

STRATEGIC SENSEMAKING TO ADAPTIVE DEFENSE: LEADERSHIP CENTERED FRAMEWORK FOR ADDRESSING HYBRID THREATS

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Abstract. The convergence of conventional, hybrid, cyber, and non-traditional threats has increased the need for defense institutions to develop adaptive capabilities beyond static doctrines, force structures, and material modernization. This study examined the mechanisms through which strategic leadership influences national defense adaptation and asked how this relationship is shaped by organizational inertia and strategic culture. Existing studies have generally treated strategic leadership and defense adaptation as separate constructs and have not sufficiently explained how leadership cognition is translated into institutional and operational capabilities, particularly within developing and archipelagic states. To address this gap, the study employed a qualitative hybrid narrative-integrative review combining a semi-systematic literature search, thematic synthesis, theoretical triangulation, and mechanism-based conceptual framework development. The analysis identified three sequential but iterative mechanisms: strategic cognition, organizational learning, and resource orchestration. Strategic cognition enabled leaders to interpret and prioritize multidimensional threats, organizational learning institutionalized these interpretations into doctrine, routines, and organizational memory, and resource orchestration aligned personnel, budgets, technology, logistics, structures, and partnerships with strategic priorities. Organizational inertia and strategic culture were found to condition each stage by facilitating, delaying, distorting, or preventing adaptation. This study contributes to defense and strategic leadership literature by integrating upper echelons theory and the dynamic capabilities framework into a testable leadership-centered model of defense adaptation. It concludes that adaptive defense capability depends not merely on resource possession but on leaders' ability to interpret change, institutionalize learning, and coherently mobilize resources, providing a diagnostic foundation for strengthening Indonesia's defense policy and institutional resilience.

KEYWORDS: Defense adaptation; Organizational learning; Strategic cognition; Strategic leadership.

1. INTRODUCTION

The global, regional, and national strategic environment of the twenty-first century has undergone fundamental transformation [1]. Traditional state centric threat models are no longer adequate to explain the interaction among military, political, technological, economic, informational, and social pressures. Whereas interstate conflict was previously understood as a relatively bounded phenomenon conducted primarily through conventional military instruments, contemporary threats have become increasingly diffuse, cross-domain, and difficult to attribute [2]. Cyberattacks, disinformation, proxy activities, transnational terrorism, maritime coercion, and various grey zone tactics have blurred the boundaries between war and peace and between the military and civilian domains. These developments have created a multidimensional threat environment that requires states to interpret uncertainty, adapt their institutions, and reconfigure national defense capabilities rather than merely rely on static force structures or doctrines [3].

These challenges are particularly significant for Indonesia. As a large archipelagic state situated between the Indian and Pacific Oceans, Indonesia occupies a strategically important position while remaining vulnerable to geopolitical competition, maritime disputes, cyber vulnerabilities, disinformation in the digital sphere, transnational threats, and other non-traditional security challenges. China's grey zone operations around the Senkaku Islands, Taiwan, and disputed maritime areas demonstrate the increasing use of coercive measures below the threshold of open conflict as an instrument of strategic competition. Indonesia also faces growing pressure in the North Natuna Sea, which forms part of the broader South China Sea strategic environment [4]. At the same time, Indonesia's defense institutions continue to confront resource constraints, uneven modernization of major defense equipment systems, fragmented coordination, and the incomplete achievement of the Minimum Essential Force targets [5]. After fifteen years of implementation, the Minimum Essential Force program was reportedly able to achieve only approximately 65 percent of its overall target. These conditions reveal an important analytical problem: defense adaptation cannot be

explained solely through material capabilities [6]. States with relatively comparable budgets, technologies, and force structures may demonstrate significantly different capacities to recognize threats, revise doctrines, coordinate institutions, and translate strategic priorities into operational capabilities. Models that focus excessively on material capability are therefore insufficient because they emphasize what defense organizations possess rather than how leaders with strategic authority interpret change, promote institutional learning, and mobilize Indonesia's national resources. Accordingly, the central problem addressed in this study is the limited understanding of the mechanisms through which strategic leadership shapes national defense adaptation in responding to military, non-military, and hybrid threats [7].

Strategic leadership in this study is understood not merely as the possession of formal decisionmaking authority, but as the cognitive and organizational capacity to interpret ambiguous environments, establish strategic priorities, promote institutional learning, and orchestrate resources toward coherent action. This definition draws on upper echelons theory, which explains that organizational outcomes reflect the cognitive characteristics and values of senior leaders. The concept is also linked to the dynamic capabilities framework, which views adaptation as a continuous process of sensing environmental change, seizing opportunities, and transforming organizational assets and routines [8]. Recent empirical findings further indicate that an organization's effectiveness in reconfiguring its dynamic capabilities is strongly influenced by the quality of strategic leadership rather than solely by the availability of its initial resources. Although both concepts have become well established, the relationship between strategic leadership and national defense adaptation has not been adequately examined in Indonesian defense and security studies. Existing literature tends to emphasize structural, technological, doctrinal, or material explanations of military effectiveness. Strategic leadership and organizational adaptation are also commonly treated as parallel constructs, without clearly explaining the mechanisms that connect leadership cognition to institutional change. A similar gap is evident in Indonesian defense scholarship. A number of studies have examined the transformation of national defense doctrine, the modernization of major defense equipment systems, and the alignment of defense policy with the government's vision and mission toward Golden Indonesia 2045. However, these studies have not sufficiently explained how strategic leaders transform their interpretation of environmental change into tangible outcomes of defense adaptation [9].

Based on this gap, the study poses the following principal research question: through what mechanisms does strategic leadership influence defense adaptation, and how is this influence constrained or shaped by organizational inertia and strategic culture? This question is important because defense adaptation extends beyond doctrinal change. It also encompasses changes in organizational routines, command relationships, interagency coordination, personnel management, budgeting, technology, and organizational culture. Leadership may initiate institutional change, but its influence is mediated by organizational learning and may be obstructed by bureaucratic

resistance, dependence on established patterns, fragmented authority, and deeply embedded strategic assumptions. To address this complexity, the study employs a hybrid narrative-integrative review method [10]. This method combines a semi-systematic literature search across the fields of defense studies, strategic management, leadership, and organizational theory with qualitative conceptual framework-building procedures. Relevant scholarly literature is synthesized and triangulated to identify recurring patterns, relationships, and mechanisms that consistently explain the relationship between strategic leadership and adaptive defense capability [11].

The analysis identifies three interrelated mechanisms: strategic cognition, organizational learning, and resource orchestration. Strategic cognition enables leaders to recognize, interpret, and prioritize emerging threats [12]. Organizational learning transforms these interpretations into new knowledge, doctrines, routines, and institutional memory. Resource orchestration subsequently translates organizational learning into implementation by aligning personnel, technology, budgets, organizational structures, and strategic partnerships with established defense priorities [13]. These three mechanisms operate through sequential stages of interpretation, learning, and implementation. Nevertheless, their effectiveness remains shaped by organizational inertia and strategic culture [14]. Unlike previous studies that examined strategic leadership and defense adaptation as separate phenomena, this study integrates the two into a single mechanism-based analytical framework and applies it to the context of Indonesia's national defense. The study offers a new explanation of how leadership cognition is translated into adaptive capability within the defense institutions of a developing state confronting multidimensional threats [15].

This study aims to develop and justify a leadership-centered analytical framework for defense adaptation, identify the mechanisms connecting strategic leadership with adaptive capability, and assess their relevance to Indonesia's strategic environment. It also seeks to provide a diagnostic instrument for identifying leadership related constraints within defense adaptation processes and to establish a conceptual foundation for future empirical validation, particularly in the context of developing states and global, regional, and national security architectures [16].

Research Novelty, this study develops a new mechanism based framework that positions strategic leadership as the primary driver of defense adaptation through strategic cognition, organizational learning, and resource orchestration [17]. By integrating upper echelons theory and the dynamic capabilities framework, it explains how leadership interpretation is translated into adaptive defense capability within Indonesia's defense institutions [18].

II. RESEARCH METHODS

Research Type

This study employed a qualitative research approach using a hybrid narrative-integrative review design [18]. The design combined a semi-systematic literature review with qualitative conceptual framework development to examine the

relationship between strategic leadership and national defense adaptation. A hybrid approach was selected because the relevant knowledge is distributed across several disciplines, including defense and security studies, strategic management, leadership studies, organizational theory, and public-sector governance. A conventional systematic review would be too restrictive for integrating theoretical, conceptual, and contextual literature, whereas a purely narrative review might lack sufficient transparency and methodological structure. The semi-systematic component was used to identify, screen, and organize relevant scholarly literature. The integrative component enabled the study to compare different theoretical perspectives, identify recurring causal mechanisms, and synthesize them into a unified analytical framework. The analysis focused specifically on how strategic leadership influences defense adaptation through strategic cognition, organizational learning, and resource orchestration. Organizational inertia and strategic culture were incorporated as contextual factors that may constrain or shape these mechanisms. The study was conceptual rather than hypothesis-testing. Its primary purpose was to develop and justify a mechanism-based analytical model that can subsequently be tested through empirical research in Indonesia and other developing-state defense contexts [19].

Population and Sample of Literature

Because this study did not involve human participants, the research population consisted of scholarly publications and relevant institutional documents addressing strategic leadership, defense adaptation, organizational learning, dynamic capabilities, strategic cognition, resource orchestration, military transformation, and multidimensional threats. The sample was selected purposively based on theoretical relevance rather than statistical representativeness. The reviewed materials included peer-reviewed journal articles, academic books, book chapters, defense policy studies, and selected official documents relevant to Indonesia's strategic and defense environment. Foundational publications were included to establish the theoretical basis of upper echelons theory, strategic leadership, organizational learning, and dynamic capabilities. More recent literature was examined to capture contemporary developments in hybrid threats, grey-zone competition, military adaptation, technological disruption, and Indonesian defense transformation. Sources were included when they met at least one of the following criteria: they provided a theoretical explanation of strategic leadership; examined organizational or military adaptation; discussed strategic cognition, learning, or resource mobilization; analyzed organizational inertia or strategic culture; or addressed Indonesia's defense challenges and multidimensional threat environment. Sources were excluded when they lacked scholarly or institutional credibility, discussed leadership only at the tactical or interpersonal level, did not relate to organizational adaptation, or offered unsupported commentary without clear analytical relevance. The unit of analysis was the argument, concept, mechanism, or relationship presented in each publication rather than the publication as a whole. This approach enabled the study to compare explanatory patterns across different disciplines and types of literature [20].

Research Location and Context

The research was conducted as a desk-based documentary study and was therefore not limited to a specific physical field location. Analytically, however, the study was situated within the Indonesian national defense context. Indonesia was selected because it represents a developing archipelagic state facing complex global, regional, and national security pressures. The Indonesian context provides an appropriate setting for conceptual application because the country must simultaneously address conventional military threats, maritime competition, cyber vulnerabilities, disinformation, terrorism, transnational crime, natural disasters, and other non-military and hybrid threats. Indonesia also faces institutional challenges involving defense modernization, fragmented interagency coordination, resource limitations, and the transition from the Minimum Essential Force toward a more adaptive defense posture. These conditions make Indonesia a relevant case for examining how strategic leadership may translate environmental interpretation into institutional and operational adaptation [21].

Instrumentation and Research Tools

The principal research instrument was a structured literature review and analytical coding framework developed by the researchers. The framework was used to extract and organize information from each selected source according to several analytical categories: definition of strategic leadership, form of defense or organizational adaptation, leadership cognition, learning processes, resource orchestration, institutional constraints, strategic culture, and adaptive outcomes. A literature review matrix was used to record the author, publication year, disciplinary field, research context, principal concepts, methodological approach, major findings, and relevance to the proposed analytical model. The matrix supported systematic comparison across sources and reduced the risk of relying on isolated arguments. The researchers also used a conceptual mapping tool to identify relationships among the principal constructs. The mapping process focused on the sequence through which leaders interpret environmental changes, institutionalize learning, mobilize resources, and generate adaptive defense outcomes. Reference-management software and spreadsheet-based coding tools could be used to organize citations, eliminate duplication, document screening decisions, and maintain an audit trail of the analytical process [22].

Data Collection Procedure

Data collection was conducted through several sequential stages. First, the researchers defined the central concepts and established the scope of the review. The principal concepts included strategic leadership, defense adaptation, strategic cognition, organizational learning, resource orchestration, dynamic capabilities, organizational inertia, strategic culture, hybrid threats, and multidimensional security. Second, a semi-systematic literature search was conducted across major academic databases and scholarly search platforms. Search terms were used independently and in combination, including "strategic leadership," "defense adaptation," "military adaptation," "organizational learning," "strategic cognition," "resource orchestration," "dynamic

capabilities,” “organizational inertia,” “strategic culture,” “hybrid threats,” and “Indonesia defense transformation.” Citation tracking was also conducted by examining the references of highly relevant publications to identify foundational and related studies that might not have appeared in the initial search. Third, the titles and abstracts of the identified publications were screened for relevance. Publications that addressed leadership without an organizational or strategic dimension were excluded. Studies that discussed defense capabilities without explaining adaptation, decision-making, learning, or institutional change were also excluded unless they provided important contextual evidence. Fourth, the full texts of potentially relevant publications were examined. At this stage, the researchers assessed the conceptual relevance, methodological credibility, explanatory contribution, and compatibility of each source with the research question. Fifth, the selected literature was entered into the review matrix and categorized according to the analytical themes. Evidence concerning the Indonesian strategic environment was collected from scholarly publications and relevant policy documents to assess the contextual applicability of the emerging framework [23].

Data Analysis

The data were analyzed using qualitative thematic synthesis and mechanism-based framework building. The analytical process consisted of four main stages [24]. The first stage involved descriptive mapping. The selected literature was classified according to its disciplinary origin, theoretical perspective, level of analysis, and principal explanation of leadership or adaptation. This stage identified how strategic leadership and defense adaptation had previously been conceptualized and revealed areas of overlap and fragmentation. The second stage involved thematic coding. Arguments and findings were coded according to recurring themes, including environmental interpretation, threat recognition, strategic decision-making, knowledge acquisition, institutional learning, doctrinal revision, resource allocation, capability reconfiguration, bureaucratic resistance, path dependency, and strategic culture. The third stage involved mechanism identification. The coded themes were examined to determine how strategic leadership could produce adaptive defense outcomes. Three interrelated mechanisms emerged from the synthesis: strategic cognition, organizational learning, and resource orchestration. Strategic cognition explains how leaders sense, interpret, and prioritize environmental changes. Organizational learning explains how interpretations are transformed into doctrine, knowledge, routines, and institutional memory. Resource orchestration explains how personnel, technology, budgets, structures, and partnerships are aligned to implement strategic priorities. The fourth stage involved conceptual integration and framework validation. Upper echelons theory was used to explain the influence of senior leaders’ cognitive characteristics on organizational choices, while the dynamic capabilities framework was used to explain the processes of sensing, seizing, and transforming. The emerging framework was then compared with literature on military adaptation, strategic culture, and organizational inertia. This theoretical triangulation was conducted to assess whether

the proposed relationships were coherent across multiple disciplinary perspectives. The final framework positions strategic leadership as the principal driver of defense adaptation. It proposes a sequential but iterative process consisting of interpretation through strategic cognition, institutionalization through organizational learning, and implementation through resource orchestration. Feedback from implementation may reshape subsequent leadership interpretation and learning. Organizational inertia and strategic culture operate as moderating or constraining conditions that may strengthen, delay, distort, or prevent adaptation [25].

Research Trustworthiness

The credibility of the analysis was strengthened through source triangulation, theoretical triangulation, and transparent documentation of the review process. Source triangulation involved comparing findings from defense studies, strategic management, leadership studies, and organizational theory. Theoretical triangulation involved examining the proposed mechanisms through upper echelons theory, dynamic capabilities, organizational learning, and strategic culture perspectives. Dependability was supported by applying consistent inclusion criteria and analytical categories throughout the review. Confirmability was enhanced through the use of a literature matrix and an audit trail documenting source selection, coding decisions, conceptual revisions, and the development of the final model. Transferability was addressed by clearly explaining the Indonesian strategic context and identifying the conditions under which the framework may be applied to other developing-state defense institutions [26].

Ethical Approval

This study did not involve human participants, personal data, clinical information, interviews, surveys, or experimental procedures. It relied exclusively on publicly available scholarly literature and institutional documents. Therefore, formal ethical approval and informed consent were not required. Nevertheless, the study followed academic integrity principles by accurately attributing all ideas, theories, arguments, and evidence to their original sources and by avoiding misrepresentation, selective citation, and plagiarism [27].

III. 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.

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. 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 [28].

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 [29].

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. 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 [29].

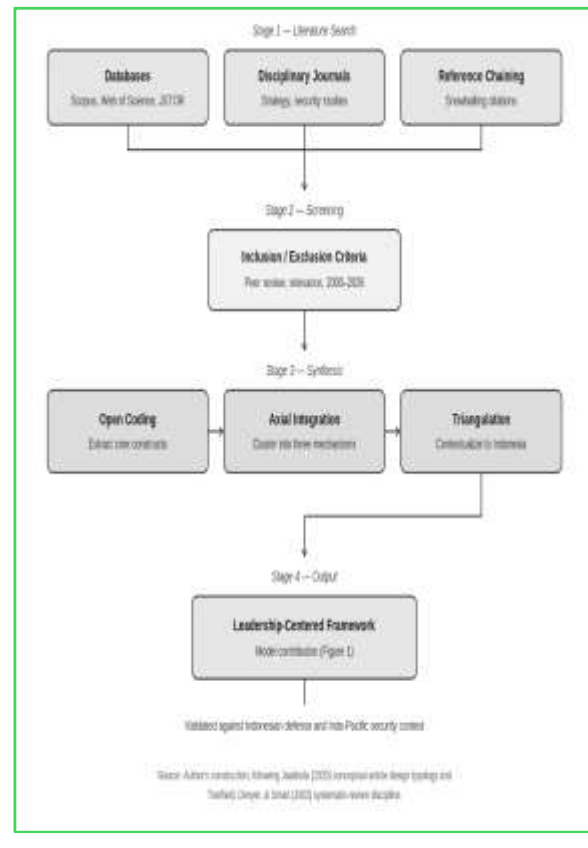


Figure 1. Research framework depicting the hybrid narrative-integrative review methodology, from literature search through screening, synthesis, and framework output.

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 [30].

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.

Table 1. 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 instruments within a single strategic campaign.	Threat ambiguity and fragmented responses	Global
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

The Resulting Conceptual Framework

The synthesis produced a leadership-centered analytical framework that positions strategic leadership as the primary driver of national defense adaptation. The relationship is expressed through the following mechanism-based sequence:



Figure 2. Conceptual Framework

Strategic cognition performs the interpretive function by recognizing and prioritizing emerging threats. Organizational learning performs the institutionalization function by converting leadership interpretations into knowledge, doctrine, procedures, routines, and institutional memory. Resource orchestration performs the implementation function by aligning personnel, technology, budgets, organizational structures, logistics, and partnerships to produce operational capability. The process is not entirely linear. It is iterative and feedback-driven. Operational success, failure, exercises, emerging intelligence, and environmental changes provide new information for subsequent rounds of leadership interpretation and organizational learning. Defense adaptation is therefore understood as a continuous cycle rather than a single episode of reform. Organizational inertia and strategic culture operate across all stages of the framework. They can reinforce, delay, distort, or prevent adaptation depending on whether established structures and assumptions support or resist the required change.

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.

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-Cabral, 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.

Strengths and Limitations

The twenty first-century strategic environment has changed fundamentally as conventional, state-centered threat models no longer capture the interaction of military, political, technological, economic, informational, and social pressures. Contemporary security threats are increasingly diffuse, cross-domain, and difficult to attribute. Cyberattacks, disinformation, proxy activities, transnational terrorism, maritime coercion, and grey-zone tactics have blurred the distinction between war and peace as well as between military and civilian spheres. These conditions create a multidimensional security environment in which static doctrines and force structures are insufficient. States must develop the capacity to interpret uncertainty, recognize emerging threats, adapt institutions, and reconfigure defense capabilities in a timely and coordinated manner. Effective national defense therefore depends not only on material resources, weapons, or conventional military strength, but also on strategic leadership, institutional learning, interagency coordination, technological responsiveness, and the ability to integrate military and non-military instruments in addressing complex and evolving threats across global, regional, and national levels

Recommendations for Future Research

Future research should empirically validate the proposed framework through quantitative, qualitative, mixed-method, longitudinal, and comparative designs. Quantitative studies may operationalize strategic cognition, organizational learning, resource orchestration, organizational inertia, strategic culture, and adaptive defense capability, while structural equation modeling can test direct, indirect, mediating, and moderating effects. Qualitative inquiry should use interviews, focus groups, process tracing, and case studies involving defense leaders, commanders, policymakers, planners, and civilian agencies to explain how threat interpretation, learning, and resource allocation occur in practice. Longitudinal studies are needed to assess causality and determine whether adaptation becomes institutionalized beyond individual leaders. Comparative research across Indonesia and other developing or archipelagic states should examine the influence of political institutions, civil-military relations, resource capacity, and strategic culture. Future studies should also explore collective leadership networks and evaluate adaptation through indicators such as interoperability, cyber resilience, doctrinal responsiveness, interagency coordination, readiness, flexibility, and decision-making speed under multidimensional threat conditions.

Overall Discussion

Overall, this study demonstrates that national defense adaptation is not determined solely by the quantity of material resources or the modernization of military equipment. It is fundamentally shaped by the capacity of strategic leaders to

interpret environmental change, institutionalize knowledge, and align resources with strategic priorities. Strategic cognition provides direction, organizational learning converts interpretation into institutional knowledge, and resource orchestration transforms that knowledge into operational capability. The study therefore provides a leadership-centered and mechanism-based explanation of defense adaptation. Its principal contribution lies in integrating upper echelons theory and the dynamic capabilities framework with organizational learning, military adaptation, organizational inertia, and strategic culture. The resulting framework explains not only why defense institutions need to adapt but also how adaptation can occur and where institutional failures may emerge. For Indonesia, the framework emphasizes that responding to multidimensional threats requires more than policy declarations, budget increases, or weapons acquisition. It requires leaders who can interpret complex threats, institutions that can learn from experience, and governance systems capable of coordinating personnel, technology, budgets, logistics, organizational structures, and partnerships. Strengthening these mechanisms is essential for developing a defense system that is adaptive, integrated, responsive, and resilient in the face of an increasingly uncertain strategic environment.

IV. CONCLUSION

This study examined how strategic leadership influences national defense adaptation and developed a leadership-centered analytical framework for Indonesia's multidimensional security environment. The findings show that adaptive defense capability is produced through three sequential but iterative mechanisms: strategic cognition, organizational learning, and resource orchestration. Strategic cognition enables leaders to identify, interpret, and prioritize emerging conventional, non-conventional, and hybrid threats. Organizational learning converts these interpretations into doctrine, procedures, routines, and institutional memory, while resource orchestration aligns personnel, budgets, technology, logistics, structures, and partnerships with strategic priorities. The effectiveness of these mechanisms is shaped by organizational inertia and strategic culture, which may support, delay, distort, or obstruct adaptation. The study emphasizes that defense adaptation cannot be understood solely through military spending, weapons modernization, or material capability. In Indonesia, effective adaptation depends on leaders' ability to interpret cross-domain threats, institutionalize knowledge, and coordinate limited resources across a large archipelagic setting. The proposed framework can therefore be used diagnostically to identify whether adaptation failures arise from weak threat interpretation, inadequate organizational learning, or ineffective resource alignment. Its practical implications include strengthening strategic leadership education, lessons-learned systems, interagency coordination, cross-domain threat assessment, and alignment between doctrinal reform and capability development.

Academically, the study contributes by integrating upper echelons theory and the dynamic capabilities framework into a mechanism-based model of defense adaptation. It also demonstrates the value of a hybrid narrative-integrative review for synthesizing fragmented literature into testable conceptual propositions. However, the study remains conceptual, relies on publicly available sources, and may be affected by researcher judgment and limited access to classified or internal evidence. Future research should empirically test the framework through surveys, structural equation modeling, interviews, process tracing, comparative case studies, and mixed-method designs across maritime security, cyber defense, information warfare, disaster response, and military modernization. Such evidence would support more integrated, resilient defense policies.

AUTHOR'S CONTRIBUTION STATEMENT

Lila Irawati Tjahjo Widuri contributed to the conceptualization of the study, development of the theoretical framework, literature investigation, data curation, thematic synthesis, and preparation of the original manuscript. Asep Adang Supriyadi contributed to the research methodology, theoretical validation, interpretation of the findings, supervision, and critical revision of the manuscript for important intellectual content. Faonaso Harefa contributed to the conceptualization, literature search and screening, formal analysis, framework visualization, manuscript writing, editing, reference management, and coordination of the submission and publication process. All authors reviewed and approved the final version of the manuscript and agreed to be accountable for the accuracy and integrity of the work.

CONFLICTS OF INTEREST

The authors declare that they have no financial, professional, institutional, or personal conflicts of interest that could have influenced the design, analysis, interpretation, or presentation of this study. The authors also confirm that they have no relationships with any organization or entity that could be perceived as inappropriately affecting the objectivity or integrity of the research.

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