individual toughness or emotional endurance.

Traditional leadership theories have often emphasized leader traits, styles, behaviors, and influence processes. Although these perspectives remain valuable, they are insufficient for explaining leadership in systems where outcomes emerge from interactions among multiple actors rather than from the unilateral decisions of formal leaders. Complexity leadership theory argues that leadership in knowledge-producing organizations involves enabling adaptive dynamics, supporting interaction, and creating conditions for innovation and learning (Uhl-Bien et al., 2007). Similarly, studies of leadership for organizational adaptability emphasize that leaders must create adaptive spaces where ideas, conflicts, experiments, and connections can develop across formal boundaries (Uhl-Bien & Arena, 2018). From this perspective, leadership resilience is not the capacity of one leader to withstand crisis alone; it is the capacity to sustain adaptive interaction across the system when conventional routines are disrupted.

The need to reconceptualize leadership resilience becomes especially evident in complex adaptive management systems. A management system includes decision-making processes, performance controls, communication structures, authority relationships, organizational routines, and feedback mechanisms. In stable environments, such systems may function through standardized procedures and predictable planning cycles. Under complexity, however, rigid management systems may amplify fragility because they suppress weak signals, delay response, and discourage local experimentation. A complex adaptive management system requires a different leadership logic: one that combines direction with flexibility, structure with emergence, and accountability with learning. Dynamic capabilities theory similarly suggests that organizations facing rapid environmental change must integrate, build, and reconfigure internal and external competences (Teece, Pisano, & Shuen, 1997). Leadership resilience may therefore be understood as a capability that enables such reconfiguration under pressure.

Resilience research has also shown that organizations respond to adversity through multiple pathways, including anticipation, coping, adaptation, and transformation. Williams, Gruber, Sutcliffe, Shepherd, and Zhao (2017) argued that crisis management and resilience research should be integrated because organizational responses to adversity involve both immediate action and longer-term renewal. Sutcliffe and Vogus (2003)

similarly emphasized that resilience is not simply a reaction after failure but can be cultivated through organizing practices that support competence, relational resources, and mindful attention. These insights suggest that leadership resilience should be examined through everyday managerial practices, not only through extraordinary crisis events. Leaders build resilience when they create shared awareness, sustain trust, encourage learning from errors, and preserve coordination under strain.

A major limitation in existing discussions is that leadership resilience is often treated either as an individual psychological attribute or as a generic organizational capability. This creates a conceptual gap between individual leader resilience and system-level organizational resilience. In practice, managers often experience resilience as a relational and systemic process. They must interpret ambiguous signals, decide when to intervene and when to allow emergence, protect teams from overload, maintain legitimacy, and transform fragmented information into coordinated action. These practices are neither purely psychological nor purely structural. They occur at the interface between leader cognition, team interaction, organizational routines, and environmental complexity. Therefore, qualitative inquiry is particularly suitable for exploring how managers themselves understand and enact resilience within complex adaptive management systems.

The Iranian organizational context provides a meaningful setting for this inquiry. Organizations in Tehran operate in a dense institutional, economic, technological, and competitive environment. Managers frequently face market volatility, regulatory uncertainty, resource limitations, digital transformation pressures, and workforce expectations. These conditions intensify the need for adaptive leadership and resilient management systems. While leadership resilience has been widely discussed in global literature, there remains a need for context-sensitive qualitative studies that examine how managers in emerging and turbulent environments make sense of resilience in practice. A qualitative approach can reveal the lived meanings, interpretive patterns, and practical mechanisms through which leaders sustain adaptive functioning when conventional managerial assumptions become unstable.

Methodologically, semi-structured interviews are appropriate for this study because they allow participants to narrate complex experiences while also enabling the researcher to explore common dimensions across cases. Thematic analysis provides a flexible yet systematic approach for identifying patterns across interview data (Braun & Clarke, 2006). In addition, inductive qualitative approaches are valuable when the aim is concept development rather than hypothesis testing, particularly in areas where existing theory requires extension or reconceptualization (Gioia, Corley, & Hamilton, 2013). Because leadership resilience in complex adaptive management systems is an emerging and multi-dimensional construct, qualitative inquiry can generate a nuanced conceptual model grounded in managerial experience.

The present study addresses the following central problem: existing leadership and resilience frameworks do not sufficiently explain how leaders in complex adaptive management systems transform uncertainty into collective adaptive capacity. To respond to this problem, the study explores how managers in Tehran-based organizations define, experience, and enact leadership resilience under conditions of disruption and complexity. The aim of this study was to develop a qualitative understanding of leadership resilience as an adaptive, relational, and system-level capability in complex adaptive management systems.

2. Methods and Materials

This study employed a qualitative research design with an interpretive orientation. The purpose was not to measure predetermined variables but to explore how managers construct meaning around leadership resilience in complex adaptive management systems. A qualitative design was considered appropriate because leadership resilience, as examined in this study, concerns lived experience, practical judgment, social interaction, and contextual interpretation. The study focused on managers working in Tehran because Tehran represents a major organizational, economic, technological, and administrative center in Iran, where managers are frequently exposed to complexity, uncertainty, and strategic pressure. Participants were selected through purposive sampling. Inclusion criteria were having at least five years of managerial experience, direct involvement in strategic or operational decision-making, experience of leading teams during organizational disruption, and willingness to participate in an in-depth interview. The final sample included 24 participants, consisting of senior executives, department managers, project managers, and organizational consultants from technology, finance, manufacturing, healthcare, retail, and public-sector organizations. Theoretical saturation was reached after 22 interviews, when no substantially new categories emerged from the data; two additional interviews were conducted to confirm saturation.

Data were collected through semi-structured interviews. The interview guide included open-ended questions about participants' experiences of disruption, their understanding of resilient leadership, their decision-making practices under uncertainty, their strategies for maintaining team coordination, and their perceptions of how management systems adapt during crises. Sample interview questions included: "How do you define leadership resilience in your organization?", "Can you describe a situation in which your management system faced serious disruption?", "What did you do when formal plans no longer worked?", "How did you maintain trust and coordination among team members?", and "What practices helped the organization learn from disruption?" Interviews were conducted in a private setting or through secure online platforms depending on participant availability. Each interview lasted between 45 and 75 minutes. With participant consent, interviews were audio-recorded and then transcribed verbatim. Field notes were written immediately after each interview to capture contextual observations, emerging analytical ideas, and nonverbal impressions relevant to interpretation.

Data analysis was conducted using thematic analysis supported by NVivo software. The analysis followed a systematic process of familiarization, initial coding, category development, theme refinement, and interpretive integration. First, all transcripts were read several times to develop immersion in the data. Second, meaningful units related to leadership resilience, uncertainty, adaptation, decision-making, coordination, and learning were coded line by line. Third, similar codes were grouped into preliminary categories. Fourth, categories were compared across participants and refined into main themes. NVivo was used to organize transcripts, assign codes, retrieve coded segments, compare categories, and develop thematic maps. The analysis was primarily inductive, although sensitivity to complexity leadership theory, organizational resilience, and adaptive management informed interpretation. To enhance trustworthiness, the researcher used member checking with six participants, peer debriefing with two qualitative research experts, and an audit trail documenting coding decisions. Credibility was further supported by preserving direct quotations from participants. Dependability was addressed through consistent coding procedures, and confirmability was supported through reflexive memo writing. Ethical considerations included voluntary participation, informed consent, confidentiality, anonymization of participant identities, and the right to withdraw at any stage.

3. Findings and Results

The demographic characteristics of the participants indicated that the sample included a diverse group of managers with substantial experience in complex organizational settings. Of the 24 participants, 16 were male and 8 were female. In terms of age, 5 participants were between 30 and 39 years old, 11 were between 40 and 49 years old, and 8 were 50 years old or older. Regarding educational background, 6 participants held a bachelor's degree, 14 held a master's degree, and 4 held a doctoral degree. In terms of organizational sector, 6 participants worked in technology and digital services, 4 in finance and banking, 4 in manufacturing, 3 in healthcare, 3 in retail and service organizations, and 4 in public or semi-public organizations. With respect to managerial level, 7 participants were senior executives, 10 were middle managers, 4 were project managers, and 3 were organizational consultants. Managerial experience ranged from 6 to 27 years; specifically, 6 participants had 5–10 years of managerial experience, 11 had 11–20 years, and 7 had more than 20 years. These characteristics provided a rich empirical basis for understanding leadership resilience across different types of complex management systems.

The first main category was **adaptive sensemaking under uncertainty**. Participants repeatedly described resilient leadership as the capacity to interpret uncertainty before taking action. They emphasized that in complex management systems, leaders rarely have complete information, and waiting for certainty can create paralysis. Instead, resilient leaders gather weak signals, listen to multiple organizational voices, construct provisional interpretations, and update their understanding as new information appears. One senior manager in the technology sector stated, “In crisis, the first mistake is pretending that you understand everything. I learned to say, ‘This is what we know now, and this is what we still do not know.’ That honesty helped people think with me instead of waiting for orders.” Another participant from the banking sector explained, “Resilience begins when the leader can translate confusion into a language that others can work with.” This category shows that leadership resilience is not merely rapid decision-making; it is disciplined interpretation under ambiguity. Participants viewed sensemaking as collective rather than individual. They emphasized cross-functional meetings, informal conversations, customer feedback, and frontline reports as essential sources of interpretation. In this sense, resilient leaders functioned as meaning organizers who helped teams move from uncertainty to coordinated action without denying complexity.

The second main category was **distributed resilience through relational coordination**. Participants strongly rejected the idea that resilience belongs only to the formal leader. Instead, they described resilience as distributed across teams, networks, and relationships. Managers explained that when disruption occurs, no single person has enough knowledge or authority to solve all problems. Resilient leadership therefore involves activating relational capacity across the system. A manufacturing manager noted, “When supply problems started, the solution did not come from my office. It came from the purchasing team, production supervisors, and even warehouse staff. My role was to connect them and remove fear.” A healthcare-sector participant similarly stated, “The team became resilient when people trusted that speaking about problems would not be punished.” This category indicates that leadership resilience depends on psychological safety, trust, communication quality, and lateral coordination. Participants emphasized that resilient leaders build relationships before crises, because relationships created during crisis are often too fragile to support rapid adaptation. They described practices such as regular interdepartmental dialogue, transparent communication, informal mentoring, and rapid problem-solving groups.

In complex adaptive systems, resilience emerged when relational networks could compensate for the limitations of formal hierarchy.

The third main category was **balancing control and emergence**. Participants explained that one of the most difficult aspects of resilient leadership was knowing when to impose structure and when to allow flexibility. Excessive control was described as a source of brittleness, while excessive freedom was described as a source of fragmentation. Resilient leaders were those who created minimal structures that allowed adaptive behavior without producing chaos. One public-sector manager stated, “If you control every detail, people stop thinking. If you control nothing, everyone moves in a different direction. The art is to define the boundary and let people find the path.” A project manager in a digital transformation unit explained, “During disruption, we reduced reporting layers but increased daily coordination. We controlled the rhythm, not every decision.” This category shows that leadership resilience involves dynamic tension management. Participants described resilient leaders as capable of setting priorities, clarifying non-negotiable values, protecting essential operations, and simultaneously allowing local experimentation. They used terms such as “flexible discipline,” “guided autonomy,” and “controlled improvisation.” These expressions indicate that leadership resilience in complex adaptive management systems cannot be reduced to either command-and-control or self-organization. It requires the continuous calibration of formal authority and emergent adaptation.

The fourth main category was **learning-based renewal after disruption**. Participants emphasized that resilience was incomplete if the organization merely survived disruption without learning from it. Leaders were considered resilient when they converted adverse experience into improved routines, stronger relationships, and revised assumptions. A senior executive in a service organization stated, “After every disruption, I ask what this event taught us about our system. If we only return to normal, the crisis was wasted.” Another participant commented, “The important question is not only how we recovered, but what changed in our thinking.” This category highlights the developmental dimension of leadership resilience. Participants described post-crisis reviews, reflective meetings, documentation of lessons learned, redesign of decision procedures, and development of new capabilities as key practices. However, they also noted that learning after disruption requires humility and tolerance of uncomfortable truths. In several interviews, managers reported that organizations often rush to restore performance indicators without examining deeper systemic weaknesses. Resilient leadership, by contrast, was associated with reflective renewal, meaning the capacity to transform disruption into organizational intelligence. Thus, leadership resilience was not defined as a return to equilibrium but as the capacity to regenerate the management system at a higher level of awareness and adaptability.

Taken together, the findings suggest that leadership resilience in complex adaptive management systems consists of four interrelated dimensions: interpretive, relational, structural, and developmental. The interpretive dimension enables leaders and teams to make sense of ambiguity. The relational dimension distributes adaptive capacity across networks. The structural dimension balances control and emergence. The developmental dimension transforms disruption into learning and renewal. These dimensions are not sequential stages but mutually reinforcing processes. For example, adaptive sensemaking supports relational coordination, relational coordination enables flexible control, and flexible control creates space for learning-based renewal. Participants’ accounts showed that resilience was strongest when leaders avoided both heroic individualism and passive decentralization. Instead, resilient leaders acted as system enablers who created the conditions for collective

adaptation. Therefore, the findings support a reconceptualization of leadership resilience as a dynamic capability embedded in the interactions, routines, and learning processes of complex management systems.

4. Discussion and Conclusion

The purpose of this study was to reconceptualize leadership resilience in complex adaptive management systems through qualitative inquiry. The findings showed that leadership resilience is not adequately understood as an individual trait, emotional endurance, or the ability to preserve stability under pressure. Instead, participants described leadership resilience as an adaptive, relational, structural, and developmental capability through which leaders enable collective functioning under uncertainty. This result aligns with complexity leadership theory, which argues that leadership should be understood as an emergent interactive dynamic that enables adaptive outcomes in complex adaptive systems rather than merely as the actions of individuals occupying formal positions (Uhl-Bien et al., 2007). In the present study, managers did not describe resilience as personal toughness alone; they emphasized interpretation, coordination, boundary setting, experimentation, and learning. This supports the argument that resilient leadership is enacted through system-level processes.

The first major finding concerned adaptive sensemaking under uncertainty. Participants emphasized that resilient leaders help organizational members interpret ambiguous conditions without pretending to possess complete certainty. This finding is consistent with sensemaking theory, which views organizing as a process through which people construct meaning in equivocal environments (Weick, Sutcliffe, & Obstfeld, 2005). In complex adaptive management systems, uncertainty cannot be eliminated through planning alone because new patterns emerge from interaction, feedback, and environmental change. Therefore, leaders contribute to resilience by helping members create workable interpretations that guide action. This finding also supports Schneider and Somers (2006), who argued that leadership in complex adaptive systems affects organizations indirectly through identity, meaning, and collective movement rather than direct control alone. The participants' emphasis on weak signals, provisional interpretation, and transparent communication shows that resilient leadership begins with epistemic humility: the leader acknowledges uncertainty while sustaining collective orientation.

The second finding concerned distributed resilience through relational coordination. Participants described resilience as a networked capacity rather than an attribute of a single leader. This finding aligns with the view that complexity leadership depends on interaction, interdependence, and enabling conditions for adaptive dynamics (Lichtenstein et al., 2006; Uhl-Bien et al., 2007). It also supports organizational resilience literature emphasizing relational resources, social capital, and collective competence (Lengnick-Hall et al., 2011; Sutcliffe & Vogus, 2003). In this study, participants repeatedly stated that crisis response improved when people trusted one another, communicated openly, and felt safe to report problems. This is consistent with the broader resilience literature, which suggests that resilient organizing depends on mindful attention, respectful interaction, and the capacity to recombine knowledge across boundaries. The finding extends previous studies by showing that leadership resilience is not simply supported by relationships; it is constituted through relationships. In other words, leaders become resilient by enabling the system to think and act through distributed networks.

The third finding concerned balancing control and emergence. Participants described resilient leaders as those who could provide sufficient structure without suppressing local initiative. This result is strongly aligned with complexity leadership theory's distinction between administrative, adaptive, and enabling leadership (Uhl-Bien

et al., 2007). Administrative leadership provides formal coordination and accountability, adaptive leadership generates novelty and learning, and enabling leadership manages the conditions that allow both to coexist. The present findings show that leadership resilience depends on the ability to hold this tension. Participants did not advocate abandoning hierarchy; rather, they emphasized “guided autonomy” and “controlled improvisation.” This finding is also compatible with Uhl-Bien and Arena’s (2018) argument that adaptability requires adaptive spaces where exploration and operational execution can connect. Resilient leaders in this study created boundaries, priorities, and rhythms while allowing teams to experiment within those boundaries. This suggests that resilience in complex management systems is not anti-structure; it requires adaptive structuring.

The fourth finding concerned learning-based renewal after disruption. Participants emphasized that true resilience involves learning, not merely recovery. This finding aligns with Duchek’s (2020) capability-based view of organizational resilience, which conceptualizes resilience as a meta-capability involving anticipation, coping, and adaptation. It also corresponds with Williams et al. (2017), who argued that organizational responses to adversity include both immediate crisis response and longer-term resilience processes. In the present study, managers viewed disruption as an opportunity to redesign routines, update assumptions, and develop organizational intelligence. This supports the idea that resilience is not a return to the previous equilibrium but a process of adaptive renewal. The finding also connects with dynamic capabilities theory, which emphasizes the reconfiguration of competences under changing environments (Teece et al., 1997). Leadership resilience, therefore, may be interpreted as a leadership-mediated dynamic capability that helps organizations reconfigure meaning, relationships, routines, and capabilities after disruption.

A key theoretical contribution of this study is its reconceptualization of leadership resilience as a multi-level systemic capability. Much of the popular and managerial discourse on resilience focuses on individual strength, perseverance, and stress tolerance. Although these qualities may matter, the present findings suggest that they are insufficient in complex adaptive systems. A leader may be personally resilient yet still fail to create a resilient management system if communication is centralized, relationships are weak, experimentation is punished, and learning is superficial. Conversely, a management system may demonstrate resilience when leadership is distributed, interpretation is collective, and routines are flexible. This insight advances resilience research by linking individual leadership practices with system-level adaptive capacity. It also extends complexity leadership theory by specifying resilience as one of the key outcomes of enabling leadership in turbulent environments.

The findings also have implications for the design of management systems. Many organizations attempt to increase resilience through risk management procedures, crisis plans, and contingency protocols. While these tools are useful, the present study suggests that resilience also depends on softer but highly consequential system properties: interpretive openness, relational trust, adaptive boundaries, and learning discipline. This is consistent with Bhamra, Dani, and Burnard’s (2011) argument that organizational resilience must be understood broadly and across multiple levels. In complex adaptive systems, resilience cannot be fully codified in manuals because disruptions often exceed existing categories. Therefore, leaders must develop systems that can think, communicate, and adapt in real time. The practical challenge is to design management systems that are stable enough to coordinate action but flexible enough to evolve when conditions change.

Another important contribution is contextual. The study examined managers in Tehran-based organizations, where complexity is intensified by economic, institutional, technological, and competitive pressures. Participants’ experiences showed that leadership resilience is especially important when uncertainty is chronic rather than

episodic. In such contexts, resilience cannot be reserved for crisis moments; it must become part of everyday management practice. Leaders need to normalize ambiguity, build cross-functional relationships, and create routines for learning before disruption occurs. This finding supports the broader view that resilience is developed through repeated practices, not improvised only after adversity appears (Sutcliffe & Vogus, 2003). It also suggests that leadership development programs in turbulent environments should move beyond competency lists and focus on system-level adaptive practices.

Ethical Considerations

All procedures performed in this study were under the ethical standards.

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Conflict of Interest

The authors report no conflict of interest.

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References

- Arena, M. J., & Uhl-Bien, M. (2016). Complexity leadership theory: Shifting from human capital to social capital. *People & Strategy*, 39(2), 22–27.
- Bhamra, R., Dani, S., & Burnard, K. (2011). Resilience: The concept, a literature review and future directions. *International Journal of Production Research*, 49(18), 5375–5393. <https://doi.org/10.1080/00207543.2011.563826>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Duchek, S. (2020). Organizational resilience: A capability-based conceptualization. *Business Research*, 13, 215–246. <https://doi.org/10.1007/s40685-019-0085-7>
- Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational Research Methods*, 16(1), 15–31. <https://doi.org/10.1177/1094428112452151>
- Lengnick-Hall, C. A., Beck, T. E., & Lengnick-Hall, M. L. (2011). Developing a capacity for organizational resilience through strategic human resource management. *Human Resource Management Review*, 21(3), 243–255. <https://doi.org/10.1016/j.hrmr.2010.07.001>
- Lichtenstein, B. B., Uhl-Bien, M., Marion, R., Seers, A., Orton, J. D., & Schreiber, C. (2006). Complexity leadership theory: An interactive perspective on leading in complex adaptive systems. *Emergence: Complexity and Organization*, 8(4), 2–12.
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, 16(1), 1–13. <https://doi.org/10.1177/1609406917733847>
- Plowman, D. A., Baker, L. T., Beck, T. E., Kulkarni, M., Solansky, S. T., & Travis, D. V. (2007). Radical change accidentally: The emergence and amplification of small change. *Academy of Management Journal*, 50(3), 515–543. <https://doi.org/10.5465/amj.2007.25525647>
- Schneider, M., & Somers, M. (2006). Organizations as complex adaptive systems: Implications of complexity theory for leadership research. *The Leadership Quarterly*, 17(4), 351–365. <https://doi.org/10.1016/j.leaqua.2006.04.006>
- Sutcliffe, K. M., & Vogus, T. J. (2003). Organizing for resilience. In K. S. Cameron, J. E. Dutton, & R. E. Quinn (Eds.), *Positive organizational scholarship: Foundations of a new discipline* (pp. 94–110). Berrett-Koehler.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533. [https://doi.org/10.1002/\(SICI\)1097-0266\(199708\)18:7%3C509::AID-SMJ882%3E3.0.CO;2-Z](https://doi.org/10.1002/(SICI)1097-0266(199708)18:7%3C509::AID-SMJ882%3E3.0.CO;2-Z)
- Uhl-Bien, M., & Arena, M. (2018). Leadership for organizational adaptability: A theoretical synthesis and integrative framework. *The Leadership Quarterly*, 29(1), 89–104. <https://doi.org/10.1016/j.leaqua.2017.12.009>
- Uhl-Bien, M., Marion, R., & McKelvey, B. (2007). Complexity leadership theory: Shifting leadership from the industrial age to the knowledge era. *The Leadership Quarterly*, 18(4), 298–318. <https://doi.org/10.1016/j.leaqua.2007.04.002>



- Weick, K. E., Sutcliffe, K. M., & Obstfeld, D. (2005). Organizing and the process of sensemaking. *Organization Science*, 16(4), 409–421. <https://doi.org/10.1287/orsc.1050.0133>
- Williams, T. A., Gruber, D. A., Sutcliffe, K. M., Shepherd, D. A., & Zhao, E. Y. (2017). Organizational response to adversity: Fusing crisis management and resilience research streams. *Academy of Management Annals*, 11(2), 733–769. <https://doi.org/10.5465/annals.2015.0134>