ANALYSIS OF THE SUCCESS DETERMINANTS IN IMPLEMENTING MARITIME SECURITY STRATEGY AT INDONESIA ARCHIPELAGIC SEA LANE II

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Abstract *– The purpose of this study is to analyze the various success determinants which affects the Indonesian Navy's Second Fleet Command's in implementing its maritime security strategy. The success factors identified were: (i) tactics and procedures adapted, (ii) capabilities of weapons, (iii) capabilities of sensors, (iv) exercise, (v) command and control center, (v) operational effectiveness, and (vi) command and control effectiveness. The research was conducted using a mixed research method where the success factors above were established in a statistic model known as the Structural Equation Modeling. The results of this research concluded that all of the abovementioned factors were had a direct impact on the Second Fleet Command's ability to successfully implement its maritime security strategy. Competency of personnel related to maritime security from KRI positively affect the success in implementing the maritime security strategy at ALKI.*
Keywords*: The Indonesian navy; success determinants; maritime security strategy; archipelagic sea lane II*

INTRODUCTION

As the largest archipelago in the world, Indonesia is made up of about 17,499 large and small islands, which are spread from east to west of its archipelago. The total area of Indonesia covers about 7.9 million km2 where about two-thirds of this area is made up of waters, with 0.3 million km2 of territorial seas, 2.9 million km2 area of archipelago waters and 2.9 million km2 area of exclusive economic zone (Le, & Chen, 2020). The remaining 1.8 million km2 consists of land masses. The fact that Indonesia is the largest archipelagic country in the world is related to international law concerning maritime areas and boundaries (Munavvar, 2021). International laws, such as the United Nations Convention on the Law of the Sea (UNCLOS), provide a framework for determining the rights and obligations of countries regarding their maritime areas (Awaliyah et al., 2020).

In this context, UNCLOS regulates territorial seas, exclusive economic zones (EEZ), and archipelagic waters. Territorial seas are the waters surrounding the islands of Indonesia, extending up to 12 nautical miles from the baseline (Yuliartini, & Pardani, 2022). The EEZ is a maritime area that extends up to 200 nautical miles from the baseline, and Indonesia has specific economic rights related to natural resources and economic activities in that area (Rohmat, 2023). Meanwhile, the archipelagic waters encompass all waters that fall under the sovereignty of Indonesia. With its significant maritime area, Indonesia has a responsibility to manage and protect its marine resources in accordance with the principles set forth in international law. This involves cooperation with other countries to preserve the sustainability of marine ecosystems, protect the environment, and regulate economic activities in Indonesian waters.

Indonesia is also strategically located as it is at the cross position between two oceans (namely Indian and Pacific), and flanked by two continents (Asia and Australia) (Pudjiastuti et al., 2021). Naturally, several Sea Lines of Communications (SLOCs) and Sea Lines of Trade (SLOT) exists and passes through Indonesia's archipelagic waters. Indonesia's strategic position has brought about much opportunities, and at the same time, challenges related to security, law enforcement and national defense. As an archipelagic country with a maritime vision, Indonesia must be able to uphold the sovereignty and security in its waters, in accordance with its national laws (specifically the 1945 Constitution) and ideals (known as Pancasilla). Indonesia believes that the sea plays an important role in the stability of the nation, both in terms of its contributions to the economy with the availability of vast a mount of natural

resources and its security as the first layer of defence against external threats. The sea is also an important medium for cross-islands transportation within Indonesia.

In accordance with UNCLOS 1982 and Indonesia's obligations as an archipelagic state, Indonesia had established three Indonesian Archipelagic Sea Lanes (ALKI) which could be used by the international shipping in the 'normal mode'. The implementation of these ALKI allows Indonesia to better monitor and respond to threats within the related sea space. Besides that, it also helps to regulate the movement of ships in/out of Indonesia's archepalgic waters, which consists of many potential entry/exit points. The three ALKIs are: (i) ALKI I, via the South China Sea, Karimata Strait, Sunda Strait to the Indian Ocean, (ii) ALKI II, via the Sulawesi Sea, Makassar Strait, Lombok Strait towards the Indian Ocean, and (iii) ALKI III, via the Maluku Sea, Sunda Sea, which is then forked into the Savu Sea to the Indian Ocean, and the Arafura Sea to the Indian Ocean and east of Timor Island towards the Indian Ocean. The establishment of these ALKI is not free of challenges and several potential threats such as violations of sovereignty by foreign countries, smuggling activities, transational crime, piracy and others, continue to be a concern for Indonesia. These challenges/threats will need to be addressed swiftly and decisively to ensure national and regional security.

The Second Fleet Command is an integral part of the Indonesian Navy which is charged with the responsibility of national maritime defense, as stated in article 9 of the Republic of Indonesia Law No. 34/2004 (Putri, & Saputro, 2022). The Second Fleet Command plays an important role in implementing the Navy's maritime strategy in ALKI II which falls within its area of operations and responsibilities. This strategy is executed by the ALKI II Joint Task Force (ALKI II Kogasgab) which is commanded by the Second Fleet Commander (Second Fleet Commander) as the Task Force Commander. The Second Fleet Command deploys both warships (or otherwise known as the Republic of Indonesia Ship (KRI)) and aircraft as means in the implementation of its maritime security strategy at ALKI II. The successful implementation of the above maritime strategy is affected by various factors (ways) including: (i) proficiency and effectiveness of tactics and procedures, (ii) quality and sufficiency of training, (iii) weapons capabilities, (iii) sensor capabilities, (iv) the ability of the Command and Control Center to direct and monitor operations, (v) the effectiveness of ground operations, and (vi) the effectiveness of command and control of the operations. These factors were measured against the ends of The Second Fleet Command's ability to monitor shipping and the situation within ALKI II and its ability to respond effectively.

This research aims to identify and model the factors that influence the success of The Second Fleet Command's maritime strategy related to ALKI II. Eight hypotheses are tested:

(a) Proficiency and effectiveness of maritime security tactics and procedures has a positive and significant impact on the effectiveness of operations;
(b) The quality and amount of exercises and training has a positive and significant impact on the effectiveness of operations;
(c) The capabilities of KRI's weaponry systems has a positive and significant impact on the effectiveness of operations;
(d) The capabilities of the KRI's and aircraft's sensors has a positive and significant impact on the effectiveness of operations;
(e) The ability of the Command andControl Center (Puskodal) to direct and monitor operations has a positive and significant impact on the effectiveness of operations;
(f) The effectiveness of command and control has a positive and significant effect on the effectiveness of operations;
(g) The effectiveness of ground operations has a positive and significant effect on the overall maritime strategy; and
(h) The effectiveness of command and control has a positive and significant effect on the overall maritime strategy.

Given the urgency of this research and its potential contribution to understanding and action in maintaining maritime security in the Indonesian Archipelagic Sea Route II, this research deserves to be studied in depth. So it is hoped that it can help establish policies that support the development of maritime potential in the Indonesian Archipelagic Sea Route II region, which in turn will increase national resilience.

RESEARCH METHODS

The research uses a mixed quantitative and qualitative method. The researcher started off by identifying the various existing theories related to the factors / determinants of the success of The Second Fleet Command in implementing the maritime security. These factors were then arranged in the Structural Equation Modeling (SEM) which is a statistical modeling technique to test the relationship between

complex variables (both recursive and non-recursive variables), with the aim of obtaining a comprehensive picture of a model used in solving a problem (Marlina, 2009: 16).

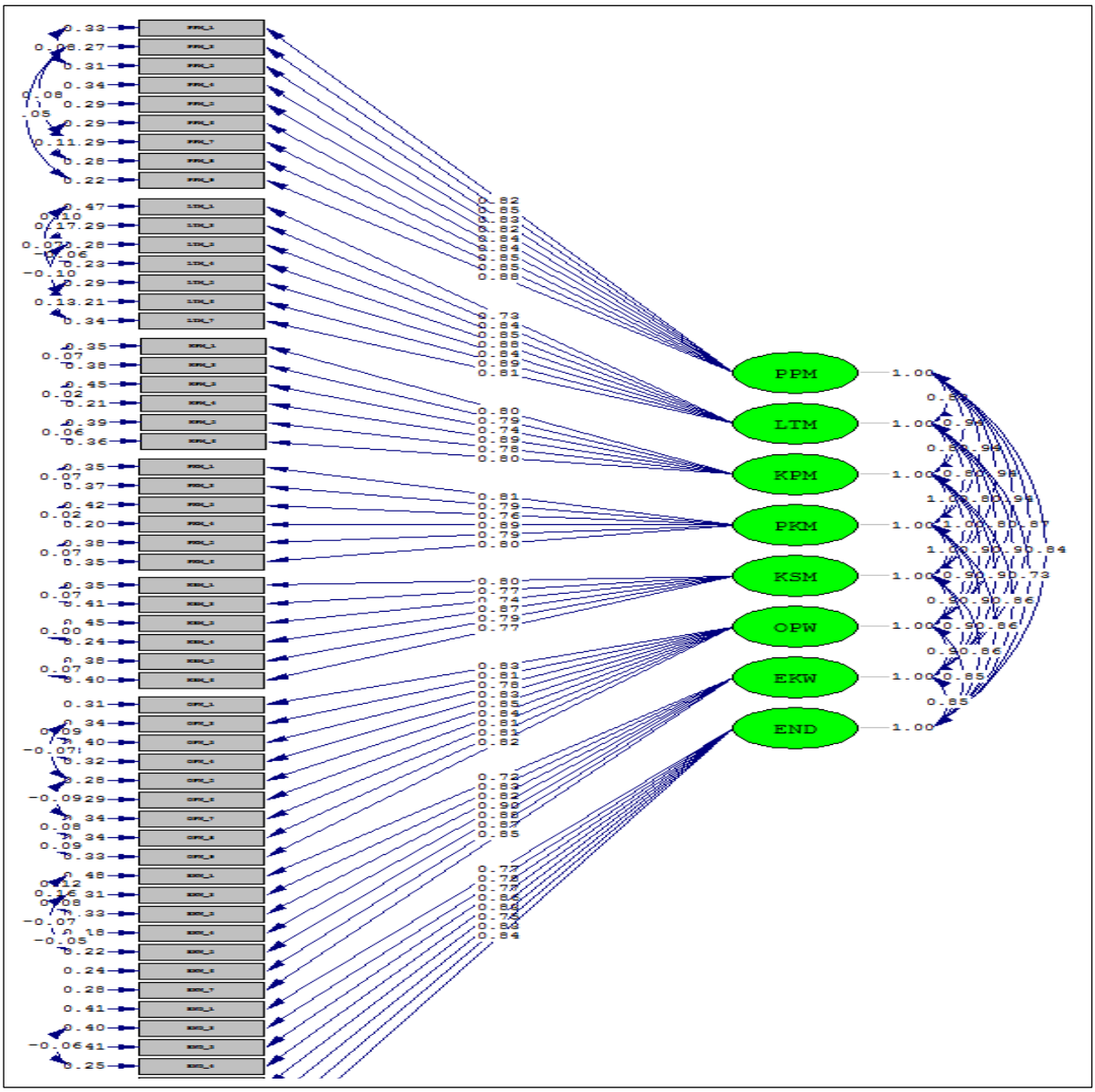
The next step was to analyze the model formed to determine the level of influence from each of the variables. Qualitative data analysis on the results of in-depth interviews was done using the Soft System Methodology (SSM). Quantitative data collection was carried out at the Second Fleet Command Headquarter in Surabaya (East Java Province), the Second Fleet Command Maritime Security Task Group (Guskamla) Command Headquarters in Manado (North Sulawesi Province), the KRIs and aircraft involved in maritime security at ALKI II. The total population of this research was 815 and a sample of 277 was taken. The following key personnel were interviewed: (i) Assistant Operations to the Chief of Naval Staff, (ii) Commander of the Second Fleet Command, (iii) Assistant to Second Fleet Commander; (iii) Assistant Operations to Second Fleet Commander; (iv) Chief of the Command and Control Center of the Second Fleet Command; and (v) several commanders of KRI and aircraft pilots who had been deployed for security operations at ALKI II.

RESULTS AND DISCUSSION

ALKI was designated after the Indonesian government ratified the 1982 UNCLOS International Sea Law through the Republic of Indonesia (RI) Law Number 17 of 1985. ALKI II, which includes the Makassar-Straits of the Lombok Strait, dividing the western and eastern parts of Indonesia. Furthermore, recent silting in the Malacca Strait has caused larger ships to adjust their shipping routes to include the Lombok-Makassar Straits. As an international trade and shipping route, ALKI II provides an important alternative to the already crowded and congrested Malacca Strait.

The Indonesian Navy is charged with defending Indonesia's maritime interests. As an integral part of the Navy, the Second Fleet Command plays an important role in deterring an preventing any form of threats that may arise from ALKI II by deploying its assets to the "hot spots" to prevent and respond to any potential situations. The Second Fleet Command's maritime security operations related to ALKI II includes the Lombok Strait, the Makassar Strait, the Sulawesi Sea, as well as the maritime borders between Indonesia, Malaysia and the Philippines which presents several challenges related to violation of soveringty and other threats such as piracy, smuggling, fisheries etc. Therefore, this research model uses research data related to the various variables: (i) tactics and procedures adapted (PPM), (ii) quality and sufficiency of training (LTM), (iii) capabilities of weaponary (KPM), (iv) capabilities of sensors (KSM), (v) effectiveness of exercise, command and control center to direct and monitor operations (PKM), (vi) operational effectiveness (OPW), (vii) command and control effectiveness (EKW), and (viii) the success of the maritime security strategy (as ends). The related path diagram is shown on figure 1:

Figure 1: Research Model



Sources; Researcher Processed Results, 2023

The outcome from the first research phase (estimation) included a model that contains the final value of the estimated parameters. In this stage the researcher examined the level of compatibility between the data and the model which was carried out with several stages: (i) overall model fit test, (ii) suitability test of the measurement model, and (iii) suitability test of the structural model. The results of the calculations are summarized in Table 1.

Table 1: Model Suitability Test

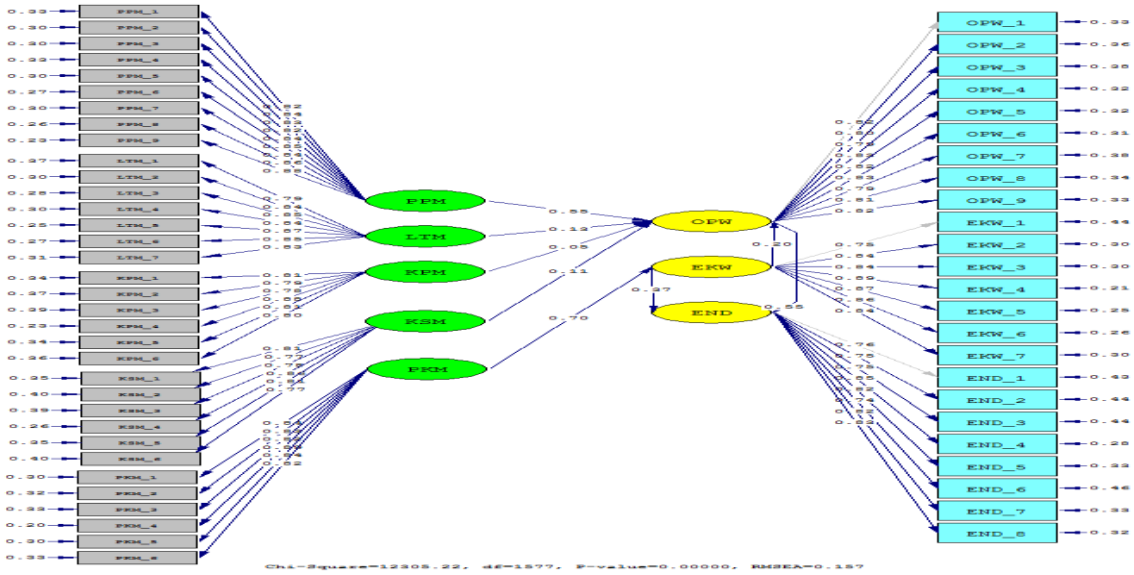
vIndicator GFI	Remarks GFI	Suitability Value	Results	Conclusion
RMSEA	Root Mean Square Error of Approximation	≤ 0,08	0,060	Suitable
NFI	Normed Fit Index	≥ 0,90	0,99	Suitable
NNFI	Non-Normed Fit Index	≥ 0,90	0,99	Suitable
CFI	Comparative Fit Index	≥ 0,90	0,99	Suitable
IFI	Incremental Fit Index	≥ 0,90	0,99	Suitable
RFI	Relative Fit Index	> 0,90	0,98	Suitable

Std. RMR	Standardized Root Mean Square Residual	≤ 0,05	0,022	Suitable
GFI	Goodness of Fit Index	≥ 0,90	0,97	Suitable
AGFI	Adjusted Goodness of Fit Index	≥ 0,90	0,94	Suitable

Sources; Researcher Processed Results, 2023

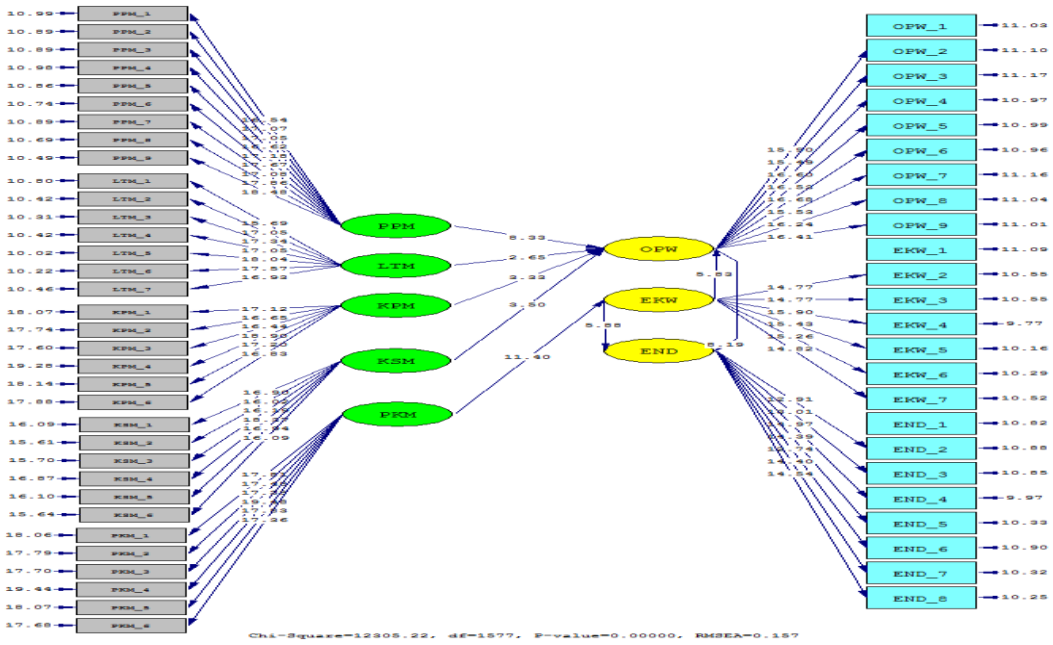
The test results showed that the model had passed all the nine Goodness of Fit Index (GFI) which meant that this model could be used as a basis for analysis of the research problem. The validity and reliability tests also confirmed that all the variables were valid and reliable. The next step was the conduct of the structural model analysis which aims to test the research hypotheses. The hypothesis will be accepted if the absolute value of t > 1.96, with the coefficient sign assigned according with the proposed research hypothesis. Analysis of the structural models is shown in Figures 2 and 3.

Figure 2. Research Structural Model Pathways Diagram (Standard Solution)



Sources: Researcher Processed Results, 2023

Figure 3. Research Structural Model Pathway Diagram (T-Values)



Sources: Researcher Processed Results, 2023

1. Proficiency in Maritime Security Tactics and Procedures and its Impact on Operational Effectiveness

The theory of sea control states that the proficiency of tactics and procedures, which are captured in doctrines and acts as a bridge between theory and practice, is an important factor is determining the operational effectivness. The tactics and procedures must also be adapted to technological developments and should consist of elements related to the deployment of assets, methods of detection and responses, leadership, command and control, as well as planning and operational decision making. Besides that, the operations must also be supported by functions such as intelligence, information operations and logistics. Tactics and procedures in the maritime security domain include: (i) competencies related to anti-surface warfare, from detection to prosecution, in order to deal with each threat systematically. This includes the need for surface vessels to identify the actions of the adversary vessels that may consitute hostile intent hostile act; (ii) maritime security procedures, (iii) rules of engagement (ROE), (iv) Visit, Board, Search and Seizure (VBSS) procedures; (v) tactical coordination and collaboration with other surface ships, submarines, aircraft, as well as with the Command and Control Center (Puskodal), and (vi) understanding of the operational plans and the morale of the personnel involved in the operations.

Based on the testing of the research hypothesis, as seen in Figure 2 and Figure 3, proficiency of tactics and procedures in the implementation of maritime security has a path coefficient of 0.55 and a t-test of 8.33. This meant that the variable has a significant and positive influences on the effectiveness operations in supporting the successful implementation of maritime security strategy at ALKI II.

2. Quality and Sufficiency of *Exercises* and Training and its Impact on Operational Effectiveness

Marcu (2009: 125) highlighted in his work that manpower essential military resource and only with high quality and motivated people can budgets and weapon systems be turned into the effective military capabilities that are required to provide for a nation's security. Therefore, human resource management, through structured and systematic training, plays an important role in preparing soldiers that are competent and ready for operations, in support of national defense. This is supported by Vego (2016: 67) who stated that the success of an operation is largely determined by the quality of the training that the solider had received and its level of corresponding operational preparedness/readiness.

In this context, the exercises and training include joint exercises/operations involving various assets, warfare competencies, as well as safety procedures at sea. Training is an important platform for military units to establish a common understanding on the doctrines, procedures and tactics, operating language, as well as intentions in order to achieve unity of action at sea. The level of training of the Indonesian Navy operational units is conducted to integrate both the readiness of the equipment and the personnel for the execution of operational tasks/ missions assigned. Training Commands are formed in each of the Indonesian Navy's Main Operational Commands, including Training Command of Second Fleet Command, are the units that are responsible to planning and ensuring the operational readiness of each unit, according to the competencies required for each mission/operation that they are assigned to. At the Headquarters level, the function is carried out by the Office of Operations and Training, in coordination with the Training Command and Educational Institutions, is capable of supporting operational training both in terms of providing qualified trainers, as well as training facilities.

Operational training for warships (KRIs) and aircraft involved in the ALKI II security operations includes pre-deployment training which integrates the readiness of equipment, personnel and systems within and amongst the various KRIs and aircraft deployed. This training had also became a multi-tier training where the elemental level is conducted in base (L1), sea exercises and maneuvers (L2), integration with other elements of the Indonesian Armed Forces (L3), to the highest level of exercises of the Indonesian Navy's Fleet Exercise, and Joint Training of Indonesian Armed Forces.

The operational effectiveness of a task force / unit cannot be viewed separately from the quality and sufficiency of exercises and training conducted. Related to the maritime security strategy for ALKI II, the types of training and exercises includes warfare competencies, namely anti-air warfare, anti surface warfare, anti-submarine warfare, electronic warfare and mine warfare. In addition, the operations of equipment on board, training related to sea safety procedures, Visit, Board, Search, and Seizure (VBSS) training, tactical cooperation training, and pre-training exercises before the warships and aircraft depart for operations are all important factors to be considered.

Based on the testing of the research hypothesis, as seen in Figure 2 and Figure 3, the sufficiency and quality of training has a path coefficient of 0.13 and a t-count of 2.65. This meant that the sufficiency and quality of the training and exercises have a significant and positive influences on the effectiveness operations in supporting the successful implementation of maritime security strategy at ALKI II. This fact is also supported by the various respondents (from the interview sessions) where they highlighted that an adequate level of training would be required to achieve operational effectiveness and mission success. This also includes training provided to the crew when new vessels are commissioned, as well as after the ships complete their refit phase/program. The four types of training include:

(a) Equipment-specific training, for the operators to understand the technical specifications and maintenance requirements of the all the on-board equipment.

(b) System Integration Training, for the operators to understand how the equipment could be operated to support the employment of other systems/equipment.

(c) Operational training, integration of how the equipment could be used by the operators to support and fulfil the operational demands.

(d) Shut Down Training, Work Up period, designed to train the ship and its crew to meet the operational standards expected of the specific missions/deployments.

3. Weapons Capabilities/Effectivness and its Impact on Operational Effectiveness

Firepower or weapons capabilities/effectiveness is one of the important operational functions that must be considered (Wade, 2010: 3-11). Firing power is an important derterminant factor in the concept of sea control, sea denial and deterrence. This includes firepower against military targets on land, sea, air and even sub-surface. Related to the context of maritime security strategy at ALKI II, weapons capability/effectiveness can be considered from the perspective of its accuracy and its ability to: (i) destroy surface targets, (ii) be use for anti-ship warfare and asymmetrical warfare, (iii) facilitate the conduct of VBSS, (iv) compete and compare against the weapons of the violators at ALKI II.

Based on the testing of the research hypothesis, as seen in Figure 2 and Figure 3, the variable weapons capability had a path coefficient of 0.05 and a t-test of 3.33. This meant that the variable weapons capability/effectivness have a significant and positive influences on the effectiveness operations in supporting the successful implementation of maritime security strategy at ALKI II (Fitriyanto et al., 2022). Comparing the weapon capabilities/effectiveness of the assets from Koarmada II deployed for operations at ALKI II with the expected threat, it is assessed that the KRI can conduct the necessary actions at sea, as well as self-defense. Weapons readiness part of the overall operational readiness of the Navy which needs to be reported to the Chief of Naval Staff (KASAL). Operational readiness is made up of the three elements, namely material, personnel and training readiness where weapons readiness is part of material and training readiness. In a related noted, there is also a need for Indonesia to be able to produce, operate and maintain its own defense equipments so that there is no need to rely on external parties for issues related to national defense. (Nugraha, 2016: 265).

4. Sensor's Capabilities (Warships and Aircraft) and its Impact on Operational Effectiveness

Network Centric Warfare (NCW) focuses on the collective combat strength from effective relationships or networks of warfare systems (Albert, 2005: 7). NCW supports the speed of command decision making as it helps to convert information superior into action. Furthermore, NCW also contributes to the integration of tactical, operational, and strategic intentions and actions. NCW is not only about technology, but also the military response that is a result of information superiority, including those data/information obtained through superior sensor capabilities that are integrated with command and control systems. Superior sensor capability, including air radars, surface radars, navigation radars, weapon control radars, and underwater detection equipment, will support the achievement of operational effectiveness. In other words, superior sensor capabilities enhance the prosses related to detection, classification, identification and evaluation of a target, while maintaining a comprehensive air, surface and sub-surface picture. This is common picture is further enhanced through real-time information sharing between KRI and aircraft deployed at sea, as well as the land-based Puskodal.

Based on the testing of the research hypothesis, as seen in Figure 2 and Figure 3, the variable of senior capability had a path coefficient of 0.11 and a t-value of 3.50. This meant that the sensors capabaility/readiness have a significant and positive influences on the effectiveness operations in supporting the successful implementation of maritime security strategy at ALKI II. In each of the operational deployment, the returns on KRI's sensors are supplemented with that from the deployed aircraft in order to paint a complete picture of the situaiton. The importance of deploying aircraft to supplement surveillance efforts was highlighted by DR. Geoffrey Till, an engineer at Royal Naval College

London, in his book titled Sea Power which advocates the joint development of naval and air technology ti achieve surveillance for early warning (Till, 2004: 125).

5. Effectiveness of the Shore-based Command and Control Center (C2 Center) in the Command and Control of the Operations

The sea control theory by Milan Vego highlighted several basic components required for achieving operational success and command and control is one of the key components. This includes the ability for the decision maker(s) to make decisions quickly, sensor neting and the utilization of technology and the exchange of information between the C2 Center and the deployed forces (KRI and aircraft). Command and control of an operation is the process of synergizing the operations of all the different units which may be from different institutions, with different cultures and doctrines. The idea is somewhat similar to the Network Centric Warfare (NCW) theory described above; in order to achieve effective command and control, it is necessary to have adequate command and control skills and experiences. The 'output' of Command and Control is the commander's decision which is based on a complete understanding of the situation and this decision is then translated to the various deployed forces. In this context, Puskodal must be able to facilitate the speed of command and this must be supported by adequate sensors (for the collection of data) which is then prossess and analysed into information for decision making. Decision at the C2 Center must then be translated into actionable commands/plans for the ground units. Puskodal must also be able to take leverage technological developments to increase its capacity, cooperate with other related agencies, conduct beyond line of sight engagement, conduct self-synchronization, and increase its responsiveness.

Based on the testing of the research hypothesis, C2 Center's capabilities had a path coefficient of 0.70 and a t-test value of 11.40. This meant that Puskodal's capabilities would have a significant and positive influence on the command and control effectiveness in the implementation of ALKI II's maritime security strategy. Puskodal plays an important role in gathering information, analyze and supporting decision making. 'Command' is defined as the authority given to someone to coordinate and control a military organization. There are two definitions of 'Control': (i) special authority given to a Commander over military organizations which are usually not under his command, in the form of operational control and tactical control; and (ii) a process whereby a Commander organizes and directs all the troop's activities under his command.

A capable C2 Center will facilitate better decision making by Second Fleet Commander where decisions can be made faster and more accurately. Unity of effort for complex operations can be done through decentralized implementation, with centralized planning. Advances in information and communication systems can help to improve information flow between the strategic, operational and tactical levels where Second Fleet Commander can be in a position to understand tactical situation. While the operating environment continues to evolve and becomes more complex, C2 Center's capabilities will also need to evolve and provide effective directions for its subordinate units to take the required action in a decentralized manner while maintaining a centralized control by Second Fleet Commander.

6. Effectiveness of Command and Control and its Impact on Operational Effectiveness

The importance of Command and Control has already been stated in previous sections. Therefore, based on the testing of the research hypothesis, it is clear that Command and Control has a positive and significant impact on the operational effectiveness of a unit with the path coefficient of 0.20 and t-test value of 5.83. Related to the previous section, the C2 Center's capability must be improved continuously to achieve maximum operational effectiveness.

7. Operational Effectiveness and its impact on the Implementation of the ALKI II's Maritime Security Strategy

The effectiveness of a maritime security strategy is partly influenced by the effectiveness of operations related to bases' readiness, the operational deployment of KRIs and aircraft, and the sufficiency of assets in supporting the operational demands. Furthermore, Wade (2015: 2-11) argues operational commanders must consider six factors, namely command and control, mobility and access, fire power, durability of operation (sustainability) and protection.

The effectiveness of ground operations is an important component in the implemention of the maritime security strategy (Bueger et al., 2020). Some important sub-factors include: (i) the readiness of the support base to shorten the logistics chain, (ii) the deployment of KRI and aircraft in accordance with the priority of threats, (iii) speed in responding to violations of law at sea, (iv) interoperability between air, surface (and even sub-surface) components, and other agencies, (v) understanding operational plans, (vi) operational readiness, (vii) deterrence posture, and (viii) good understanding of own and adversary's tactics and procedures. In this context, the success of maritime security strategy related to ALKI II

includes several factors: (i) the ability to monitor ALKI II and achieve information superiority, (ii) the ability to execute response plans and counteractions, (iii) the ability to conduct engagements and self-defense, (iv) C2 of the assets deployed, (v) interoperability between various elements deployed, (vi) well-established and strong deterrence posture to deter acts of violations, (vii) the implementation of the operation plans, and (viii) the creation of a sense of security for users of ALKI II.

Based on the results of the research, the operations were assessed to be executed effectively. The hypothesis thesis showed that the variable 'effectiveness of operations' returned a path coefficient of 0.55 and a t-test of 8.19. This meant that the effectiveness of operations has a positive and significant effect on the success implementation of Koarmada II's maritime security strategy in ALKI II. The effectiveness of the operation is also influenced by latent variables described in previous sections, namely the proficiency of tactics and procedures, weapon readiness, sensor readiness, and the quality and sufficiency of training.

The maritime security of ALKI II consists of two main components: (i) the deployment of its assets; and (ii) the mobilization/employment of these assets. Deployment of assets is related to the deployment of the most suitable assets at strategic points in order to support the tactical and strategic requirements of maritime security. The mobilization/employment of assets is related to the use of assets within a specific period, in a strategic location or area against potential threats. In order to achieve an effective deterrence posture, the deployment of forces must be able to demonstrate persistent presence within the area of operations and this must be felt by users of the sea, including international shipping community, foreign vessels and even potential adversies.

The operational deployments by Second Fleet Command related to the security operations of ALKI II is supported by bases in Surabaya, Banyuwangi, Bali, Mataram, Kotabaru, Banjarmasin, Makassar, Mamuju, Balikpapan, Palu, Tarakan, Toli-Toli, and Nunukan. These are the bases for strategic assets such as Frigate, Corvette, Fast Torpedo Boat (KCT), Fast Missile Ship (KCR) and Fast Patrol Boat (FPB). The operating deployments are flexible and consists of three considerations: (i) the assets that would execute the operations, (ii) the standby elements, and (iii) the backup elements. This arrangement can be adjusted to meet the operational demands at that particular point of time.

Intelligence and data collection needs to be conducted to provide a comprehensive picture of the threat situation. This should be supported by both intelligence units of Second Fleet Command and other supporting units, including information from coastal communities and fishermen. In a related note, there is a need to increase the intensity of ALKI II security operations in its northern tip where the territorial borders with Malaysia and the Philippines is located (Sutanto et al., 2021). This also includes the need to deploy suitable KRIs that can withstand the sea conditions in the Sulawesi Sea. Besides the warships and aircraft deployed for operations, the task force is also supported by the Second Fleet Quick Response Force (2FQR) which is based within the naval bases along ALKI II. The 2FQR, which consists of a 24/7 standby team, is tasked with conducting preventive and reactive actions against any incident or potential incidents at sea.

8. The Effectiveness of Command and Control and its Impact on the Implementation of Maritime Security at ALKI II

The results of the hypothesis testing showed that the effectiveness of command and control has returned a path coefficient of 0.37 and a t-test of 5.88. This meant that the effectiveness of command and control has a positive and significant impact on the success of Second Fleet Command in implementing maritime security strategy. The effectiveness of command control is affected by various factors: (i) the speed of Puskodal in gathering information, (ii) the speed of responding to information received, (iii) the speed in analyzing the information obtained that will assist the leadership in executing the decisions swiftly and decisively. In addition, the effectiveness of command and control is also related to the task force's ability to produce actionable information that has been analyzed and validated and those that supports the implementation of operational plans.

The deployment of radar surveillance, including the Integrated Maritime Surveillance System (IMSS) in a placed in strategic position and this enhances the ability for the task force to gather and consolidate information from all other sources. These information is then used for further threat analysis which would cue operational deployments.

According to the theory of cooperation (synergy) from James F. Stoner (Pardede, 2020), the implementation of maritime security strategy in ALKI II can be organized in the form of a joint operations between the Navy, TNI and Air Force to maximize the outcomes. This includes exchanging information to achieve information superiority in support of command and control. This has to be facilitated by common communication networks, equipment as well as procedures.

Collaboration should also include other maritime agencies which has jurisdiction within their respective fields. At this moment, the maritime security efforts are not synchronized. The 13 agencies involved are: the Navy (TNI AL), Marine Police, Customs and Excise, Directorate General of Sea Transportation (Ditjenhubla), Maritime Service and Fisheries (DKP), Immigration, Ministry of Environment, Ministry of Forestry, Ministry of Education and Culture, Ministry of Human Resources (HR), Ministry of Agriculture, Ministry of Culture and Tourism, and Maritime Security Agency (Bakamla) which operates at sea based on 11 different jurisdictions.

The ext level of collaboration required is TNI AL's cooperation with other regional partners and navies (Pradana, 2023). This includes information exchange and coordinated patrols. A well-established Cooperation arrangement will strengthen the effect of deterrence, increase responsiveness, and promote mutual trusts amongst partners through Confidence Building Measures (CBM). To enable such cooperation, the concept of interoperability needs to be considered. This could be enabled by some form of joint Standard Operating Procedure (SOP) where the same references are used, with integrated procedures and supported by an integrated communication System/plan. This is expected to improve the effectiveness of command and control, as well as the effectiveness of operations related to the maritime security strategy in ALKI II.

CONCLUSION

Based on the above discussion, the following conclusions can be drawn regarding the analysis of success determinants in the implementation of maritime security strategies in the Indonesian archipelagic sea lane II:

1. Firstly, the path coefficient of the variable related to proficiency of tactics and maritime security procedures is 0.55 with a t-test value of 8.33 which meant that this variable has a positive and significant effect on the effectiveness of operations. This meant that the higher the competency of personnel related to maritime security from KRI, aircraft and staff within Second Fleet Command, the more effective the operations would be. This in turn positively affect the success in implementing the maritime security strategy at ALKI II.
2. Secondly, the variable related to sufficiency and quality of training had a path coefficient of 0.13 and t-count of 2.65, which meant that the sufficiency and quality of training which are executed in an integrated, stratified and continuous manner would have a positive and significant effect on the effectiveness of operations; more quality training would result in more effective operations. This in turn positively affect the success in implementing the maritime security strategy at ALKI II.
3. Thirdly, the path coefficient on the variable KRI weapon capability variable is 0.05 with a t-test value of 3.33. Therefore, this variable has a positive and significant impact on the effectiveness of operations. This meant that the higher the weapons readiness of the KRI, as the ground executor of the maritime security strategy in ALKI II, the more effective the operations. This in turn positively affect the success in implementing the maritime security strategy at ALKI II.
4. Fourth, the variable KRI sensor and airplane sensor capability had a path coefficient of 0.11 and a t-test of 3.50, which meant that this variable has a significant positive effect on operating effectiveness. Based on the results of theis study, the respondents agreed that the readiness of KRI sensors and aircraft is one of the key factors that determine the effectiveness of operations; the higher the readiness and capabilities of the sensors, the more effective the operations would be. This in turn positively affect the success in implementing the maritime security strategy at ALKI II.
5. Fifth, the variable related to the capability of the Command and Control Center has a path coefficient of 0.70 and a t-test of 11.40, which meant that this variable has a significant positive effect on operating effectiveness. Respondents also highlighted that the ability of the Command and Control Center is a major factor in determining the effectiveness of Command and Control. They also highlighted that a capable and high-tech Command and Control Center will support the effectiveness of command and control, which then affects the implementation of the maritime security strategy.
6. Sixth, the variable related to the effectiveness of operations has a path coefficient of 0.55 and a t-test of 8.19, which meant that this variable has a significant positive effect on the implementation of the maritime security; the more effective the operations, the more effective would be the implementation of the strategy.
7. Seventh, the variable Command and Control Effectiveness had a path coefficient of 0.20 and a t-test of 5.83 for operating effectiveness, and a path coefficient of 0.37 and a t-test of 5.88 for the successful implementation of a maritime security strategy. Thus, the effectiveness of command and control has a significant and positive impact on the effectiveness of operations, as well as the success of Second Fleet Command in implementing maritime security strategy during peacetime at ALKI II; a more effective command and control would lead to higher success rate for the implementation of the maritime strategy.

8. Eighth, Command and Control Effectiveness has a path coefficient of 0.20 and a t-test of 5.83 for operating effectiveness, and a path coefficient of 0.37 and a t-test of 5.88 for the successful implementation of a maritime security strategy. Thus, the effectiveness of command and control has a significant and positive impact on the effectiveness of operations and the success of Second Fleet Command in implementing maritime security strategy during peacetime at ALKI II. This means that the more effective the command and control by Second Fleet Command, the more effective would be the operations, as well as the higher rate of success for the implementation of the maritime security strategy.

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REFERENCES

[1] Albert, David S, John J. Garstka, Frederick P. Stein (2005). *Network Centric Warfare, Developing and Leveraging Information Superiority.* Washington DC: CCRP Publication Series.

[2] Awaliyah, S., Mangku, D. G. S., Yuliartini, N. P. R., & Suastika, I. N. (2020). Enforcement of Illegal Fishing Laws that was Done by Foreign Ships in the Indonesian Sea Region, Viewed from International Sea Law. *International Journal*, 9, 1165.

[3] Bueger, C., Edmunds, T., & McCabe, R. (2020). Into the sea: capacity-building innovations and the maritime security challenge. *Third World Quarterly*, 41(2), 228-246.

[4] Fitriyanto, A., Darmawan, W. B., & Djuyandi, Y. (2022). Kerjasama Pengamanan Alur Laut Kepulauan Indonesia Ii:(Studi Kasus Sinergi Bakamla, TNI Dan POLAIRUD). *Paradigma POLISTAAT: Jurnal Ilmu Sosial* dan Ilmu Politik, 5(1), 1-15.

[5] Le, J., & Chen, X. (2020). Overview of Major Fishery Countries in the World. *Brief Introduction to Fisheries*, 97-130.

[6] Marcu, Hari Bucur, Philipp Fluri, Todor Tagarev (2009). Defence Management: An Introduction, Geneva: Procon Ltd

[7] Marlina. D. (2009). Structural Equation Model Untuk Industri Musik Online di Indonesia, Thesis Universitas Indonesia Fakultas Teknik Program Studi Teknik Industri

[8] Munavvar, M. (2021). Ocean States: archipelagic Regimes in the Law of the Sea. In Ocean States. Brill Nijhoff.

[9] Nelson, C. Richard (2016). "The life and work of General Andrew J. Goodpaster : Best Practices in National Security Affairs. Amerika Serikat.

[10] Nugraha (2016). Studi kelayakan PT PAL Indonesia (PERSERO) Dalam Pembangunan Kapal Perusak Kawal Rudal (PKR) Guna Mendukung Ketahanan Alutsista TNI AL, *Journal Ketahanan Nasional*, 22 (3); 255-266

[11] Pardede, S. D. (2020). The Intelligence Conditioning For Ex-Terrorism Convicts To Prevent Radicalism And Terrorism In North Sumatera. *Jurnal Pertahanan & Bela Negara| December*, 10(3).

[12] Pradana, L. (2023). Optimizing the Role of Maritime Diplomacy of the Indonesian Navy in Supporting the Relocation of the National Capital. *Journal of Industrial Engineering & Management Research*, 4(4), 61-68.

[13] Pudjiastuti, E. T., Putra, I. N., & Susilo, A. K. (2021). Vision Of The World Maritime Axis Of Indonesia As A Maritime Country In Alfred Thayer Mahan's Perspective. *Journal of Defense Resources Management*, 12(2), 211-219.

[14] Putri, I. A., & Saputro, G. E. (2022). Internal Challenges and Planning in Creating Indonesia as the Axis of the World Maritime Economy. *GPH-International Journal of Social Science and Humanities Research*, 5(12), 01-11.

[15] Rohmat, B. (2023). The Regulation Of Foreign Warship Activities In The Exclusive Economic Zone (EEZ) In Order To Protect Indonesia's Sovereignty. *Journal Asro*, 14(02), 9-17.

[16] Sutanto, R., Suseto, B., Warka, I. W., Sianturi, D., & Rudiawan, B. (2021). Marine Defense Strategy In Facing The Threat Of Transnational Crime In The Indonesian Archipelago Sea Lane I. *Review of International Geographical Education Online*, 11(10).

[17] Till, Geoffrey (2004). “Sea Power”, Frank Cass, London Portland
[18] Vego, Milan N (2016). Maritime Strategy and Sea Control : Theory and Practice. London:Routledge.
[19] Wade, Norman M. (2010), “The Naval Operations and Planning Smart Book, Guide to Designing, Planning and Conducting Maritime Operations”, Lakeland: The Lightning Press.
[20] Yuliartini, N. P. R., & Pardani, N. K. C. (2022). Cooperation Between Indonesia And The Philippines In Maritime Affairs Related To Eez (Exclusive Economic Zone) Based On The United Nations Convention On The Law Of The Sea Of 1982 Or UNCLOS. *Jurnal Komunikasi Hukum (JKH)*, 8(2), 71-87.