

Air Power Development Strategies for Safeguarding Airspace Sovereignty: A Systematic Review of Patterns and Typologies

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Abstract: The strategic imperative of airspace sovereignty necessitates robust air power development, yet existing literature remains fragmented across technological, operational, diplomatic, and institutional silos, hindering a holistic understanding of effective strategic formulation. This study aims to synthesize thematic patterns and develop a comprehensive typology of air power development strategies through a systematic review of contemporary scholarship. Following the PRISMA 2020 guidelines, a systematic literature review was conducted on peer-reviewed journal articles indexed in the Scopus database and supplementary sources. After rigorous screening against predefined inclusion and exclusion criteria, 12 studies published between 2017 and 2025 were selected for thematic synthesis. The analysis reveals four dominant thematic patterns, capability-driven, technology-centric, diplomacy-oriented, and institutional governance factors, which are consolidated into four strategic typologies: capability-based, technology-focused, diplomacy-oriented, and hybrid strategies. The findings demonstrate a paradigmatic shift from siloed, platform-specific approaches toward integrated, multidimensional frameworks that combine military readiness, technological innovation, institutional strengthening, and international cooperation. Theoretically, this study bridges military innovation theory and the political economy of defense by offering a typological framework that clarifies strategic choices and enables cross-context comparative analysis. Practically, it provides policymakers with an adaptive roadmap for designing resilient air power strategies that balance capability modernization, technological adoption, and cooperative security to address contemporary airspace threats.

Keywords: Air Power Development, Airspace Sovereignty, Defense Strategy, Systematic Literature Review

A. Introduction

The strategic relevance of air power has expanded alongside the diversification of aerial threats. Contemporary challenges include not only conventional military aircraft but also unmanned aerial systems, long-range precision weapons, and hybrid operational tactics. These developments have fundamentally altered the character of airspace threats and the requirements for effective air defense. As a result, air power

development strategies must increasingly address complexity, adaptability, and technological integration rather than focusing solely on platform acquisition (Bridgelall, 2024; Cohen et al., 2021). Recent scholarship highlights that air power development is undergoing a structural transformation driven by advances in automation, artificial intelligence, and network-centric warfare. Studies on future air combat emphasize a shift from platform-centric models toward integrated “systems of systems,” in which manned and unmanned platforms operate collaboratively (Jordan, 2021).

This transformation challenges traditional assumptions about pilot-centric combat and raises new questions regarding command-and-control architectures, operational effectiveness, and strategic risk management. Consequently, air power development strategies increasingly encompass doctrinal, organizational, and technological dimensions. At the same time, the political economy of air power development has become an increasingly salient concern. The rising acquisition, maintenance, and sustainment costs of advanced combat aircraft have placed significant fiscal pressure on defense budgets (Droff & Malizard, 2023). Research suggests that these economic constraints shape strategic choices by influencing force size, modernization priorities, and procurement models. As a result, air power development strategies are often characterized by trade-offs between technological ambition and financial sustainability. Beyond economic considerations, empirical studies underscore that the effectiveness of air power depends heavily on institutional and organizational factors (Jakob et al., 2020).

Research on drone operations demonstrates that air power outcomes are shaped not only by kinetic capabilities but also by intelligence integration, surveillance persistence, and decision-making structures (Eslami & Borges, 2025). These findings suggest that air power development strategies cannot be assessed solely through technical performance metrics. Instead, effectiveness must be understood within broader strategic and institutional contexts. The literature further indicates that air power development is deeply embedded within geopolitical and alliance frameworks. Strategic choices regarding air force structure and capability development are influenced by regional threat perceptions, alliance commitments, and international norms governing the use of force. Studies on military innovation and diffusion highlight that states often adapt air power development strategies in response to external competitive pressures and peer developments (Shklarsky & Shamir, 2023). This contextual variation complicates efforts to generalize from individual case studies.

Despite the expanding body of research on air power, unmanned systems, and air warfare, existing studies remain highly fragmented (Borg, 2020; Calcara et al., 2022). Much of the literature concentrates on isolated aspects such as technological innovation, operational effectiveness, legal and ethical debates, or single-country analyses. While these studies provide valuable insights, they offer limited

understanding of how air power development strategies are systematically structured across different national and strategic contexts. Consequently, there is insufficient synthesis regarding recurring patterns and strategic orientations within the broader literature. The absence of systematic synthesis represents a significant gap in strategic studies and defense scholarship. Without a comprehensive overview, it remains difficult to identify common strategic patterns, distinguish between alternative development approaches, or assess their underlying assumptions. Moreover, the lack of typological frameworks limits the ability to compare air power development strategies across cases and over time. Addressing this gap is particularly important given the accelerating pace of technological change and the growing diversity of airspace threats

Systematic literature review offers a rigorous methodological approach to addressing this fragmentation by enabling structured synthesis of existing research. Through transparent selection criteria and thematic analysis, SLR facilitates the identification of dominant patterns, conceptual linkages, and research gaps within a given field (Marzi et al., 2025). In the context of air power development, SLR provides a means to integrate insights from strategic studies, defense economics, and military innovation research. This integrative capacity makes SLR particularly suitable for advancing conceptual understanding in complex and interdisciplinary domains. Airspace sovereignty is a fundamental pillar of national security, as effective control over national airspace underpins deterrence, territorial integrity, and military effectiveness (Pellegrino, 2022). Air power has historically served as a decisive instrument for surveillance, deterrence, and coercive diplomacy. However, contemporary aerial threats ranging from conventional aircraft to unmanned systems, precision weapons, and hybrid tactics have increased the complexity of maintaining airspace control. Recent scholarship highlights a structural transformation in air power development driven by automation, artificial intelligence, network-centric warfare, and rising acquisition costs. Despite growing research, the literature remains fragmented, often focusing on isolated technological, operational, or single-country analyses. This lack of systematic synthesis hinders the identification of recurring strategic patterns and typologies.

The theoretical framework of this literature review is based on two complementary theoretical lenses: (1) military innovation theory which explains the diffusion and adoption of new technologies in military organizations (Horowitz & Pindyck, 2023), and (2) political economy of defense, which examines how economic, industrial, and institutional factors shape capability development (Grimes, 2021). This systematic literature review addresses the following research questions: What are the dominant thematic patterns in air power development strategies for airspace sovereignty in the contemporary literature? What strategic typologies can be identified from the synthesis of existing research? What factors shape the effectiveness of different air power development approaches?

B. Methods

This study employed a systematic literature review (SLR) to identify, synthesize, and classify patterns in the literature on air power development strategies for safeguarding airspace sovereignty. The SLR approach was selected because existing research on air power development is dispersed across multiple perspectives, including military capabilities, technological innovation, diplomacy, institutional arrangements, and governance. A systematic review enables these fragmented findings to be synthesized through a transparent and structured process, facilitating the identification of recurring patterns, factors influencing strategic effectiveness, and the development of a conceptual typology.

The review process followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines to ensure transparency and methodological rigor throughout the identification, screening, eligibility assessment, and inclusion of relevant studies. The review was guided by the following research questions:

RQ1: What are the dominant thematic patterns in air power development strategies for airspace sovereignty in the contemporary literature?

RQ2: What strategic typologies can be identified from the synthesis of existing research?

RQ3: What factors shape the effectiveness of different air power development approaches?

These research questions provided the analytical framework for the literature search, data extraction, thematic synthesis, and development of the strategy typology.

The literature search was conducted primarily through the Scopus database because of its broad coverage of peer-reviewed international journals and its relevance for systematic reviews in interdisciplinary fields. Supplementary searches were also conducted to identify potentially relevant studies that might not have been retrieved through the primary database search. The search strategy was developed based on the key concepts of the study, namely *air power*, *airspace sovereignty*, *air defence*, and *air power development strategy*. These concepts were combined using Boolean operators to maximise the retrieval of relevant literature. The search strategy was designed to capture studies addressing air power development from strategic, technological, operational, diplomatic, institutional, and governance perspectives. The search was limited to studies published between 2017 and 2025.

This publication period was selected to capture recent developments in air power strategy and contemporary transformations in the security environment, particularly those associated with technological innovation, unmanned systems, artificial intelligence, network-centric operations, and evolving approaches to airspace defence. The search focused primarily on peer-reviewed journal articles published in English.

To ensure consistency and relevance, predetermined inclusion and exclusion criteria were established before the screening process. Studies were included when they:

1. were published between 2017 and 2025;
2. were peer-reviewed journal articles;
3. discussed air power development, air power strategy, air defense, or related approaches to safeguarding or controlling airspace;
4. addressed at least one strategic dimension relevant to air power development, including military capabilities, technology, diplomacy, institutional arrangements, or governance; and
5. provided sufficient conceptual or empirical information to support thematic synthesis and analysis of factors influencing strategic effectiveness.

Studies were excluded when they:

1. were published outside the specified publication period;
2. were not peer-reviewed journal articles, such as books, book chapters, conference proceedings, editorials, news articles, and opinion pieces;
3. focused exclusively on technical or engineering aspects without strategic relevance to air power development;
4. did not address air power, air defense, airspace security, or related strategic issues; or
5. lacked sufficient information to contribute to the thematic analysis or to address the research questions.

The inclusion and exclusion criteria were applied consistently throughout the screening process to minimize selection bias and ensure that the final body of literature was aligned with the research objectives. The study selection process followed the four stages of the PRISMA 2020 framework: identification, screening, eligibility, and inclusion. In the identification stage, potentially relevant records were retrieved from the Scopus database and supplementary sources using the predetermined search strategy. Duplicate records and irrelevant entries were subsequently removed. During the screening stage, the titles and abstracts of the retrieved records were examined to assess their relevance to the research questions. Studies that did not address air power development strategies, airspace sovereignty, air defense, or relevant strategic dimensions were excluded at this stage. The remaining studies were then subjected to a full-text eligibility assessment. The full texts were examined against the predefined inclusion and exclusion criteria.

Following the eligibility assessment, studies that satisfied all criteria were included in the final synthesis. The screening process resulted in 12 studies published between 2017 and 2025 being selected for detailed analysis. Data were extracted systematically from each included study using a structured data extraction framework developed in accordance with the research questions. The extracted information included publication year, study focus, geographical or strategic context, research perspective, methodological approach, key findings, strategic dimensions, and factors associated

with the effectiveness of air power development approaches. To ensure alignment between the research questions and the analytical process, the extracted data were organized into three analytical categories. The first category captured the dominant thematic patterns discussed in each study, addressing RQ1. The second category recorded the strategic orientations and combinations of approaches identified in the literature, supporting the development of strategy typologies for RQ2. The third category captured the factors influencing effectiveness, including military capability, technological readiness, institutional capacity, organizational arrangements, strategic decision-making, financial sustainability, intelligence integration, international cooperation, and geopolitical context, addressing RQ3.

C. Results and Discussion

Overview of Included Studies

The systematic literature review identified 12 peer-reviewed journal articles published between 2017 and 2025 that met the eligibility criteria for analysis. The distribution of studies by publication year demonstrates growing academic attention to air power development strategies, with a notable peak in 2021 (25% of included studies) and sustained scholarly interest throughout the review period (Table 1).

Table 1. Distribution of Studies by Publication Year

Publication Year	Number of Studies	Percentage (%)
2025	1	8.33
2024	1	8.33
2023	2	16.67
2022	2	16.67
2021	3	25.00
2019	2	16.67
2017	1	8.33
Total	12	100.00

The temporal distribution reveals that scholarly interest in air power development strategies has intensified since 2019, coinciding with accelerated technological innovation in unmanned systems, artificial intelligence applications in military contexts, and evolving geopolitical dynamics affecting airspace security (Jordan, 2021).

Thematic Patterns of Air Power Development Strategies

The thematic synthesis of the 12 included studies identified four dominant patterns in air power development strategies for safeguarding airspace sovereignty: (1) capability-driven approaches, (2) technology-centric approaches, (3) diplomacy-oriented approaches, and (4) institutional and governance factors as a cross-cutting

theme. These patterns address Research Question 1 (RQ1) by revealing the recurring strategic logics that structure contemporary air power development literature.

Capability-Driven Air Power Development

The capability-driven theme reflects a strategic orientation that prioritizes the enhancement of core military capabilities to achieve and maintain air superiority and effective airspace control. Studies within this theme emphasize force readiness, fleet modernization, pilot training, and the robustness of command-and-control systems as central components of air power development. This approach is grounded in conventional military thinking, where deterrence and sovereignty are closely linked to the availability of credible and deployable combat power. The literature demonstrates that organizational capacity and sustained investment play a decisive role in shaping air power effectiveness, particularly in conventional deterrence contexts (Borges, 2023).

However, findings from the reviewed studies indicate that capability-driven strategies are increasingly constrained by fiscal pressures and the rising acquisition costs of advanced combat aircraft (Küstters, 2018; Yelwe, 2025). Locatelli (2018) highlight that defense procurement decisions involve complex trade-offs between technological ambition and financial sustainability, a tension that shapes strategic choices regarding force size and modernization priorities. This pattern aligns with military innovation theory, which emphasizes that the diffusion and adoption of new technologies in military organizations are shaped by organizational capacity, resource availability, and strategic culture (Horowitz & Pindyck, 2023). The capability-driven approach thus represents a traditional but evolving strategic logic that remains central to air power development despite emerging challenges.

Technology-Centric Air Power Development

The technology-centric theme highlights the growing reliance on advanced technologies as primary drivers of air power effectiveness. Research within this theme focuses on the integration of unmanned aerial systems, automation, artificial intelligence, and network-centric operations to enhance surveillance, persistence, and operational flexibility. Rather than prioritizing platform quantity, technology-centric strategies emphasize qualitative advantages derived from systems integration and information superiority. Empirical and conceptual studies suggest that technological innovation has reshaped assumptions about cost-efficiency, risk distribution, and the future structure of air forces (Christensen et al., 2019; Silfverskiöld et al., 2021).

Calcara et al. (2022) argue that while drones have introduced significant operational capabilities, they have not fundamentally revolutionized air warfare due to enduring competition between detection and concealment technologies. This finding underscores that technological innovation alone is insufficient without corresponding

doctrinal and organizational adaptation. The technology-centric pattern is particularly salient in the context of contemporary security challenges, where unmanned aerial systems and artificial intelligence are transforming the character of airspace threats and defense requirements (Bridgelall, 2024; Cohen et al., 2021). Studies indicate that the shift from platform-centric models toward integrated “systems of systems” represents a structural transformation in air power development, with manned and unmanned platforms operating collaboratively in increasingly complex operational environments (Jordan, 2021).

Diplomacy-Oriented Air Power Development

The diplomacy-oriented theme underscores the role of international cooperation and defense diplomacy in strengthening air power effectiveness and safeguarding airspace sovereignty. Studies within this category emphasize alliances, intelligence sharing, joint training, and interoperability as strategic instruments that complement national air power capabilities. The literature indicates that air power effectiveness increasingly depends on relational and networked forms of security cooperation, particularly in regions characterized by transnational threats and complex geopolitical environments. Empirical analyses of drone operations and security partnerships highlight how cooperative frameworks enhance situational awareness and strategic reach beyond national capabilities (Hildmann & Kovacs, 2019; Steen & Hansen, 2025).

This pattern is particularly relevant for states with limited resources, as alliances and intelligence sharing can significantly enhance airspace control without requiring equivalent indigenous capabilities (Borg, 2020). The diplomacy-oriented theme extends traditional security studies by emphasizing the relational nature of military power. The reviewed literature demonstrates that strategic choices regarding air force structure and capability development are influenced by regional threat perceptions, alliance commitments, and international norms governing the use of force (Eslami & Borges, 2025; Shklarsky & Shamir, 2023). This finding aligns with the political economy of defense framework, which examines how external pressures and cooperative arrangements shape national defense strategies.

Institutional and Governance Factors

Institutional and governance factors emerge as a cross-cutting theme influencing all air power development strategies. The literature highlights the importance of procurement governance, defense-industrial relationships, and civil-military coordination in shaping long-term air power outcomes. Studies demonstrate that technological advancement and capability investment alone are insufficient without coherent institutional frameworks and sustained political commitment. Research on the political economy of military aircraft production underscores how governance structures and industrial policies condition the feasibility, sustainability, and strategic effectiveness of air power development (Droff et al., 2024).

The reviewed literature indicates that institutional factors shape air power outcomes through their influence on procurement efficiency, technological absorption capacity, and strategic alignment between military requirements and industrial capabilities (Droff & Malizard, 2023). Furthermore, research on drone operations demonstrates that air power outcomes are shaped not only by kinetic capabilities but also by intelligence integration, surveillance persistence, and decision-making structures (Eslami & Borges, 2025). These findings suggest that air power development strategies cannot be assessed solely through technical performance metrics; effectiveness must be understood within broader strategic and institutional contexts.

Strategic Typologies of Air Power Development

Based on the synthesis of thematic patterns, this study consolidates the literature into four distinct strategic typologies, addressing Research Question 2 (RQ2): (1) capability-driven strategies, (2) technology-centric strategies, (3) diplomacy-oriented strategies, and (4) hybrid strategies. These typologies represent higher-order conceptual models that enable systematic comparison and analysis of air power development approaches across different strategic contexts.

Table 2. Typology of Air Power Development Strategies for Airspace Sovereignty

Typology	Core Characteristics	Strategic Instruments
Capability-Driven Strategy	Emphasizes traditional military strength, force readiness, and air superiority through manned combat aircraft and conventional force structures	Fleet modernization, pilot training, command-and-control enhancement, sustained defense investment
Technology-Centric Strategy	Prioritizes technological innovation to enhance effectiveness and efficiency, often as a response to fiscal and manpower constraints	Unmanned aerial systems (UAS/UCAV), artificial intelligence, network-centric operations, integrated surveillance systems
Diplomacy-Oriented Strategy	Focuses on cooperation and partnerships to compensate for limited national capabilities and enhance airspace control	Defense diplomacy, alliances, intelligence sharing, joint exercises, interoperability frameworks
Hybrid Strategy	Integrates military capability, advanced technology, and international cooperation in an adaptive and context-sensitive manner	Combined use of manned-unmanned systems, multilateral cooperation, flexible procurement and governance models

Capability-Driven Strategies

Capability-driven strategies emphasize traditional military strength, force readiness, and air superiority through manned combat aircraft and conventional force structures. These strategies are characterized by sustained defense investment, fleet modernization programs, comprehensive pilot training, and robust command-and-control enhancement. The reviewed literature indicates that capability-driven strategies remain essential for conventional deterrence but are increasingly

constrained by high costs and fiscal pressures (Horowitz & Pindyck, 2023). The effectiveness of capability-driven strategies depends on organizational capacity, sustained political commitment, and the alignment between military requirements and industrial capabilities. Studies suggest that states pursuing capability-driven strategies must navigate complex trade-offs between force size, technological sophistication, and financial sustainability (Sanusi & Adeeko, 2025).

Technology-Centric Strategies

Technology-centric strategies prioritize technological innovation to enhance effectiveness and efficiency, often as a response to fiscal and manpower constraints. These strategies focus on unmanned aerial systems, artificial intelligence, network-centric operations, and integrated surveillance systems to achieve qualitative advantages through systems integration and information superiority (Jordan, 2021). The reviewed literature demonstrates that technology-centric strategies offer promising efficiency gains through unmanned systems and AI; however, technology alone is insufficient without proper doctrine, organizational integration, and institutional support (Calcara et al., 2022). The effectiveness of technology-centric approaches depends on the capacity to absorb and integrate new technologies within existing organizational structures and operational concepts (Horowitz & Pindyck, 2023).

Diplomacy-Oriented Strategies

Diplomacy-oriented strategies focus on cooperation and partnerships to compensate for limited national capabilities and enhance airspace control. These strategies employ defense diplomacy, alliances, intelligence sharing, joint exercises, and interoperability frameworks to strengthen air power effectiveness through relational and networked forms of security cooperation (Horowitz & Pindyck, 2023). The literature indicates that diplomacy-oriented strategies are increasingly vital, particularly for states with limited resources, as cooperative frameworks significantly enhance situational awareness and strategic reach beyond national capabilities (Borg, 2020). The effectiveness of these strategies depends on the quality of institutional relationships, alignment of strategic interests, and sustained commitment to cooperative security arrangements (Eslami & Borges, 2025).

Hybrid Strategies

Hybrid strategies integrate military capability, advanced technology, and international cooperation in an adaptive and context-sensitive manner (Liikola & Blomvall, 2026). These strategies employ combined use of manned-unmanned systems, multilateral cooperation, and flexible procurement and governance models to achieve strategic effectiveness through balanced and integrated. The emergence of hybrid strategies highlights a shift toward adaptive, context-sensitive theorization in

air power development, where strategic effectiveness depends on balancing military capability, technological innovation, institutional governance, and international cooperation. The reviewed literature suggests that hybrid strategies provide the most sustainable path forward for safeguarding airspace sovereignty, particularly given the accelerating pace of technological change and the growing diversity of airspace threats (Scott & I. Andritsos, 2023).

Factors Shaping the Effectiveness of Air Power Development Approaches

The thematic synthesis identified multiple factors that shape the effectiveness of different air power development approaches, addressing Research Question 3 (RQ3). These factors span military capability, technological readiness, institutional capacity, organizational arrangements, strategic decision-making, financial sustainability, intelligence integration, international cooperation, and geopolitical context.

Military Capability and Force Readiness

The reviewed literature consistently emphasizes that military capability and force readiness are foundational to air power effectiveness. Capability-driven strategies depend on sustained investment in fleet modernization, pilot training, and command-and-control systems to maintain credible deterrence and effective airspace control (Horowitz & Pindyck, 2023). However, the effectiveness of military capability is contingent on organizational capacity and strategic alignment between force structure and threat perceptions.

Technological Readiness and Integration

Technological readiness and integration emerge as critical factors shaping the effectiveness of technology-centric strategies. The literature demonstrates that technological innovation enhances air power effectiveness only when accompanied by appropriate doctrinal development, organizational adaptation, and operational concepts (Calcara et al., 2022). Studies highlight that the integration of unmanned systems, artificial intelligence, and network-centric operations requires significant organizational change and sustained investment in human capital.

Institutional Capacity and Governance

Institutional capacity and governance structures condition the feasibility and sustainability of all air power development approaches. The reviewed literature underscores the importance of procurement governance, defense-industrial relationships, and civil-military coordination in shaping long-term air power outcomes (Droff & Malizard, 2023). Research on the political economy of defense demonstrates that coherent institutional frameworks and sustained political

commitment are essential for translating capability investment and technological innovation into strategic effectiveness (Grimes, 2021).

International Cooperation and Geopolitical Context

International cooperation and geopolitical context shape the effectiveness of diplomacy-oriented and hybrid strategies. The literature indicates that alliances, intelligence sharing, and joint exercises significantly enhance airspace control, particularly for states with limited resources (Horowitz & Pindyck, 2023). Strategic choices regarding air force structure and capability development are influenced by regional threat perceptions, alliance commitments, and international norms governing the use of force.

Financial Sustainability

Financial sustainability emerges as a cross-cutting factor influencing all air power development strategies. The rising acquisition, maintenance, and sustainment costs of advanced combat aircraft have placed significant fiscal pressure on defense budgets, forcing states to navigate complex trade-offs between technological ambition and financial sustainability. The reviewed literature suggests that effective air power development requires careful balancing of force size, modernization priorities, and procurement models to ensure long-term strategic flexibility and resilience (Manurung et al., 2023).

Synthesis and Theoretical Integration

The findings of this systematic literature review contribute to air power theory by moving beyond fragmented, issue-specific studies toward a more integrated understanding of air power development strategies. The identified thematic patterns and strategic typologies demonstrate that air power development cannot be adequately explained through single-variable or platform-centric approaches. Instead, effective air power development for airspace sovereignty requires balanced and integrated approaches that combine military capability, technological innovation, institutional governance, and international cooperation. The proposed typology bridges military innovation theory (Horowitz & Pindyck, 2023) with the political economy of defense. It shows how capability-driven strategies align with classical military power theories, while technology-centric strategies reflect contemporary innovation theories.

The diplomacy-oriented typology extends security studies by emphasizing the relational nature of military power through alliances and interoperability. Most importantly, the emergence of hybrid strategies highlights a shift toward adaptive, context-sensitive theorization, where strategic effectiveness depends on balancing multiple dimensions of air power development. The findings demonstrate a shift in

the literature from traditional approaches focused on single platforms and dimensions to more integrated, adaptive, and multidimensional strategies. This transformation is driven by advances in automation, artificial intelligence, and network-centric warfare, which have fundamentally altered the character of airspace threats and the requirements for effective air defense (Jordan, 2021).

Contemporary challenges include not only conventional military aircraft but also unmanned aerial systems, long-range precision weapons, and hybrid operational tactics, requiring air power development strategies that increasingly address complexity, adaptability, and technological integration (Calcara et al., 2022). The theoretical implications of this study are threefold. First, it provides a systematic framework for analyzing air power development strategies that accounts for the multidimensional nature of contemporary air power. Second, it demonstrates the value of integrating military innovation theory with the political economy of defense to understand the complex dynamics shaping air power development. Third, it contributes to strategic studies by developing typologies that enable cross-context comparisons of air power development approaches and facilitate systematic analysis of strategic effectiveness.

Practical Implications

The findings of this systematic literature review have several practical implications for scholars and policymakers engaged in air power development and defense strategy formulation. The typology-based conceptual framework developed in this study clarifies analytical structures and enables cross-context comparisons of air power development strategies. Future research should empirically test the proposed typologies across different national and strategic contexts, examining how contextual factors shape the adoption and effectiveness of different strategic approaches. Additionally, longitudinal studies are needed to examine how air power development strategies evolve over time in response to technological change, geopolitical dynamics, and fiscal pressures. Effective air power development for airspace sovereignty requires balanced and integrated approaches rather than reliance on a single strategy.

Policymakers are encouraged to pursue flexible, context-sensitive development pathways supported by strong governance structures to ensure long-term strategic flexibility and resilience. The findings suggest that hybrid strategies combining military capability, technological innovation, and international cooperation provide the most sustainable path forward for safeguarding airspace sovereignty. Allocate defense resources across capability development, technological innovation, and institutional strengthening to avoid over-reliance on any single approach. Strengthen procurement governance, defense-industrial relationships, and civil-military coordination to ensure coherent implementation of air power development strategies. Leverage alliances, intelligence sharing, and joint exercises to enhance airspace control, particularly when national capabilities are limited. Develop flexible and

context-sensitive strategies that can respond to accelerating technological change and evolving security threats. Navigate trade-offs between technological ambition and financial sustainability through careful strategic planning and resource allocation.

Limitations and Future Research Directions

This systematic literature review has several limitations that should be acknowledged. First, the review focused on peer-reviewed journal articles published in English, which may limit the generalizability of findings to non-English publications and gray literature. Second, the search was primarily conducted through the Scopus database, and while supplementary searches were conducted, relevant studies may have been missed. Third, the review period (2017-2025) captured recent developments but may not fully represent historical patterns in air power development strategies. Future research should address these limitations by expanding the scope of literature search to include additional databases, non-English publications, and gray literature. Empirical studies are needed to test the proposed typologies across different national and strategic contexts, examining how contextual factors shape the adoption and effectiveness of different strategic approaches.

Longitudinal studies examining how air power development strategies evolve over time in response to technological change, geopolitical dynamics, and fiscal pressures would also contribute to advancing understanding in this field. Additionally, future research should examine the intersection of air power development with emerging security challenges, including cyber threats, space-based capabilities, and hybrid warfare. The integration of air power with other domains of warfare (land, sea, space, and cyberspace) represents an important area for future investigation, particularly as military operations become increasingly joint and multidomain in character.

D. Conclusions

This systematic literature review has identified four dominant thematic patterns in air power development strategies for safeguarding airspace sovereignty: capability-driven, technology-centric, diplomacy-oriented, and institutional and governance factors. Based on this synthesis, the study consolidated the literature into four strategic typologies: capability-driven strategies, technology-centric strategies, diplomacy-oriented strategies, and hybrid strategies. The findings demonstrate a shift in the literature from traditional approaches focused on single platforms and dimensions to more integrated, adaptive, and multidimensional strategies that combine military capabilities, technological innovation, institutional strengthening, and international cooperation. The study contributes to the development of air power studies and defense strategies by developing a typology-based conceptual framework that clarifies analytical structures and enables cross-context comparisons of strategies. Practically, these findings provide a basis for scholars and policymakers to design air power development strategies that are more adaptive, integrated, and responsive to

contemporary security dynamics. Effective air power development for airspace sovereignty requires balanced and integrated approaches rather than reliance on a single strategy, and policymakers are encouraged to pursue flexible, context-sensitive development pathways supported by strong governance structures to ensure long-term strategic flexibility and resilience.

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