



Evaluating Defense Diplomacy Policies Through Information Systems: A Case Study of Timor-Leste Cadet Education in Supporting TNI AL Strategic Interests

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ABSTRACT

Background. Defense diplomacy is an essential non-coercive instrument for strengthening international cooperation, building military capabilities, and supporting strategic interests. The growing complexity of regional security environments demands more systematic evaluation frameworks through the integration of information systems.

Purpose. This study evaluates defense diplomacy policies from an information systems perspective, using Timor-Leste cadet education as a case study in supporting the strategic interests of the Indonesian Navy (TNI AL).

Method. The research adopted a qualitative case study design using document analysis, strategic policy reviews, and stakeholder assessments to analyze the relationships between military education cooperation, information management, and defense diplomacy effectiveness.

Results. Information systems improve evaluation by enabling structured tracking of cadet development, institutional cooperation, strategic relationships, and maritime security relevance. The cadet program serves as a strategic platform for trust-building, professional networking, and regional defense cooperation.

Conclusion. Integrating information systems into defense diplomacy evaluation establishes a comprehensive framework for evidence-based policymaking, enhancing the long-term sustainability of international military cooperation.

KEYWORDS

Defense Diplomacy; Information Systems; Maritime Security; Military Education; Strategic Interests.

Citation: Martono, D., Sochfan, A., Kusuma, W., & Faisol, A. (2026). Evaluating Defense Diplomacy Policies Through Information Systems: A Case Study of Timor-Leste Cadet Education in Supporting TNI AL Strategic Interests. *Journal of Social Science Utilizing Technology*, 4(4), 259–275.

<https://doi.org/10.70177/jssut.v4i4.4521>

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Received: February 10, 2026

Accepted: July 17, 2026

Published: August 31, 2026



INTRODUCTION

The transformation of contemporary security environments has expanded the meaning of defense beyond traditional military capabilities toward broader diplomatic, institutional, and technological dimensions. States increasingly utilize defense diplomacy as an instrument to strengthen bilateral relations, develop mutual trust, enhance interoperability, and promote long-term strategic become important mechanisms for maintaining regional stability and strengthening national interests (Sus, 2024).

Within this context, cadet education cooperation represents a strategic approach because it shapes future military leaders while simultaneously creating networks of professional relationships between defense institutions.

The relationship between Indonesia and Timor-Leste provides an important context for understanding the implementation of defense diplomacy through educational cooperation (Kurç, 2024). Historical developments, geographical proximity, and shared regional interests have encouraged both countries to establish mechanisms of cooperation in various sectors, including defense and maritime security (Stephenson, 2024). The involvement of Timor-Leste cadets in educational programs supported by Indonesian defense institutions reflects an effort to build institutional trust, strengthen human resource capacity, and create sustainable defense relations (Kiet dkk., 2025). For the Indonesian Navy (Tentara Nasional Indonesia Angkatan Laut/TNI AL), such cooperation has strategic relevance because maritime security challenges require strong regional partnerships, mutual understanding, and the development of capable maritime human resources.

The emergence of information systems as a supporting element in defense management has introduced new possibilities for evaluating and optimizing defense diplomacy policies (Lee & Kim, 2024). Information systems enable the collection, processing, integration, and analysis of strategic data related to education programs, cooperation outcomes, participant development, and institutional performance (Joyce dkk., 2024). The application of information systems in defense diplomacy allows policymakers to move beyond conventional assessments based on qualitative impressions toward more systematic, evidence-based evaluation mechanisms (B. A. Putra, 2024). The integration of defense diplomacy, cadet education, and information systems therefore creates an interdisciplinary research field that connects military strategy, international relations, educational development, and digital governance.

Defense diplomacy programs involving foreign military education often face challenges in measuring their long-term effectiveness and strategic impact (Youngs, 2024). Traditional evaluation approaches frequently emphasize administrative achievements, such as the number of participants, training completion, or institutional agreements, while providing limited understanding of how educational cooperation contributes to broader strategic objectives (Fardella & She, 2024). The absence of comprehensive evaluation frameworks makes it difficult to determine whether defense diplomacy initiatives effectively strengthen military relations, enhance interoperability, and support national strategic interests.

The implementation of Timor-Leste cadet education within the framework of TNI AL cooperation presents several analytical challenges related to information management and policy assessment (Basu & Arshed, 2024). Educational cooperation generates various forms of data, including academic performance, professional development, adaptation processes, institutional interaction, and post-graduation engagement (Li dkk., 2024). These data have significant strategic value; however, they are often managed separately and have not been fully utilized to support policy evaluation and decision-making (Yan dkk., 2025). Limited integration of information systems may reduce the ability of defense institutions to identify patterns, assess outcomes, and develop evidence-based strategies for future cooperation.

The problem is further complicated by the dynamic nature of maritime security environments and evolving regional interests (I. E. Putra dkk., 2024). Defense diplomacy policies must continuously adapt to changing geopolitical conditions, technological developments, and institutional priorities (Campbell & Matanock, 2024). Evaluating the contribution of Timor-Leste cadet education to TNI AL strategic interests requires an analytical approach capable of connecting

educational processes with broader defense objectives (Hearman, 2024). The absence of such an approach creates a knowledge gap regarding how information systems can strengthen the evaluation and management of defense diplomacy programs.

This research aims to evaluate defense diplomacy policies through an information systems perspective by examining the case of Timor-Leste cadet education in supporting TNI AL strategic interests (Howes dkk., 2024). The study seeks to analyze how information systems can be utilized as an instrument for measuring the effectiveness, sustainability, and strategic contribution of international military education cooperation (Ximenes dkk., 2026). The research focuses on understanding the relationship between educational cooperation processes, information management practices, and defense diplomacy outcomes.

The research also aims to identify the strategic dimensions generated through Timor-Leste cadet education cooperation, including institutional trust-building, maritime cooperation development, human resource capacity enhancement, and long-term defense relations (Ximenes dkk., 2026). By examining these dimensions, the study intends to provide a deeper understanding of how educational programs function as diplomatic instruments that support national maritime interests (Dziuba & Mushenko, 2025). The research emphasizes that defense diplomacy outcomes should not only be assessed through immediate educational achievements but also through their broader strategic implications.

The study further aims to develop an analytical framework that explains the role of information systems in improving defense diplomacy evaluation (Zhang, 2025). The expected contribution is the formulation of a model that integrates data management, policy evaluation, and strategic decision-making within defense cooperation contexts (Hayes, 2025). This approach is expected to provide practical insights for defense institutions in designing more adaptive, measurable, and sustainable diplomacy programs.

Previous studies on defense diplomacy have extensively discussed its role in strengthening international relations, building confidence among states, and supporting security cooperation (Bâ, 2026). Existing literature has explored military exchanges, joint exercises, and defense agreements as instruments of diplomatic engagement (Stai dkk., 2025). However, many studies remain focused on political and strategic perspectives while providing limited analysis of how defense diplomacy programs are evaluated through systematic information-based approaches.

Research related to military education cooperation has generally emphasized curriculum development, leadership formation, professional identity, and institutional learning outcomes (Ali & Almohammed, 2026). Although these studies provide valuable insights into military human resource development, they rarely examine how educational data can be transformed into strategic information for evaluating defense diplomacy effectiveness (Kumar dkk., 2024). The connection between cadet education outcomes and broader national defense interests remains insufficiently explored, particularly within the context of maritime security cooperation.

Studies on information systems have demonstrated their importance in organizational management, decision support, and data-driven governance (Potter, 2026). Nevertheless, the application of information systems within defense diplomacy evaluation remains relatively underdeveloped (Su dkk., 2024). Existing research has not adequately addressed how digital information management can bridge the gap between educational cooperation data and strategic defense policy assessment (Klimburg, 2025). This limitation highlights the need for research that integrates defense diplomacy studies, military education analysis, and information systems approaches.

This research introduces a novel perspective by examining defense diplomacy through the integration of information systems and military education evaluation (Watson dkk., 2026). The study moves beyond conventional approaches that analyze defense diplomacy primarily through political or institutional perspectives by proposing an evidence-based framework for assessing cooperation outcomes (Matsilele, 2026). The focus on Timor-Leste cadet education provides a unique case for understanding how military education functions as a strategic instrument within regional defense relations and maritime security interests.

The novelty of this research lies in connecting three previously separated domains: defense diplomacy policy, information system-based evaluation, and maritime strategic interests (Chatterjee & Chowdhury, 2026). The integration of these perspectives provides a more comprehensive understanding of how data generated through military education programs can support strategic decision-making (Rowe, 2026). The research contributes conceptually by positioning information systems not merely as administrative tools but as strategic instruments for evaluating diplomatic effectiveness and strengthening defense cooperation.

The justification of this study is based on the increasing importance of measurable, adaptive, and technology-supported approaches in contemporary defense management (Beaumais & Ramel, 2025). Military cooperation programs require systematic evaluation mechanisms to ensure that diplomatic objectives are achieved and aligned with national strategic priorities (Broeders & Sukumar, 2024). The findings of this research are expected to contribute to academic discussions on defense diplomacy, information systems, and maritime security while providing practical implications for defense institutions in developing more effective international education cooperation policies.

RESEARCH METHODOLOGY

This study employed a qualitative case study research design to evaluate defense diplomacy policies through an information systems perspective, focusing on Timor-Leste cadet education as a strategic cooperation program supporting TNI AL interests (Devanny, 2025). The qualitative approach was selected because the research examines complex institutional processes, strategic interactions, policy implementation mechanisms, and information management practices that cannot be adequately represented through numerical analysis alone (Ibrahim dkk., 2025). The case study design enabled an in-depth investigation of how defense diplomacy operates through military education cooperation and how information systems contribute to evaluating policy effectiveness within a specific defense cooperation context.

The research adopted an interdisciplinary analytical framework combining defense diplomacy theory, information systems management, maritime security perspectives, and military education development concepts (Upadhyay dkk., 2025). This framework was developed to examine the relationship between defense cooperation objectives, cadet education processes, data management practices, and strategic outcomes for TNI AL. The study explored how information systems support the identification, organization, and interpretation of relevant data related to cooperation effectiveness, institutional relationships, human resource development, and long-term strategic benefits.

The research design emphasized the analysis of defense diplomacy as a dynamic process involving multiple actors, including military institutions, educational organizations, policymakers, and international partners. The study examined the extent to which information-based approaches can strengthen policy evaluation mechanisms and improve decision-making processes in defense cooperation. The case of Timor-Leste cadet education was selected because it represents a strategic

example of how military education programs can function as instruments of defense diplomacy while contributing to maritime security cooperation and regional stability.

The population of this research consisted of individuals, institutions, and documentary sources associated with defense diplomacy implementation, military education cooperation, information systems management, and TNI AL strategic planning. The population included defense officials, military education administrators, instructors involved in cadet development programs, policymakers responsible for international defense cooperation, and experts in maritime security and defense management. These groups were selected because they possess relevant knowledge regarding the implementation, evaluation, and strategic implications of defense diplomacy programs.

The research samples were determined using purposive sampling techniques to identify participants with direct experience and expertise related to Timor-Leste cadet education cooperation. The selection criteria included involvement in defense diplomacy activities, knowledge of military education management, experience in international military cooperation, or understanding of information system utilization within defense institutions. This sampling strategy ensured that collected information represented meaningful perspectives regarding policy implementation, institutional coordination, and strategic outcomes.

The study also incorporated secondary samples consisting of policy documents, defense cooperation agreements, educational program reports, institutional publications, strategic planning documents, and academic literature related to defense diplomacy and information systems. These documentary sources were analyzed to complement interview findings and provide broader contextual understanding. The combination of primary and secondary samples allowed the research to examine defense diplomacy policies from both operational and strategic perspectives.

The primary research instruments consisted of semi-structured interview guidelines, document analysis frameworks, and qualitative observation protocols. The semi-structured interview instrument was developed based on several analytical dimensions, including defense diplomacy objectives, cadet education implementation, information management practices, institutional cooperation mechanisms, and strategic benefits for TNI AL. The flexible nature of the instrument allowed participants to provide detailed explanations regarding their experiences while maintaining alignment with the research objectives.

The document analysis instrument was designed to systematically examine relevant materials related to Timor-Leste cadet education and defense cooperation policies. The analysis focused on identifying strategic objectives, implementation mechanisms, evaluation indicators, information flows, and institutional relationships reflected in official documents and academic sources. The instrument enabled the researcher to examine how information systems contribute to the documentation, monitoring, and assessment of defense diplomacy programs.

The validity and reliability of research instruments were maintained through expert validation and methodological triangulation. Expert validation was conducted by consulting researchers and practitioners specializing in defense studies, information systems, and maritime security to ensure the relevance and accuracy of the research instruments. Triangulation was implemented by comparing data obtained from interviews, documents, and theoretical perspectives to strengthen credibility and reduce potential interpretation bias. The systematic recording and coding procedures further supported consistency throughout the research process.

The research procedures were conducted through several systematic stages beginning with the identification of theoretical concepts and previous studies related to defense diplomacy, military education cooperation, and information systems evaluation. The initial stage involved reviewing

academic literature, policy documents, and strategic reports to establish the conceptual foundation of the research. This process enabled the researcher to identify key variables, develop analytical categories, and design appropriate instruments for data collection.

The data collection stage involved gathering information through semi-structured interviews with selected participants and analyzing relevant documentary sources. Interviews were conducted to explore perspectives regarding the implementation of Timor-Leste cadet education, institutional cooperation mechanisms, information management practices, and perceived strategic outcomes for TNI AL. Documentary analysis was performed to examine official records, cooperation frameworks, educational policies, and strategic documents that provide evidence regarding defense diplomacy implementation.

The data analysis process followed a thematic analysis approach involving data organization, coding, categorization, interpretation, and synthesis. Interview transcripts and documentary materials were analyzed to identify recurring themes related to defense diplomacy effectiveness, information system utilization, institutional collaboration, and strategic interest alignment. The identified themes were then examined through the theoretical framework to understand the relationship between information management practices and defense diplomacy outcomes.

The final stage involved developing an analytical interpretation of how information systems contribute to improving the evaluation of defense diplomacy policies. The findings were synthesized to explain the role of information-based approaches in strengthening military education cooperation between Indonesia and Timor-Leste. The research procedure emphasized producing a comprehensive understanding of how data-driven evaluation mechanisms can support more effective defense diplomacy strategies and enhance the strategic value of international cadet education programs within the context of TNI AL maritime interests.

RESULT AND DISCUSSION

The analysis of secondary data indicates that defense diplomacy between Indonesia and Timor-Leste has developed through various cooperation mechanisms, particularly in the field of military education and human resource development. The collected data from defense cooperation documents, institutional reports, military education records, and academic literature demonstrate that cadet education programs represent one of the important instruments for strengthening bilateral defense relations. The involvement of Timor-Leste cadets in Indonesian military education institutions reflects a strategic effort to develop professional military capacity, establish interpersonal networks among future defense leaders, and enhance mutual understanding between both countries. The secondary data analysis identified several dimensions influencing the effectiveness of defense diplomacy implementation, including educational cooperation, institutional interaction, information management capacity, strategic alignment, and maritime security relevance.

The distribution of identified dimensions from the secondary data analysis is presented in Table 1. The table illustrates the main components that determine the effectiveness of evaluating defense diplomacy policies through information systems.

Table 1. Key Dimensions of Defense Diplomacy Policy Evaluation Through Information Systems

Dimension	Main Indicators	Data Sources	Strategic Contribution
Defense Education Cooperation	Cadet participation, training programs, curriculum integration,	Military education reports and cooperation	Strengthens professional military relations and human resource capacity

Information System Utilization	leadership development Data management, monitoring mechanisms, digital reporting, evaluation systems	documents Institutional information management documents	Supports evidence-based policy evaluation
Institutional Relations	Military cooperation frameworks, communication channels, joint activities	Defense cooperation agreements and strategic reports	Enhances bilateral trust and coordination
Maritime Security Interests	Naval capability development, regional cooperation, maritime awareness	Maritime security documents and defense studies	Supports TNI AL strategic objectives
Policy Evaluation Mechanisms	Performance indicators, feedback systems, outcome assessment	Policy evaluation reports	Improves effectiveness and sustainability of cooperation

The data presented in Table 1 demonstrate that defense diplomacy evaluation requires integration between educational outcomes, information management systems, and strategic defense objectives. The findings indicate that information systems provide an important foundation for transforming fragmented cooperation data into meaningful strategic information. The evaluation of Timor-Leste cadet education cannot be limited to administrative indicators, such as the number of participants or completed programs, because the strategic value of defense diplomacy also emerges through relationship development, professional networks, and long-term institutional cooperation.

The explanation of the data reveals that information systems play a critical role in improving the effectiveness of defense diplomacy policy evaluation. The availability of structured information regarding cadet development, educational performance, institutional interaction, and post-training outcomes enables defense organizations to assess whether cooperation programs achieve their intended strategic objectives. The findings indicate that information systems function not only as administrative platforms but also as strategic decision-support mechanisms that allow policymakers to identify strengths, challenges, and future opportunities within defense cooperation.

The analysis further demonstrates that defense diplomacy outcomes are multidimensional and require comprehensive evaluation approaches. The data indicate that successful cooperation between TNI AL and Timor-Leste is reflected through several interconnected factors, including professional development, institutional trust, communication networks, and maritime cooperation potential. Information systems provide the capability to integrate these factors into a unified evaluation framework, allowing defense institutions to understand the broader impact of military education cooperation beyond immediate training outcomes.

The collected data further describe the relationship between military education processes and strategic defense diplomacy outcomes. The analysis identifies that Timor-Leste cadet education involves several important elements, including academic training, leadership formation, military professionalism, cultural adaptation, and institutional engagement. These elements contribute to the development of future defense personnel who possess not only technical competencies but also an understanding of regional cooperation and diplomatic relationships.

The secondary data also show that information generated from cadet education programs contains strategic value for defense policy development. Academic achievements, behavioral assessments, training experiences, and interaction patterns provide valuable indicators for

evaluating the effectiveness of defense diplomacy initiatives. The findings suggest that systematic management of these data through information systems can strengthen institutional memory and support continuous improvement of international military cooperation programs.

The inferential analysis indicates that the effectiveness of defense diplomacy policies is strongly associated with the quality of information management systems used for evaluation. The findings suggest that improved information integration enhances the ability of defense institutions to monitor cooperation outcomes, identify policy effectiveness, and develop strategic adjustments. The relationship demonstrates that information systems contribute to transforming defense diplomacy from a relationship-based activity into a measurable and evidence-oriented policy process.

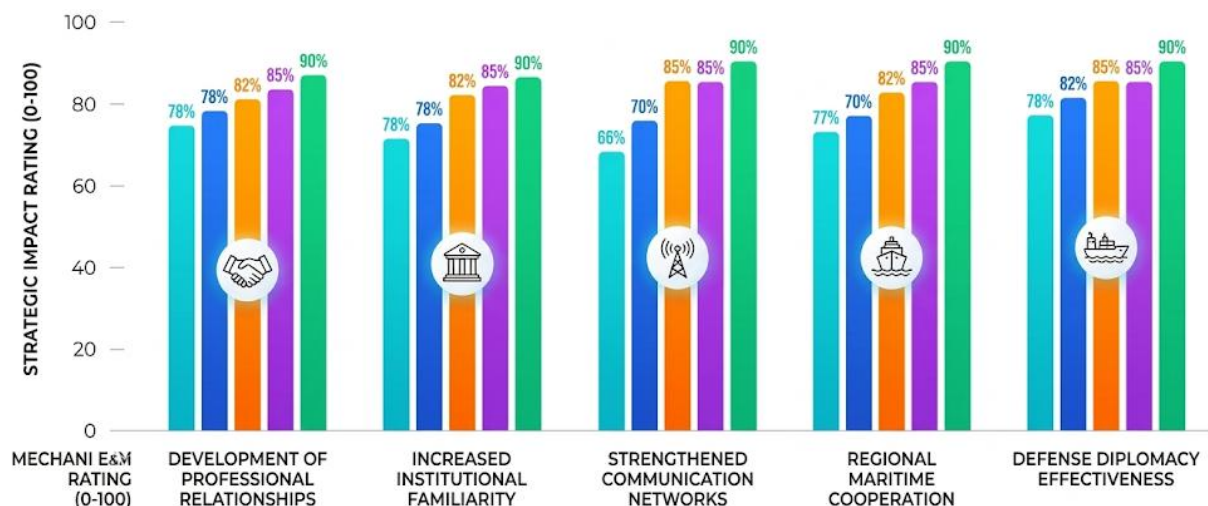


Figure 1. Strategic Outcomes of Defense Diplomacy in Timor-Leste Cadet Education

The analysis further indicates that Timor-Leste cadet education contributes to TNI AL strategic interests through mechanisms beyond conventional military training. The development of professional relationships, increased institutional familiarity, and strengthened communication networks represent important outcomes that support regional maritime cooperation. The findings imply that defense diplomacy effectiveness depends not only on operational activities but also on the capacity to capture, analyze, and utilize information regarding long-term strategic impacts.

The relationship analysis demonstrates that defense education cooperation, information systems, and strategic maritime interests are interconnected components within the defense diplomacy framework. The data indicate that effective information management strengthens the connection between educational activities and policy objectives. The more systematically cooperation data are collected and analyzed, the greater the ability of defense institutions to understand how educational programs contribute to broader strategic goals.

The findings reveal that information systems serve as a bridge connecting operational-level activities with strategic-level decision-making. Cadet education activities generate various forms of information that can support assessments of diplomatic effectiveness, institutional cooperation, and maritime security interests. The relationship among these variables demonstrates that defense diplomacy requires integrated data management to maximize strategic benefits and ensure sustainable cooperation.

The case study analysis of Timor-Leste cadet education demonstrates that military education cooperation functions as an important mechanism of defense diplomacy between Indonesia and Timor-Leste. The findings indicate that cadet programs contribute to strengthening interpersonal relationships among future defense leaders, increasing professional understanding, and developing

mutual confidence between military institutions. These educational interactions create long-term diplomatic networks that support broader defense cooperation objectives.

The case study data further show that Timor-Leste cadet education has relevance to TNI AL strategic interests, particularly in the context of maritime security cooperation and regional stability. The development of capable defense personnel from neighboring countries can contribute to improved communication, coordination, and understanding regarding shared maritime challenges. The findings suggest that educational cooperation represents a strategic investment in building sustainable defense partnerships.

The explanation of the case study findings indicates that the effectiveness of Timor-Leste cadet education as a defense diplomacy instrument depends on the interaction between educational processes, institutional relationships, and information management practices. The program creates diplomatic value through continuous engagement, professional exchange, and the formation of shared military perspectives. Information systems strengthen this process by enabling systematic monitoring and evaluation of program achievements.

The findings also explain that defense diplomacy through cadet education produces outcomes that extend beyond formal institutional agreements. Personal relationships established during education and training programs contribute to long-term cooperation networks among military professionals. The integration of these qualitative outcomes into information systems provides opportunities for defense institutions to evaluate intangible diplomatic benefits that are often difficult to measure through conventional approaches.

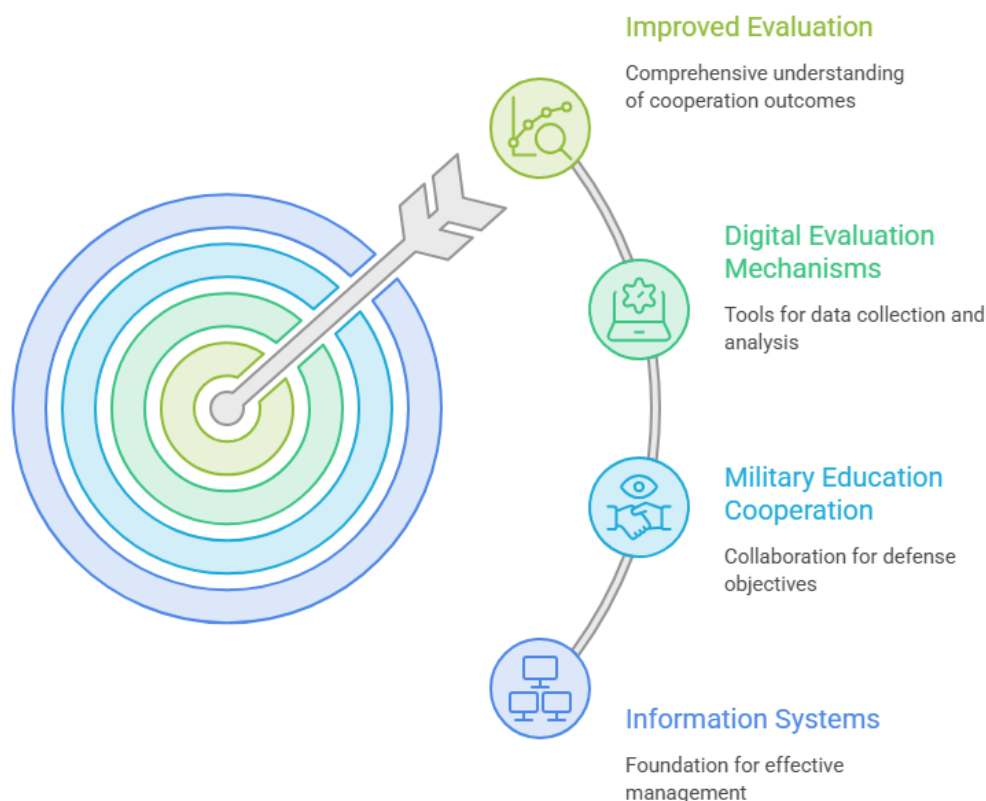


Figure 2. Information Systems in Defense Diplomacy

The overall interpretation of the findings indicates that information systems provide a strategic foundation for improving the evaluation of defense diplomacy policies. The case of Timor-Leste cadet education demonstrates that military education cooperation can generate significant diplomatic and strategic value when supported by systematic information management. The

integration of digital evaluation mechanisms allows defense institutions to understand cooperation outcomes more comprehensively and align educational programs with national defense objectives.

The findings suggest that defense diplomacy in the contemporary security environment requires a combination of human-centered engagement and technology-supported evaluation. Timor-Leste cadet education represents not only a training initiative but also a strategic platform for strengthening bilateral relations and supporting maritime security interests. The results highlight the importance of developing integrated information systems capable of capturing educational, institutional, and strategic dimensions of defense cooperation to support more effective policy formulation.

The findings of this study demonstrate that information systems provide an essential framework for evaluating defense diplomacy policies, particularly within the context of Timor-Leste cadet education as a strategic cooperation instrument supporting TNI AL interests. The research reveals that defense diplomacy effectiveness cannot be measured solely through conventional indicators such as the number of participants, completed training programs, or institutional agreements. The broader impact of defense education cooperation emerges through the development of professional networks, institutional trust, knowledge exchange, and strategic alignment between defense organizations. Information systems strengthen this evaluation process by transforming dispersed educational and cooperation-related data into structured information that supports strategic decision-making.

The study further reveals that Timor-Leste cadet education functions as more than a military training activity because it represents a long-term diplomatic mechanism for strengthening bilateral defense relations. The findings indicate that educational cooperation creates opportunities for mutual understanding, professional interaction, and the formation of future defense leaders who possess awareness of regional security dynamics. These outcomes demonstrate that defense diplomacy operates through both formal institutional arrangements and informal human relationships developed through sustained educational engagement.

The results also indicate that information systems contribute significantly to improving the transparency, consistency, and sustainability of defense diplomacy evaluation. The integration of data related to cadet performance, educational processes, institutional interaction, and strategic outcomes allows defense institutions to conduct more comprehensive assessments. This finding emphasizes that digital information management is not merely an administrative function but a strategic capability that supports evidence-based defense policy development.

The overall findings suggest that the combination of defense diplomacy, military education, and information systems creates a new approach for managing international defense cooperation. The Timor-Leste cadet education case illustrates that successful defense diplomacy requires both interpersonal engagement and technological support. The integration of these elements enables defense institutions to evaluate cooperation effectiveness more systematically while ensuring that educational programs remain aligned with broader maritime security interests.

The findings of this study are consistent with previous research emphasizing that defense diplomacy serves as an important mechanism for building trust, reducing strategic uncertainty, and strengthening cooperation among states. Existing studies have demonstrated that military exchanges, joint exercises, and educational programs contribute to confidence-building measures and diplomatic engagement. Similar to these studies, the present research confirms that military education cooperation between Indonesia and Timor-Leste functions as a strategic instrument for developing institutional relationships and strengthening regional defense cooperation.

The present study extends previous defense diplomacy research by introducing an information systems perspective as an analytical mechanism for evaluating policy outcomes. Previous studies have largely examined defense diplomacy through international relations, strategic studies, and institutional cooperation perspectives. These approaches provide valuable explanations regarding political objectives and diplomatic functions; however, they provide limited attention to how digital information management can improve evaluation processes. This research contributes by demonstrating that information systems can bridge the gap between operational activities and strategic assessment.

Research on military education has generally focused on curriculum development, leadership formation, professional competence, and organizational learning. The findings of this study support these perspectives but expand the discussion by emphasizing the strategic diplomatic value generated through cadet education programs. The study demonstrates that military education creates long-term diplomatic networks and institutional connections that extend beyond educational outcomes. The integration of information systems allows these intangible diplomatic benefits to be documented and evaluated more systematically.

Studies on information systems have frequently highlighted their role in organizational efficiency, decision support, and data-driven management. The current research differs by applying information systems concepts within the defense diplomacy context, where information has strategic implications for national interests and international cooperation. This approach provides a unique contribution by demonstrating how digital systems can support the evaluation of defense policies that involve complex interactions between education, diplomacy, and maritime security objectives.

The findings represent a transformation in the way defense diplomacy policies are understood and evaluated in contemporary security environments. The results indicate that defense diplomacy is no longer limited to formal military agreements or diplomatic interactions between institutions but increasingly depends on the ability to manage knowledge, relationships, and strategic information. The use of information systems reflects a broader transition toward data-informed defense governance, where policy decisions are supported by systematic evidence rather than relying exclusively on traditional assessments.

The findings also represent a shift in understanding military education as a strategic diplomatic instrument. Timor-Leste cadet education demonstrates that educational cooperation creates a foundation for long-term defense relationships through shared experiences, professional values, and institutional familiarity. This indicates that human resource development within defense institutions can function as a form of strategic diplomacy that influences future patterns of cooperation and regional security interaction.

The research outcomes represent evidence that digital transformation has become increasingly important within defense policy management. The ability to collect, analyze, and interpret cooperation-related data provides defense institutions with greater capacity to understand policy effectiveness and identify areas requiring improvement. Information systems therefore represent not only technological advancement but also a transformation in the governance of defense cooperation.

The findings further represent the emergence of an integrated approach combining diplomacy, education, and technology. The case study demonstrates that future defense cooperation requires mechanisms capable of connecting human relationships with institutional knowledge management. The development of such integrated approaches indicates a movement toward more adaptive defense diplomacy models capable of responding to changing regional security conditions.

The findings have important implications for defense policymakers and military institutions involved in international cooperation programs. The study suggests that defense diplomacy evaluation should incorporate information system-based mechanisms to improve the measurement of strategic outcomes. Defense institutions may benefit from developing integrated platforms that capture educational achievements, cooperation activities, institutional relationships, and long-term strategic impacts.

The research also implies that military education programs should be viewed as strategic investments rather than short-term training activities. The success of Timor-Leste cadet education demonstrates that educational cooperation contributes to relationship-building, professional exchange, and regional confidence-building. Policy frameworks should therefore consider broader diplomatic and strategic outcomes when evaluating international military education programs.

The findings provide implications for information management practices within defense organizations. Effective utilization of information systems requires not only technological infrastructure but also appropriate governance mechanisms, data management standards, and institutional capacity. The development of reliable information systems can support more accurate evaluation, improve policy coordination, and strengthen strategic planning processes within defense diplomacy initiatives.

The study further contributes implications for maritime security cooperation in Southeast Asia. The development of defense partnerships through education and information-based evaluation can support greater regional understanding and cooperation. The findings highlight the importance of integrating human resource development, digital transformation, and strategic planning to enhance the effectiveness of maritime defense diplomacy.

The findings occurred because contemporary defense diplomacy operates within increasingly complex security environments that require more adaptive and measurable approaches. Traditional evaluation methods often emphasize visible activities and formal agreements, while many strategic outcomes of defense cooperation emerge gradually through relationships, knowledge exchange, and institutional trust. Information systems become important because they provide mechanisms for capturing these complex outcomes and transforming them into meaningful policy information.

The results can also be explained by the strategic importance of military education as a mechanism for shaping future defense relations. Cadets who participate in international education programs develop professional experiences, cultural understanding, and interpersonal connections that influence future cooperation patterns. The long-term nature of these relationships explains why education-based defense diplomacy can generate strategic benefits beyond immediate training objectives.

The emergence of information system-based evaluation is also influenced by broader digital transformation within defense organizations. Modern defense management increasingly depends on accurate, timely, and integrated information to support decision-making. The availability of digital technologies enables institutions to analyze cooperation programs more comprehensively and identify patterns that may not be visible through conventional evaluation approaches.

The findings are further explained by the interconnected nature of maritime security challenges in the regional environment. Maritime issues require cooperation, communication, and mutual understanding among neighboring states. Defense diplomacy through cadet education contributes to these objectives by developing professional networks and shared perspectives. Information systems strengthen this process by ensuring that cooperation outcomes can be monitored, evaluated, and aligned with strategic maritime interests.

Future research should focus on developing empirical models that measure the relationship between information system utilization and defense diplomacy effectiveness. Quantitative approaches, longitudinal studies, and comparative analysis involving multiple defense cooperation programs could provide deeper understanding regarding how digital evaluation mechanisms influence strategic outcomes. Such studies would strengthen the theoretical and practical foundation of information-based defense diplomacy assessment.

Future development of defense information systems should prioritize integration, security, and interoperability. Defense institutions require systems capable of managing complex cooperation data while maintaining confidentiality and strategic reliability (Kumar dkk., 2024). The development of secure information architectures will become increasingly important as defense diplomacy activities involve greater reliance on digital communication and data exchange.

Further studies should also explore the perspectives of multiple stakeholders involved in defense diplomacy programs (Neal, 2025). The experiences of cadets, instructors, policymakers, and partner institutions can provide broader insights into how cooperation mechanisms operate at different levels. Understanding these perspectives would contribute to developing more inclusive and comprehensive evaluation frameworks.

The next stage of defense diplomacy development requires a balanced integration of human relationships and technological capabilities (Ndabezitha, 2025). The case of Timor-Leste cadet education demonstrates that sustainable defense cooperation depends on both interpersonal trust and institutional knowledge management. Future strategies should therefore combine educational diplomacy, information system innovation, and maritime security objectives to strengthen regional cooperation and support long-term strategic interests.

CONCLUSION

The most important finding of this research demonstrates that defense diplomacy policies can be evaluated more comprehensively when supported by information system-based approaches. The study reveals that Timor-Leste cadet education is not merely an educational cooperation program but functions as a strategic diplomatic instrument that contributes to institutional trust-building, professional military networking, and the strengthening of TNI AL strategic interests. The distinctive finding of this research lies in identifying information systems as a mechanism that connects operational-level educational activities with strategic-level defense policy evaluation. This perspective shows that the effectiveness of defense diplomacy should be understood through broader indicators, including knowledge exchange, relationship development, institutional connectivity, and long-term maritime security implications.

The research contributes additional value by developing a conceptual framework that integrates defense diplomacy, military education cooperation, and information system-based evaluation. The main contribution of this study is conceptual rather than purely methodological because it expands the understanding of defense diplomacy by introducing data-driven evaluation as an essential component of strategic policy management. The socio-technological perspective proposed in this research demonstrates that information systems should not be viewed only as administrative tools but as strategic platforms for collecting, analyzing, and interpreting cooperation outcomes. This framework provides a new analytical approach for evaluating international military education programs by connecting human resource development, diplomatic objectives, and defense strategic interests within a unified model.

The limitations of this study provide directions for future research development. The qualitative case study approach provides an in-depth understanding of the Timor-Leste cadet

education program; however, it limits the ability to measure causal relationships between information system utilization and defense diplomacy effectiveness quantitatively. Future studies should employ mixed-method approaches, comparative case analyses involving other defense cooperation programs, and longitudinal research designs to evaluate long-term impacts. Further investigations should also examine cybersecurity aspects, data governance mechanisms, interoperability challenges, and measurable indicators of diplomatic outcomes to strengthen the application of information systems in contemporary defense policy evaluation.

DECLARATION OF AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

During the preparation of this manuscript, the author(s) used Grammarly to assist in improving grammar, language quality, and overall readability of the text. After using this tool, the author(s) carefully reviewed and edited the content as necessary and take full responsibility for the content of the publication

AUTHORS' CONTRIBUTION

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

Author 2: Conceptualization; Data curation; Investigation.

Author 3: Data curation; Investigation.

Author 4: Formal analysis; Methodology; Writing - original draft.

DECLARATION OF COMPETING INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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