



The Adaptation of Military Organizations to Changes in the Strategic Environment and the Complexity of Modern Threats

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ABSTRACT

Geopolitical changes, hybrid warfare, cyber threats, and technological acceleration require military organizations to review their strategies, structures, and operational capacities. This study aims to analyze the relationship between strategic environment change and the complexity of modern threats with military organizational adaptation and identify its driving and inhibiting factors. The research applies a systematic literature review based on PRISMA 2020. Publications 2020–2026 were searched through Scopus, Web of Science, and Google Scholar using structured keywords, selected based on inclusion-exclusion criteria; 10 selected articles were analyzed through thematic coding and categorization. The synthesis shows adaptive leadership, organizational learning, technological innovation, doctrinal flexibility, and interoperability support adaptation, while rigid bureaucracy and slow decisions hinder it. These findings offer a conceptual basis for an agile, integrated, and resilient military strategy in the face of multidomain threats.

INTRODUCTION

Changing global strategic environments have increased demands on the ability of military organizations to adjust their strategies, structures, doctrines, and operational capacities. Geopolitical competition, the Russia-Ukraine war, regional conflicts, cyber threats, hybrid warfare, and the development of artificial intelligence and wireless systems have changed the character of modern security threats. The latest data from the Stockholm International Peace Research Institute shows that world military spending will reach US\$2.887 trillion by 2025, an increase of 2.9% in real terms compared to the previous year (Liang et al., 2026). This increase has coincided with changing defense needs and competition between countries. NATO (2022) also emphasizes the importance of military adaptation to face conventional, hybrid, cyber, and new technology threats. This condition shows that the effectiveness of military organizations is not only determined by the size of resources and technological sophistication, but also by the ability to manage change strategically, quickly, and in a directed manner.

In the Indonesian context, the adaptation of military organizations is important because the geographical characteristics of the archipelago, the security dynamics of the Indo-Pacific region, and the interconnectedness of military and non-military threats require effective defense coordination. Modern threats do not always arise in the form of direct armed attacks, but can involve cyberattacks, disinformation, terrorism, and hybrid actions that combine various instruments of power. Asmoro et al. (2021) identified the importance of adjusting Indonesia's defense organization and doctrine to be able to integrate military and non-military components in the face of hybrid warfare. These findings show that the problem of adaptation is not sufficiently solved through weapons modernization. Military organizations also need to ensure the compatibility between strategic objectives, command structures, human resource competencies, decision-making mechanisms, and operational doctrines. Thus, strategic management plays an important role in linking changes in the external environment with internal decisions of defense organizations. Related research on military personnel also indicates that organizational behavior, leadership, and organizational culture are relevant to understanding personnel performance within military institutions (Siagian, Setyadi, & Hendri, 2022).

Theoretically, organizational adaptation can be understood as the process of adjusting to changes in the environment through learning, updating work practices, innovation, and managing organizational culture. Brahm and Poblete (2024) explain that organizational culture can support adaptation if the organization is able to balance the need to maintain practices that are still relevant with the need to innovate. In the military context, this balance is important because discipline, hierarchy, and standardization are necessary to maintain operational consistency, but can be an obstacle if they hinder responding to rapidly changing threats. Meanwhile, Choi (2021), through a study of 425 South Korean Army officers and noncommissioned officers, found that learning agility plays a role in the relationship between job characteristics and innovative behaviors. Both studies provide a basis for understanding the importance of culture and learning in organizational adaptation. However, its application to

military organizations still needs to consider specific characteristics in the form of command hierarchy, operational risks, and combat readiness demands.

Although studies on military adaptation and innovation have evolved, the results of previous research still show diverse focuses. Horowitz and Pindyck (2023) discuss the different definitions of military innovation and offer a conceptual framework to clarify the study of innovation and change in military organizations. Dyson (2021), through a study of the German Army, highlights internal organizational barriers and the importance of linking adaptation at the tactical and operational levels with broader organizational learning. Meanwhile, Kalkman (2023) shows that military organizations can make rapid changes in structure, authority, and routine when facing emergency situations, based on a study of military assistance operations after Hurricane Dorian. On the other hand, Kuo (2022) reminds that military innovation does not always increase combat effectiveness because certain changes can actually have negative consequences. Critically, these studies provide important insights, but they depart from different conceptual focuses, specific cases, or organizational mechanisms. Therefore, a synthesis is still needed that connects changes in the strategic environment and threat complexity with adaptation mechanisms, supporting factors, and organizational obstacles in the perspective of strategic management.

Based on these gaps, this study aims to analyze how changes in the strategic environment and the complexity of modern threats affect the adaptation of military organizations, as well as identify strategic factors that support and hinder the process. The research uses a qualitative approach through Systematic Literature Review (SLR) with reporting of the selection process based on the PRISMA 2020 guidelines. The literature search is designed to include publications for the period 2020–2026 through Scopus, Web of Science, and Google Scholar, using structured keywords related to military organizational adaptation, strategic environment changes, military innovation, and modern threats. The literature is selected based on inclusion and exclusion criteria, then articles that meet the requirements are analyzed through coding and thematic synthesis. In line with the abstract, the research design sets 10 articles as the final corpus to be reviewed. The analysis is directed to identify patterns of relationships between environmental change, adaptive leadership, organizational learning, technological innovation, doctrinal flexibility, interoperability, and bureaucratic barriers.

This research is expected to make a theoretical contribution by integrating strategic management perspectives and organizational adaptation into the study of defense management. This contribution is realized through a synthesis of the relationship between strategic environmental pressures, threat complexity, adaptive capabilities, and the effectiveness of military organizational change management. Practically, the results of the research are expected to be considered by defense leaders and planners in strengthening the organization's learning system, updating doctrine in a measurable manner, improving cross-unit coordination, and directing technological innovation according to operational needs. This research is also expected to help identify obstacles that can slow

down organizational responses, especially procedural rigidity, coordination limitations, and slow decision-making. Thus, military organizational adaptation can be understood not only as a response to new threats, but as a sustainable strategic management process to maintain organizational readiness, relevance, and resilience in the face of uncertainty.

LITERATURE REVIEW

Strategic Adaptation and Changes in Military Organization

Strategic adaptation is the process of adjusting organizational goals, structures, doctrines, and resources to changes in the external environment. In military organizations, adaptation is necessary when the strategies and capabilities that have been designed are no longer fully in accordance with the character of the threats faced. Colom-Piella (2021), through a study of Spanish military changes in 2004–2020, shows the importance of adjusting defense planning to develop future military force structures and capabilities. Meanwhile, Stanley-Lockman (2021) explains that each dimension of the United States military develops a different approach to innovation to maintain strategic advantages in the face of technological competition. Both studies show that adaptation is not enough through technological change, but must include alignment between strategies, organizational structures, and operational needs.

Technological Innovation and Military Capability Transformation

The development of artificial intelligence (AI), wireless systems, and digital technology is changing the way military organizations gather information, determine priorities, and make decisions. Neads et al. (2024), in a study of AI innovation in the Australian Army, discuss the process of military organizations in developing and integrating new technologies. Johnson (2023) emphasized that the use of AI in the observation, orientation, decision, and action (OODA) cycle does not eliminate the importance of human judgment in command and control decision-making. Both studies show that the success of military innovation depends on the integration of technology with personnel competencies, doctrines, and decision-making mechanisms. Therefore, strategic management is needed to ensure that technological modernization truly enhances organizational capabilities, not just adding to the inventory of equipment.

Organizational Learning and Operational Experience Evaluation

Organizational learning is an important mechanism that allows military organizations to transform operational experience into improvements in personnel strategies, procedures, and capabilities. Dyson and Pashchuk (2022) found that the formal learning process of the Armed Forces of Ukraine during the Donbas War still faces bureaucratic constraints, organizational culture, and the implementation of operational lessons. Meyer et al. (2024), through a study of the European Union's combat group and the development of Rapid Deployment Capacity, show that organizations can identify operational problems, but do not necessarily succeed in addressing the root of the political and strategic problems that hinder their effectiveness. The findings confirm that learning does not stop at post-operation evaluations. The results of evaluations

need to be communicated, translated into decisions, and institutionalized through changes in doctrine, training, resource allocation, and organizational procedures.

Leadership, Organizational Culture, and Doctrinal Flexibility

Leadership and organizational culture influence the military's ability to respond to change, especially when adjustments require changes in habits, division of authority, and coordination patterns. Wiltenburg and Gootzen (2024), through a study of the Belgian military escort team in Afghanistan, show that operational adaptation is influenced by threat assessment, personnel readiness, equipment use, and formal and informal learning processes. The study also shows that strategic culture can support certain adjustments while limiting others. From a strategic management perspective, these findings show the need for leadership that is able to maintain command discipline and consistency without hindering necessary initiatives in the field. Doctrinal flexibility and communication across organizational levels are important for successful changes at the operational level to be applied more broadly. Related empirical research on military personnel also examines organizational military behavior as a mediating mechanism linking transformational leadership, job satisfaction, and organizational culture with personnel performance (Siagian, Setyadi, Hendri, et al., 2022). A research-based monograph likewise discusses how military organizational behavior interacts with transformational leadership and organizational culture in efforts to improve personnel performance, drawing on a case study of Kodam XXX (Siagian, Setyadi, & Hendri, 2022).

Organizational Resilience in the Face of Multidomain Threats

Organizational resilience is an organization's ability to anticipate disruptions, maintain critical functions, adjust operations, and restore capacity after facing pressure. Hepfer and Lawrence (2022) distinguish organizational resilience into three forms, namely functional, operational, and strategic resilience. This division is relevant for military organizations because disruptions to support functions, the execution of operations, and strategic direction require different responses. Su and Junge (2023) also explain that resilience is influenced by individual, group, organizational, and network factors, as well as the characteristics of the disruptions faced. In the context of defense, Amakrane and Biesbroek (2024) show that adaptation to climate change risks in a number of EU countries is still limited, although these risks can affect infrastructure, operational capabilities, and security stability. Overall, the study expands the understanding that military readiness needs to include conventional, cyber, technological, and non-military threats that are intertwined. Overall, the study expands the understanding that military readiness needs to include conventional, cyber, technological, and non-military threats that are intertwined. Complementary evidence from a survey of 250 military personnel indicates that human capital resilience has a significant positive effect on defense readiness, while organizational military behavior supports readiness through discipline, coordination, and adaptability (Siagian et al., 2026).

Literature Synthesis and Research Conceptual Framework

Based on the ten articles that form the basis of the synthesis, military organizational adaptation can be understood as a strategic management process that links external environmental pressures to internal organizational changes. The literature on defense planning and technological innovation emphasizes the suitability of strategies with capabilities; research on organizational learning highlights the importance of evaluation and institutionalization of experiences; while organizational resilience studies show the need for the ability to anticipate and address disruptions. However, the focus of the research is still diverse, so the relationship between threat complexity, adaptive capabilities, and change management needs to be summarized in an integrated analytical framework. Therefore, this study integrates six main dimensions, namely adaptive leadership, organizational learning, technological innovation, doctrinal flexibility, interoperability, and bureaucratic barriers. This framework is used to identify patterns of findings and differences in previous research results through Systematic Literature Review (SLR), not to assume cause-and-effect relationships that have not been empirically tested.

METHODOLOGY

Types, Approaches, and Research Design

This study uses a qualitative approach with a Systematic Literature Review (SLR) design. This design was chosen to identify, evaluate, and synthesize the results of previous research on the adaptation of military organizations to changes in the strategic environment and the complexity of modern threats. The literature selection and reporting process refers to the guidelines of Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 (Page et al., 2021). The focus of the research includes the relationship between changes in the strategic environment and military organizational adaptation, supporting factors in the form of adaptive leadership, organizational learning, technological innovation, doctrinal flexibility, and interoperability, as well as inhibiting factors in the form of bureaucratic rigidity and slow decision-making.

Population and Sampling Techniques

The research population includes all scientific articles relevant to strategic management, military organizational adaptation, and modern threats published in the period 2020–2026. Articles were searched through Scopus, Web of Science, and Google Scholar. Samples were determined using purposive sampling based on inclusion and exclusion criteria, with 10 scientific articles designated as the final corpus as per the research abstract. The inclusion criteria include scientific journal articles that are relevant to the focus of the research, available in full text, published within a set time frame, and present empirical findings or conceptual analysis that can be evaluated. The exclusion criteria include duplicate articles, irrelevant publications, non-scientific documents, as well as articles that do not provide sufficient information to answer the research question. Because this study uses the document as a unit of analysis, the number of human respondents or participants does not apply.

Data Collection Techniques and Instruments

Data collection was carried out through systematic search using a combination of English-language keywords, such as military organizational adaptation, strategic environment, hybrid threats, cyber threats, military innovation, and organizational learning. Keywords were combined using Boolean AND and OR operators and adjusted to the characteristics of each database. The data collection instrument is in the form of a literature extraction sheet that records the author's name, year of publication, research context, research design, main findings, adaptation dimensions, supporting factors, inhibiting factors, and research limitations. Data quality is maintained through the application of consistent selection criteria, content relevance checks, and critical assessments of objective clarity, method transparency, evidence support, and relevance of findings. Two reviewers can independently screen and resolve differences through discussion; the level of agreement can be reported using Cohen's kappa coefficients.

Research Procedure

The research was carried out through six systematic stages. First, formulating research questions and establishing SLR protocols. Second, searching for articles in all three databases using structured keywords. Third, identifying and removing duplicate articles. Fourth, filtering titles and abstracts, then checking the full text based on inclusion and exclusion criteria. Fifth, assessing the quality of the article and extracting relevant information. Sixth, conducting coding, thematic synthesis, and compilation of research results. Identification, screening, eligibility, and inclusion flows were reported using PRISMA 2020.

Diagram PRISMA 2020

The numbers in the following diagram are consistently compiled working assumptions for the methodology draft, not the actual search results. The final number is adjusted to the target of 10 articles in the abstract.

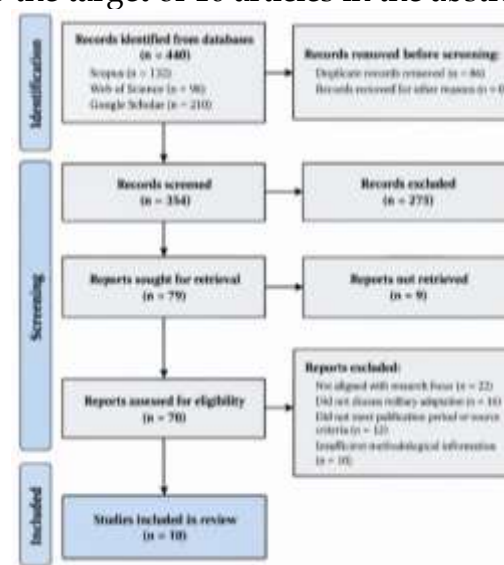


Figure 1. PRISMA Diagram 2020

Data Analysis Techniques

Data were analyzed using thematic analysis through repeated reading, coding, grouping, and synthesis of findings from ten selected articles. The analysis was focused on six dimensions, namely adaptive leadership, organizational learning, technological innovation, doctrinal flexibility, interoperability, and bureaucratic barriers and decision-making. Findings were compared to identify similarities, differences, patterns, and gaps in the research, then synthesized to explain the adaptation of military organizations to changing strategic environments and the complexity of modern threats. The analysis was conducted qualitatively without statistical meta-analysis as the research focused on thematic and conceptual synthesis.

RESEARCH RESULT AND DISCUSSION

This study synthesizes ten scientific articles to understand the adaptation of military organizations to changes in the strategic environment and the complexity of modern threats. The analysis was carried out by grouping findings based on research focus, methods, and factors that support and hinder adaptation. The results of the synthesis show that military adaptation is not only related to technological modernization, but also includes changes in doctrine, organizational learning, work culture, decision-making, and resource management. The findings show that the success of adaptation depends on the alignment between external environmental pressures and the internal capabilities of the organization.

Data Extraction from Ten Scientific Articles

Table 1 presents the results of the extraction of ten articles that have verified DOIs and are relevant to the research focus. Articles include empirical studies, conceptual analysis, theoretical modeling, and literature review. These different approaches allow military organizational adaptations to be analyzed from the individual, organizational, doctrine, to defense planning levels.

Table 1. Data Extraction of Ten Research Articles				
Author and Year	Research Methods and Focuses	Key Findings	Relevance to Research	
Asmoro et al. (2021)	Qualitative analysis of Indonesian defense doctrine.	The doctrine needs to integrate military and nonmilitary components to deal with hybrid warfare.	Supporting doctrine adaptation and defense integration.	
Brahm dan Poblete (2024)	Formal modeling of culture and organizational adaptation.	Organizational culture influences innovation and adaptation decisions.	Explain the role of culture in organizational adaptation.	
Choi (2021)	A quantitative survey of 425 South Korean	Learning agility encourages innovative behavior of personnel.	Demonstrate the importance of learning and	

	military personnel.		personnel competence.
Horowitz and Pindyck (2023)	A conceptual study of military innovation.	Military innovation requires a clear conceptual framework.	It became the basis for the analysis of military adaptation and innovation.
Dyson (2021)	A case study of the adaptation of the German Army.	Internal barriers limit the implementation of organizational learning.	Explain the importance of operational learning.
Kalkman (2023)	A case study of post-Hurricane Dorian military relief operations.	Flexibility of authority and coordination accelerate response.	Supports the importance of adaptive organizational structures.
Kuo (2022)	Theoretical analysis of the risks of military innovation.	Innovation can decrease effectiveness if resources are inadequate.	Emphasizing the risk evaluation of military modernization.
Colom- Piella (2021)	Analysis of Spanish defense planning for the period 2004–2020.	Defense planning needs to adjust military structure and capabilities.	Supporting long- term strategic adaptation.
Johnson (2023)	Conceptual analysis of AI and military decision- making.	AI does not completely replace human judgment.	Emphasizing the integration of technology and human decisions.
Hepfer dan Lawrence (2022)	An integrative review of organizational resilience.	Resilience encompasses functional, operational, and strategic dimensions.	It became the basis for the analysis of the resilience of military organizations.

Strategic Adaptation to Environmental Change and Threat Complexity

The results of the synthesis show that changes in the strategic environment require military organizations to adjust strategies, doctrines, force structures, and operational capabilities in an integrated manner. Asmoro et al. (2021) emphasized the need for Indonesia's defense doctrine to accommodate hybrid warfare through the integration of military and non-military components. In line with these findings, Colom-Piella (2021) shows that Spanish defense planning is undergoing a shift from transformation to adaptation to adapt force structures and capabilities to future needs. Both studies show that environmental changes are not adequately responded to through the addition of armaments, but require adjustments to the way organizations plan and carry out their tasks.

Horowitz and Pindyck (2023) reinforce these findings by showing that the concept of military innovation has various definitions and forms. Conceptual ambiguity can make it difficult for organizations to distinguish between changes that actually change the way they operate from changes that only update technology or procedures. Therefore, strategic adaptation needs to have clear objectives, indicators of success, and linkages to operational needs. From a strategic management perspective, changes in doctrine, structure, and capabilities need to be driven by a continuous assessment of the environment, rather than simply following technological developments.

The comparison of the three studies shows differences in context and level of analysis. Asmoro et al. (2021) emphasized the integration of Indonesian defense doctrine, Colom-Piella (2021) discussed Spanish defense planning, while Horowitz and Pindyck (2023) developed a conceptual framework for military innovation. The synthesis shows that adaptation requires two complementary elements, namely the clarity of strategic direction and the ability of the organization to translate that direction into real change. Without clarity of direction, innovation risks running separate from defense needs; without the ability to implement, adaptation strategies are only a planning document.

Organizational, Cultural, and Adaptive Leadership Learning

Organizational learning emerged as one of the important mechanisms in building military adaptability. Dyson (2021) showed that the internal constraints of the German Army can reduce the effectiveness of implementing change, especially when learning from the tactical and operational levels is not connected to broader organizational learning. These findings suggest that field experience does not automatically result in strategic change. Organizations need to have mechanisms in place to document experiences, evaluate successes and failures, update procedures, and disseminate knowledge to different levels of command.

At the individual level, Choi (2021) found that *learning agility* had a positive effect on the innovative behavior of South Korean Army officers and non-commissioned officers. Job challenges and autonomy also support learning agility, which in turn mediates the relationship between job characteristics and innovative behaviors. These findings show that adaptability depends not only on organizational structure, but also on personnel's opportunities to learn, take initiative, and apply knowledge on the job. However, the results of the study come from the context of job characteristics and innovative behaviors, so they cannot be directly considered as evidence that *learning agility* increases combat effectiveness.

Brahm and Poblete (2024) provide additional explanations for the role of organizational culture. Through formal models, they show that more accurate beliefs about organizational conditions can help determine when innovation is needed and when existing practices still need to be maintained. These findings are relevant for military organizations that require discipline, standardization, and continuity of doctrine, but must also be able to change practices that are no longer appropriate to the strategic environment. A culture that is overly conservative can inhibit innovation, while an undirected drive of innovation can eliminate practices that are still effective.

Meanwhile, Kalkman (2023) shows that adaptation can take place very quickly when the initial organizational structure does not match the needs of emergency situations. In relief operations after Hurricane Dorian, frontline personnel changed the division of authority, plans, safety standards, routines, and coordination relationships. These changes resulted in a temporary response structure that supported the execution of operations. In contrast to Dyson (2021), who highlighted organizational learning barriers in the context of the German military, Kalkman (2023) demonstrated the ability of personnel to make direct adjustments in extreme situations.

These differences show that flexibility and standardization have complementary functions. Structures and procedures are needed to maintain coordination, but organizations also need space for personnel who understand the field situation to adjust the execution of tasks. Strategically, adaptive leadership is needed to maintain a balance between command control, learning, and operational initiatives. Subsequent field-level adjustments need to be evaluated so that changes that prove effective can be lessons learned for the organization as a whole.

Technological Innovation, Decision Making and Adaptation Risk

Technological developments provide opportunities for military organizations to improve their ability to gather information, analyze situations, and make decisions. However, the results of the synthesis show that technological innovations do not always result in increased effectiveness. Johnson (2023) explains that artificial intelligence cannot reliably replace human judgment in understanding complex and uncertain strategic environments. In the OODA (*observation, orientation, decision, and action*) cycle, the orientation stage is important because it involves the interpretation of information, experience, and assessment of the context before decisions are made.

Johnson's (2023) findings show that increased automation does not eliminate the need for humans in command and control processes. As information becomes more and more readily available, organizations still need to ensure that it is appropriately interpreted and linked to strategic objectives. Therefore, technology integration needs to be accompanied by the development of personnel competencies, information governance, and procedures that ensure that decisions remain evaluated and accountable.

Kuo (2022) provides a critical perspective by showing that military innovation can reduce combat effectiveness when security commitments are not commensurate with available resources. Under these conditions, organizations can reduce old capabilities before new technologies or concepts are proven to deliver better results. This risk shows that modernization that is too fast, untested, or not supported by adequate resources can actually create a capability gap.

The difference between Johnson (2023) and Kuo (2022) lies in the focus of their analysis. Johnson emphasizes the limitations of automation and the importance of human judgment, while Kuo highlights the strategic risks of innovation that are not proportional to resources and operational needs. Both show that the success of innovation depends on the suitability of technology with the objectives, resources, doctrines, and capabilities of personnel. Thus, strategic management needs to ensure that modernization decisions are based on identified needs, adequate testing, and evaluation of consequences to existing capabilities.

Organizational Resiliency and Multidomain Capability Integration

Organizational resilience is an important dimension in the face of changing and interrelated threats. Hepfer and Lawrence (2022) distinguish resilience into three forms, namely functional, operational, and strategic. Functional resilience is related to the ability to maintain important functions, operational resilience is related to the sustainability of the implementation of activities, while strategic resilience is related to the ability to adjust the direction of the organization when facing major changes. These three dimensions provide an analytical framework to understand why it is not enough for organizations to be able to maintain routine operations, but also need to change their ways of working and priorities when the situation changes.

In the military context, the framework can be linked to the findings of Asmoro et al. (2021) regarding the need for integration of military and non-military components in the face of hybrid warfare. Threats involving various instruments require coordination that goes beyond the boundaries of units or functions. Interoperability can therefore be understood as a strategic need for organizational elements to be able to exchange information, harmonize procedures, and carry out joint actions effectively. However, the article by Asmoro et al. (2021) emphasizes the need for doctrinal integration; the research does not in itself prove the actual level of interoperability or its impact on operational performance.

This synthesis suggests that resilience and interoperability are interrelated, but not identical. Resiliency describes an organization's ability to maintain, adjust, and recover its functions, while interoperability deals with the ability of various elements to work together. An organization can have adequate resources, but still face difficulties when its information systems, procedures, and command structures are disconnected. Instead, good coordination needs to be sustained by the ability to maintain critical functions and adjust strategies when faced with disruptions.

However, the resilience framework from Hepfer and Lawrence (2022) comes from the literature of organizations in general, not specifically military organizations. Its application in defense management therefore needs to consider military characteristics, such as command hierarchy, confidentiality of information, operational risks, and combat readiness demands. This framework is useful for organizing analysis, but it should not be treated as direct empirical evidence regarding military resilience.

Thematic Synthesis and Strategic Management Implications

Based on the results of the extraction, six main dimensions can be summarized to explain the factors that support and inhibit the adaptation of military organizations.

Table 2. Thematic Synthesis of Adaptation Factors of Military Organizations

Dimensions	Synthesis Findings	Supporting Factors	Inhibiting Factors
Adaptive leadership	Leaders play a role in directing change and balancing updates with practices that are still effective.	Accurate strategic assessment, communication, and targeted initiative space.	Rigid decision-making and a culture that resists change.
Organizational learning	Operational experience needs to be transformed into knowledge and improvement of procedures.	Systematic evaluation, knowledge dissemination, and cross-level learning.	Internal bottlenecks and failure to implement operational lessons.
Technological innovation	Technology increases the chances of adaptation, but the benefits depend on integration and evaluation.	Suitability of technology to needs, personnel competence, and operational testing.	Hasty modernization and reduction of capabilities long before new capabilities are proven.
Doctrinal flexibility	Doctrine and structure need to adapt to the character of the threat without losing command consistency.	Doctrine review and ongoing capability planning.	Doctrines that do not accommodate new threats and implementation gaps.
Interoperability	Integration between components is necessary to deal with threats involving multiple instruments.	Coordination, information exchange, and procedure alignment.	Separation of functions and inconsistencies in organizational procedures.

Bureaucratic and decision-making barriers	Formal structures can maintain control, but they can slow down responses when situations change quickly.	Delegation in accordance with competencies and clear decision mechanisms.	Organizational inertia, slow coordination, and an imbalance of commitment and resources.
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Table 2 shows that military organizational adaptation is a process that involves several dimensions simultaneously. Leadership and learning support an organization's ability to recognize the need for change; technological innovation and doctrinal flexibility provide the means to respond to it; while interoperability helps integrate actions. In contrast, rigid bureaucracy, uninstitutionalized learning, and resource imbalances can hinder the process.

These findings also show that supporting factors do not always produce positive impacts in all circumstances. A culture that maintains tradition can maintain organizational continuity, but can limit innovation if it is not accompanied by evaluation. Delegation of authority can accelerate response, but must consider competence, accountability, and risk. Technology modernization can improve capabilities, but it has the potential to reduce effectiveness at the expense of capabilities that are still needed. Thus, strategic adaptation is not an effort to maximize change, but rather to determine changes that are appropriate to the organization's threats, resources, and goals.

Compared to previous studies that tend to focus on specific aspects, this synthesis connects findings at the individual, organizational, and defense planning levels. Choi (2021) highlights the learning agility of personnel; Brahm and Poblete (2024) explain the role of culture through formal modeling; Dyson (2021) discusses organizational learning barriers; while Asmoro et al. (2021) and Colom-Piella (2021) emphasize doctrinal adjustment as well as capability planning. Johnson (2023) and Kuo (2022) show two different risks in technological innovation, while Kalkman (2023) points out the possibility of rapid structural adjustment in an emergency.

The synthesis's contribution lies in integrating these findings into a strategic management framework that links environmental change, internal capabilities, adaptation implementation, and organizational resilience. The framework helps to make clear that environmental pressures do not automatically result in effective adaptation. Organizations need to translate these pressures through strategic assessment, learning, leadership, doctrinal adjustments, and innovation and resource management. However, because the ten articles use diverse contexts and approaches, these interdimensional relationships are the result of conceptual synthesis, rather than statistically tested causal models.

In practice, military organizations need to strengthen learning mechanisms from operational experience, evaluate doctrine periodically, integrate technology as needed, and improve coordination between components. Leaders also need to ensure that modernization decisions consider the consequences for existing resources and capabilities. For the Indonesian context, these findings are relevant as an analytical basis to strengthen the fit between defense doctrine, organizational structure, personnel competencies, and responses to multidomain threats. However, direct application to the TNI still requires empirical research that specifically examines organizational conditions, decision-making processes, and the implementation of adaptation in the field.

Overall, the results of the study answer the objectives of the study by showing that military organizational adaptation is underpinned by adaptive leadership, organizational learning, measurable technological innovation, doctrinal flexibility, and capability integration. The main barriers identified in the literature include organizational inertia, weak learning implementation, slow decision-making, and an imbalance between strategic needs and resources. The findings confirm that the effectiveness of adaptation is not determined by the speed of change alone, but by the organization's ability to align change with strategic goals, operational readiness, and long-term resilience.

CONCLUSIONS AND RECOMMENDATIONS

This study concludes that the adaptation of military organizations to the changing strategic environment and complexity of modern threats requires the integration of adaptive leadership, organizational learning, technological innovation, doctrinal flexibility, and interoperability. Such adaptation can be hampered by rigid bureaucracy, slow decision-making, and an imbalance between strategic needs and resources. Therefore, military organizations are advised to strengthen regular doctrine evaluations, develop learning mechanisms from operational experience, improve personnel competencies, and ensure that technological modernization is in accordance with operational needs and readiness. The implementation of an integrated adaptation strategy is expected to improve the resilience, readiness, and effectiveness of military organizations in the face of multidomain threats.

ADVANCED RESEARCH

Further research is suggested using an empirical approach through case studies, in-depth interviews, or surveys on military organizations to directly examine the influence of adaptive leadership, organizational learning, technological innovation, and doctrinal flexibility on the effectiveness of adaptation. Comparative studies between countries are also needed to identify adaptation practices relevant to Indonesia's defense context.

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