

Strategic Leadership Strengthens Indonesia's Adaptive Defense Capabilities Amid Increasingly Uncertain Multidimensional Global Threats

**Lila Irawati Tjahjo Widuri¹, Yahdiana Harahap², Dian Andriani Ratna Dewi³,
Sutanto⁴, Faonaso Harefa⁵**

¹Defense Health, Indonesia Defense University, Jakarta, Indonesia

*Corresponding author E-mail: faonaso.harefa@doktoral.idu.ac.id

Abstract

The convergence of multidimensional threats has increased the need for defense institutions to develop adaptive capabilities beyond static doctrines, force structures, and material modernization. This study aims to examine the contribution of strategic leadership to adaptive defense capability in Indonesia and to analyze how this relationship is influenced by organizational inertia and strategic culture. The study employs a qualitative approach through a hybrid narrative-integrative review involving semi-systematic searching, structured screening, thematic synthesis, theoretical triangulation, and mechanism-based conceptual integration. Rather than treating strategic cognition, organizational learning, and resource orchestration as entirely new constructs, this study integrates them into a sequential yet recursive defense-adaptation pathway. The findings indicate that strategic leadership functions as the antecedent construct, strategic cognition as the interpretive leadership mechanism, organizational learning as the institutionalization mechanism, resource orchestration as the implementation mechanism, and adaptive defense capability as the principal outcome. Organizational inertia and strategic culture operate as boundary conditions that may weaken or strengthen the translation of strategic interpretation into institutional and operational change. Defense adaptation therefore depends not only on resource possession but also on the capacity to interpret global environmental change, institutionalize learning, and align national resources with strategic priorities. The study concludes that strengthening Indonesia's adaptive defense requires strategic leadership capable of integrating threat interpretation, institutional learning, and resource implementation. It recommends strengthening strategic leadership education, formal lessons-learned systems, interagency coordination, and continuous defense-adaptation evaluation supported by cross-domain threat analysis, scenario planning, interoperability, and measurable strategic resource prioritization across national defense institutions and relevant governmental agencies.

Keywords: Adaptive defense capability, Indonesian defense, Organizational learning, Resource orchestration, Strategic leadership.

INTRODUCTION

Although strategic leadership, organizational adaptation, organizational learning, and dynamic capabilities have each received substantial scholarly attention, their relationships within national defense institutions remain insufficiently integrated. Strategic leadership research primarily explains how senior leaders' cognition, experience, and values influence organizational choices, whereas organizational adaptation research focuses more directly on changes in structures, routines, resources, and capabilities. Consequently, an important explanatory gap remains between leadership interpretation of environmental change and the institutional processes through which such interpretation becomes adaptive defense capability. Drawing on upper echelons theory and the dynamic capabilities perspective, this review examines interpretive, institutional-learning, and implementation processes as sensitizing analytical domains rather than treating them as predetermined empirical findings. Their final configuration and relationships are established through the thematic synthesis reported in the Results section. This distinction is important because strategic cognition may constitute an internal leadership process rather than a concept fully independent of strategic leadership, while organizational learning and resource orchestration represent subsequent organizational mechanisms through which leadership priorities may become embedded in institutional practice (Samimi et al., 2022)

The contemporary global strategic environment is increasingly characterized by uncertainty and the convergence of multidimensional threats that extend beyond conventional military boundaries. Hybrid, cyber, informational, economic, technological, maritime, and other non-traditional threats are developing simultaneously and interacting across domains, thereby complicating threat identification, assessment, and defense responses. These conditions require defense institutions to develop more adaptive capabilities, not only through doctrinal strengthening, force-structure development, and material modernization, but also through the capacity to interpret changes in the strategic environment, institutionalize learning, and effectively direct resources. In the Indonesian context, this requirement is increasingly important because the national defense system must be capable of responding to uncertain global developments while safeguarding national strategic interests. Strategic leadership therefore becomes a critical element in strengthening Indonesia's adaptive defense capabilities because strategic leaders play an important role in

interpreting change, establishing priorities, promoting organizational learning, and directing national resources toward defense objectives (Wijnja, 2022).

The current defense environment indicates that increased resources, force-structure development, and modernization of major defense equipment do not automatically produce adaptive defense capabilities. The complexity of global threats requires defense institutions to respond more rapidly, coherently, and across multiple domains. In institutional practice, recognizing emerging threats does not necessarily result in corresponding changes in doctrine, procedures, organizational structures, education and training, or resource allocation. Adaptation may also be constrained by organizational inertia manifested through rigid procedures, dependence on established routines, fragmented authority, and resistance to change. At the same time, strategic culture influences how institutions interpret threats and determine which responses are considered appropriate. Consequently, Indonesia's defense challenge concerns not only the availability of resources but also the capacity of strategic leadership to connect the interpretation of global threats with institutional learning and the effective implementation of national resources (Colom-Piella, 2021).

The expected condition is the development of adaptive Indonesian defense capabilities, defined as the institutional capacity to continuously recognize changes in the strategic environment, understand their implications, adjust policies and doctrines, and allocate resources according to national strategic priorities. Under such conditions, strategic leadership should function not merely as decision-making authority but also as a driver of interpretation, learning, and implementation. Strategic cognition is required to identify, interpret, and prioritize multidimensional threats; organizational learning is needed to institutionalize these interpretations through knowledge, doctrine, procedures, education, training, and organizational memory; and resource orchestration is required to align personnel, budgets, technology, logistics, organizational structures, interoperability, and partnerships with defense priorities. Adaptive defense should therefore be understood as a sequential yet recursive process in which implementation experience continuously provides feedback for subsequent interpretation and organizational learning (Dyson & Pashchuk, 2022).

Previous studies have made important contributions to the understanding of strategic leadership, organizational adaptation, organizational learning, and dynamic capabilities. Upper echelons theory explains how organizational choices and directions are influenced by

senior leaders' cognition, experience, values, and interpretations. The dynamic capabilities perspective, meanwhile, explains organizational adaptation through the capacity to sense environmental change, seize strategic opportunities or respond to emerging challenges, and transform organizational assets and routines. Organizational learning literature emphasizes knowledge acquisition, experiential evaluation, lessons learned, doctrinal revision, and institutional memory. Resource orchestration studies further demonstrate that organizational effectiveness depends not merely on the amount of resources possessed but also on the ability to combine, allocate, and reconfigure those resources in accordance with strategic objectives. However, these bodies of literature have largely developed along relatively separate lines and have not fully explained defense adaptation as an integrated mechanism linking leadership interpretation, institutionalization, and operational implementation (Singh et al., 2023).

Despite these contributions, an important theoretical gap remains in explaining how strategic leaders' interpretation of environmental change is systematically translated into adaptive defense capability. Strategic leadership research primarily emphasizes the characteristics, cognition, experience, and decisions of senior leaders, whereas organizational adaptation research focuses more directly on changes in structures, routines, doctrines, resources, and capabilities. As a result, a gap remains between leadership interpretation of global environmental change and the institutional mechanisms through which that interpretation becomes operational defense capability. In addition, strategic cognition, organizational learning, resource orchestration, organizational inertia, and strategic culture are frequently examined as separate concepts rather than being consistently positioned within an integrated sequence involving an antecedent, interpretive mechanism, institutionalization mechanism, implementation mechanism, boundary conditions, and adaptive outcome. This gap is particularly relevant to Indonesian defense because a coherent framework is required to explain how strategic leadership may contribute to defense adaptation amid increasingly uncertain and multidimensional global threats (Samimi et al., 2022).

This study is important because increasing uncertainty in the global strategic environment means that defense institutions can no longer rely primarily on static response patterns, organizational structures, or established capability priorities. Adaptation failures may occur at different stages and therefore require different institutional responses. Failure to recognize or appropriately prioritize emerging threats may indicate weaknesses in strategic

cognition; recognition of a threat without corresponding changes in doctrine, procedures, education, training, or organizational routines may indicate weaknesses in organizational learning; and revised policies or doctrines that are not supported by personnel, budgets, technology, logistics, or organizational arrangements may indicate weaknesses in resource orchestration. Organizational inertia and strategic culture may further constrain or facilitate these processes. Developing a mechanism-based framework is therefore important not only for theoretical clarification but also for diagnosing potential adaptation bottlenecks and providing a conceptual foundation for strengthening strategic leadership and Indonesia's adaptive defense capabilities (Hunzeker & Harkness, 2021).

Accordingly, this study aims to examine how strategic leadership may contribute to strengthening Indonesia's adaptive defense capabilities and how these relationships are conditioned by organizational inertia and strategic culture. More specifically, the study seeks to clarify the conceptual positions and relationships of strategic leadership as the antecedent construct, strategic cognition as the interpretive leadership mechanism, organizational learning as the institutionalization mechanism, resource orchestration as the implementation mechanism, and adaptive defense capability as the principal outcome. It also examines organizational inertia and strategic culture as boundary conditions that may weaken or strengthen the translation of strategic interpretation into institutional and operational change. Through a qualitative hybrid narrative-integrative review, the study seeks to develop a theoretically coherent mechanism-based framework that can provide a foundation for future empirical testing in Indonesian defense institutions (Wijnja, 2022).

The study's novelty lies in integrating strategic leadership, strategic cognition, organizational learning, resource orchestration, organizational inertia, and strategic culture into a defense-specific mechanism-based framework. It clarifies causal sequencing, boundary conditions, and adaptive feedback, providing a diagnostic model for strengthening Indonesia's adaptive defense capabilities amid uncertain multidimensional global threats and challenges.

RESEARCH METHODS

Research Design

This study employed a qualitative hybrid narrative-integrative review combining a semi-systematic literature search with thematic synthesis and mechanism-based conceptual framework development. The approach was selected because the research problem spans defense and security studies, strategic leadership, organizational theory, organizational learning, and strategic management. Rather than seeking statistical aggregation, the review sought to identify recurring explanatory relationships across disciplinary traditions and integrate them into a theoretically coherent framework (Johnson et al., 2026).

The review followed six stages: literature identification, duplicate removal and screening, eligibility assessment, structured data extraction, thematic development, and theoretical integration. The analytical strategy was abductive, combining theory-informed sensitizing concepts from upper echelons theory and dynamic capabilities with iterative coding of patterns identified in the reviewed literature. This approach enabled the analysis to distinguish concepts inherited from established theories from mechanisms synthesized through cross-literature comparison (Zhou et al., 2024).

Corpus of Reviewed Sources and Eligibility Criteria

The corpus consisted of peer-reviewed journal articles, scholarly books and book chapters, relevant defense-policy studies, and selected official institutional documents. The principal electronic search covered publications from 2000 to 2026. Earlier foundational works were retained when they were theoretically indispensable and were identified through backward citation tracking.

Sources were eligible when they addressed at least one of the following domains: strategic leadership at the organizational or institutional level; military or defense adaptation; strategic cognition and environmental interpretation; organizational learning and doctrinal change; resource orchestration or capability reconfiguration; organizational inertia or path dependence; strategic culture; multidimensional, hybrid, cyber, or grey-zone threats; or Indonesian defense transformation.

Sources were excluded when they focused exclusively on tactical or interpersonal leadership, lacked a clear relationship with organizational adaptation, provided unsupported

commentary, lacked identifiable scholarly or institutional provenance, or were only indirectly related to the research question without providing transferable theoretical or methodological value. The unit of analysis was the theoretical argument, empirical finding, mechanism, or relationship reported by each source rather than the publication as an undifferentiated whole.

Literature Search Strategy

The literature search was conducted using Scopus and Web of Science, supplemented by backward and forward citation tracking of highly relevant publications. The main database search covered peer-reviewed publications published between 2021 and 2026, while earlier foundational studies were retained when they were considered essential for establishing the theoretical foundations of upper echelons theory, dynamic capabilities, organizational learning, strategic culture, and military adaptation.

The searches were completed in July 2026. The search strategy combined terms related to strategic leadership, organizational adaptation, institutional mechanisms, and national defense. Boolean operators AND and OR were used to combine the principal concepts. The principal search string was adapted to the syntax requirements of each database as follows:

Scopus: TITLE-ABS-KEY (("strategic leadership" OR "strategic cognition" OR "upper echelons") AND ("defense adaptation" OR "military adaptation" OR "military transformation") AND ("organizational learning" OR "dynamic capabilities" OR "resource orchestration" OR "organizational inertia" OR "strategic culture"). Additional searches incorporated the terms: ("hybrid threats" OR "grey-zone competition" OR "multidimensional threats") AND ("defense adaptation" OR "military transformation") and ("Indonesia" OR "Indonesian defense") AND ("strategic leadership" OR "defense transformation" OR "military adaptation")

Web of Science: TS= (("strategic leadership" OR "strategic cognition" OR "upper echelons") AND ("defense adaptation" OR "military adaptation" OR "military transformation") AND ("organizational learning" OR "dynamic capabilities" OR "resource orchestration" OR "organizational inertia" OR "strategic culture"). Supplementary searches combined: TS= ("hybrid threats" OR "grey-zone competition" OR "multidimensional threats") AND ("defense adaptation" OR "military transformation")

and TS= ("Indonesia" OR "Indonesian defense") AND ("strategic leadership" OR "defense transformation" OR "military adaptation"). Search terms were adjusted iteratively to

account for differences in terminology across defense studies, strategic management, leadership studies, and organizational theory. Backward citation tracking was conducted by examining the reference lists of highly relevant studies, while forward citation tracking was used to identify more recent studies that cited foundational publications.

Screening and Source Selection

The combined searches of Scopus and Web of Science, together with citation tracking, initially identified 60 potentially relevant records. Records were consolidated into a single review database and checked for duplicate titles, authors, publication years, and digital object identifiers where available. Following duplicate removal, records underwent sequential title-and-abstract screening and full-text eligibility assessment. Sources were excluded when they did not address strategic-level leadership or organizational adaptation, focused exclusively on tactical or interpersonal leadership, lacked relevance to defense or security institutions, did not provide a theoretically transferable organizational mechanism, or lacked sufficient scholarly or institutional credibility. Across the duplicate-removal, title-and-abstract screening, and full-text assessment stages, 26 records were excluded. The final analytical corpus therefore consisted of 34 publications that met the inclusion criteria and provided substantive theoretical, empirical, or contextual evidence relevant to the research question. The selection process was purposive and theory-oriented rather than statistically representative. The objective was to develop a coherent body of evidence capable of explaining the mechanisms linking strategic leadership with adaptive defense capability.

Source Quality and Credibility Assessment

Because the corpus included theoretical, empirical, review, and institutional sources, source quality was assessed using criteria appropriate to an integrative conceptual synthesis rather than a single study-design checklist. Each source was evaluated according to six criteria: (1) direct relevance to the research question, (2) scholarly or institutional credibility, (3) methodological transparency where applicable, (4) clarity of theoretical or empirical support, (5) traceability of evidence, and (6) contribution to one or more components of the analytical framework. Peer-reviewed studies in defense and security studies, strategic leadership, organizational adaptation, military transformation, organizational learning, and strategic

management were prioritized in the core synthesis. Foundational theoretical works were retained when necessary to establish the intellectual basis of the framework. Interdisciplinary publications were included only when they provided clearly transferable mechanisms relevant to organizational learning, dynamic capabilities, strategic cognition, or resource orchestration. Sources whose relationship with defense adaptation was weak, whose scholarly provenance could not be adequately verified, or whose arguments did not contribute directly to the development of the framework were excluded from the central evidentiary corpus.

Data Extraction and Analytical Framework

A structured literature-review matrix was developed to ensure consistent data extraction across the 34 included publications. For each source, the matrix recorded the author and year, study context, disciplinary field, theoretical perspective, methodology, principal findings, strategic-leadership implications, evidence relating to strategic cognition, organizational learning, resource orchestration, organizational inertia, strategic culture, adaptive outcomes, and reported limitations. The literature matrix also enabled the researchers to distinguish between constructs originating from established theoretical frameworks and analytical patterns emerging from the cross-study synthesis. Bibliographic records were systematically organized to identify duplicates and maintain consistency between in-text citations and the reference list. Thematic coding and organization were undertaken using a structured coding framework. The coding process followed an audit trail linking relevant statements and findings from individual publications to initial codes, analytical categories, higher-order themes, and ultimately the proposed mechanisms. This procedure reduced reliance on isolated publications and enabled relationships to be examined comparatively across disciplinary traditions.

Data Analysis and Thematic Development

The analysis followed an abductive thematic-synthesis approach combining inductive identification of recurring patterns with theory-informed interpretation. Upper echelons theory and the dynamic capabilities framework were used as sensitizing theoretical perspectives rather than as predetermined coding categories. This distinction enabled the researchers to examine whether recurring relationships identified across the literature supported, extended,

or modified existing theoretical explanations. The analysis proceeded through four levels: initial coding, analytical categorization, higher-order thematic development, and mechanism integration. Initial codes relating to environmental scanning, threat recognition, ambiguity interpretation, information integration, priority setting, anticipatory judgment, and strategic decision-making were grouped into an interpretive-process category. Cross-source comparison subsequently synthesized these patterns as strategic cognition, representing the interpretive mechanism through which strategic leadership may recognize and prioritize multidimensional environmental change.

A second group of codes included knowledge acquisition, after-action review, lessons learned, doctrinal revision, knowledge sharing, professional military education, organizational feedback, training adaptation, and institutional memory. These codes were grouped into an institutional-learning category and subsequently synthesized as organizational learning, representing the process through which strategic interpretation may become embedded in institutional knowledge, doctrine, procedures, and routines. A third group consisted of codes concerning personnel alignment, budget prioritization, technological acquisition, capability reconfiguration, logistics, organizational restructuring, partnerships, interoperability, and interagency coordination. These patterns formed an implementation-and-resource-alignment category that was subsequently synthesized as resource orchestration, representing the mechanism through which institutionalized strategic priorities may be translated into operational capability. Two additional thematic clusters were identified outside the sequential mechanism. Codes relating to bureaucratic resistance, rigid procedures, fragmented authority, institutional rigidity, slow decision-making, and path dependence were synthesized as organizational inertia. Codes concerning historically embedded threat assumptions, institutional identity, professional norms, accepted patterns of military response, and organizational values were synthesized as strategic culture. Organizational inertia and strategic culture were therefore treated as boundary conditions rather than as sequential mediating mechanisms. Organizational inertia is theoretically expected primarily to constrain the translation of strategic interpretation into institutional and operational change, whereas strategic culture may either facilitate or inhibit adaptation depending on whether established assumptions support learning, innovation, and cross-domain awareness.

The final analytical stage involved comparing the resulting themes with upper echelons theory, dynamic capabilities, organizational-learning theory, and military-adaptation literature. The resulting framework therefore represents an abductive synthesis: the individual constructs have established theoretical foundations, whereas their proposed ordering-strategic leadership → strategic cognition → organizational learning → resource orchestration → adaptive defense capability was developed through cross-literature integration.

To strengthen interpretive consistency, the coding matrix and thematic classifications were reviewed across the research team. Differences concerning the assignment of codes, analytical categories, and relationships among constructs were discussed through iterative comparison with the original publications. Interpretive differences were resolved through consensus after re-examining the relevant source material, and revisions to coding decisions were documented in the analytical matrix.

Table 1. Thematic Development and Audit Trail

Illustrative initial codes	Analytical category	Final construct	Analytical role	Theoretical status
Threat recognition; environmental scanning; ambiguity interpretation; prioritization; strategic judgment	Interpretive leadership processes	Strategic cognition	First-stage leadership mechanism	Theory-informed and literature-refined
Lessons learned; after-action review; doctrinal revision; knowledge sharing; institutional memory	Institutionalization of knowledge	Organizational learning	Mediating mechanism	Literature-synthesized with established theoretical foundation
Resource allocation; capability reconfiguration; personnel; budgets; technology; logistics; interoperability	Implementation and alignment	Resource orchestration	Downstream implementation mechanism	Literature-synthesized with established theoretical foundation
Bureaucratic resistance; rigid routines; path dependence; fragmented authority	Institutional rigidity	Organizational inertia	Weakening boundary condition	Established contextual construct
Resource allocation; capability reconfiguration; personnel; budgets; technology; logistics; interoperability	Implementation and alignment	Resource orchestration	Downstream implementation mechanism	Literature-synthesized with established theoretical foundation

Readiness; resilience; interoperability; doctrinal responsiveness; capability flexibility	Adaptation outcomes	Adaptive defense capability	Principal outcome	Outcome construct
---	---------------------	-----------------------------	-------------------	-------------------

Source: Author, 2026

Conceptual Position of the Constructs

Strategic leadership is defined as the senior-level capacity to establish strategic direction, interpret complex environments, influence institutional priorities, and mobilize organizational processes. Strategic cognition is analytically separated from strategic leadership not as an independent leadership construct, but as the interpretive process through which strategic leadership operates. Organizational learning represents the mechanism through which strategic interpretations become institutionalized in doctrine, routines, procedures, training, and organizational memory. Resource orchestration represents the subsequent implementation mechanism through which institutionalized priorities are translated into personnel, technology, budgets, logistics, structures, and partnerships. Adaptive defense capability constitutes the principal outcome. Organizational inertia and strategic culture are conceptualized as boundary conditions that may alter the strength of the translation between the mechanisms.

Conceptual Propositions

P1. Strategic leadership is positively associated with the quality of strategic cognition used to recognize, interpret, and prioritize multidimensional threats (Attah-Boakye et al., 2023).

P2. Higher-quality strategic cognition is positively associated with organizational learning because clearer strategic interpretation increases the likelihood that emerging threats will be translated into revised knowledge, doctrine, routines, and institutional practices (Csaszar et al., 2024).

P3. Organizational learning is positively associated with resource orchestration because institutionalized knowledge provides a basis for realigning personnel, budgets, technology, logistics, organizational structures, and partnerships (Dwivedy et al., 2025; Mohiman et al., 2025; Paiola et al., 2023).

P4. Resource orchestration is positively associated with adaptive defense capability because coherent resource alignment is theoretically expected to increase the capacity of defense institutions to implement strategic and doctrinal change (Usenashvili, 2025; Yang & Zhu, 2025).

P5. Organizational inertia weakens the translation of strategic cognition into organizational learning and the translation of organizational learning into resource orchestration (Largani et al., 2025; Widuri et al., 2026).

P6. A strategic culture supportive of learning, cross-domain awareness, innovation, and institutional coordination strengthens the translation of strategic cognition into organizational learning and resource orchestration, whereas a rigid strategic culture is expected to weaken these relationships (Sun et al., 2025; Vladić et al., 2025).

P7. Feedback from operational implementation and adaptive outcomes contributes to subsequent strategic cognition and organizational learning by providing new information concerning the validity of previous strategic assumptions and institutional responses (Balarezo et al., 2024; Weiser et al., 2020).

RESULTS AND DISCUSSION

General Mapping of the Literature

The literature mapping revealed that research on strategic leadership and defense adaptation has developed across four principal clusters. The first cluster examines the transformation of the security environment, particularly the emergence of hybrid threats, cyberattacks, disinformation, maritime coercion, proxy activities, and grey-zone competition. Studies in this cluster consistently indicate that contemporary threats are cross-domain, difficult to attribute, and capable of blurring the boundaries between war and peace and between military and civilian spheres. The second cluster focuses on strategic leadership and emphasizes that organizational decisions are shaped by the cognitive capacity, experience, values, and interpretations of senior leaders. From the perspective of upper echelons theory, an organization's response to environmental change is influenced not only by external pressures but also by how senior leaders select, interpret, and prioritize strategic information (Hao & Nordin, 2026).

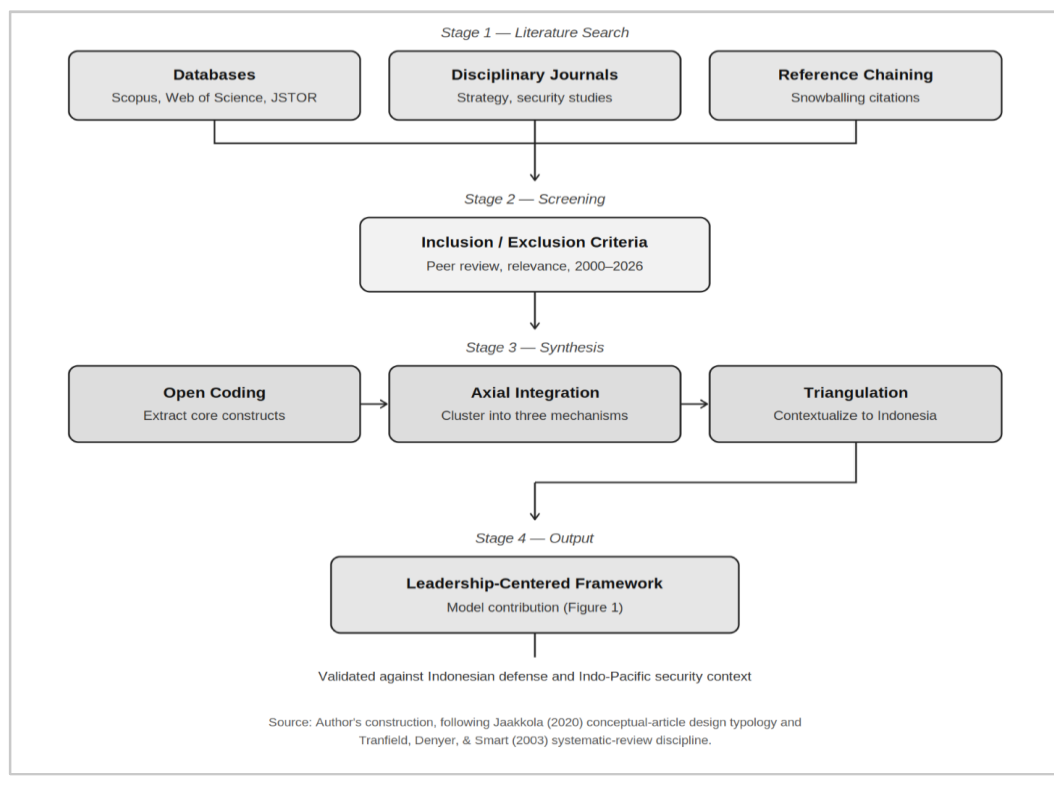


Figure 1. Research framework depicting the hybrid narrative-integrative review methodology, from literature search through screening, synthesis, and framework output.

The third cluster addresses organizational adaptation, dynamic capabilities, institutional learning, and military transformation. This body of literature conceptualizes adaptation as a continuous process involving the ability to sense environmental changes, make strategic choices, and transform organizational assets, structures, doctrines, and routines. However, much of this literature does not specify in detail how leadership interpretation is converted into adaptive defense capability. The fourth cluster examines the Indonesian defense context, particularly doctrinal transformation, modernization of major defense equipment systems, force-posture development, and the alignment of defense policy with the Golden Indonesia 2045 vision (Corrales-Estrada et al., 2021). These studies establish the need for defense transformation but do not yet provide an integrated causal explanation of how strategic leadership produces institutional and operational adaptation. Overall, the mapping identified substantial theoretical fragmentation. Leadership literature generally concentrates on the characteristics, cognition, and decisions of senior leaders, whereas defense adaptation

literature emphasizes changes in doctrine, structure, technology, and material resources. The relationship between these domains has rarely been integrated into a coherent mechanism based explanation (Sarta et al., 2021).

Primary Findings from the Literature Synthesis

The qualitative thematic synthesis identified three interrelated mechanisms through which strategic leadership influences adaptive defense capability: strategic cognition, organizational learning, and resource orchestration. These mechanisms form a sequential but iterative pathway from environmental interpretation to institutional learning and operational implementation (Maharani et al., 2024).

Strategic Cognition

Strategic cognition emerged as the initial mechanism enabling leaders to recognize, interpret, and prioritize changes in the strategic environment. The literature indicates that multidimensional threats cannot always be identified through conventional military indicators. Cyber operations, disinformation, economic pressure, proxy activities, and grey-zone coercion are frequently ambiguous, cumulative, and deliberately maintained below the threshold of open conflict (Corrales-Estrada et al., 2021). Under these conditions, the quality of defense adaptation depends heavily on leaders' capacity for strategic sensemaking. Strategic leaders must distinguish temporary developments from structural changes that require the revision of doctrine, organizational design, force posture, or capability priorities. Misinterpretation may result in delayed responses, inappropriate allocation of resources, or the continued use of defense postures that no longer correspond to the threat environment. Strategic cognition also supports priority setting under conditions of limited budgets, incomplete information, and competing institutional interests. It therefore involves more than information collection. It requires the integration of intelligence, technical knowledge, operational experience, political considerations, and long-term national objectives into coherent strategic judgments (Maharani et al., 2024).

Organizational Learning

Organizational learning was identified as the second mechanism. The synthesis demonstrates that leadership interpretation does not automatically generate institutional change. Strategic assessments must be embedded in organizational processes before they can reshape doctrine, procedures, routines, structures, and institutional memory. Organizational learning occurs through operational evaluation, joint exercises, doctrinal development, education and training, knowledge exchange, lessons-learned systems, and the incorporation of field experience into policy. Through these processes, defense institutions do not merely correct technical deficiencies; they may also reconsider the assumptions used to interpret threats and determine appropriate responses. The findings position organizational learning as a mediating mechanism between leadership cognition and institutional adaptation. Without effective learning processes, strategic knowledge may remain confined to individual leaders, temporary policy statements, or isolated organizational units. It consequently fails to become embedded in collective routines and operational behavior. The effectiveness of organizational learning is influenced by openness to evaluation, the availability of feedback mechanisms, knowledge sharing across services and institutions, and organizational willingness to revise established practices. Institutions that lack a learning culture tend to repeat familiar procedures even when the strategic environment has fundamentally changed (Rupcic, 2023).

Resource Orchestration

Resource orchestration emerged as the third mechanism. It refers to the capacity of strategic leaders to align personnel, budgets, technology, logistics, information, organizational structures, and partnerships with strategic priorities. The reviewed literature indicates that the possession of resources does not automatically produce adaptive capability. Defense effectiveness depends on how resources are assembled, allocated, combined, and reconfigured. Resource orchestration converts organizational learning into implementation. A revised doctrine must be supported by corresponding changes in command structures, personnel development, technological acquisition, budgeting, interoperability, logistics, and interagency coordination. When these elements are not aligned, organizational change remains largely administrative and does not generate meaningful operational capability. This

mechanism is particularly relevant to Indonesia because defense adaptation occurs under conditions of resource constraints, uneven modernization of major defense equipment systems, fragmented coordination, and the operational demands of a geographically dispersed archipelagic state. Effective orchestration allows leaders to optimize available capabilities while directing future defense development toward the most urgent strategic risks.

Constraining Factors in Defense Adaptation

The analysis identified organizational inertia and strategic culture as the two principal contextual factors shaping the relationship between strategic leadership and defense adaptation. Organizational inertia appears in the form of bureaucratic resistance, rigid procedures, dependence on established patterns, fragmented authority, and slow decision-making. These conditions can obstruct implementation even when leaders have recognized the need for adaptation. Inertia may also produce a gap between policy change at the strategic level and implementation at the operational level. Strategic culture influences how defense institutions interpret threats and determine which responses are considered legitimate or appropriate. A culture strongly oriented toward conventional military threats may inhibit recognition of cyber, informational, economic, health, environmental, and other non-military challenges. Conversely, a culture that encourages innovation, critical evaluation, collaboration, and institutional learning can accelerate adaptation. Neither organizational inertia nor strategic culture is inherently negative. Institutional traditions, identity, and established procedures can provide stability, cohesion, and continuity. However, when these factors become excessively rigid, they may delay change and restrict leaders' ability to convert strategic interpretation into adaptive capability (Castillo & Trinh, 2019).

Table 2. Key Findings from the Reviewed Literature

Author/ Years	Study Focus	Key Findings	Moderating	Analytical Context
Buzan, Wæver, and de Wilde (1998)	Expansion of security sectors	Security extends beyond the military domain to political, economic, societal, and environmental sectors.	State priorities and securitization processes	Global
Hoffman (2007)	Hybrid threats and warfare	Contemporary threats combine conventional, irregular, and non-military	Threat ambiguity and fragmented responses	Global

		instruments within a single strategic campaign.		
Rid (2012)	Cyber conflict and attribution	Cyber operations complicate attribution, escalation management, and the boundary between conflict and non-war activity.	Technological uncertainty and attribution problems	Global
Hambrick (2007)	Upper echelons theory	Organizational choices and outcomes reflect the cognition, values, and experiences of senior leaders.	Managerial discretion, structure, and organizational context	Global
Teece (2007)	Dynamic capabilities	Adaptation depends on the organizational capacity to sense change, seize opportunities, and transform assets and routines.	Organizational routines, flexibility, and resource availability	/Global
Farrell (2010)	Military adaptation and change	Military adaptation requires learning, doctrinal revision, and the institutionalization of operational experience.	Military culture, resistance, and path dependency	Global
Bornay Barrachina, López-Cabrales, and Salas-Vallina (2025)	Strategic leadership and dynamic capabilities	Strategic leadership strengthens the organization's ability to develop, coordinate, and reconfigure dynamic capabilities.	Organizational conditions and resource-management capacity	Global
Sianturi and Saputro (2025)	Indonesian defense transformation	Indonesia must adjust its doctrine and capabilities to multidimensional threats and the Golden Indonesia 2045	Resource limitations and institutional coordination	Indonesia

Source: Author, 2026

The Resulting Conceptual Framework

The figure should present the principal sequence as:



Figure 2. Conceptual Framework

Organizational inertia and strategic culture should be shown outside the main causal chain as boundary conditions affecting the translation between stages. A feedback arrow should run from Adaptive Defense Capability / Implementation Outcomes back toward Strategic Cognition and Organizational Learning. The figure should not depict organizational inertia and strategic culture as mediators.

Conceptual Propositions

The literature synthesis generated five conceptual propositions that can guide subsequent empirical testing: Strategic cognition: The quality of leaders' strategic cognition determines the capacity of defense institutions to recognize and prioritize multidimensional threats. Organizational learning: Organizational learning mediates the relationship between leadership interpretation and changes in defense doctrine, routines, and institutional structures. Resource orchestration: Resource orchestration determines whether institutional learning is translated into operational defense capability. Contextual constraints: Organizational inertia and strategic culture shape the strength and direction of the relationship between strategic leadership and defense adaptation. Adaptive feedback: Feedback from implementation updates strategic cognition and organizational learning, enabling defense adaptation to continue over time.

Relevance to the Indonesian Defense Context

Applying the framework to Indonesia demonstrates that defense adaptation cannot be reduced to budget adequacy or the modernization of major defense equipment systems. The central challenge also concerns the ability of strategic leaders to interpret cross-domain threats, institutionalize learning across defense and security institutions, and align national resources with strategic priorities. The incomplete achievement of the Minimum Essential Force targets, uneven modernization, fragmented coordination, and the growth of challenges in the North Natuna Sea, cyberspace, and the information environment suggest possible bottlenecks within each of the three mechanisms. Constraints may arise during threat interpretation, the institutionalization of learning, or the implementation of policy through resource alignment. The framework can therefore serve as a diagnostic instrument. When an institution fails to recognize a changing threat, the principal bottleneck lies in strategic

cognition. When the threat is recognized but does not lead to doctrinal, structural, or procedural change, the bottleneck lies in organizational learning. When policies and doctrines have changed but are not supported by personnel, budgets, technology, logistics, or coordination, the bottleneck lies in resource orchestration. Overall, the results answer the research question by demonstrating that strategic leadership influences defense adaptation through three sequential and mutually reinforcing mechanisms: strategic cognition, organizational learning, and resource orchestration. The relationship is dynamic, shaped by feedback, and conditioned by organizational inertia and strategic culture. This mechanism-based explanation provides a conceptual foundation for diagnosing adaptation failures and for future empirical validation within Indonesia and other developing-state defense institutions (Harefa, Harahap, Dewi, Nurrobi, & Harsono, 2026; Harefa, Harahap, Dewi, Nurrobi, Sutanto, et al., 2026; Harsono et al., 2026).

DISCUSSION

This study examined how strategic leadership influences national defense adaptation in the context of multidimensional, hybrid, and rapidly changing threats. The literature synthesis demonstrates that strategic leadership affects adaptive defense capability through three interconnected mechanisms: strategic cognition, organizational learning, and resource orchestration. These mechanisms form a sequential but iterative process through which environmental changes are interpreted, institutionalized, and translated into operational capabilities. The analysis also indicates that this process is conditioned by organizational inertia and strategic culture, which may facilitate, delay, distort, or prevent adaptation.

Interpretation of Key Findings

The first major finding is that strategic cognition constitutes the initial mechanism of defense adaptation. Contemporary threats, including cyberattacks, disinformation, proxy activities, maritime coercion, terrorism, and grey-zone operations, are frequently ambiguous and deliberately maintained below the threshold of conventional armed conflict. Under such circumstances, defense institutions cannot rely exclusively on traditional threat indicators or established military planning assumptions. Strategic leaders must interpret fragmented information, distinguish temporary developments from structural strategic changes, and

determine which threats require institutional and capability transformation. This finding reinforces the proposition that defense adaptation begins with leadership interpretation rather than with the automatic acquisition of additional resources. The availability of technology, military equipment, budgets, or personnel does not guarantee effective adaptation when leaders fail to recognize changes in the threat environment or continue to prioritize capabilities that are no longer strategically relevant. Strategic cognition therefore functions as the sensing mechanism through which leaders identify threats, evaluate their significance, and establish priorities under conditions of uncertainty, competing institutional interests, and limited resources.

In the Indonesian context, strategic cognition is particularly important because the country faces simultaneous conventional and non-conventional challenges. Maritime competition in the North Natuna Sea, cyber vulnerabilities, disinformation, transnational crime, natural disasters, terrorism, and geopolitical rivalry require leaders to integrate military, political, economic, technological, informational, and social considerations. An excessively conventional interpretation of security may result in underestimating threats emerging from cyberspace, information operations, public health emergencies, economic coercion, and other non-military domains. Strategic leaders must consequently develop cross-domain awareness and incorporate intelligence, technology, operational experience, national policy, and long-term development objectives into their strategic judgments. The second major finding concerns the mediating role of organizational learning. The analysis shows that leadership awareness alone is insufficient to generate institutional transformation. Strategic assessments must be converted into doctrine, organizational routines, education and training programs, operational procedures, command relationships, and institutional memory. Organizational learning therefore explains how individual leadership cognition becomes collective institutional capability.

This mechanism is important because strategic knowledge may otherwise remain concentrated among particular leaders or organizational units. When leadership interpretation is not institutionalized, changes in personnel may cause strategic priorities to disappear, policy implementation to become inconsistent, and defense organizations to return to established routines. Organizational learning reduces this risk by embedding knowledge into systems rather than allowing it to remain dependent on individual leadership personalities.

Operational evaluations, after-action reviews, joint exercises, lessons-learned systems, professional military education, doctrinal development, and interagency knowledge exchange are therefore central elements of defense adaptation. These processes allow defense institutions not only to correct technical weaknesses but also to reconsider the underlying assumptions used to define threats and appropriate responses. Organizational learning consequently involves both incremental improvement and deeper institutional reflection.

The third major finding is that resource orchestration determines whether institutional learning produces operational capability. Defense institutions may recognize a threat and revise their policies or doctrines, yet adaptation will remain incomplete when these changes are not supported by appropriate personnel, technology, budgeting, logistics, organizational structures, and strategic partnerships. Resource orchestration bridges the gap between institutional intention and operational implementation. This result demonstrates that resource availability and resource effectiveness are analytically different. Defense institutions may possess significant resources but remain unable to generate adaptive capability when those resources are fragmented, duplicated, poorly coordinated, or allocated according to outdated priorities. Conversely, institutions operating under resource constraints may improve their adaptive capacity when leaders successfully combine existing resources, develop partnerships, prioritize critical capabilities, and align organizational components with clearly defined strategic objectives.

Resource orchestration is especially relevant to Indonesia because of its archipelagic geography, uneven defense modernization, incomplete achievement of the Minimum Essential Force targets, and fragmented interagency coordination. Effective adaptation requires more than increasing the defense budget or purchasing major weapons systems. It also requires the alignment of force posture, personnel development, command and control systems, intelligence, logistics, cyber capabilities, joint operations, interoperability, and cooperation with civilian institutions. The findings further indicate that the three mechanisms should not be understood as a rigid linear sequence. Operational implementation generates feedback that may confirm or challenge previous leadership assumptions. Exercises, operational failures, technological disruption, emerging intelligence, and changes in the geopolitical environment provide new information for subsequent strategic interpretation and

organizational learning. Defense adaptation is therefore a continuous and recursive process rather than a single institutional reform.

Organizational inertia and strategic culture shape every stage of this process. Inertia may emerge through bureaucratic resistance, rigid procedures, fragmented authority, dependence on established routines, and slow decision-making. These conditions may prevent recognized threats from producing institutional change or may obstruct the implementation of revised policies. Strategic culture similarly influences which threats are considered important and which responses are regarded as legitimate. A strategic culture dominated by conventional military assumptions may limit adaptation to cyber, informational, economic, health, environmental, and other non-military threats. However, organizational inertia and strategic culture should not be interpreted solely as negative factors. Institutional traditions, stable procedures, professional identity, and organizational continuity can support discipline, cohesion, and predictability. The problem occurs when these elements become excessively rigid and prevent critical evaluation or innovation. The objective of defense adaptation is therefore not to eliminate institutional traditions but to distinguish those that preserve organizational effectiveness from those that obstruct necessary transformation.

Comparison with Previous Studies

The findings are consistent with the expanded security framework developed by Buzan, Wæver, and de Wilde, which argues that security extends beyond the military sector to include political, economic, societal, and environmental dimensions. The present study supports this broader understanding by demonstrating that strategic leaders must interpret threats across multiple domains before defense institutions can determine appropriate adaptive responses. However, this study extends the sectoral security perspective by explaining the organizational mechanisms through which multidimensional threat recognition can be transformed into defense capabilities. The results also align with Hoffman's analysis of hybrid threats, particularly the combination of conventional, irregular, political, technological, informational, and economic instruments within integrated strategic campaigns. While Hoffman primarily explains the changing character of threats, the present study focuses on the internal institutional process required to respond to such threats. It therefore moves the discussion

from identifying hybrid threats to explaining how leadership cognition, institutional learning, and resource alignment can generate an adaptive response.

The finding concerning strategic cognition is strongly supported by Hambrick's upper echelons theory. According to this perspective, organizational choices reflect the experiences, cognitive characteristics, and values of senior leaders. The present study confirms that defense adaptation is influenced by how strategic leaders select and interpret environmental information. Nevertheless, it extends upper echelons theory by specifying the mechanisms through which leadership interpretation may influence defense outcomes. Leadership cognition does not directly and automatically produce adaptation; its effects are transmitted through organizational learning and resource orchestration. The proposed framework is also consistent with Teece's dynamic capabilities approach, which conceptualizes adaptation through the capacities to sense environmental change, seize opportunities, and transform organizational assets. Strategic cognition corresponds closely to sensing, organizational learning supports the institutional processing and seizing of strategic opportunities, and resource orchestration facilitates organizational transformation. However, this study places strategic leadership more explicitly at the center of these capabilities. It argues that sensing, seizing, and transforming do not occur independently of leadership but are initiated and coordinated through strategic interpretation, institutional influence, and resource prioritization.

The organizational learning mechanism supports Farrell's explanation of military adaptation, which emphasizes operational learning, doctrinal change, and the institutionalization of experience. Both studies recognize that military institutions must convert operational knowledge into revised practices. The present study extends this argument by positioning organizational learning between strategic cognition and resource implementation. It therefore explains not only why military institutions learn but also how leadership interpretation becomes embedded in doctrine, routines, and institutional memory.

The results are also compatible with the findings of Bornay-Barrachina, López-Cabrales, and Salas-Vallina, who emphasize the role of strategic leadership in developing and reconfiguring dynamic capabilities. However, the current study applies this relationship to national defense institutions, where adaptation is affected by bureaucratic authority, strategic culture, political oversight, security classification, interservice relations, and interagency

coordination. Unlike private organizations, defense institutions cannot evaluate adaptation solely through organizational efficiency or market performance. Their effectiveness must also be assessed in terms of preparedness, deterrence, resilience, interoperability, and the capacity to respond to threats across multiple domains.

In relation to Indonesian defense studies, the findings support Sianturi and Saputro's argument that Indonesia must adjust its doctrine and capabilities to multidimensional threats and the Golden Indonesia 2045 vision. Nevertheless, previous Indonesian studies have generally emphasized the necessity of transformation without providing an integrated causal explanation of how transformation occurs. The present study addresses this limitation by identifying three specific mechanisms and two contextual constraints. It explains why policy recognition may not generate doctrinal change and why revised doctrine may not necessarily produce operational capability. The framework therefore contributes a more nuanced explanation than material or structural approaches that define defense adaptation primarily through budgets, weapons acquisition, force posture, or technological modernization. Material capabilities remain important, but their strategic value depends on leadership interpretation, institutional learning, and coherent orchestration. This helps explain why countries or institutions with comparable resources may demonstrate different levels of adaptive capability.

Practical and Policy Implications

The findings have several implications for Indonesian defense policy and institutional development. First, strategic leadership development should place greater emphasis on strategic sensemaking, cross-domain threat analysis, scenario planning, technological awareness, and decision-making under uncertainty. Leadership education should not focus only on command authority and operational experience but also on the cognitive capacity to interpret complex interactions among military and non-military threats. Second, defense institutions should strengthen organizational learning systems. Lessons from military operations, joint exercises, maritime incidents, cyberattacks, disaster responses, and interagency operations should be systematically documented, evaluated, disseminated, and incorporated into doctrine and training. A formal lessons-learned system should connect operational units, educational institutions, policy organizations, and strategic decision-makers.

Third, policy development should be linked to resource orchestration. Every major doctrinal or strategic revision should be accompanied by an assessment of its implications for personnel, command structures, budgeting, technology, logistics, infrastructure, and institutional coordination. This would reduce the risk of symbolic reforms in which policies are revised without corresponding changes in operational capabilities.

Fourth, the framework can be used as a diagnostic instrument for identifying adaptation failures. When an emerging threat is not recognized, the problem primarily concerns strategic cognition. When the threat is recognized but does not produce institutional change, the main weakness lies in organizational learning. When policies and doctrines are revised but remain unsupported by personnel, budgets, technology, logistics, and coordination, the failure is primarily associated with resource orchestration. Finally, Indonesia should strengthen interagency mechanisms because many contemporary threats cross the boundaries of military and civilian authority. Strategic leadership must be capable of coordinating the Ministry of Defence, the Indonesian National Armed Forces, other ministries and agencies, local governments, research institutions, private technology actors, and civil society where appropriate. National defense adaptation should therefore be treated as a whole-of-government and, in selected areas, a whole-of-society process.

Contextual Application to Indonesian Defense

The framework was derived from the broader literature synthesis rather than from primary empirical investigation of Indonesian defense institutions. Indonesia is therefore treated as a contextual application of the proposed model rather than as an independently tested empirical case. This distinction is necessary because the present review cannot establish whether particular Indonesian institutional outcomes are directly caused by weaknesses in strategic cognition, organizational learning, or resource orchestration. Nevertheless, Indonesia provides a relevant setting in which to examine the framework because its archipelagic geography, Indo-Pacific strategic position, maritime-security challenges, defense-modernization requirements, cyber and information-security exposure, and need for cross-institutional coordination create substantial demands for adaptive defense governance. Within this context, the framework suggests several analytically distinct questions. Where an emerging threat is not adequately recognized or prioritized, the potential bottleneck may lie

in strategic cognition. Where recognized strategic changes fail to become embedded in doctrine, routines, education, or organizational procedures, organizational learning may constitute the principal constraint. Where revised strategies and doctrines are not accompanied by corresponding personnel, technology, logistics, budgets, command arrangements, or interoperability, the bottleneck may instead concern resource orchestration.

These applications should be interpreted as theoretically informed diagnostic propositions rather than empirical conclusions regarding Indonesian defense institutions. Substantive claims concerning Minimum Essential Force achievement, North Natuna Sea developments, cyber vulnerability, modernization, logistical constraints, and interagency coordination should therefore be supported independently by official government documents, institutional reports, defense-policy publications, or high-quality empirical studies.

Strengths, Limitations, and Cautions

A principal strength of this study is its integration of literature that is normally separated across strategic leadership, organizational adaptation, organizational learning, dynamic capabilities, military adaptation, and strategic culture. The mechanism-based approach moves beyond simply identifying factors associated with defense transformation by specifying how leadership interpretation may be translated into institutional learning and subsequently into capability implementation. The framework also distinguishes sequential mechanisms from contextual boundary conditions and provides propositions that can be subjected to subsequent empirical testing.

Several limitations nevertheless require caution. First, a hybrid narrative-integrative review does not provide the same exhaustive coverage or statistical aggregation as a conventional systematic review or meta-analysis. Although a structured search and screening procedure can improve transparency, publication bias and selection bias may remain because relevant studies may use different disciplinary terminology or may not be indexed in the databases examined. Second, thematic synthesis necessarily involves researcher interpretation. The grouping of codes into categories and mechanisms may therefore be influenced by analytical judgment even when supported by coding matrices, theoretical triangulation, and an audit trail. Third, this study does not use primary data from defense leaders, military units, government agencies, or operational organizations. The proposed

relationships should consequently be understood as theoretical propositions rather than empirically demonstrated causal effects. Fourth, the review relies predominantly on publicly accessible literature and documents. Classified assessments, internal evaluations, operational lessons, intelligence reporting, and confidential decision-making processes could not be examined, even though such information may substantially influence actual defense adaptation.

Finally, Indonesia functions primarily as a contextual application of the framework. The findings should not therefore be generalized automatically to all Indonesian defense institutions or to other national settings. Differences in political institutions, civil-military relations, strategic culture, resource availability, alliance structures, geography, and threat environments may alter the proposed relationships. Empirical testing across different institutional and national contexts is required before broader generalizations can be made.

CONCLUSION

This study develops a leadership-centered framework explaining how strategic leadership may contribute to adaptive defense capability under multidimensional threat conditions. The contribution does not lie in introducing new individual constructs, but in integrating established concepts into a mechanism-based sequence connecting strategic leadership with strategic cognition, organizational learning, resource orchestration, and adaptive defense capability. Organizational inertia and strategic culture are positioned as boundary conditions, while feedback from implementation provides a recursive connection to subsequent interpretation and learning.

The synthesis suggests that defense adaptation may depend not only on the possession of military resources but also on the institutional capacity to interpret strategic change, convert interpretation into organizational learning, and align resources with revised priorities. Indonesia illustrates the potential diagnostic relevance of this framework, but the present study does not empirically test Indonesian defense institutions. Its conclusions are therefore conceptual and should not be interpreted as causal findings.

The principal limitations concern the interpretive nature of the review, possible publication and selection bias, reliance on publicly accessible evidence, absence of primary empirical data, and lack of access to classified institutional information. Future research should

test the proposed relationships through interviews, comparative case studies, longitudinal analysis, surveys, structural equation modeling, and mixed-method designs involving defense institutions in Indonesia and other developing or archipelagic states.

REFERENCES

- Attah-Boakye, R., Costanzo, L. A., Guney, Y., & Rodgers, W. (2023). The effects of top management team strategic cognition on corporate financial health and value: an interactive multi-dimensional approach. *The European Journal of Finance*, 29(13), 1461-1492.
- Balarezo, J. D., Foss, N. J., & Nielsen, B. B. (2024). Organizational learning: Understanding cognitive barriers and what organizations can do about them. *Management Learning*, 55(5), 741-768.
- Castillo, E. A., & Trinh, M. P. (2019). Catalyzing capacity: absorptive, adaptive, and generative leadership. *Journal of Organizational Change Management*, 32(3), 356-376.
- Colom-Piella, G. (2021). From transformation to adaptation: analysing the Spanish military change (2004-2020). *Defence Studies*, 21(1), 47-66.
- Corrales-Estrada, A. M., Gómez-Santos, L. L., Bernal-Torres, C. A., & Rodríguez-López, J. E. (2021). Sustainability and resilience organizational capabilities to enhance business continuity management: A literature review. *Sustainability*, 13(15), 8196.
- Csaszar, F. A., Ketkar, H., & Kim, H. (2024). Artificial intelligence and strategic decision-making: Evidence from entrepreneurs and investors. *Strategy Science*, 9(4), 322-345.
- Dwivedy, M., Pandit, D., & Khatter, K. (2025). Assessment of smart manufacturing readiness for small and medium enterprises in the Indian automotive sector. *Sustainability*, 17(18), 8096.
- Dyson, T., & Pashchuk, Y. (2022). Organisational learning during the Donbas War: the development of Ukrainian Armed Forces lessons-learned processes. *Defence Studies*, 22(2), 141-167.
- Hao, E. O. Y., & Nordin, M. N. (2026). School-Based Emotion Regulation Support for Learners with Autism Spectrum Disorder: A Systematic Literature Review of Interventions, Mechanisms, and Implementation. *International Journal of Special Education*, 41(9s), 392-427.
- Harefa, F., Harahap, Y., Dewi, D. A. R., Nurrobi, R. M. T., & Harsono, C. F. (2026). The role of physiotherapy in a health maintenance strategy for retirees in Indonesia to support total defense. *Physical Therapy Journal of Indonesia*, 7(1), 70-78.
- Harefa, F., Harahap, Y., Dewi, D. A. R., Nurrobi, R. M. T., Sutanto, S., & Harsono, C. F. (2026). An Integrated Risk Analysis Approach in Military Hospitals: Implications for Public Health Preparedness and Resilience. *Media Publikasi Promosi Kesehatan Indonesia (MPPKI)*, 9(1), 99-113.
- Harsono, C. F., Sutanto, S., & Harefa, F. (2026). Model of State Defense Strengthening Responding to the Impact of Eliminating the Presidential Threshold in Order to Realize Inclusive Democracy. *JHSS (JOURNAL OF HUMANITIES AND SOCIAL STUDIES)*, 9(2).
- Hunzeker, M. A., & Harkness, K. A. (2021). Detecting the need for change: How the British Army adapted to warfare on the Western Front and in the Southern Cameroons. *European Journal of International Security*, 6(1), 66-85.

- Johnson, N. S., Purwanegara, M. S., & Mulyono, N. B. (2026). Managing E-commerce ecosystem coordination in crisis-affected Asian markets: a scoping analysis of digital adaptation. *Cogent Business & Management*, 13(1), 2656033.
- Largani, K. N., Kojouri, D. K., Hajiaghajani, A., & Rahmaty, M. (2025). Proposing a Model of Organizational Inertia Management in Iranian Public Organizations. *Future of Work and Digital Management Journal*, 3(4), 1-19.
- Maharani, I. A. K., Alfina, A., & Indawati, N. (2024). Strategic Leadership and Organizational Innovation: bibliometric Overview (1993-2022). *Journal of Scientometric Research*, 13(3), 849-865.
- Mohiman, M. A., Salem, A. H., & Eldin, Y. N. (2025). Adaptive Resource Orchestration as a Visionary Competency: Strategic Coordination for Agility, Innovation, and Institutional Transformation. *Middle East Journal of Scientific Publishing*, 8, 1-32.
- Paiola, M., Khvatova, T., Schiavone, F., & Ferraris, A. (2023). How do omnichannel strategies contribute to value-based healthcare? An orchestra-based analysis. *Journal of Business Research*, 167, 114175.
- Rupcic, N. (2023). Means to improve organizational learning capability. *The Learning Organization*, 30(1), 101-109.
- Samimi, M., Cortes, A. F., Anderson, M. H., & Herrmann, P. (2022). What is strategic leadership? Developing a framework for future research. *The Leadership Quarterly*, 33(3), 101353.
- Sarta, A., Durand, R., & Vergne, J.-P. (2021). Organizational adaptation. *Journal of Management*, 47(1), 43-75.
- Singh, A., Lim, W. M., Jha, S., Kumar, S., & Ciasullo, M. V. (2023). The state of the art of strategic leadership. *Journal of Business Research*, 158, 113676.
- Sun, S., Gu, B., & Tang, F. (2025). Cross-category innovation strategy and evolution of digital platform ecosystems: A technology-driven perspective. *Sustainability*, 17(11), 5113.
- Usenashvili, C. L. (2025). Challenges Of National Defense Resource Management. *თავდაცვა და მენეჯერება*, 4.
- Vladić, N., Maletič, D., & Maletič, M. (2025). A systems perspective on sustainable leadership and innovation capability: building organizational resilience in a high-tech company. *Systems*, 13(12), 1075.
- Weiser, A.-K., Jarzabkowski, P., & Laamanen, T. (2020). Completing the adaptive turn: An integrative view of strategy implementation. *Academy of Management Annals*, 14(2), 969-1031.
- Widuri, L. I. T., Supriyadi, A. A., & Harefa, F. (2026). Strategic Sensemaking To Adaptive Defense: Leadership Centered Framework For Addressing Hybrid Threats. *JHSS (JOURNAL OF HUMANITIES AND SOCIAL STUDIES)*, 10(03), 1001-1012.
- Wijnja, K. (2022). Countering hybrid threats: does strategic culture matter? *defence Studies*. *Defence Studies*, 22(1), 16-34.
- Yang, Y.-T., & Zhu, Q. (2025). Toward a multi-echelon cyber warfare theory: a meta-game-theoretic paradigm for defense and dominance. *ArXiv Preprint ArXiv:2509.08976*.
- Zhou, H., Kalembo, F., Nair, A., Lim, E., Hou, X.-Y., & Ng, L. (2024). Unravelling Factors Shaping International Students' Learning and Mental Wellbeing During the COVID-19 Pandemic: An Integrative Review. *International Journal of Environmental Research and Public Health*, 22(1), 37.