Leadership Sensemaking in Complex Management Systems: A Grounded Theory Study of Executive Decision-Making

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Abstract

This study aimed to develop a grounded theoretical model explaining how executive leaders make sense of ambiguous, dynamic, and interdependent decision situations in complex management systems. This qualitative study was conducted using a constructivist grounded theory design. Participants included 24 executive managers working in medium and large organizations in Tehran, Iran, selected through purposive and theoretical sampling. Data were collected exclusively through semi-structured interviews focused on executives' experiences of strategic ambiguity, stakeholder pressure, crisis interpretation, information overload, and decision enactment. Interviews continued until theoretical saturation was achieved; saturation was reached after the twenty-second interview, and two additional interviews were conducted to confirm category density. Interview data were transcribed verbatim and analyzed using constant comparative analysis, including initial coding, focused coding, axial integration, theoretical memoing, and core category development. NVivo software was used to organize transcripts, codes, memos, categories, and analytical comparisons. The analysis generated one core category, "adaptive sensemaking loops," and five main categories: strategic ambiguity framing, collective cue integration, temporal balancing, political-emotional containment, and enactment through provisional commitment. The findings indicated that executive decision-making in complex systems was not experienced as a linear process of problem identification and solution selection, but as a recursive process through which leaders interpreted weak signals, negotiated meaning with others, stabilized anxiety, balanced short-term and long-term consequences, and acted before complete certainty was available. The study suggests that leadership sensemaking is a central mechanism through which executives transform uncertainty into actionable direction in complex management systems. Effective executive decision-making depends less on perfect information and more on interpretive discipline, dialogic intelligence, adaptive timing, emotional containment, and the ability to convert provisional meaning into coordinated organizational action.

Keywords: leadership sensemaking; complex management systems; grounded theory; executive decision-making; strategic ambiguity; qualitative research; Tehran.

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1. Introduction

Organizations increasingly operate as complex management systems characterized by interdependence, nonlinear change, competing stakeholder expectations, technological disruption, institutional uncertainty, and accelerated decision cycles. In such conditions, executive leaders rarely face decision problems that are fully structured, technically solvable, or reducible to stable cause-and-effect relations. Instead, they encounter ambiguous situations in which information is incomplete, consequences are delayed, actors interpret the same event differently, and seemingly small decisions may generate disproportionate organizational effects. This complexity challenges conventional assumptions that executive decision-making is primarily a rational process of collecting data, evaluating alternatives, and selecting an optimal course of action. Although analytical tools remain important, complex systems often require leaders to interpret what is happening before they can decide what should be done. Therefore, the study of leadership decision-making must attend not only to choice, but also to sensemaking.

Sensemaking refers to the process through which individuals and groups construct meaning from ambiguous, surprising, or disruptive events. Weick's foundational work conceptualized sensemaking as an ongoing, social, retrospective, identity-based, cue-driven, and plausibility-oriented process through which people convert equivocal situations into workable interpretations (Weick, 1995). Later developments emphasized that sensemaking is not merely the interpretation of existing reality, but the enactment of organizational reality through language, interaction, and action (Weick et al., 2005). In organizational contexts, leaders do not simply respond to uncertainty; they participate in constructing the meaning of uncertainty for others. This makes sensemaking especially relevant to executive leadership, because executives must interpret uncertain environments while simultaneously shaping how others understand priorities, risks, threats, and possibilities.

The sensemaking perspective is particularly important in complex management systems because complexity weakens the reliability of linear prediction. Traditional decision models assume that decision-makers can define problems, compare alternatives, and predict outcomes with reasonable confidence. However, organizational complexity often produces conditions in which problems are unstable, goals are contested, and consequences emerge through interaction among multiple actors and subsystems. Complexity leadership theory argues that leadership in such systems is less about command-and-control and more about enabling adaptive responses, fostering interaction, supporting emergence, and creating conditions for organizational learning (Marion & Uhl-Bien, 2001; Uhl-Bien et al., 2007; Uhl-Bien & Arena, 2018). From this view, the leader's role shifts from providing definitive answers to enabling the organization to make better collective sense of changing circumstances.

Executive decision-making has long been examined through strategic management, behavioral decision theory, and upper echelons perspectives. Upper echelons theory suggests

that organizational outcomes are partly shaped by executives' experiences, values, cognitive bases, and interpretive filters (Hambrick & Mason, 1984). Behavioral theories of the firm similarly argue that organizational decision-making is bounded by limited attention, routines, aspiration levels, and political negotiation rather than complete rational optimization (Cyert & March, 1963; March, 1994). These perspectives demonstrate that executive decisions are not purely technical outputs; they are embedded in cognitive, social, historical, and institutional contexts. Yet, while these theories explain why executives interpret situations differently, they often provide less processual detail on how leaders construct meaning in real time when facing complex, ambiguous, and emotionally charged management situations.

Sensemaking provides this missing processual lens. Maitlis and Christianson (2014) define sensemaking as a process through which people work to understand issues or events that are novel, ambiguous, confusing, or inconsistent with expectations. In executive contexts, sensemaking becomes visible when leaders confront strategic disruptions, performance decline, market turbulence, organizational conflict, technological change, or reputational crisis. These events disturb existing frames and require leaders to ask what is happening, why it matters, who is affected, and what action can be justified. Brown et al. (2015) argue that sensemaking has become central in organization studies because it connects cognition, discourse, identity, power, and action. This connection is essential for understanding executive decision-making, because decisions in complex management systems are not only cognitive judgments; they are communicative acts that authorize attention, allocate resources, and establish organizational direction.

Leadership sensemaking is also closely related to sensegiving. Gioia and Chittipeddi (1991) introduced sensegiving as the process through which leaders attempt to influence the meaning construction of others during strategic change. Executives must first make sense of ambiguous circumstances for themselves, but they must also translate that interpretation into narratives, priorities, and actions that others can understand and enact. In complex systems, this sensegiving role becomes difficult because different stakeholders often hold conflicting interpretations. Board members may emphasize financial stability, employees may emphasize job security, customers may emphasize service continuity, regulators may emphasize compliance, and senior managers may emphasize operational feasibility. The executive leader must therefore construct a sufficiently plausible interpretation that can support coordinated action without eliminating all disagreement.

Prior research has shown that decision-making under uncertainty depends on both analytical and intuitive processes. Eisenhardt's (1989) study of high-velocity environments found that fast decision-makers did not use less information; rather, they used more real-time information, developed multiple alternatives, and relied on experienced advisers. Kahneman and Klein (2009) argued that expert intuition can be reliable under conditions of valid cues and timely feedback, but may be misleading when environments are irregular and feedback is delayed. These insights are significant for leadership sensemaking because

executives in complex systems must decide when to trust experience, when to slow down interpretation, when to expand consultation, and when to act despite unresolved ambiguity. Therefore, the core challenge is not simply speed versus accuracy; it is the leader's capacity to construct a meaningful and actionable interpretation under conditions of partial knowledge.

Complex management systems intensify this challenge because they involve multiple interacting layers: formal structures, informal networks, technological systems, market conditions, institutional rules, organizational culture, and human emotions. Osborn et al. (2002) argued that leadership is embedded in context and should be understood as a collective influence process unfolding through time. Similarly, Plowman et al. (2007) showed that leaders in complex systems may enable emergence by disrupting existing patterns, encouraging novelty, and helping others make sense of unfolding events. This means that executive sensemaking is not an isolated mental activity. It is distributed across meetings, conversations, reports, scenarios, dashboards, informal signals, crises, and organizational routines. Executives make sense by interacting with data, people, histories, identities, and anticipated futures.

Despite the theoretical importance of sensemaking, empirical knowledge about how executives experience sensemaking in complex management systems remains limited, especially in non-Western organizational contexts. Much of the existing literature is conceptual, case-based, or focused on crisis, strategic change, or middle-management interpretation. Less attention has been paid to how executive leaders in emerging-market environments construct meaning when facing institutional uncertainty, economic fluctuation, technological transition, stakeholder pressure, and organizational complexity at the same time. Tehran provides a valuable context for such inquiry because many organizations in this environment operate under conditions of market volatility, resource constraints, regulatory uncertainty, and rapid managerial adaptation. These conditions make executive decision-making highly interpretive, relational, and context-sensitive.

A grounded theory approach is appropriate for this topic because leadership sensemaking is a processual phenomenon that requires theory development from participants' lived managerial experiences. Grounded theory is designed to generate conceptual explanations of social processes through systematic comparison of data, codes, categories, and emerging theoretical relationships (Glaser & Strauss, 1967; Charmaz, 2014; Corbin & Strauss, 2015). Rather than testing a predefined model, grounded theory enables the researcher to examine how executives describe ambiguity, how they identify relevant cues, how they involve others, how they manage anxiety and conflict, and how they convert interpretation into decision and action. This approach is particularly suitable for studying executive decision-making because leaders' actual interpretive work is often tacit, situated, and difficult to capture through standardized instruments.

The present study addresses this gap by developing a grounded theoretical explanation of leadership sensemaking in complex management systems. Specifically, it investigates how executives in Tehran-based organizations interpret ambiguous decision situations, integrate fragmented cues, negotiate meaning with stakeholders, manage the emotional and political dimensions of uncertainty, and enact decisions under incomplete information. The aim of this study was to develop a grounded theory model explaining how executive leaders make sense of complex management situations and transform ambiguity into actionable organizational decisions.

Methods and Materials

This study used a qualitative constructivist grounded theory design to explore leadership sensemaking in complex management systems. Grounded theory was selected because the purpose of the study was not to test a pre-existing hypothesis, but to generate an explanatory model of how executive leaders interpret ambiguity and enact decisions in complex organizational contexts. A constructivist orientation was adopted because executive sensemaking was understood as a socially situated and interpretive process shaped by participants' experiences, organizational roles, interactions, and contextual conditions. The study focused on senior executives working in medium and large organizations in Tehran, Iran, where leaders frequently encounter strategic uncertainty, stakeholder complexity, market instability, regulatory pressures, and interdepartmental interdependence.

Participants consisted of 24 executive managers selected through purposive and theoretical sampling. Inclusion criteria were holding an executive or senior managerial position, having at least seven years of managerial experience, direct involvement in strategic or organization-wide decision-making, and willingness to participate in an in-depth interview. Participants included chief executive officers, deputy managing directors, senior strategy managers, operations directors, human resource executives, financial executives, and senior project directors. The initial sampling strategy aimed to include executives from different organizational sectors, including manufacturing, banking and finance, information technology, healthcare services, construction, retail, and consulting. As analysis progressed, theoretical sampling was used to recruit participants who could elaborate emerging categories, especially those related to crisis interpretation, stakeholder negotiation, and decision enactment under uncertainty.

The final sample included 24 executives from Tehran. Theoretical saturation was reached after the twenty-second interview, when no substantially new properties were emerging in the main categories. Two additional interviews were conducted to confirm category density and refine the relationships among categories. The final sample size was considered adequate because the interviews provided rich, conceptually relevant, and diverse accounts of executive sensemaking across different organizational settings. Participation was voluntary, and all participants were informed about the purpose of the study, confidentiality procedures, the right to withdraw, and the use of anonymized quotations in reporting the findings.

Data were collected only through semi-structured interviews. Semi-structured interviews were selected because they allowed the researcher to explore participants' experiences in depth while maintaining enough flexibility to follow emerging concepts. An interview guide was developed based on the study aim and the literature on sensemaking, leadership, complexity, and executive decision-making. The guide included open-ended questions such as: "Can you describe a situation in which you had to make an important decision under high ambiguity?", "How did you determine what information was relevant?", "Who did you involve in interpreting the situation?", "How did you manage conflicting interpretations among stakeholders?", "How did you decide when enough meaning had been established to act?", and "What happens when later events show that the initial interpretation was incomplete or wrong?" Follow-up probes were used to clarify examples, deepen conceptual detail, and explore emotions, interactions, and consequences.

The interviews were conducted face-to-face in Tehran or through secure online meetings when participants' schedules required it. Each interview lasted between 50 and 85 minutes, with an average duration of approximately 67 minutes. All interviews were audio-recorded with participants' permission and transcribed verbatim. Field notes were written immediately after each interview to document contextual impressions, nonverbal observations, preliminary interpretations, and analytical questions. Data collection and analysis occurred simultaneously. Early interviews informed initial coding and memo writing, while later interviews were used to elaborate emerging concepts and test the boundaries of developing categories. Interviewing continued until theoretical saturation was achieved, meaning that the main categories were sufficiently developed in terms of their properties, dimensions, conditions, strategies, and consequences.

Data were analyzed using constant comparative analysis. The analysis began with repeated reading of transcripts to gain familiarity with participants' narratives. Initial coding was conducted line by line to identify actions, meanings, tensions, and processes in the data. Codes were kept close to participants' words wherever possible, especially when describing interpretive practices such as "waiting for weak signals," "testing the story with trusted people," "holding multiple explanations," "calming the room before deciding," and "acting without pretending certainty." After initial coding, focused coding was used to synthesize the most significant and frequent codes into more abstract categories. Codes were constantly compared across participants, sectors, decision types, and organizational contexts.

Axial and theoretical coding were used to identify relationships among categories. The analysis examined causal conditions, contextual influences, action-interaction strategies, intervening conditions, and consequences. Memo writing was central throughout the analysis. Analytical memos documented emerging interpretations, comparisons between participants, category boundaries, negative cases, and potential theoretical relationships. NVivo software was used to manage the dataset, organize codes and categories, retrieve coded segments,

compare cases, and maintain an audit trail of analytical decisions. The software supported data organization but did not replace interpretive analysis.

Several strategies were used to enhance trustworthiness. Credibility was supported through prolonged engagement with the data, iterative questioning, constant comparison, and member reflection with selected participants. Dependability was strengthened through systematic documentation of sampling decisions, coding procedures, memos, and category development. Confirmability was addressed by maintaining reflexive notes about the researcher's assumptions regarding leadership and executive decision-making. Transferability was supported through thick description of the research context, participants, and categories. The final grounded theory was developed through integration of the core category with five main categories that explained how executives transform ambiguity into coordinated organizational action.

Findings

The demographic characteristics of the participants showed diversity in gender, age, managerial experience, organizational sector, and executive role. Of the 24 participants, 17 were men with a frequency of 17 and a percentage of 70.8%, and 7 were women with a frequency of 7 and a percentage of 29.2%. Regarding age, 5 participants were between 35 and 40 years old, 8 were between 41 and 45 years old, 7 were between 46 and 50 years old, and 4 were older than 50 years. In terms of managerial experience, 6 participants had 7 to 10 years of senior managerial experience, 9 had 11 to 15 years, 6 had 16 to 20 years, and 3 had more than 20 years. Participants came from different organizational sectors: manufacturing with a frequency of 5, banking and financial services with a frequency of 4, information technology with a frequency of 4, healthcare services with a frequency of 3, construction with a frequency of 3, retail and distribution with a frequency of 2, consulting with a frequency of 2, and education-related services with a frequency of 1. Executive roles included chief executive officer, deputy managing director, strategy director, operations director, financial director, human resource director, and senior project director. This diversity strengthened the conceptual variation of the findings and enabled comparison of sensemaking practices across different complex management settings.

The grounded theory analysis generated one core category: "adaptive sensemaking loops." This core category explained how executives moved recursively between ambiguity, interpretation, consultation, emotional stabilization, provisional decision-making, action, feedback, and reinterpretation. Participants did not describe executive decision-making as a linear movement from problem to solution. Instead, they described a looping process in which initial interpretations were continuously revised as new cues, stakeholder reactions, operational constraints, and environmental changes appeared. One executive explained, "In complex decisions, the first definition of the problem is usually wrong. You decide, but you keep listening to the system." Another participant stated, "I do not wait until everything is clear, because in our environment it never becomes completely clear. I try to make enough

sense to move, and then I adjust." The core category connected five main categories: strategic ambiguity framing, collective cue integration, temporal balancing, political-emotional containment, and enactment through provisional commitment.

The first main category was strategic ambiguity framing. This category referred to the way executives initially framed unclear situations by distinguishing between symptoms, underlying patterns, decision boundaries, and strategic stakes. Participants emphasized that the most difficult part of executive decision-making was often not selecting among alternatives, but defining what kind of situation they were facing. Some described ambiguity as "fog," "noise," or "a moving target." Executives reported that they tried to identify whether an issue was operational, strategic, political, cultural, financial, or systemic. One participant noted, "At first everyone brings me pieces of the problem. Sales says it is pricing, finance says it is cash flow, operations says it is capacity. My first job is to understand whether these are separate problems or one larger pattern." Another executive stated, "If I frame the problem too quickly, the organization runs in the wrong direction very efficiently." This category included subcategories such as identifying weak signals, separating noise from pattern, naming the decision arena, questioning inherited assumptions, and reframing the issue as new information emerged.

The second main category was collective cue integration. Participants explained that sensemaking became more reliable when executives gathered cues from multiple organizational levels and stakeholder groups. They did not rely only on formal reports, dashboards, or senior management briefings. Instead, they sought information from frontline employees, middle managers, customers, suppliers, consultants, and informal networks. One participant said, "The official report tells me what the system wants me to see. The informal conversation tells me what the system is afraid to say." Another executive explained, "When the data are contradictory, I bring different people into one room and listen to how they argue. The argument itself becomes information." Collective cue integration involved comparing formal and informal information, listening for contradiction, consulting trusted interpreters, triangulating stakeholder perspectives, and using disagreement as a diagnostic resource. Participants emphasized that executives in complex systems must not eliminate dissent too early because minority interpretations may contain important weak signals.

The third main category was temporal balancing. This category described how executives balanced immediate pressures with long-term consequences while making decisions under uncertainty. Participants often described complex decision situations as involving different clocks: the market clock, the financial clock, the human clock, the regulatory clock, and the strategic clock. One executive stated, "The board wants speed, employees need reassurance, customers want continuity, and the market punishes delay. The decision is not only what to do; it is when to do each part." Another participant explained, "Sometimes the right decision becomes wrong because of timing. You may understand the issue correctly but act too early or too late." Temporal balancing included pacing decisions, sequencing actions, delaying

irreversible commitments, creating short feedback cycles, and distinguishing urgent action from premature closure. Participants suggested that effective leaders keep some interpretive flexibility while still creating enough temporal structure for the organization to move.

The fourth main category was political-emotional containment. Participants consistently emphasized that executive sensemaking was not only cognitive but also emotional and political. Ambiguous situations produced anxiety, blame, defensive routines, coalition-building, and reputational concerns. Executives reported that before rational discussion could occur, they often had to reduce emotional escalation and prevent premature blame. One participant noted, “In crisis meetings, people are not only presenting facts; they are protecting themselves. If I ignore that, I misunderstand the facts.” Another stated, “Sometimes my role is to lower the temperature. When fear is high, people interpret every signal as a threat.” Political-emotional containment involved legitimizing uncertainty, reducing fear, managing blame, protecting psychological safety, recognizing hidden interests, and preventing dominant actors from closing interpretation too early. Participants described this work as essential because emotional defensiveness could distort information flow and narrow decision options.

The fifth main category was enactment through provisional commitment. This category captured how executives converted incomplete interpretations into coordinated action without claiming absolute certainty. Participants explained that in complex systems, waiting for complete clarity may produce paralysis, while acting with false certainty may produce rigidity. Therefore, they used provisional commitments: decisions strong enough to mobilize action but flexible enough to be revised. One executive explained, “I tell my team, this is our best interpretation today. We commit to it, but we are not married to it.” Another participant said, “A decision in complexity is like placing a marker, not building a wall.” This category included subcategories such as communicating plausible direction, defining reversible and irreversible steps, assigning responsibility, monitoring feedback, learning from consequences, and revising the narrative when needed. Participants emphasized that credibility was not built by pretending to know everything, but by showing disciplined attention, transparency about uncertainty, and willingness to adapt.

The relationships among the categories formed the grounded theoretical model of adaptive sensemaking loops. Strategic ambiguity framing initiated the process by defining what kind of uncertainty the executive was facing. Collective cue integration expanded the interpretive base by bringing multiple signals and perspectives into the decision arena. Temporal balancing helped executives determine when to pause, when to accelerate, when to sequence, and when to preserve future options. Political-emotional containment stabilized the social environment so that information could flow and disagreement could remain productive. Enactment through provisional commitment translated meaning into action while preserving adaptive capacity. Feedback from action then returned the executive to renewed ambiguity framing, creating a loop rather than a finished sequence. The model shows that executive

decision-making in complex management systems is a continuous interpretive cycle through which leaders construct, test, revise, and enact meaning.

Discussion

The present grounded theory study aimed to explain how executive leaders make sense of complex management situations and transform ambiguity into actionable organizational decisions. The findings generated the core category of "adaptive sensemaking loops," supported by five main categories: strategic ambiguity framing, collective cue integration, temporal balancing, political-emotional containment, and enactment through provisional commitment. Overall, the results suggest that executive decision-making in complex systems is not a linear process of information processing and rational choice, but an iterative, social, emotionally situated, and action-oriented process of meaning construction. This finding is consistent with Weick's view that sensemaking is an ongoing process through which people turn equivocal circumstances into situations that are sufficiently comprehensible for action (Weick, 1995; Weick et al., 2005). It also aligns with Maitlis and Christianson's (2014) argument that sensemaking becomes especially salient when organizational actors face novelty, ambiguity, confusion, or expectation violation. In the present study, executives experienced complexity not simply as a lack of information, but as the coexistence of competing interpretations, shifting cues, emotional pressure, and uncertain consequences.

The first main category, strategic ambiguity framing, shows that executives begin sensemaking by constructing a workable definition of the decision situation. Participants emphasized that misframing the problem could lead to efficient but misguided action. This finding supports the sensemaking literature, which argues that organizational actors do not respond directly to environments, but to environments as they are noticed, bracketed, labeled, and enacted (Weick, 1995; Brown et al., 2015). In complex management systems, framing is particularly important because visible symptoms often emerge from deeper systemic interdependencies. For example, what initially appears to be a financial problem may reflect strategic misalignment, cultural resistance, operational bottlenecks, or stakeholder distrust. This finding also extends upper echelons theory by showing how executives' interpretive work mediates between environmental complexity and strategic action (Hambrick & Mason, 1984). Rather than treating executives' cognitive characteristics as static predictors of decisions, the grounded model highlights the active process through which executives define what the organization is facing.

The second main category, collective cue integration, demonstrates that executive sensemaking is distributed across people, levels, and information channels. Participants did not rely exclusively on formal data; they also valued informal conversations, disagreement, frontline signals, and stakeholder narratives. This finding aligns with Eisenhardt's (1989) observation that effective decision-makers in high-velocity environments often use more real-time information, not less, and consult experienced advisers while maintaining decision speed. It also supports the argument that sensemaking is fundamentally social, because

meaning is developed, challenged, and stabilized through interaction (Maitlis & Christianson, 2014; Weick et al., 2005). In complex systems, no single actor has full visibility. Therefore, leadership sensemaking depends on the leader's ability to create interpretive spaces in which fragmented cues can be compared. The finding also resonates with complexity leadership theory, which emphasizes interaction, networked intelligence, and adaptive responses rather than centralized control (Uhl-Bien et al., 2007; Uhl-Bien & Arena, 2018).

The third main category, temporal balancing, indicates that executive decision-making is shaped by timing, pacing, sequencing, and reversibility. Participants experienced complex decisions as temporally layered, with different stakeholders and subsystems operating under different time pressures. This finding contributes to sensemaking research by emphasizing that leaders must not only ask "What does this mean?" but also "When must we act?" and "Which parts of the decision can remain open?" March (1994) argued that decision-making is shaped by ambiguity, history, rules, and timing rather than pure optimization. The present study supports this view by showing that executives often manage complexity through temporal structuring: delaying irreversible action, creating short feedback loops, sequencing commitments, and distinguishing urgent movement from premature closure. This is also consistent with complexity perspectives, which suggest that nonlinear systems require adaptive pacing rather than rigid planning (Marion & Uhl-Bien, 2001; Snowden & Boone, 2007).

The fourth main category, political-emotional containment, highlights that executive sensemaking is inseparable from affect, power, blame, and identity protection. Participants repeatedly noted that anxiety and defensive behavior could distort information flow and reduce interpretive quality. This finding supports Brown et al.'s (2015) argument that sensemaking is tied to identity, discourse, and power. It also extends leadership research by showing that executives do not merely analyze uncertainty; they must contain the emotional consequences of uncertainty so that organizational members can participate in interpretation without excessive fear. In ambiguous situations, individuals may protect their departments, reputations, or prior decisions. Therefore, the leader's capacity to lower defensiveness and legitimize uncertainty becomes central to decision quality. This finding is also consistent with Gioia and Chittipeddi's (1991) sensemaking and sensegiving framework, because leaders must influence not only what people think, but also how safe they feel in revising prior meanings.

The fifth main category, enactment through provisional commitment, shows how executives convert incomplete interpretation into action. Participants rejected both paralysis and false certainty. Instead, they described decision-making as a provisional commitment to the best available interpretation, accompanied by monitoring and revision. This finding strongly aligns with Weick's enactment perspective, according to which action is not merely the result of sensemaking but also a source of new cues for further sensemaking (Weick, 1995; Weick et al., 2005). In complex systems, leaders often cannot know whether an interpretation is adequate until action produces feedback. Therefore, provisional commitment allows organizations to move while preserving adaptability. This finding also corresponds with

Snowden and Boone's (2007) argument that complex contexts require probing, sensing, and responding rather than applying fixed best practices. Executives in the present study enacted decisions as adaptive tests rather than final answers.

The core category of adaptive sensemaking loops integrates these findings into a process model. The model suggests that leadership sensemaking begins with ambiguity but does not end with a single interpretation. Instead, executives frame the situation, integrate cues, balance timing, contain emotional-political dynamics, enact provisional commitments, and then reinterpret feedback. This recursive pattern contributes to the literature by showing how executive decision-making functions as a continuous loop of meaning and action in complex management systems. The model also offers a bridge between sensemaking theory and complexity leadership theory. Sensemaking explains how leaders construct meaning under ambiguity, while complexity leadership explains why such meaning must remain adaptive, distributed, and responsive to emergence (Marion & Uhl-Bien, 2001; Uhl-Bien et al., 2007; Uhl-Bien & Arena, 2018). Together, these perspectives suggest that effective executive leadership in complex systems depends on interpretive agility rather than command certainty.

The findings also have implications for understanding executive expertise. Kahneman and Klein (2009) argued that intuitive expertise is more reliable when environments provide valid cues and timely feedback. The present study suggests that executives in complex systems are aware of the limits of intuition when cues are ambiguous and feedback is delayed. Rather than relying solely on personal judgment, participants strengthened their interpretations through cue triangulation, disagreement, scenario testing, and provisional action. This indicates that leadership expertise in complexity may consist not of having immediate answers, but of knowing how to build, test, and revise interpretations. Expert executives appear to combine experience with humility, speed with reflection, and commitment with revisability.

This study contributes to management and leadership literature in three ways. First, it provides an empirically grounded model of leadership sensemaking in executive decision-making. Second, it expands the understanding of complexity leadership by identifying the interpretive mechanisms through which leaders enable adaptive action. Third, it contributes contextual insight from Tehran-based organizations, showing how executives in volatile and institutionally complex environments manage uncertainty through relational, temporal, emotional, and provisional practices. The model may be useful for scholars studying strategic leadership, organizational change, crisis management, and executive cognition, as well as for practitioners seeking to improve decision-making in complex systems.

Conclusion

This grounded theory study explored how executive leaders make sense of complex management situations and transform ambiguity into actionable decisions. The findings showed that executive decision-making in complex systems is best understood as an adaptive sensemaking loop rather than a linear rational sequence. Executives begin by framing strategic

ambiguity, expand interpretation through collective cue integration, manage timing through temporal balancing, stabilize the social field through political-emotional containment, and enact decisions through provisional commitment. These processes allow leaders to move forward without denying uncertainty.

The study contributes to leadership and management research by developing a grounded theoretical model that connects sensemaking, complexity, and executive decision-making. It shows that the central leadership challenge in complex management systems is not simply choosing the correct alternative, but constructing a plausible, revisable, and mobilizing interpretation that enables coordinated action. The findings suggest that executive effectiveness depends on interpretive agility, relational intelligence, emotional discipline, and adaptive commitment. In environments where complete certainty is rarely available, leaders must develop the capacity to act responsibly while continuing to learn from the system they are trying to guide.

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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