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# Defense Industry Cooperation as an Instrument of Indonesia–Türkiye Defense Diplomacy: A Case Study of the Harimau Medium Tank Joint Development Program

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**Abstract**

Indonesia's dependence on foreign defense suppliers has prompted efforts to strengthen domestic defense industrial capabilities through defense diplomacy and international industrial cooperation. This study aimed to analyze how Indonesia–Türkiye defense industrial cooperation contributes to Indonesia's defense industrial autonomy from a Neo-Realist perspective. Employing a qualitative case study design, data were collected through semi-structured interviews with key stakeholders, document analysis, and examination of relevant policy documents. The findings indicate that Indonesia–Türkiye cooperation extends beyond conventional defense procurement by incorporating technology transfer, joint development, and institutional coordination through the Defense Cooperation Agreement and the Defense Industry Cooperation Meeting. The Harimau Medium Tank program demonstrates that bilateral cooperation has strengthened Indonesia's defense manufacturing and systems-integration capabilities while reducing strategic dependence on external suppliers. Nevertheless, defense industrial autonomy remains a gradual process because limitations in critical technologies, supporting


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industrial ecosystems, and human resource capacity continue to constrain domestic capability development. From a Neo-Realist perspective, this cooperation represents an internal balancing strategy through which Indonesia enhances its national defense capabilities while maintaining diversified international partnerships. The study concludes that collaborative defense industrial development can support the long-term pursuit of strategic autonomy, although its effectiveness depends on sustained technology absorption, institutional capacity, and industrial ecosystem development. This study contributes to defense and international relations scholarship by integrating defense diplomacy, defense industrial cooperation, and internal balancing within a unified analytical framework and by providing empirical evidence of how middle powers can pursue strategic autonomy through collaborative capability development.

**Keywords:** Defense Industrial Cooperation; Indonesia–Türkiye Cooperation; Internal Balancing; Neo-Realism; Strategic Autonomy

## INTRODUCTION

Indonesia occupies a strategically important position at the crossroads of the Indo-Pacific, a region increasingly characterized by intensifying geopolitical competition and strategic rivalry among major powers. As the regional security environment becomes more complex, middle powers such as Indonesia face growing challenges in preserving strategic autonomy while responding to evolving military and technological developments (AS, 2018). Consequently, defense modernization can no longer be understood merely as the acquisition of advanced weapon systems; rather, it has become an essential component of a broader national strategy aimed at strengthening defense capabilities, reducing external dependence, and maintaining strategic flexibility in an increasingly competitive international system (Athirah, 2025). Accordingly, contemporary defense procurement policies emphasize not only operational requirements but also technology acquisition, industrial capacity building, and the long-term sustainability of the domestic defense industry.

Indonesia's experience with foreign arms embargoes demonstrated the strategic risks associated with excessive dependence on a single supplier (Diphda & Wiswayana, 2026). The military embargo imposed by the United States in the early 2000s significantly disrupted Indonesia's defense readiness and exposed the vulnerability of relying on external actors for critical defense capabilities (Sutikno et al., 2025). This experience fundamentally reshaped

Indonesia's defense policy, shifting its emphasis from conventional arms procurement toward strengthening the national defense industrial base (Fitriah et al., 2025). The enactment of Law No. 16 of 2012 on the Defense Industry institutionalized this new approach by requiring every foreign defense procurement contract to incorporate technology transfer (ToT), offset arrangements, and the participation of domestic defense industries (Government of Indonesia, 2012). Consequently, defense procurement has evolved beyond a transactional activity into a strategic instrument for developing indigenous technological capabilities and achieving greater defense industrial self-reliance (Urquhart, 1989).

Within this policy framework, Indonesia has actively expanded defense industrial cooperation with various strategic partners. Among these partnerships, cooperation with Türkiye represents one of the most significant examples because it extends beyond conventional buyer–seller relationships toward joint development, joint production, and technology sharing (Luerdi & Marisa, 2019). The Harimau Medium Tank (Kaplan MT) program, jointly developed by PT Pindad and FNSS, exemplifies this collaborative model (Shiddiqy et al., 2024). Rather than merely producing a new armored combat vehicle, the program aims to enhance Indonesia's technological capabilities, strengthen human resources, improve manufacturing competence, and increase the competitiveness of the domestic defense industry (Elisabeth et al., 2021). Furthermore, defense cooperation between Indonesia and Türkiye has continued to expand into broader industrial collaboration, reflecting a long-term strategic partnership rather than isolated procurement transactions (Triantama, 2020).

From the perspective of Indonesia's defense policy, such cooperation constitutes more than an industrial initiative. It reflects a broader diplomatic strategy designed to diversify strategic partnerships while reducing dependence on traditional defense suppliers (Nugraha et al., 2024). By engaging non-traditional partners willing to provide greater technological collaboration, Indonesia seeks to strengthen its defense autonomy without becoming excessively aligned with any major power. In this regard, defense industrial cooperation functions simultaneously as a mechanism for capability development and as an instrument of defense diplomacy that supports Indonesia's broader strategic interests in the Indo-Pacific.

Existing studies have examined Indonesia–Türkiye defense cooperation from various perspectives. Several scholars argue that defense diplomacy has become an important

instrument for expanding Indonesia's international partnerships while simultaneously strengthening domestic defense capabilities. Previous research has highlighted the successful implementation of the Harimau Medium Tank project as evidence of productive bilateral cooperation and effective technology transfer between PT Pindad and FNSS (Fitriah et al., 2025; Shiddiqy et al., 2024). Other studies have emphasized the importance of Law No. 16 of 2012 in promoting industrial participation, technology transfer, and the development of Indonesia's indigenous defense industry (Riyadi & Dewi, 2022). More recent research also discusses the expanding scope of Indonesia–Türkiye defense cooperation and its contribution to military modernization and bilateral strategic relations (Athirah, 2025).

Despite these valuable contributions, the existing literature exhibits several important limitations. First, most studies examine defense diplomacy, technology transfer, defense industrial policy, or bilateral relations as separate issues rather than integrating them within a comprehensive analytical framework. Second, previous research primarily focuses on describing the implementation or outcomes of defense cooperation without critically evaluating whether joint defense industrial development effectively contributes to Indonesia's long-term objective of defense technological autonomy. Third, relatively little attention has been devoted to understanding defense industrial cooperation as both an instrument of defense diplomacy and a strategy of internal capability enhancement within the broader structure of international politics. Consequently, the relationship between joint defense industrial development, defense diplomacy, and national strategic autonomy remains insufficiently explored.

To address these gaps, this study offers two principal contributions. First, it integrates the concept of defense diplomacy with the Neo-Realist perspective (Waltz, 1979), particularly the concept of internal balancing, to explain how defense industrial cooperation serves both diplomatic and strategic functions. Rather than treating industrial collaboration solely as an economic or technological activity, this study conceptualizes it as a state strategy for strengthening national capabilities under conditions of international anarchy. Second, unlike previous studies that primarily describe the implementation of technology transfer or bilateral defense cooperation, this research evaluates the effectiveness of the Harimau Medium Tank joint development program in advancing Indonesia's defense technological autonomy. By doing so, the study provides a more comprehensive understanding of how collaborative defense industrial programs contribute to national defense capacity beyond immediate procurement objectives.

The theoretical foundation of this study is derived from Neo-Realism. According to Neo-Realist theory, the international system is characterized by anarchy, compelling states to rely primarily on their own capabilities to ensure national security. Under such conditions, states pursue self-help strategies by enhancing domestic military, technological, and industrial capabilities through internal balancing rather than relying exclusively on external alliances. Within this framework, Indonesia's defense industrial cooperation with Türkiye is interpreted not as a manifestation of dependence but as a strategic effort to strengthen indigenous capabilities through technology acquisition, industrial learning, and the diversification of defense partnerships. Accordingly, the Harimau Medium Tank program represents an internal balancing strategy designed to improve Indonesia's long-term strategic autonomy while simultaneously enhancing bilateral defense relations.

Based on these considerations, this study aims to analyze how Indonesia–Türkiye defense industrial cooperation, as implemented through the Harimau Medium Tank joint development program, functions as an instrument of Indonesia's defense diplomacy. Furthermore, the study evaluates the extent to which this cooperation contributes to strengthening Indonesia's defense technological autonomy through technology transfer, industrial capability development, and domestic defense industrial capacity from a Neo-Realist perspective. By integrating defense diplomacy and internal balancing within a single analytical framework, this study is expected to contribute both theoretically and empirically to the literature on defense industrial cooperation and strategic autonomy in the Indo-Pacific region.

## METHODS

This study employed a qualitative case study approach to examine how Indonesia–Türkiye defense industry cooperation, implemented through the Harimau Medium Tank joint development program, functions as an instrument of Indonesia's defense diplomacy. A qualitative approach was selected because the study seeks to understand institutional processes, policy implementation, and strategic interactions among defense stakeholders rather than testing causal relationships through quantitative measurement (Creswell, 2014). The case study design enables an in-depth investigation of contemporary phenomena within their real-world context, particularly when the boundaries between defense diplomacy, industrial cooperation, and technology transfer are closely intertwined (Yin, 2018). The

Harimau Medium Tank joint development program was deliberately selected as the unit of analysis because it represents Indonesia's first major defense industrial collaboration emphasizing joint development, technology transfer (ToT), and domestic defense industrial capacity building.

The study focused on evaluating the implementation of technology transfer within the Harimau Medium Tank production program and its contribution to Indonesia's defense technological autonomy. Guided by the Neo-Realist perspective, particularly the concept of *internal balancing*, the research examined how bilateral defense industrial cooperation strengthens Indonesia's indigenous defense capabilities while simultaneously supporting its defense diplomacy objectives (Waltz, 1979). Accordingly, the study explored the interaction between defense diplomacy, technology transfer, and industrial capability development as interconnected elements of Indonesia's broader strategy to achieve greater strategic autonomy.

Primary data were collected through semi-structured interviews with key informants who possessed direct knowledge and professional involvement in Indonesia–Türkiye defense industrial cooperation. Informants were selected using purposive sampling based on three criteria: (1) direct involvement in defense industrial policy formulation or implementation; (2) participation in the Harimau Medium Tank joint development program or related defense cooperation initiatives; and (3) expertise in defense diplomacy, technology transfer, or defense industrial development (Moleong, 2017). The interviews were conducted with senior officials from the Directorate General of Defense Potential (Ditjen Pothan), Ministry of Defense of the Republic of Indonesia, between May and June 2026 using an interview guide developed from the analytical dimensions of defense diplomacy, technology transfer, internal balancing, and defense technological autonomy.

To strengthen the empirical basis of the study, interview data were complemented by document analysis and non-participant observation. Documentary sources included Law No. 16 of 2012 on the Defense Industry, ministerial regulations, bilateral cooperation agreements between Indonesia and Türkiye, official reports published by the Ministry of Defense and PT Pindad, parliamentary documents, government press releases, and relevant peer-reviewed journal articles (Government of Indonesia, 2012). Non-participant observation was conducted during visits to relevant defense institutions to obtain contextual information regarding the implementation of defense industrial cooperation and technology

transfer practices. The combination of multiple data sources enabled a comprehensive understanding of the policy context while reducing reliance on a single source of evidence.

The collected data were analyzed using thematic analysis following the six-step procedure proposed by Braun and Clarke (2006). The analysis began with transcribing interview recordings and reviewing documentary materials to achieve familiarity with the data. Relevant information was subsequently coded according to recurring concepts associated with defense diplomacy, technology transfer, defense industrial cooperation, internal balancing, and defense technological autonomy. Similar codes were grouped into broader categories and refined into overarching themes that reflected the implementation of the Harimau Medium Tank joint development program. These themes were then interpreted through the Neo-Realist framework to explain how defense industrial cooperation contributes to strengthening Indonesia's indigenous defense capabilities and strategic autonomy. Throughout the analytical process, findings derived from interviews were continuously compared with documentary evidence and observational data to ensure analytical consistency.

To enhance the trustworthiness of the findings, the study employed source triangulation and methodological triangulation by comparing information obtained from interviews, official documents, and observations (Rahmadhani et al., 2025; Wulandari et al., 2024). The consistency of the collected evidence was further verified through cross-checking among different informants and documentary sources. This process strengthened the credibility, dependability, and confirmability of the findings while minimizing potential researcher bias.

## RESULTS

### Policy Drivers for Indonesia's Defense Industrial Development

The findings indicate that Indonesia's commitment to strengthening its domestic defense industry originated from previous experiences of military dependence on foreign suppliers, particularly during the period of international arms embargoes. Interview data obtained from officials of the Directorate General of Defense Potential (Ditjen Pothan) consistently identified the United States arms embargo as a major policy turning point that encouraged the government to pursue greater defense industrial autonomy.

According to the interviewee, the embargo demonstrated that excessive reliance on foreign defense suppliers created strategic vulnerabilities that could directly affect Indonesia's military readiness. The participant explained that the government began to reconsider its procurement-oriented defense policy after realizing that political decisions made by supplier countries could disrupt the continuity of national defense capability. One participant stated:

> *"At that time, we felt that Indonesia was being controlled by major powers. Therefore, the government began to formulate policies aimed at developing an independent defense industry so that Indonesia would not easily become vulnerable to future embargoes."* (Participant P1, personal communication, May 20, 2026).

The interview further revealed that government efforts to strengthen domestic defense capabilities intensified during the second administration of President Susilo Bambang Yudhoyono (2009–2014). During this period, defense industrial development became an important component of Indonesia's broader defense modernization agenda. Rather than relying solely on imported defense equipment, the government sought to expand domestic industrial capacity through international cooperation capable of providing access to advanced defense technologies.

The participant also explained that cooperation with technologically advanced developing countries was considered a more feasible alternative for obtaining strategic defense technologies. Instead of emphasizing conventional procurement, the government began prioritizing collaborative programs that could facilitate technology acquisition while simultaneously supporting the long-term development of Indonesia's defense industry.

Documentary evidence examined in this study supports these interview findings. Government policy documents demonstrate that defense procurement gradually shifted from an import-oriented approach toward industrial cooperation emphasizing joint development, technology transfer, and domestic industrial participation. This policy direction subsequently became the foundation for Indonesia's cooperation with several strategic partners, including Türkiye.

Overall, the interview and documentary findings consistently indicate that previous experiences of military embargoes became one of the principal drivers behind Indonesia's decision to strengthen its domestic defense industry through international defense industrial cooperation.

**Strategic Considerations in Selecting Türkiye as Indonesia's Defense Industry Partner**

The findings indicate that Indonesia's decision to establish defense industrial cooperation with Türkiye was influenced by several interrelated considerations identified from interview data and documentary analysis. Rather than emphasizing conventional defense procurement, policymakers prioritized cooperation that could facilitate technological learning, industrial participation, and long-term collaboration. Figure 2 summarizes the principal considerations that informed Indonesia's selection of Türkiye as its strategic defense industry partner.

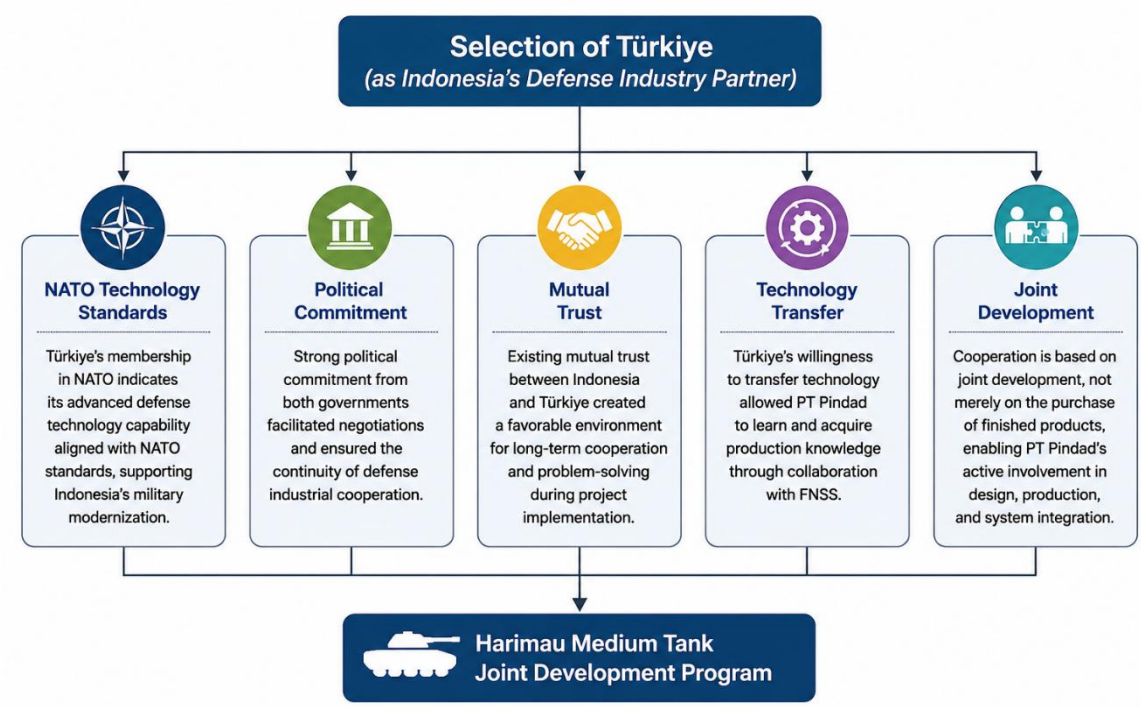



**Figure 1.** Strategic Considerations for Selecting Türkiye as Indonesia's Defense Industry Partner.
Source: Developed by the author based on interview findings and documentary analysis (2026).

As illustrated in Figure 1, one of the principal considerations was Türkiye's technological capability as a member of the North Atlantic Treaty Organization (NATO). Interview participants explained that defense equipment developed according to NATO standards was considered capable of supporting Indonesia's military modernization while simultaneously providing opportunities for domestic industrial learning through collaborative production. Rather than merely acquiring finished defense products, the cooperation was expected to provide access to advanced defense manufacturing capabilities.

The findings also demonstrate that political commitment and mutual trust between the two governments played an important role in facilitating bilateral cooperation. According

to the interview participant, the relationship between Indonesia and Türkiye created a favorable environment for negotiations throughout the development of the Harimau Medium Tank program. This political relationship enabled both governments to maintain cooperation during different stages of project implementation while supporting long-term industrial collaboration.

Another important finding concerns Türkiye's willingness to implement technology transfer as an integral component of the cooperation framework. Interview participants explained that FNSS demonstrated readiness to cooperate through joint development rather than limiting cooperation to conventional defense exports. This arrangement enabled PT Pindad to participate directly in several stages of product development, including engineering activities, manufacturing processes, and system integration.

The interview findings further indicate that Indonesia viewed joint development as a mechanism for expanding domestic industrial participation. Instead of acting solely as a defense equipment purchaser, PT Pindad became directly involved in the production process alongside its Turkish counterpart. According to the participants, this collaborative arrangement provided opportunities for Indonesian engineers and technicians to strengthen their technical competencies throughout the implementation of the Harimau Medium Tank program.

The findings additionally reveal that institutional considerations influenced the implementation of bilateral cooperation. Interview participants explained that Türkiye benefited from relatively stable institutional arrangements supporting long-term defense industrial development, whereas Indonesia experienced institutional adjustments following political transition. Despite these different domestic conditions, both governments maintained continuous coordination through the Defense Industry Cooperation Meeting (DICM), which functioned as the primary bilateral mechanism for addressing technical and administrative issues encountered during project implementation.

Overall, the interview and documentary findings demonstrate that Indonesia's selection of Türkiye was influenced by the combination of technological capability, political commitment, mutual trust, technology transfer, and opportunities for joint development, all of which collectively supported the implementation of the Harimau Medium Tank joint development program.

**Institutional Framework Supporting Indonesia–Türkiye Defense Industry Cooperation**

The findings indicate that the implementation of Indonesia–Türkiye defense industry cooperation was supported by a formal institutional framework consisting of legal agreements and bilateral coordination mechanisms. Interview data and documentary analysis identified two principal institutional instruments underpinning the cooperation: the Defense Cooperation Agreement (DCA), ratified through Law No. 19 of 2014, and the Defense Industry Cooperation Meeting (DICM), which functions as the primary bilateral coordination forum. Figure 3 illustrates the institutional framework supporting the implementation of defense industrial cooperation between Indonesia and Türkiye.

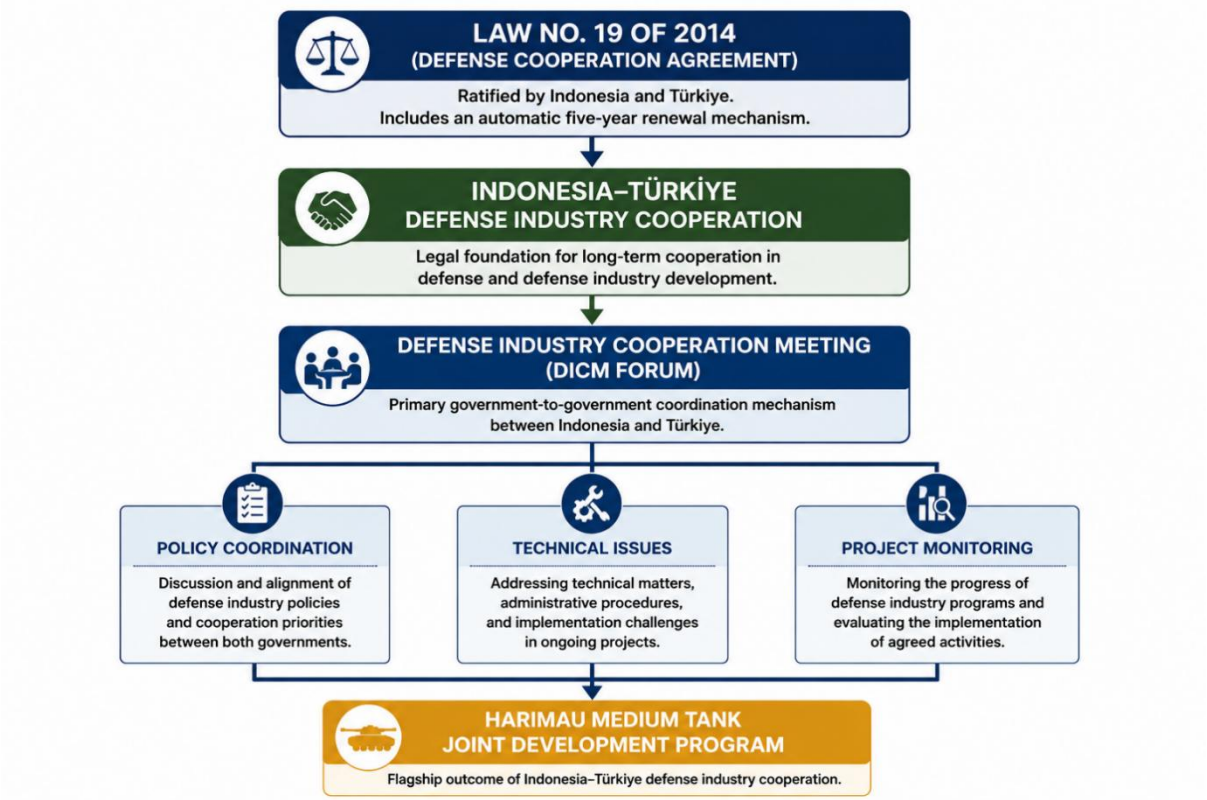



**Figure 2.** Institutional Framework Supporting Indonesia–Türkiye Defense Industry Cooperation.
**Source:** Developed by the author based on interview findings and documentary analysis (2026).

As presented in Figure 2, the Defense Cooperation Agreement (DCA) serves as the legal foundation governing bilateral defense cooperation between Indonesia and Türkiye. Documentary evidence indicates that the agreement was formally ratified through Law No. 19 of 2014, providing a legal basis for long-term cooperation in various areas of defense, including defense industrial development. Interview participants further explained that the agreement incorporates an automatic five-year renewal mechanism, enabling bilateral

cooperation to continue without requiring repeated legislative ratification for each implementation period.

The findings further reveal that operational coordination was conducted through the Defense Industry Cooperation Meeting (DICM). According to interview participants, DICM functioned as the principal government-to-government coordination forum responsible for discussing project implementation, resolving administrative issues, and monitoring the progress of bilateral defense industrial programs. Regular meetings between representatives of both governments were conducted during the early implementation phase of the Harimau Medium Tank program to support coordination between relevant institutions.

Interview data also show that the frequency and format of DICM meetings changed during the COVID-19 pandemic. Participants explained that face-to-face meetings held alternately in Jakarta and Ankara during the initial implementation period were replaced by virtual meetings beginning in 2020. Although communication continued through video conferencing, interview participants noted that virtual meetings reduced opportunities for direct observation of production activities and limited technical discussions requiring on-site interaction.

In addition to the impact of the pandemic, interview participants identified budgetary constraints as another factor affecting institutional coordination. Reductions in official travel budgets limited opportunities for bilateral meetings after 2020, resulting in a period during which face-to-face coordination became less frequent. According to the interview participant, preparations were underway to resume regular in-person meetings by the end of 2026 in order to strengthen bilateral coordination for ongoing defense industrial cooperation.

Overall, the findings demonstrate that Indonesia–Türkiye defense industry cooperation was implemented through an institutional framework combining a formal legal agreement and a bilateral coordination mechanism. While the legal framework remained unchanged throughout the cooperation period, the implementation of institutional coordination experienced adjustments in response to the COVID-19 pandemic and administrative constraints affecting bilateral meetings.

**Implementation of the Harimau Medium Tank Joint Development Program**

The findings indicate that the Harimau Medium Tank program represented a shift from conventional defense procurement toward joint development emphasizing technology

transfer and domestic industrial participation. Interview participants explained that PT Pindad was selected as Indonesia's industrial partner because it had previously developed basic competencies in armored vehicle manufacturing, making it capable of participating in collaborative production with FNSS.

The interview findings further reveal that the development of the Harimau Medium Tank was adapted to Indonesia's operational requirements. Rather than adopting the heavier Main Battle Tank (MBT) platform, both countries agreed to develop a medium-weight tank that was considered more suitable for Indonesia's geographical conditions and operational environment. Analysis of interview data identified different levels of technological capability acquired through the joint development program.

**Table 1.** Technological Capabilities Acquired through the Harimau Medium Tank Joint Development Program

| Technology Component | Current Capability of PT Pindad | Empirical Finding |
|---|---|---|
| Armored hull structure | Domestic manufacturing capability | Successfully mastered through joint development |
| Track system | Domestic manufacturing capability | Successfully mastered through joint development |
| 12.7 mm Remote Control Weapon System (RCWS) integration | Domestic integration capability | Successfully integrated by PT Pindad |
| Combustion engine | Limited domestic capability | Still dependent on foreign partner |
| 105 mm gun barrel metallurgy | Limited domestic capability | Core technology not yet mastered |
| Turret mechanism | Limited domestic capability | Still dependent on foreign partner |
| Thermal sensor system | Limited domestic capability | Technology remains externally sourced |

**Source:** Developed by the author based on interview findings (Participant P1, personal communication, May 20, 2026) and documentary analysis.

As summarized in Table 1, PT Pindad had developed competencies in manufacturing armored hull structures, track systems, and integrating the 12.7 mm Remote Control Weapon System (RCWS). However, several strategic technologies remained dependent on foreign partners, particularly those related to combustion engines, 105 mm gun barrel metallurgy, turret mechanisms, and thermal sensor systems.

Interview participants also identified economic scale as one of the principal challenges affecting domestic defense production. According to the participants, PT Pindad operates in a highly competitive global defense market where production volume remains

relatively limited. To support domestic industrial participation, the Indonesian government implemented the Domestic Component Level (TKDN) policy, allowing locally manufactured defense products to remain competitive despite higher production costs.

Overall, the findings demonstrate that the Harimau Medium Tank program enabled Indonesia to expand its participation in defense manufacturing while simultaneously revealing several technological and industrial capabilities that continue to require further development.

**Supply Chain Management and Operational Capability**

The findings indicate that operational sustainability constituted an important consideration during the implementation of the Harimau Medium Tank program. Interview participants explained that the maintenance and repair requirements of armored vehicles differ from those of aerospace platforms because a larger proportion of replacement components can be produced or sourced domestically.

According to the interview data, consumable components, including rubber track pads, can be manufactured locally and replaced periodically without requiring extensive dependence on foreign original equipment manufacturers (OEMs). Participants also explained that electronic subsystems incorporated into the Harimau Medium Tank were subject to fewer export restrictions than those commonly applied to military aircraft. This condition enabled domestic industries, including PT LEN, to participate in developing and integrating supporting electronic systems.

Despite these advantages, the interview findings identified several remaining operational limitations. Participants noted that the Harimau Medium Tank had not yet been fully integrated into a network-centric warfare architecture linking multiple military services. In addition, interview participants highlighted the absence of a specific national regulatory framework governing the long-term availability of logistics and spare parts for land defense systems.

Overall, the findings indicate that the Harimau Medium Tank program has strengthened several aspects of domestic operational capability, particularly in maintenance and selected supporting technologies, while challenges remain in systems integration and long-term logistics management.

**Defense Industrial Ecosystem and Human Resource Capacity**

The findings indicate that the effectiveness of Indonesia–Türkiye defense industrial cooperation was influenced not only by technology transfer but also by the capacity of the domestic defense industrial ecosystem and the availability of qualified human resources. Interview participants consistently emphasized that the absorption of transferred technology depended on the readiness of supporting industries and technical personnel involved in the Harimau Medium Tank program.

According to the interview data, Türkiye possesses a well-established defense industrial ecosystem supported by approximately 500 domestic suppliers, whereas Indonesia continues to face limitations in the availability of specialized supporting industries. Participants explained that these differences affected the capacity of domestic industries to support large-scale defense manufacturing and technology absorption during the implementation of joint development activities.

The findings further reveal that PT Pindad, as a state-owned enterprise, operates under commercial considerations while simultaneously carrying out strategic national responsibilities. Interview participants explained that this dual role influences investment decisions, particularly those related to research facilities and advanced manufacturing infrastructure. To strengthen domestic industrial participation, the Ministry of Defense has initiated a mapping program involving approximately 11,000 manufacturing industries that have the potential to supply components for the national defense industry. According to the participants, supporting regulations are being prepared to facilitate greater participation of these domestic industries within the defense supply chain.

Interview findings also demonstrate that diplomatic representatives contributed to facilitating bilateral industrial cooperation. Participants explained that Indonesian ambassadors and defense attachés assisted PT Pindad in resolving coordination and communication issues with Turkish counterparts during project implementation, thereby supporting the continuity of bilateral cooperation.

Finally, the interview participants highlighted the importance of human resource development for sustaining the long-term implementation of defense industrial cooperation. According to the participants, the Ministry of Defense has strengthened collaboration with educational institutions, including SMA Taruna Nusantara and Universitas Pertahanan, to

prepare future engineers and defense technology specialists capable of supporting the continued development of Indonesia's defense industry.

Overall, the findings indicate that the successful implementation of Indonesia–Türkiye defense industrial cooperation depends on the interaction between industrial capability, institutional support, and the availability of competent human resources to sustain technology absorption and domestic defense production.

## DISCUSSION

The findings indicate that Indonesia–Türkiye defense industrial cooperation represents more than a bilateral defense procurement arrangement; it reflects Indonesia's broader strategy to strengthen national defense capability through domestic industrial development. The experience of arms embargoes encouraged Indonesia to reduce strategic dependence on traditional defense suppliers and to prioritize cooperation that emphasizes technology transfer, joint development, and industrial participation. This finding supports the Neo-Realist perspective that states operating in an anarchic international system seek to enhance their own capabilities through self-help and internal balancing rather than relying on external guarantees of security (Suminar et al., 2025; Waltz, 1979). Unlike previous studies that primarily describe Indonesia–Türkiye defense cooperation as a form of bilateral partnership (Elisabeth et al., 2021), this study demonstrates that the partnership also functions as an instrument for gradually strengthening Indonesia's defense industrial autonomy through capability development.

The findings further suggest that Indonesia's decision to cooperate with Türkiye reflects a pragmatic approach to defense diplomacy. Rather than focusing solely on acquiring military equipment, Indonesia selected a partner willing to undertake joint development and technology transfer while maintaining a relationship based on equality and mutual benefit. This strategy is consistent with the concept of hedging, whereby Indonesia diversifies its strategic partnerships without becoming dependent on a single supplier or military bloc. In this regard, cooperation with Türkiye complements Indonesia's free and active foreign policy while supporting the long-term objective of strengthening domestic defense capabilities. These findings reinforce previous studies highlighting Türkiye's role as an alternative strategic partner, while extending the literature by demonstrating how defense diplomacy contributes directly to industrial capability development through institutional mechanisms

such as the Defense Cooperation Agreement (DCA) and the Defense Industry Cooperation Meeting (DICM) (Darmawan et al., 2025; Haura et al., 2025).

Although the Harimau Medium Tank program demonstrates the potential of joint development, the findings also reveal that strategic autonomy remains an incremental rather than immediate outcome. PT Pindad has strengthened its capability in several manufacturing and systems integration processes; however, dependence on foreign partners persists in highly specialized technologies, including propulsion systems, advanced metallurgy, turret mechanisms, and thermal sensing. These findings indicate that technology transfer should be understood as a continuous learning process requiring sustained investment in research, industrial infrastructure, and technological innovation rather than as the simple transfer of production knowledge. This interpretation is consistent with Ariputro et al. (2024), who argue that collaborative defense production primarily facilitates long-term capability accumulation instead of complete technological independence.

The study also demonstrates that the success of defense industrial cooperation depends on factors extending beyond bilateral agreements. The limited capacity of Indonesia's supporting industrial ecosystem, the relatively small number of specialized domestic suppliers, and the need for highly skilled human resources continue to constrain the absorption of transferred technologies. Consequently, strengthening defense industries requires an integrated policy that combines industrial development, institutional support, and human capital investment. The government's initiatives to expand domestic industrial participation and strengthen defense-oriented education therefore represent important complementary measures for sustaining technology absorption and future innovation. These findings suggest that internal balancing is not achieved solely through defense acquisition or technology transfer but also through the development of national industrial and institutional capacity capable of sustaining defense production over the long term.

Overall, this study contributes to the literature by demonstrating that defense diplomacy, defense industrial cooperation, and internal balancing are mutually reinforcing rather than independent processes. The Indonesia–Türkiye partnership illustrates how bilateral defense cooperation can simultaneously strengthen industrial capability, facilitate technological learning, and reduce strategic dependence on external suppliers. Accordingly, the findings extend the application of Neo-Realism by showing that, for middle powers such as Indonesia, internal balancing is increasingly pursued through collaborative defense

industrial development rather than through military modernization alone. This perspective highlights defense industrial cooperation as an important pathway toward strategic autonomy while recognizing that its effectiveness ultimately depends on the continuity of institutional commitment, technological upgrading, and long-term investment in domestic industrial capabilities.

## CONCLUSION

This study examined how defense diplomacy contributes to strengthening Indonesia's defense industrial autonomy through defense industrial cooperation with Türkiye. The findings indicate that the Indonesia–Türkiye partnership extends beyond conventional defense procurement by integrating technology transfer, joint development, and institutional cooperation to enhance domestic industrial capability. From the perspective of Neo-Realism, this cooperation reflects Indonesia's internal balancing strategy in response to the strategic vulnerabilities arising from dependence on foreign defense suppliers. Although the Harimau Medium Tank program has strengthened Indonesia's manufacturing and systems integration capabilities, the findings also demonstrate that strategic autonomy remains a gradual process because several critical technologies and supporting industrial capacities continue to rely on external partners.

This study contributes to the literature by demonstrating that defense diplomacy, defense industrial cooperation, and internal balancing should be understood as interconnected processes rather than separate policy instruments. While previous studies have primarily discussed Indonesia–Türkiye cooperation from diplomatic or industrial perspectives, this research integrates both dimensions within the Neo-Realist framework to explain how bilateral defense cooperation can support the long-term development of domestic defense capabilities. Practically, the findings highlight that achieving defense industrial autonomy requires not only technology transfer agreements but also sustained institutional commitment, industrial ecosystem development, and investment in human resources to strengthen national technological capacity.

Future research should examine defense industrial cooperation across different strategic partners or defense sectors to assess whether similar patterns of capability development and technology transfer are observed in other forms of international collaboration. Comparative studies involving additional countries or defense industries

would provide a broader understanding of how different institutional arrangements, industrial ecosystems, and technology transfer mechanisms influence the effectiveness of internal balancing strategies. Such research would further enrich the study of defense diplomacy and defense industrial development, particularly for middle powers seeking greater strategic autonomy within an increasingly complex international security environment.

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