



PLANNING MALAYSIA:

Journal of the Malaysian Institute of Planners

VOLUME 23 ISSUE 6 (2025), Page 165 – 190

**EFFECTIVENESS OF AIRPORT FUNCTION SEPARATION IN INDONESIA:
A CASE STUDY OF SOEKARNO-HATTA AND HALIM PERDANAKUSUMA
AIRPORTS, WITH A PROPOSAL FOR UTILIZING KERTAJATI AIRPORT
FOR PRIVATE AVIATION**

**Wisnu Darjono¹, Farah Khalda Arinta², Achril Zalmansyah^{3,4*},
Fachri Muhammad Rasyid⁵, Sitti Aminah³**

¹ CENTRE FOR STRATEGIC AND AVIATION STUDIES (CSAS), INDONESIA

² Directorate General of Civil Aviation,

MINISTRY OF TRANSPORTATION, INDONESIA

³ NATIONAL RESEARCH AND INNOVATION AGENCY (BRIN), INDONESIA

⁴ Doctoral in Education Program, FKIP

LAMPUNG UNIVERSITY, INDONESIA

⁵ Urban and Regional Planning,

INSTITUT TEKNOLOGI SUMATERA (ITERA), INDONESIA

Abstract

This study analyzes the effectiveness of airport function separation in Indonesia as a strategic response to airspace congestion, operational inefficiencies, and overlapping civil-military airport usage. Focusing on Soekarno-Hatta (CGK), Halim Perdanakusuma (HLP), and Kertajati (KJT) Airports, the study adopts a qualitative-descriptive method supported by in-depth interviews with stakeholders from the Ministry of Transportation, Indonesian Air Force (TNI-AU), airport operators, airlines, and aviation experts. The findings reveal that overlapping functions at Halim generate flight delays, coordination difficulties, and safety risks, while Soekarno-Hatta faces high traffic volume with limited relief options. Meanwhile, Kertajati remains underutilized despite having modern infrastructure and a strategic location. Drawing on international best practices, such as Japan's Narita-Haneda-Chōfu model and similar systems in the US and UK, the study proposes a five-function airport classification: international commercial, domestic commercial, state/VVIP, military, and private/general aviation. It recommends formalizing a national regulation on function separation, reclassifying Halim for exclusive state and military use, and optimizing Kertajati through Public-Private Partnerships (PPPs) supported by regulatory incentives. Establishing a civil-military coordination body is also urged to enhance airspace governance. The novelty of this study lies in its integrated policy framework, which combines regulatory, institutional, and operational dimensions. Unlike previous studies that focus only on Jakarta's traffic management or civil-military coordination, this research introduces Kertajati as a national hub for private and general aviation, an approach that remains underexplored in Indonesian aviation discourse and presents a viable solution to redistribute traffic and improve national airspace efficiency.

Keywords: Airport management, civil-military coordination, airspace governance, function separation, Kertajati Airport, Indonesia aviation policy

³ Corresponding author. Email: zzalmansa@gmail.com

INTRODUCTION

Background

Airports play a vital role in national transportation by enabling regional integration, facilitating population movement, and supporting both economic activities and national defense logistics. As an archipelagic country, Indonesia relies heavily on air transportation to bridge vast geographical distances (Hayakawa et al., 2020; Prastyoutomo, 2024; Rimmer & Dick, 2018; Svetlana, 2021). Consequently, airport management is not merely a technical issue, but also one deeply connected to logistics efficiency, public service delivery, and strategic national interests.

Despite the rapid growth of air traffic, Indonesia continues to face structural challenges in airport governance, particularly the overlapping functions between civil and military operations, as well as between commercial and non-commercial aviation (Abeyratne, 2014). This issue is most prominent at Halim Perdanakusuma Airport, which has long served a dual role as both a strategic military base and a commercial airport. The lack of clear functional separation frequently leads to operational disruptions, flight delays, and elevated safety risks. Meanwhile, Soekarno-Hatta International Airport (CGK), the country's main commercial aviation hub, has expanded significantly with three terminals and three runways. However, increasing air traffic and rising demand for flight slots across various aviation sectors require functional consolidation and more efficient coordination. These pressures underscore the urgent need for a rational and strategic separation of airport functions.

The Indonesian government's decision to relocate most scheduled commercial flights from Halim to Soekarno-Hatta beginning August 1, 2025, marks a pivotal policy shift. Additionally, to accommodate private and charter flights currently dispersed across multiple airports, Kertajati International Airport (KJT) presents strong potential to serve as a national hub for private and general aviation, aligned with best practices observed in advanced aviation systems. In response to these pressing challenges, the present study evaluates how airport function separation has been implemented in Indonesia, focusing on Soekarno-Hatta and Halim Perdanakusuma Airports, while proposing the strategic utilization of Kertajati Airport as a medium-term solution for national aviation realignment.

Problem Statement

This study aims to address three core questions regarding airport function separation in Indonesia. *First*, it investigates the effectiveness of the government's policy in separating operational functions between Soekarno-Hatta and Halim Perdanakusuma Airports. *Second*, it explores the challenges and consequences that arise from such functional separation within the Jakarta

airspace, particularly with regard to flight efficiency and aviation safety. *Third*, the study examines the potential role of Kertajati International Airport as a strategic alternative for accommodating private and general aviation activities in the national airport network.

Research Objectives

This study seeks to achieve three main objectives. *First*, it analyzes the effectiveness of the airport function separation policy in the Greater Jakarta/Jabodetabek area (BPTJ, 2023). *Second*, it identifies the key barriers and dynamics involved in stakeholder coordination, particularly in separating civil-military and commercial-non-commercial airport functions. *Third*, the research assesses the feasibility and potential impact of utilizing Kertajati International Airport as a hub for private aviation, within the broader context of national airport restructuring.

Significance of the Study

This study is expected to offer threefold contributions. *Academically*, it enriches scholarly discourse in the fields of air transportation management, infrastructure policy, and national airspace governance; *practically*, it provides data-driven recommendations for policymakers and airport operators in formulating more effective airport function separation strategies; and *strategically*, the research promotes the optimal utilization of Kertajati International Airport as both a regional economic catalyst and a relief node to ease congestion at overburdened airports in Jakarta.

Scope of the Study

This study focuses on the effectiveness of functional separation between civil and military airports, as well as between commercial and non-commercial operations within the Greater Jakarta area. The primary case studies are Soekarno-Hatta and Halim Perdanakusuma Airports, complemented by an exploration of Kertajati International Airport as an alternative policy option. The analysis is confined to regulatory frameworks, flight operations, slot management, and airspace efficiency. Technical assessments of radar systems or financial analyses of airport operations fall outside the scope of this research.

THEORETICAL AND POLICY REVIEW

Concept of Airport Function Separation and Integration

In modern air transportation systems, effective airport management is largely determined by the clarity of each airport's functional role within the national airport network (Adisasmita & Caroles, 2021; Delaurentis & Fry, 2008; Gifford & Garrison, 1993; Ivannikova et al., 2021; Rocha, 2017). Broadly, two primary

management models exist based on operational function: single-use airports and dual-use airports. A single-use airport is dedicated to a specific type of operation—such as civil-commercial, military, or VVIP, and is generally regarded as more efficient and secure, as air traffic control, security protocols, and infrastructure planning can be tailored to a single category of users (Darjono, 2025). In contrast, dual-use airports are shared between civil and military aviation, a model commonly found in developing countries like Indonesia due to limited infrastructure and legacy systems. However, such shared usage often results in overlapping operational interests, which can trigger conflicts in airspace prioritization, schedule disruptions, and increased safety risks. The function separation has become essential in increasingly complex air traffic environments, especially in high-density metropolitan regions (Graham, 2023; Schmitt & Gollnick, 2015; Zhang & Graham, 2020). The separation of airport functions must be aligned with the regional transport network by ensuring passenger accessibility, minimizing logistical costs, and enhancing connectivity with surrounding infrastructure (Darjono, 2025). This was evident in the relocation of Adisutjipto Airport to Yogyakarta International Airport (YIA), where accessibility challenges persisted despite advanced facilities (Fitradia, 2019). Moreover, effective function separation requires support from spatial planning policies that secure airport safety zones from incompatible land use. A study on Indonesia's military-civil airports found that misalignment between spatial regulations and aviation safety standards may result in operational and security risks (Septanaya et al., 2025). In advanced aviation systems, the specialization of airport functions is widely implemented to enhance efficiency, operational safety, and the overall quality of public service delivery.

International Regulations on Airport Management

The International Civil Aviation Organization (ICAO), a specialized UN agency responsible for regulating international civil aviation, has developed a set of Standards and Recommended Practices (SARPs) that member states are expected to adopt. Two key documents are particularly relevant to airport and airspace management. First, Annex 14 to the Convention on International Civil Aviation (Volume I) outlines technical and operational requirements for civil airports, including airport design standards, safety installations, and the designation of restricted areas to ensure secure and efficient operations (ICAO, 2022). Second, ICAO Doc 9971: Manual on Civil/Military Cooperation in Air Traffic Management underscores the importance of coordinated governance between civil and military aviation authorities (ICAO, 2019). This document introduces the concept of Flexible Use of Airspace (FUA), a dynamic model that allows the allocation of airspace based on real-time civil and military needs. Together, these international regulations provide a comprehensive global framework that guides

states in managing airport functions and shared airspace effectively, without compromising operational safety.

National Regulations and Policies on Airports

In Indonesia, the primary legal foundation for airport management is established by Law No. 1 of 2009 on Aviation. Article 212 allows military airports to be used for civil purposes and vice versa, provided such use does not compromise the airport's primary function (Sekneg, 2009). Article 216 permits airports to be managed by the government, state-owned enterprises (BUMN), or private entities, as long as operations remain aligned with the airport's designated status and function. Complementing this, Government Regulation No. 70 of 2001 on Airport Operations elaborates on key operational aspects and emphasizes the importance of clearly defined airport classifications to ensure safety and efficiency (Sekneg, 2001). A pivotal policy document is the Minister of Transportation Decree No. KM 166 of 2019, which presents the National Airport System Plan (RINBU), a strategic framework that classifies airports by hierarchy, function, and development priority (Kemenhub, 2019). Under RINBU, Kertajati International Airport is categorized as a primary international airport for West Java, though its utilization remains suboptimal as of 2025. The plan also promotes functional separation based on regional and strategic considerations, distinguishing among commercial, VVIP/state, military, and special-purpose airports. Furthermore, Minister of Transportation Regulation No. 40 of 2023, which revises Regulation No. 39 of 2019, reinforces that any alteration in airport status or function must be coordinated across multiple sectors, including the Ministry of Defense, Directorate General of Customs and Excise, Immigration, and quarantine agencies (Kemenhub, 2023). Such inter-agency coordination ensures that the designation of airport functions remains consistent with national security, logistical, and strategic objectives.

Issues and Challenges in Airport Function Separation in Indonesia

Examples of Dual-Use Airports in Indonesia

Several airports in Indonesia operate under dual-use arrangements, serving both military and civil aviation needs (Darjono, 2025). Notable examples include Halim Perdanakusuma Airport in Jakarta, which functions as a military airbase while also accommodating commercial, charter, and VVIP flights. Adisutjipto Airport in Yogyakarta previously operated under a similar arrangement between the Indonesian Air Force and civil aviation authorities until the opening of Yogyakarta International Airport (YIA) allowed for the relocation of most commercial traffic. Supadio Airport in Pontianak continues to serve both military and civil purposes, though with limited facilities dedicated to civilian operations.

These cases highlight the structural legacy and operational complexity of dual-use airports in Indonesia's aviation system.

Security and Safety Challenges

The shared use of airspace and infrastructure by civil and military aviation presents several safety and security risks. These include inconsistent flight prioritization, the absence of harmonized operating procedures, and potential disruptions during military exercises or official state visits. Such conditions complicate air traffic management and heighten the risk of conflict between stakeholders. According to ICAO (2019), operational incidents are statistically more likely to occur at dual-use airports due to fragmented institutional coordination and unclear lines of authority in day-to-day operations.

Impact on Operational Efficiency and Service Quality

Dual-use functionality significantly impacts the operational efficiency of civil aviation, particularly in terms of flight slot availability, airline scheduling reliability, and overall service quality for passengers. Civil operators at these airports often face logistical constraints such as limited apron space, delayed aircraft rotation, and irregular slot allocations. A 2023 report by the Transportation Policy Agency (BPTJ) found that airlines operating from Halim Perdanakusuma experienced repeated schedule disruptions and turnaround time inefficiencies, largely due to competition with military activities and inadequate ground infrastructure (BPTJ, 2023). These challenges ultimately reduce the effectiveness of civil aviation operations and hinder efforts to improve service quality.

Case Studies of Airport Function Separation

Comparative Study: Soekarno-Hatta vs. Halim Perdanakusuma

Soekarno-Hatta International Airport serves as Indonesia's primary commercial aviation hub, featuring modern infrastructure and large operational capacity. In contrast, Halim Perdanakusuma Airport, originally designed as a military airbase and VVIP entry point, has been compelled to handle scheduled domestic commercial flights. This dual-role arrangement has frequently led to operational disruptions, particularly during official state visits and military activities. The Indonesian government's decision to relocate most commercial flights from Halim to Soekarno-Hatta, effective August 2025, represents a critical policy shift toward rationalizing airport functions. This move not only addresses safety and efficiency concerns but also opens a strategic window for restructuring the broader national airport network.

Airports with Effective Function Separation

Several airports in Indonesia and abroad demonstrate effective models of functional separation. Domestically, Sultan Hasanuddin International Airport in Makassar and Hasanuddin Air Force Base operate under distinct management structures with well-coordinated airspace usage. Similarly, Lombok International Airport is geographically and administratively separated from the nearby Rembiga Air Force Base, ensuring that military operations do not interfere with commercial aviation. International examples further underscore the benefits of this approach. In Japan, Haneda and Narita Airports serve different aviation segments, domestic and international, respectively, while Chōfu Airport caters to general aviation. In the United States, Washington Dulles International Airport and Andrews Air Force Base represent a clear demarcation between civilian and military functions. These cases highlight the importance of specialization and institutional clarity in enhancing safety, service delivery, and strategic airspace utilization.

METHODS

Research Approach

This study adopts a qualitative descriptive approach (Moleong, 2017; Sugiyono, 2014), aiming to gain an in-depth understanding of the dynamics of airport function separation in Indonesia through case studies of Soekarno-Hatta Airport, Halim Perdanakusuma Airport, and the potential use of Kertajati Airport. This approach was chosen because the research focuses on interpretation, policy context, and implementation processes, rather than statistical measurement or quantification of variables. According to Creswell, a qualitative approach (Creswell & Plano Clark, 2023; Creswell & Poth, 2016) is suitable for exploring complex phenomena that are not yet fully structured theoretically, such as policy actor interactions, institutional overlap, and the social implications of decision-making.

Types and Sources of Data

This study employs a qualitative descriptive approach to explore the dynamics of airport function separation in Indonesia, focusing on case studies of Soekarno-Hatta Airport, Halim Perdanakusuma Airport, and the prospective role of Kertajati Airport. This approach is appropriate given the interpretative nature of the research, which emphasizes policy context, institutional coordination, and implementation processes over statistical measurement. As Creswell notes that qualitative inquiry is well-suited for examining complex, poorly structured phenomena (Creswell & Poth, 2016), such as inter-agency dynamics, civil-military operational overlaps, and the broader socio-political implications of transport policy.

The study utilizes both primary and secondary data. Primary data were obtained through in-depth, semi-structured interviews with key stakeholders, including officials from the Ministry of Transportation (e.g., Director General of Civil Aviation, Director of Airports, and policy analysts), the Indonesian Air Force (e.g., operational commanders and national airspace regulators), airport operators such as Angkasa Pura, airline representatives (e.g., operations directors and station managers), and academics from institutions such as the Indonesian Civil Aviation Polytechnic and CSAS Indonesia. Secondary data were sourced from laws and regulations, official reports, academic publications, and international documents, including ICAO manuals and SARPs. These multiple data streams allowed for a holistic understanding of both the regulatory framework and on-the-ground realities.

Data collection methods included literature review, in-depth interviews, and document/policy analysis, all of which were analyzed through thematic analysis (Braun et al., 2023; Fryer, 2022; Kärmeniemi et al., 2022; Khoa et al., 2023; Kiger & Varpio, 2020). This process involved reducing data to relevant content, categorizing it into key themes, such as institutional overlap, operational efficiency, separation strategy, and Kertajati's development potential, interpreting findings in the context of Indonesia's airport system, and conducting triangulation across data sources to ensure validity and consistency. The combined methodology enabled a nuanced understanding of the challenges and prospects for implementing more effective airport function separation in Indonesia.

Research Location and Period

This research was conducted in the Jakarta and West Java regions, focusing on three key airports that represent different functional roles within Indonesia's air transportation system: Soekarno-Hatta International Airport (CGK) as the primary commercial hub, Halim Perdanakusuma Airport (HLP) as a dual-use facility serving both military and limited commercial operations, and Kertajati International Airport (KJT) as a potential hub for private and general aviation. The study was carried out over six months from January to June 2025, encompassing all stages of the research process, including initial preparation, field data collection, analysis, and the final report writing.

Data Validity and Reliability

This research was conducted in the Jakarta and West Java regions, focusing on three major airports: Soekarno-Hatta International Airport (CGK), Halim Perdanakusuma Airport (HLP), and Kertajati International Airport (KJT). The research period spanned from January to June 2025 and included stages of preparation, data collection, analysis, and report writing. To ensure the validity

and reliability of data, the study employed triangulation strategies. Source triangulation was used by comparing inputs from government officials, military personnel, airport operators, and academic experts. Method triangulation was applied through the integration of interviews, literature reviews, and policy document analysis. Data accuracy was further enhanced by cross-checking key findings with official regulations and international references, including ICAO reports. Ethical standards were also strictly upheld throughout the research process. All informants provided informed consent, and their anonymity was preserved. The researcher maintained analytical neutrality, avoiding conflicts of interest, and presented findings with objectivity. Furthermore, transparency of sources was ensured by relying solely on credible and scientifically verifiable references.

Semi-Structured Interview Guidelines

To support the qualitative inquiry of this study, semi-structured interviews were conducted with selected key stakeholders representing the government, military, airport operators, airlines, and academic experts. These interviews aimed to explore institutional perspectives, operational experiences, and policy implications related to airport function separation in Indonesia. The questions were designed to be open-ended, allowing for flexibility while maintaining consistency across interviewees.

For the Ministry of Transportation (Directorate General of Civil Aviation), the questions focused on the formulation and implementation of policies, the role of Ministerial Decree No. KM 166/2019, and inter-agency coordination in the functional separation of airports. Key inquiries also examined the strategic planning aspects of utilizing Kertajati Airport and whether a long-term roadmap exists within the Ministry's framework (Kemenhub, 2019). Interviews with the Indonesian Air Force (TNI-AU) aimed to capture the military's perspective on dual-use airport operations, the prioritization of military and VVIP flights, and the practical application of the Flexible Use of Airspace (FUA) model. Discussions addressed the challenges of civil-military coordination and assessed the preparedness of reverting Halim Airport to exclusive state/military use.

The airport operators (PT Angkasa Pura) were consulted to gain operational insights into managing dual-use airports, particularly the complexities faced at Halim and Soekarno-Hatta. Questions explored the implications of flight relocations, technical and administrative coordination, and the future potential of Kertajati as a dedicated hub for private aviation. From the airline perspective (e.g., Citilink, Batik Air), the interviews investigated how dual-use airport arrangements influence daily operations, including aircraft rotation, passenger satisfaction, punctuality, and operational costs. Additional

questions examined airline engagement in policy-making and their views on operating from alternative airports like Kertajati.

Lastly, academic and transportation policy experts were interviewed to obtain independent analysis on regulatory implementation, comparative policy perspectives, and long-term impacts. These interviews provided critical evaluations of policy effectiveness and offered strategic recommendations to improve Indonesia's airport governance and system restructuring.

RESULT AND DISCUSSION

Ideal Framework for Airport Function Separation in Indonesia

Findings from interviews, policy documents, and international comparative studies suggest that the ideal framework for airport function separation in Indonesia must be anchored in five fundamental principles. First, clarity of institutional function is essential to prevent overlapping mandates between civil, military, and special-purpose airport authorities. The overlap of civil and military operations often creates operational inefficiencies, safety concerns, and limits the scalability of airport facilities (Aida & Meilani, 2023; Darjono, 2025; Lestari et al., 2020). Such cases emphasize the urgency of establishing clearly separated functional roles between civil and military airport operations in Indonesia. Second, aviation safety and security must remain a non-negotiable priority, particularly in dual-use environments where operational risks are elevated. Third, operational efficiency must be enhanced by ensuring proper slot allocation, infrastructure utilization, and traffic flow management. Fourth, the framework must support strategic national interests, including defense readiness, diplomatic accessibility, and national logistical resilience. Lastly, regional economic sustainability must be considered by aligning airport development and function designation with local growth potential, connectivity needs, and investment priorities. Together, these five principles provide a comprehensive basis for designing a rational and adaptive airport function separation model suited to Indonesia's geographic, institutional, and developmental context.

Based on an in-depth study of operational activities at Soekarno-Hatta Airport, aircraft movement data were obtained as follows:

Table 1. Aircraft Movements at Soekarno-Hatta Airport 2020–2024

No	Year	Acft. Movement	Remarks
1	2020	~248.000	Sharp decline due to Covid-19 pandemic
2	2021	~196.000	Slow recovery due to ongoing restrictions
3	2022	~298.000	Significant post-pandemic recovery
4	2023	~360.000	Approaching pre-pandemic levels (2019)
5	2024	~380.000	Full recovery, routine growth

Notes: (1) Aircraft movements refer to total take-offs and landings; (2) Pre-pandemic movements (2019): ~450,000 (Source: Soekarno-Hatta Airport Operator, PT Angkasa Pura, 2024).

The data in Table 1 show a steady recovery of aircraft movements at Soekarno-Hatta Airport between 2020 and 2024. The sharp drop in 2020 and 2021 reflects the global aviation downturn caused by the Covid-19 pandemic. From 2022 onward, the recovery trajectory indicates a return to normal operations, approaching pre-pandemic levels by 2023 and achieving full stabilization in 2024.

This upward trend suggests that capacity utilization and airside operations have largely normalized, yet the rapid rebound also introduces renewed pressure on slot allocation and turnaround processes. Congestion during peak hours, particularly at Terminals 2 and 3, continues to test the airport's efficiency, highlighting the importance of strategic function separation between Jakarta's main airports to distribute traffic more evenly.

The findings correspond with the operational efficiency dimension outlined in the theoretical model (Section 2.1), which links function specialization to system-wide throughput optimization (Schmitt & Gollnick, 2015).

Further, based on collected data, the average monthly aircraft movements at Soekarno-Hatta in 2024 are as follows:

Table 2. Monthly Aircraft Movements at Soekarno-Hatta Airport (2024)

No	Month	Acft. Movements	Remarks
1	January	~30.000	Influenced by the year-end holiday season
2	February	~28.500	Post-holiday low season
3	Marc	~30.500	Gradual recovery
4	April	~31.000	Increased demand during the Eid Holiday
5	May	~33.000	Peak school holiday period
6	June	~34.000	Rise in international traffic
7	July	~33.500	Hajj and school holiday
8	August	~32.000	Post-peak stabilization
9	September	~31.000	Normal operation
10	October	~31.500	Year-end prep
11	November	~30.500	Steady
12	December	~35.000	Peak Christmas / New Year holiday

Summary: (a) Total aircraft movements (2024): ~380,000; (b) Monthly average: ~31,600–32,000 movements; (c) Daily average: ~1,100 movements; peak hour movements can reach ~75 take-offs/landings (Source: PT Angkasa Pura, 2024)

The monthly trend demonstrates consistent traffic growth throughout 2024, with notable peaks in May–July (holiday season) and December (year-end). These fluctuations mirror seasonal demand cycles typical of Indonesia’s domestic market, dominated by religious holidays and school vacations. Despite an overall positive growth trend, the data reveal that slot utilization during peak months exceeds optimal runway capacity, causing potential delays in apron turnover and taxiway congestion. The analysis supports the view that operational strain at Soekarno-Hatta remains structurally linked to centralized traffic concentration, reinforcing the need for a multi-airport system. The consistency between these operational findings and the theoretical argument that multi-nodal airport systems enhance both capacity and resilience (Delaurentis & Fry, 2008) further validates Indonesia’s ongoing policy to redistribute traffic toward Kertajati and Halim.

Meanwhile, Halim Perdanakusuma Airport (HLP) shows a unique dynamic as a multi-function airport, with an average of 4,200 to 4,600 aircraft movements per month in 2024:

Table 3. Monthly Aircraft Movements at Halim Perdanakusuma Airport (2024)

No	Month	Acft. Movements	Remarks
1	January	~4.500	Influenced by VVIP and charter flights
2	February	~4.000	Post-holiday low season
3	March	~4.300	Normal activities
4	April	~5000	Eid Travel surge
5	May	~4.800	Mix of civil and military flight activities
6	June	~4.600	Stable: commercial & Military activities
7	July	~4.500	Hajj season, special flight
8	August	~4.400	Military exercises (Independence Day)
9	September	~4.200	Normal Operation

No	Month	Acft. Movements	Remarks
10	October	~4.300	Year-end preparation
11	November	~4.100	Relatively stable
12	December	~5000	Increase in VVIP and charter flights

(Source: PT Angkasa Pura, 2024)

The data in Table 3 shows that Halim Perdanakusuma Airport maintains a steady operational volume of approximately 4,000–5,000 aircraft movements per month. Peaks occur in April and December, corresponding to Eid travel and state/VVIP events. Unlike Soekarno Hatta, Halim’s operational fluctuations are influenced more by governmental and military priorities than by commercial demand.

This confirms that Halim serves as a strategic complement to Soekarno-Hatta, absorbing state and defense-related traffic while relieving the main airport during specific operational peaks. However, the data also reveal capacity limitations: simultaneous scheduling of VVIP, military, and limited commercial flights often causes slot conflicts and ground handling delays. These operational challenges validate the necessity of function separation and specialization proposed in the national airport framework. As ICAO (2019) and Doc 9971 emphasize, civil–military coordination efficiency increases when roles and access rights are clearly defined. Hence, reverting Halim to an exclusive state and military role while shifting private and general aviation to Kertajati aligns with international best practice and strengthens Indonesia’s overall airspace efficiency.

Furthermore, the operational strain observed at multi-function airports also reflects inadequate facility-management competencies, a challenge similarly identified in other Southeast Asian contexts (Said & Hayani, 2025). In addition, studies on passenger facility preferences at dual-use airports demonstrate that mismatches between facility supply and user expectations can exacerbate operational bottlenecks (Muldiyanto & Handajani, 2025). The illustration is as follows:

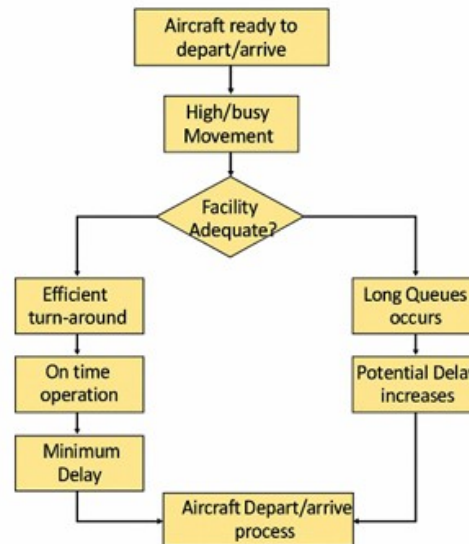


Figure 1: Turnaround Process Flow vs Facility Readiness
 (Source: Processed from Interviews/Research documentation 2025)

The flowchart illustrates the direct relationship between airport facility readiness and turnaround efficiency. When aircraft movements increase, sufficient ground handling and apron capacity become critical for maintaining on-time performance. Adequate facilities enable efficient turnaround, faster gate clearance, and reduced taxi-in/out times, which collectively minimize overall delay.

Conversely, when infrastructure is inadequate, operational bottlenecks emerge. Aircraft may queue for parking stands, turnaround durations extend, and the cumulative delay risk increases. This condition was repeatedly emphasized by operational managers during interviews at Soekarno-Hatta and Halim Perdanakusuma, who noted that facility readiness and slot coordination remain two major determinants of airport performance. This observation directly supports the efficiency dimension of the theoretical model outlined in Section 2.1, confirming that physical capacity and process discipline must evolve together to achieve true functional separation in busy airport environments.

Drawing from multiple variables and references, a national airport function separation framework is proposed as follows:

Table 4. Framework for Airport Function Separation

No	Function	Main Airports (examples)	Remarks
1	International Commercials	Soekarno-Hatta; Ngurah Rai; Juanda; Kualanamu; Sultan Hasanuddin	Serves scheduled domestic and international passengers & cargo
2	Domestic Commercial	Ahmad Yani; Sepinggan; Lombok Praya; Patimura; Haluoleo; dll.	Focus on domestic connectivity.
3	State / VVIP	Halim Perdanakusuma; Adi Soemarmo	For state duties, VIP guests, and Air Force Operations
4	Military	Major Air Bases	Prohibited from civilian flight, except in an emergency
5	Private/general Aviation	Kertajati; Pondok Cabe	For executive jets, charters, and flight training

(Source: Research documentation 2025)

Table 4 proposes a structured national framework for airport function separation. It assigns operational roles based on specialization and strategic purpose: commercial, domestic, state/VVIP, military, and private/general aviation. This categorization directly addresses long-standing inefficiencies arising from overlapping operations, particularly at Halim Perdanakusuma, while offering a pathway to balance civil, defense, and private aviation needs.

The model builds on lessons from both international references and local realities. By aligning airport function with airspace capacity, infrastructure availability, and institutional responsibility, Indonesia can achieve a more coherent, safe, and efficient multi-airport system. This structure also facilitates regulatory clarity, as each airport type can operate under distinct safety oversight mechanisms (e.g., DGCA for civil, TNI-AU for military, and joint coordination for state/VVIP).

Moreover, it supports broader national goals: a) Economic efficiency through reduced delays and better slot distribution; b) National security through controlled airspace segmentation; and c) Investment optimization through targeted infrastructure planning.

The integrated framework, therefore, positions Soekarno-Hatta as Indonesia's principal international gateway, Halim for state and limited domestic duties, Kertajati for private and general aviation, and military bases exclusively for defense operations. This separation mirrors international best practices while remaining adaptive to Indonesia's archipelagic geography and dual-use heritage.

Lessons from International Airport Function Separation Models

The proposed framework draws inspiration from several international systems that have successfully implemented functional separation without overlap. Each provides practical insight into how Indonesia can adapt these models within its regulatory and infrastructural realities.

In Japan, the Narita–Haneda–Chōfu model demonstrates the effectiveness of tri-functional specialization. Narita handles international operations, Haneda serves domestic flights, and Chōfu manages general aviation. This structure prevents congestion and enhances service differentiation across the Tokyo metropolitan area. The model resonates with Indonesia’s plan to designate Kertajati for private and general aviation, complementing Soetta and Halim. However, Japan’s success depends heavily on ground transport integration (rail and highway links), suggesting that Indonesia must improve intermodal access to Kertajati to achieve similar results.

In the United States, the Dulles–Andrews–Manassas system exemplifies clear separation between civilian, military, and private operations. Each airport functions under independent authority, yet operates within a unified airspace system managed by the Federal Aviation Administration (FAA). For Indonesia, this model underlines the importance of establishing a joint civil–military coordination body, as recommended in ICAO Doc 9971, to enhance situational awareness and harmonize airspace usage between DGCA and the Indonesian Air Force.

The United Kingdom follows a comparable structure (commercial), Northolt (state/military), and Biggin Hill (private aviation) through Heathrow. This separation reduces congestion while supporting London’s complex airspace system and maintaining high safety standards. It also reinforces economic specialization, as each airport caters to distinct market segments under consistent regulatory oversight.

Applying these lessons, Indonesia can progressively develop a multi-node system for the Greater Jakarta region: a) Soekarno-Hatta as the main commercial hub; b) Halim Perdanakusuma reserved for state and defense purposes; and c) Kertajati as the private/general aviation hub. Such an approach aligns with international best practices and supports the principle that functional specialization enhances safety, efficiency, and governance. It also creates the regulatory foundation for sustainable airspace management as outlined in Section 2.3 of this research.

Implications for State-Owned and Private Airport Management

The implementation of systematic airport function separation has significant implications for both state-owned enterprises (SOEs), such as Angkasa Pura I and II, and private sector stakeholders. For SOEs, the policy encourages operational restructuring, allowing for more efficient allocation of human resources, flight slots, and airport facilities. It also enables core business strengthening, as seen in the potential for Angkasa Pura to focus its international commercial services at Soekarno-Hatta without the operational burden of managing dual-use functions at Halim. Additionally, the emergence of specialized airports like Kertajati

creates partnership opportunities, particularly through Public-Private Partnerships (PPPs), to support private and general aviation development (Hudalah et al., 2022; Naipospos et al., 2020; Niederberger, 2025). This collaborative approach aligns with the Triple Helix framework of synergizing government, industry, and academia to enhance innovation in the aviation sector (Zainol et al., 2022).

From the private sector's perspective, delineated airport functions enhance business certainty, offering a stable regulatory and operational environment for long-term investment planning. The policy also opens pathways for service specialization, enabling private operators to concentrate on niche markets such as charter services, executive jets, or Maintenance, Repair, and Overhaul (MRO) facilities. Furthermore, airport function separation encourages the growth of integrated connectivity ecosystems, including hospitality, cargo handling, and regional logistics, through better space utilization and streamlined management practices. Collectively, these changes can improve the efficiency, attractiveness, and competitiveness of Indonesia's broader aviation sector.

Challenges to Implementation

Despite its strategic rationale, the implementation of airport function separation in Indonesia faces several structural and institutional challenges. *Overlapping Authority and Institutional Culture*

The first major issue concerns overlapping authority among key stakeholders, particularly the Indonesian Air Force (TNI-AU), the Ministry of Transportation (DGCA), and state-owned airport operators. Each institution operates under distinct mandates, procedures, and organizational cultures (Frederickson & LaPorte, 2002; Lockhart et al., 2021; Salter, 2007; Starkie, 2002). This fragmentation often results in unclear lines of coordination and slow decision-making, particularly during airspace conflict management or dual-use scheduling. Several informants from both the DGCA and Angkasa Pura described coordination as "episodic rather than systemic," depending heavily on personal networks rather than institutionalized mechanisms. This supports previous research highlighting that institutional overlap rather than resource shortage is the primary cause of inefficiency in Indonesia's civil-military airport operations (Darjono, 2025). To address this, a joint coordination body should be established under a shared legal framework between DGCA and TNI-AU, aligned with ICAO Doc 9971's concept of Flexible Use of Airspace (FUA). Such a structure would formalize communication protocols, enhance real-time coordination, and minimize jurisdictional ambiguity.

Infrastructure Gaps and Underutilized Facilities

A second challenge lies in the limited availability of alternative infrastructure capable of supporting function separation. While policy directives

encourage decentralization, many regions still lack fully equipped substitute airports to absorb diverted traffic. The case of Kertajati International Airport illustrates this problem vividly. Despite having modern facilities and strategic proximity to Jakarta's eastern corridor, it remains underutilized due to limited flight demand, poor ground connectivity, and insufficient supporting services. Interview data from operators indicate that airlines hesitate to shift operations to Kertajati because of passenger access constraints and logistical inefficiencies. This underlines the importance of synchronized infrastructure development, not only expanding airport capacity but also improving road, rail, and cargo linkages. The experience parallels Japan's early challenge in integrating Narita with Tokyo's urban transport network, which was later resolved through high-speed rail expansion. For Indonesia, achieving similar integration is essential to realize the full potential of multi-airport systems.

Policy Politics, and Regional Resistance

Another obstacle stems from policy politics and regional resistance. Local governments and political actors often oppose changes in airport function that could reduce local accessibility or economic activity. Several stakeholders noted that proposals to reassign airport roles sometimes meet with political hesitation or public misperception, particularly when local airports are perceived as being "downgraded." These political sensitivities highlight the need for policy socialization and stakeholder engagement. Transparent communication on the long-term benefits, such as safety enhancement, traffic balance, and regional growth potential, can build broader support for implementation. Moreover, decentralization policies should include local compensation mechanisms, ensuring that regional economies continue to benefit from redefined airport functions through new roles in logistics, training, or maintenance activities.

Lack of Integrated Roadmap and Cross-Sectoral Coordination

The absence of a clear, integrated roadmap further complicates the execution of functional separation. Currently, there is no consolidated policy document specifying implementation phases, responsibility allocation, or monitoring mechanisms. This regulatory vacuum creates uncertainty for both state and private stakeholders. Developing a National Functional Separation Master Plan, jointly endorsed by the Ministry of Transportation, TNI-AU, and the National Development Planning Agency (Bappenas), would address this gap. Such a plan should outline milestones, performance indicators, and coordination protocols, mirroring the integrated planning frameworks adopted in Singapore's Changi system and the United States' National Airspace System (NAS) modernization programs. By formalizing inter-agency collaboration, Indonesia can transition from ad hoc coordination to a sustainable governance model, ensuring that functional separation delivers both operational efficiency and strategic resilience.

Potential of Kertajati Airport for Private and General Aviation Use

Kertajati International Airport (KJT), equipped with a 3,000-meter runway and a modern terminal facility, remains significantly underutilized despite its strategic infrastructure. Based on interviews with airport operators, airline representatives, and transportation policy analysts, Kertajati presents strong potential as a dedicated hub for private and general aviation (GA) in Indonesia (Darmawan et al., 2018; Hudalah et al., 2022; Luanlaka et al., 2021; Mahfudz et al., 2021; Olii, 2024; Ricardianto et al., 2021; Sari et al., 2018; Syafarudin & Mulyana, 2019). Its development could serve multiple strategic purposes, including reducing slot congestion at Soekarno-Hatta, providing a base for charter, training, and private jet operations in eastern West Java, and supporting industrial and logistics zones emerging in the Majalengka region.

The realization of this potential, however, is contingent upon several enabling factors. *First*, improved ground accessibility, such as seamless integration with toll road networks and the prospective Jakarta–Bandung high-speed rail, is critical to increase airport reach and attractiveness. *Second*, the government and airport authorities must consider offering regulatory incentives to attract GA operators, including competitive pricing structures, prioritized slot allocation, and dedicated facilities for small aircraft operations. *Finally*, the success of Kertajati’s transformation relies on legal certainty and long-term policy consistency to assure investors and operators of the airport’s viability and strategic support within the national aviation framework.

Legal and Regulatory Gaps in Function Separation Implementation

Although the rationale for airport function separation is widely accepted in both policy and practice, this study identifies a number of legal and regulatory gaps that hinder its effective implementation in Indonesia. Most critically, there is an absence of a specific national regulation that mandates the functional separation of airports based on categories such as civil, military, VVIP, and private aviation. Without such a formal legal foundation, enforcement remains inconsistent and largely dependent on ad hoc administrative decisions.

In addition, the lack of a national roadmap outlining the strategic phases, timelines, and institutional responsibilities for function separation further exacerbates the issue. The absence of a systematic, measurable plan introduces the risk of unintended socio-economic consequences, including disruptions in regional accessibility and uncertainty among investors. A particularly pressing case is the unclear functional status of Halim Perdanakusuma Airport, which continues to operate under a mixed-use model, serving military, VVIP, and commercial flights simultaneously. This creates friction in coordination, undermines efficiency, and blurs institutional accountability.

Another notable gap lies in the underutilization of Kertajati Airport, which, despite its infrastructure readiness, has yet to be fully positioned as a hub for general aviation or aviation training. One of the major obstacles to the effective use of Kertajati Airport lies in its limited connectivity to urban centers and the lack of supporting infrastructure, such as high-speed rail or dedicated airport expressways. Despite the advanced facilities at Kertajati Airport, its underutilization reflects a broader issue of insufficient multimodal connectivity, mirroring the experience of Yogyakarta International Airport during its early operational phase (Arti et al., 2023; Carnis & Yulawati, 2013; Fitriada, 2019). This suggests that infrastructural readiness alone is not sufficient; strategic alignment with transportation planning and passenger behavior is also crucial. Likewise, civil-military coordination in airspace management remains fragmented and sectoral. This weak coordination complicates slot allocation, reduces national airspace efficiency, and increases the risk of operational conflicts. Without addressing these regulatory deficiencies, the long-term goals of Indonesia's airport restructuring strategy may remain unrealized.

Policy Recommendations for the Government

Based on the study's findings, several policy measures are proposed to strengthen airport function separation in Indonesia. First, the Ministry of Transportation should enact a dedicated regulation to formally govern airport function separation nationwide, aligning with the Aviation Law and providing clear guidance for all stakeholders. Second, a national roadmap should be developed to outline timelines, responsible agencies, implementation phases, and socio-economic outcomes, ensuring coherent long-term restructuring.

Halim Perdanakusuma Airport should be reclassified for exclusive state, VVIP, and military use, redirecting commercial flights to Soekarno-Hatta or other suitable airports. Kertajati Airport should be optimized as a hub for general aviation, charter services, and pilot training, facilitated through Public-Private Partnerships (PPPs) and policy incentives.

Finally, an inter-ministerial coordination task force, including the Ministry of Transportation, Ministry of Defense, Indonesian Air Force, and PT Angkasa Pura, is essential to integrate civil and military operations. This ensures efficient joint airspace management, safety, and strategic alignment. Implementing these recommendations will create a legally grounded, operationally efficient, and strategically coherent airport system that maximizes infrastructure utilization while enhancing aviation safety and national priorities.

CONCLUSION

This study shows that function separation at Indonesian airports not only achieves operational efficiency but also supports national priorities in aviation safety,

security, and competitiveness. Case studies of Soekarno-Hatta, Halim Perdanakusuma, and Kertajati International Airport reveal that overlapping functions between military and civil operations or VVIP and commercial flights compromise safety, punctuality, and service quality. An ideal model of function separation should prioritize institutional clarity, operational efficiency, aviation security, national strategic interest, and regional economic sustainability. Properly defined roles also enable state-owned enterprises like PT Angkasa Pura and private partners to design targeted business models, form alliances, and enhance the resilience of Indonesia's air transportation system.

The study introduces Kertajati as a potential national hub for private and general aviation, complementing Jakarta's airspace and addressing underutilized infrastructure. However, challenges such as institutional overlap, insufficient alternative facilities, local resistance, and weak inter-agency coordination remain. Addressing these requires an integrated, legally grounded, and transparently communicated roadmap, backed by political commitment and cross-sectoral collaboration.

Strategic policy recommendations include enacting a dedicated regulatory framework to clearly delineate commercial, military, VVIP, and private airport functions. A national roadmap should involve key stakeholders, the Ministry of Transportation, Indonesian Air Force, PT Angkasa Pura, and others, with phased implementation, regional priorities, and socio-economic considerations. In the short to medium term, Halim should be designated for exclusive state and military use, while Kertajati should serve private, charter, and training aviation through PPP schemes supported by accessibility improvements and regulatory incentives. Civil-military coordination must be institutionalized via a dedicated task force, and transparency and stakeholder engagement should be ensured throughout. By combining coordinated governance, empirical policy design, and inclusive engagement, Indonesia can establish a resilient, strategically coherent airport network that optimizes infrastructure, reduces conflicts, and enhances overall aviation performance.

ACKNOWLEDGEMENTS

The authors would like to express their deepest gratitude to the Ministry of Transportation of the Republic of Indonesia for granting access to essential data and reports that greatly supported this study. Appreciation is also extended to the management of Soekarno-Hatta Airport, Halim Perdanakusuma Airport, and Kertajati International Airport for their support during the data collection and fieldwork process. The authors would also like to thank the anonymous reviewers for their valuable comments and constructive suggestions, which have significantly improved the quality of this article.

DISCLOSURE STATEMENT/ETHICAL STATEMENT

The authors declare that no conflict of interest is related to this research. The authors also affirm that this research is original, plagiarism-free, and has not been submitted for publication elsewhere.

AUTHORS' CONTRIBUTIONS

All authors have read and agreed to the published version of the manuscript. They drafted and participated in contributing to the text and the manuscripts together, discussed all parts of this paper, edited and revised the earlier version, and approved the final version of the paper to be published

REFERENCES

- Abeyratne, R. (2014). Joint Use of Military and Civil Airports. *Law and Regulation of Aerodromes*, 223-256. https://doi.org/10.1007/978-3-319-04780-5_7
- Adisasmita, S. A., & Caroles, L. (2021). Multi-Airport System Development Model: Case Study of Airports in Indonesia. *Civil Engineering Journal Vol. 7, Special Issue*. <https://doi.org/10.28991/CEJ-SP2021-07-013>
- Aida, R., & Meilani, I. (2023). Case Study of the Merger of Military Airports in Commercial Aviation at Jenderal Ahmad Yani International Airport Semarang. *QISTINA: Jurnal Multidisiplin Indonesia*, 2(1), 355-364. <https://doi.org/10.57235/qistina.v2i1.475>
- Arti, E. S., Praptiningsih, N., Widagdo, R. A., & Wagini, D. (2023). Airport Perimeter Security System Readiness Analysis (Case Study at Budiarto Curug-Tangerang Airport). *Siber Journal of Transportation and Logistics*, 1, 64-71. <https://doi.org/10.38035/sjtl.v1i2>
- BPTJ, J. T. M. A. (2023). *Laporan evaluasi operasi transportasi wilayah Jabodetabek tahun 2023* ([2023 Jabodetabek regional transportation operations evaluation report]. Kementerian Perhubungan Republik Indonesia [Ministry of Transportation of the Republic of Indonesia].
- Braun, V., Clarke, V., Hayfield, N., Davey, L., & Jenkinson, E. (2023). Doing Reflexive Thematic Analysis. *Supporting Research in Counselling and Psychotherapy: Qualitative, Quantitative, and Mixed Methods Research*, 19-38. https://doi.org/10.1007/978-3-031-13942-0_2
- Carnis, L., & Yuliawati, E. (2013). Nusantara: Between Sky and Earth could the PPP be the Solution for Indonesian Airport Infrastructures? *Case Studies on Transport Policy*, 1(1-2), 18-26. <https://doi.org/10.1016/j.cstp.2013.08.003>
- Creswell, J. W., & Plano Clark, V. (2023). Revisiting Mixed Methods Research Designs Twenty Years Later. *Handbook of Mixed Methods Research Designs*, 1(1), 21-36. <https://www.torrossa.com/en/resources/an/5730651#page=56>
- Creswell, J. W., & Poth, C. N. (2016). *Qualitative Inquiry and Research Design: Choosing among Five Approaches*. Sage publications.
- Darjono, W. (2025). *Pemisahan Fungsi Bandara: Demi Efisiensi, Keamanan, dan Kenyamanan Penerbangan Nasional* [Separation of Airport Functions: For the

- Efficiency, Security, and Comfort of National Aviation]. *nnc netralnews.com*(edition: July 17, 2025). <https://www.netralnews.com/pemisahan-fungsi-bandara-demi-efisiensi-keamanan-dan-kenyamanan-penerbangan-nasional/eFJqcng1Q3FSVVg3Q0N2Z2IFVmdZZz09>
- Darmawan, M. R., Pratama, R. K., Agusinta, L., Pratiwi, S. W., & Kamal, I. (2018). Kertajati Airport Potential for West Java Tourism. *Advances in Transportation and Logistics Research*, 1, 782-795. <https://proceedings.itltrisakti.ac.id/index.php/ATLR/article/view/77>
- Delaurentis, D. A., & Fry, D. N. (2008). Understanding The Implications for Airports of Distributed Air Transportation Using A System-of-Systems Approach. *Transportation Planning and Technology*, 31(1), 69-92. <https://doi.org/10.1080/03081060701835738>
- Fitrada, A. G. (2019). Investigating the Impact of Airport Relocation on the Transport Network in Special Region of Yogyakarta, Indonesia. *Journal of The Civil Engineering Forum*,
- Frederickson, H. G., & LaPorte, T. R. (2002). Airport Security, High Reliability, and the Problem of Rationality. *Public Administration Review*, 62, 33-43. <https://doi.org/10.1111/1540-6210.62.s1.7>
- Fryer, T. (2022). A Critical Realist Approach to Thematic Analysis: Producing Causal Explanations. *Journal of Critical Realism*, 21(4), 365-384. <https://doi.org/10.1080/14767430.2022.2076776>
- Gifford, J. L., & Garrison, W. L. (1993). Airports and The Air Transportation System: Functional Refinements and Functional Discovery. *Technological Forecasting and Social Change*, 43(2), 103-123. [https://doi.org/10.1016/0040-1625\(93\)90011-U](https://doi.org/10.1016/0040-1625(93)90011-U)
- Graham, A. (2023). *Managing Airports: An International Perspective*. Routledge. <https://doi.org/10.4324/9781003269359>
- Hayakawa, K., Isono, I., & Kumagai, S. (2020). Transportation Costs in Archipelagos: Evidence from Indonesia. *The Developing Economies*, 58(3), 227-241. <https://doi.org/10.1111/deve.12249>
- Hudalah, D., Talitha, T., & Lestari, S. F. (2022). Pragmatic State Rescaling: The Dynamics and Diversity of State Space in Indonesian Megaproject Planning and Governance. *Environment and Planning C: Politics and Space*, 40(2), 481-501. <https://doi.org/10.1177/23996544211030935>
- ICAO. (2019). Manual on civil/military cooperation in air traffic management (Doc 9971). *International Civil Aviation Organization*, 223-256.
- ICAO. (2022). Annex 14 to the Convention on International Civil Aviation: Aerodromes (Vol. I, 8th ed.). *International Civil Aviation Organization, Montreal*, 13(03), 34-38.
- Ivannikova, V., Boldyrieva, M., & Konovalyuk, V. (2021). Modern Ecological Approach to Air Transportation Management. *International Conference TRANSBALTICA: Transportation Science and Technology*, 658-670. https://doi.org/https://doi.org/10.1007/978-3-030-94774-3_64
- Kärmeniemi, M., Nykänen, K., Korpelainen, R., Lankila, T., Koivumaa-Honkanen, H., & Rönkkö, E. (2022). Active Transportation Policy and Practice in the City of

- Oulu from 1998 to 2016—A Mixed Methods Study. *Journal of Transport and Land Use Policy*, 15(1), 689-708.
<https://doi.org/https://www.jstor.org/stable/48719792>
- Kemenhub. (2019). Keputusan Menteri Perhubungan Republik Indonesia Nomor KM 166 Tahun 2019 tentang Tatanan Kebandarudaraan Nasional. *Kementerian Perhubungan Republik Indonesia*.
- Kemenhub. (2023). Peraturan Menteri Perhubungan Republik Indonesia Nomor PM 40 Tahun 2023 tentang Perubahan atas Peraturan Menteri Perhubungan Nomor PM 39 Tahun 2019 tentang Tatanan Kebandarudaraan Nasional. *Kementerian Perhubungan Republik Indonesia*.
- Khoa, B. T., Hung, B. P., & Hejsalem-Brahmi, M. (2023). Qualitative Research in Social Sciences: Data Collection, Data Analysis and Report Writing. *International Journal of Public Sector Performance Management*, 12(1-2), 187-209.
<https://doi.org/10.1504/IJSPM.2023.132247>
- Kiger, M. E., & Varpio, L. (2020). Thematic Analysis of Qualitative Data: AMEE Guide No. 131. *Medical teacher*, 42(8), 846-854.
<https://doi.org/10.1080/0142159X.2020.1755030>
- Lestari, W. A., Arti, E. S., & Putra, G. T. (2020). Pengaruh Aktivitas Penerbangan Militer terhadap *Decision Making Personel Air Traffic Controller* pada Unit Approach di Perum LPPNPI Cabang Pekanbaru. *Langit Biru: Jurnal Ilmiah Aviasi*, 13(03), 34-38. <https://doi.org/10.54147/langitbiru.v13i3.346>
- Lockhart, A., While, A., Marvin, S., Kovacic, M., Odendaal, N., & Alexander, C. (2021). Making Space for Drones: The Contested Reregulation of Airspace in Tanzania and Rwanda. *Transactions of the Institute of British Geographers*, 46(4), 850-865.
<https://doi.org/10.1111/tran.12448>
- Luanlaka, B. N. F., RAFI, S., & RIFNI, M. (2021). The Prospective Kertajati International Airport (Kjt) to Become the Logistics Hub in Indonesia (2021). *Advances in Transportation and Logistics Research*, 4, 762-771.
<https://proceedings.itlrisakti.ac.id/index.php/ATLR/article/view/433>
- Mahfudz, S., Kridarso, E., & Iskandar, J. (2021). Comparison Structure and Construction of Husein Sastranegara International Airport Terminal and Kertajati International in West Java. *IOP Conference Series: Earth and Environmental Science*,
- Moleong, L. (2017). Metode Penelitian Kualitatif. *Remaja Rosdakarya Offset, cetakan ke-36*.
- Muldiyanto, A., & Handajani, M. (2025). Passenger Preferences at General Ahmad Yani Airport, Semarang, Indonesia. *Planning Malaysia*, 23.
<https://doi.org/10.21837/pm.v23i38.1787>
- Naipospos, B., Rahmah, U., & Muthia, A. (2020). Partnership Scheme for BIJB Kertajati West Java International Airport. *IOP Conference Series: Earth and Environmental Science*, 592(1), 012020.
- Niederberger, A. J. (2025). Achieving Public Goals Using Private Tools: Build-Operate-Transfer Projects in Southeast Asia. *Scholarship @ Claremont*.
https://scholarship.claremont.edu/scripps_theses/2574/
- Olii, C. (2024). From Husein Sastranegara to Kertajati: Strategic Insights on Maintaining International Tourist Flow to Bandung (*Relokasi Bandara Husein Sastranegara*

- ke Kertajati: Strategi Mempertahankan Arus Wisatawan Internasional ke Bandung). <https://dx.doi.org/10.2139/ssrn.4954132>
- Prastyoutomo, P. (2024). A Study on the Construction of Sustainable Connected Transportation in Kepulauan Riau, Indonesia Using Advanced Air Mobility (AAM). *Journal of Advanced Navigation Technology*, 28(3), 288-299. <https://doi.org/10.12673/jant.2024.28.3.288>
- Ricardianto, P., Martagani, M., Teweng, N. M., Maemunah, S., & Kurniawan, J. S. (2021). Strategy to Increase Passenger Attractiveness at Kertajati International Airport, West Java. *Quest Journals Journal of Research in Humanities and Social Sciences*, 9(9), 2321-9467. <https://www.questjournals.org/jrhss/papers/vol9-issue9/Ser-2/F09093137.pdf>
- Rimmer, P. J., & Dick, H. (2018). Gateways, Corridors and Peripheries. In *Routledge handbook of urbanization in Southeast Asia* (pp. 9-30). Routledge.
- Rocha, L. E. (2017). Dynamics of Air Transport Networks: A Review from A Complex Systems Perspective. *Chinese Journal of Aeronautics*, 30(2), 469-478. <https://doi.org/10.1016/j.cja.2016.12.029>
- Said, S. A. A. S., & Hayani, H. H. (2025). A Stusy of Maintenance Competencies in Airport Building Facilities *Planning Malaysia*, 23. <https://doi.org/10.21837/pm.v23i36.1732>
- Salter, M. B. (2007). Governmentalities of An Airport: Heterotopia and Confession. *International Political Sociology*, 1(1), 49-66. <https://doi.org/10.1111/j.1749-5687.2007.00004.x>
- Sari, N. A., Septiani, R. M., Simarmata, J., Apriyadi, D., & Sakti, R. D. (2018). The Implementation of Aerotropolis and Eco-Airport Concept towards Kertajati International Airport Introduction. *Advances in Transportation and Logistics Research*, 1, 924-934. <https://proceedings.itlrisakti.ac.id/index.php/ATLR/article/view/88>
- Schmitt, D., & Gollnick, V. (2015). The Air Transport System. In *Air transport system* (pp. 1-17). Springer. https://doi.org/10.1007/978-3-7091-1880-1_1
- Sekneg, S. N. (2001). Peraturan Pemerintah Republik Indonesia Nomor 70 Tahun 2001 tentang Kebandarudaraan. Lembaran Negara Republik Indonesia Tahun 2001 Nomor 127. *Pemerintah Republik Indonesia, Jakarta*.
- Sekneg, S. N. (2009). Undang-Undang Republik Indonesia Nomor 1 Tahun 2009 tentang Penerbangan. Lembaran Negara Republik Indonesia Tahun 2009 Nomor 1. *Pemerintah Republik Indonesia, Jakarta*.
- Septanaya, I. D. M. F., Ariastita, P. G., & Anindya, A. I. (2025). Assessing the Alignment of Spatial Planning Directives and Aviation Safety and Security Aviation Operations within the Airport Public Safety Zone (PSZ) A Case Study at Iswahjudi Military Airport, Indonesia. *International Review for Spatial Planning and Sustainable Development*, 13(2), 235-260. https://doi.org/10.14246/irspsd.13.2_235
- Starkie, D. (2002). Airport Regulation and Competition. *Journal of Air Transport Management*, 8(1), 63-72. [https://doi.org/10.1016/S0969-6997\(01\)00015-1](https://doi.org/10.1016/S0969-6997(01)00015-1)
- Sugiyono, P. (2014). Metode Penelitian Kombinasi (Mixed Methods). *Alfabeta, CV*, 12.

Wisnu Darjono, Farah Khaldi Arinta, Achril Zalmansyah, Fachri Muhammad Rasyid, Sitti Aminah
EFFECTIVENESS OF AIRPORT FUNCTION SEPARATION IN INDONESIA: A CASE STUDY OF
SOEKARNO-HATTA AND HALIM PERDANAKUSUMA AIRPORTS, WITH A PROPOSAL FOR UTILIZING
KERTAJATI AIRPORT FOR PRIVATE AVIATION

- Svetlana, C. (2021). Transport in Indonesia: Recent Development Trends. *Восточная аналитика*(4), 62-73. <https://cyberleninka.ru/article/n/transport-in-indonesia-recent-development-trends/viewer>
- Syafarudin, A., & Mulyana, B. (2019). *Formulation Strategy of PT. Bandara Internasional Jawa Barat Bandung Indonesia*, Kertajati in business aerocity (Aerotropolis). *International Review of Management and Marketing*, 9(3), 106. <https://doi.org/10.32479/irmm.8113>
- Zainol, R., Roslan, F. F., Azali, N. S., Rosni, N. A., & Chang, L. W. (2022). Triple Helix Model in Handling Challenges to the Informal Economic Activities. *Planning Malaysia*, 20. <https://doi.org/10.21837/pm.v20i24.1217>
- Zhang, F., & Graham, D. J. (2020). Air Transport and Economic Growth: A Review of the Impact Mechanism and Causal Relationships. *Transport Reviews*, 40(4), 506-528. <https://doi.org/10.1080/01441647.2020.1738587>

Received: 28th January 2025. Accepted: 14th September 2025