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## AN EVALUATION OF THE PHILIPPINE COAST GUARD COMPREHENSIVE STRATEGY ON MARITIME SECURITY: TOWARDS AN ENHANCED MARITIME SECURITY PLAN IN THE WEST PHILIPPINE SEA

### ABSTRACT

This study aims to analyze and evaluate the comprehensive strategy for efficient maritime security by examining the perceptions of respondents on key indicators, including national security, natural security, non-renewable sources of energy, and physical security. The study collected data on the demographic profile of the respondents, including gender, age, highest educational attainment, and years in service. The findings revealed positive evaluations overall, indicating that the strategy effectively addressed various security concerns. However, significant differences were observed in evaluations based on age and educational attainment. Based on the results, recommendations include tailoring the strategy to different age groups, enhancing inter-agency coordination, and promoting sustainability and community collaboration. These findings provide valuable insights for the strategic development of maritime security policies and initiatives.

**Keywords:** *comprehensive strategy, maritime security, evaluation, demographic analysis, national security, natural security, non-renewable energy, physical security*

### INTRODUCTION

The West Philippine Sea is of strategic importance to the Philippines due to its rich marine resources, vital shipping lanes, and unresolved territorial disputes. Efficient maritime security in this region is crucial to safeguarding the country's maritime interests, ensuring safe trade routes, and upholding sovereignty. The Philippine Coast Guard (PCG) plays a pivotal role in maritime security operations but faces challenges such as limited resources, geopolitical dynamics, and unauthorized activities. This study aims to develop a comprehensive strategy for efficient maritime security by analyzing the PCG's practices, identifying gaps, and proposing measures to enhance operational capabilities.

The outcomes of this study will benefit policymakers, maritime security agencies, and stakeholders involved in safeguarding the West Philippine Sea. By implementing an efficient maritime security strategy, the Philippines can protect its maritime interests, deter unauthorized activities, sustainably utilize marine resources,

and contribute to regional stability and cooperation. This study seeks to support on-going efforts in securing the West Philippine Sea and fostering regional collaboration.

The PCG conducts various operations such as surveillance, law enforcement, search and rescue, and humanitarian assistance missions to enforce maritime security. Developing an efficient and comprehensive maritime security strategy requires a thorough assessment of the PCG's current practices, operational procedures, and capabilities. This includes evaluating patrol routes, surveillance systems, and information sharing mechanisms, inter-agency coordination, and international cooperation. Identifying gaps and opportunities in these areas can contribute to enhancing the PCG's operational efficiency and effectiveness.

International collaboration is also essential in addressing maritime security challenges in the West Philippine Sea. Strengthening partnerships, sharing information, and participating in multilateral initiatives can significantly contribute to the development of an efficient maritime security strategy.

The objective of this study is to analyze the PCG's maritime patrol operations in the West Philippine Sea and develop a comprehensive strategy for efficient maritime security. By evaluating the current framework, identifying challenges, and proposing recommendations, the study aims to enhance the PCG's capabilities, optimize operational procedures,

and contribute to the overall security and stability of the region.

The findings of this study will inform policymakers, maritime security agencies, and relevant stakeholders in the development and implementation of strategies to address maritime security challenges. By adopting a comprehensive approach, the Philippines can strengthen its ability to protect its maritime interests, ensure the sustainable use of marine resources, and promote a peaceful and secure environment in the West Philippine Sea.

The undertaking is all about the development of a comprehensive strategy for efficient maritime security in the West Philippine Sea which may be used as an academic reference for any maritime-related endeavors, a tool to improve the efficient conduct of marine patrol operations vis-a-vis the government's system and implementation improvements, and a piece of background information that adds up to the body of knowledge solely to protect the welfare and interest of the Filipinos. Specifically, it seeks to answer the questions set out hereunder:

1. What is the demographic profile of the evaluators in terms of gender, age, highest educational attainment and Years in service;

2. What is the evaluation of the high-ranking PCG officials and other evaluators in the developed comprehensive strategy for efficient maritime security in terms of National security, Natural security, Non-renewable source of energy and Physical security;

3. Is there a significant difference in the evaluation made by the PCG officials and other evaluators in the development of comprehensive policy for efficient maritime security when grouped according to gender, age, highest educational attainment and Years in service?

4. What improvement in the developed comprehensive strategy for efficient maritime security can be made according to the recommendations provided by the PCG officials and other evaluators?

### LITERATURES

"Maritime security" in the Philippines' national language, Filipino, does not have a direct translation. However, a similar meaning can be conveyed with the phrase "kapanatagan sa karagatan." The term "kapanatagan" translates to "security" and "sa karagatan" means "at sea." This translation is influenced by the Philippine words for "national security," which is "kapanatagan pambansa" in the official Filipino version of the 1987 Constitution.

The Philippines' approach to maritime security encompasses various elements due to its archipelagic nature and extensive maritime interests. These elements include environmental protection, mariner safety, fisheries management, resource management (excluding fisheries), counterterrorism, law enforcement, naval operations, and deterrence. The definition of maritime security quoted earlier covers these aspects, with "marine assets" and "maritime practices" encompassing environmental protection, mariner safety, fisheries management, and resource management.

The National Security Strategy provides a comprehensive definition of "national security" as the state or condition wherein the nation's sovereignty, territorial integrity, people's wellbeing, core values, way of life, and the state and its institutions are protected and enhanced. It emphasizes "maritime and airspace security" as goals and outlines actions necessary to achieve them, including integrated management plans and operations, acquisition of equipment for maritime domain awareness, harmonization of agency plans and requirements, establishment of comprehensive databases, and promotion of maritime domain awareness.

"Territorial integrity" refers to naval operations and deterrence, while "coastal peace and order" addresses counterterrorism and law enforcement. However, it is important to note that while the definition is comprehensive in theory, the practical application of maritime security in the Philippines is more limited, primarily focusing on territorial defense and maritime law enforcement.

The Philippines faces unique challenges in maritime security due to its geographical location and the competing interests at domestic, regional, and global scales. Domestically, the fragmented islands and resource-rich marine environment create competition between marginalized coastal communities and commercial sectors, leading to issues like illegal fishing and drug trafficking.

Maritime awareness and data sharing play a pivotal role in reducing the threat of piracy and sea robbery. States, along with their navies, coast guards, and law enforcement agencies, employ various tools such as registrations, port data, electronic monitoring systems, and patrols to track shipping and identify vulnerable locations. International sharing of maritime awareness data became crucial. The Malacca Straits Patrols and subsequent information sharing protocols were instrumental in bridging gaps and maximizing deterrence and information collection. The launch of ReCAAP in 2006

further advanced maritime data sharing by providing the latest information, incident alerts, and analysis to enhance situational awareness. The ReCAAP ISC collaborates with external sources, conducts data analysis, and analyzes external factors related to piracy and sea robbery incidents to develop targeted responses.

A significant event occurred during the review when the DTRA visited the National Coast Watch Center (NCWC) in Manila, where they briefed CGWCEISC Coast Guard Deputy Commander Arnoldo M. Lim on the visit's outcomes. The expectation was that these outcomes would contribute to a more effective and capable NCWS.

Both parties shared a common goal of achieving optimum maritime domain awareness. They recognized that executing missions successfully in maritime security required precise coordination and communication. This was especially crucial since optimal enforcement often necessitated cooperation between multiple agencies within the Philippine Government or with foreign partners. DTRA International Project Officer U.S. Navy Commander Bryan Kroncke expressed pride in partnering with the Philippines

through the NCWS to provide the tools necessary to address maritime security threats while understanding these specific requirements.

These dynamics have given rise to intricate diplomatic undercurrents in Southeast Asia, with member-states of the Association of Southeast Asian Nations (ASEAN) employing different strategies such as balancing, bandwagoning, and hedging towards China, the US, and the middle powers. Traditional alliances and partnerships are being tested, with some countries, like Vietnam and Indonesia, strengthening their security engagements with the US and its allies. On the other hand, the Philippines has explored cooperative engagements with "non-traditional partners" China and Russia.

The Philippines faces an array of traditional and non-traditional security concerns due to its location, interests, and dynamics between surrounding nations. Traditional security challenges arise from increasing tensions between claimant countries in the South China Sea, primarily driven by resource competition and strategic rivalry among major powers in the Pacific. The country is also surrounded by volatile regions, such as the Middle East, the Korean Peninsula, the Taiwan Strait, and the East China Sea, all of which pose high concern for regional stability.

Asia (Kyodo 2018; Lemahieu 2019; Wu 2020), coupled with the —lack of key institutions and policies dedicated to maritime security II (Despi 2019, 22), the gargantuan task of securing the country's massive maritime domain is magnified. It is noteworthy, though, that recent policy directives recognize and seek to address this predicament through forced modernization and security cooperation.

Financial incentives are considered crucial for promoting renewable energy. Studies by Ciarreta et al. (2017) and Cox (2016) emphasize the significance of financial incentives in overcoming barriers to renewable energy growth. These incentives aim to make renewable energy systems and equipment more accessible by reducing financial burdens.

As speculated, job creation is a significant aspect of renewable energy development. Haerer and Pratson (2015) estimate that the natural gas, solar, and wind industries in the United States added approximately 220,000 new jobs, while the coal industry lost over 49,000 jobs from 2008 to 2012. Similar findings by Garrett-Peltier (2017) suggest that energy efficiency and renewable energy industries create almost three times as many jobs as fossil fuel industries.

The economic benefits of transitioning to renewable energy are highlighted by Bulavskaya and Reynès (2017). They argue that producing power from renewable energy sources is more economically valuable than relying on fossil fuels. The transition to renewables can create jobs and contribute positively to a country's GDP. On the topic of maritime security, the Asia Maritime Transparency Initiative (AMTI) conducted an analysis using ship tracking data from Marine Traffic and satellite imagery from Maxar and Planet Labs to evaluate the frequency of Philippine patrols in disputed areas of the South China Sea over the past year. Though this assessment may have overlooked some patrols, particularly those conducted by naval vessels that did not broadcast Automatic Identification System (AIS) signals, the findings revealed a noteworthy increase in activity.

The shift in patrol locations appears to be related to a significant event that occurred on March 20, which was the public announcement about the presence of a Chinese militia in the Whitsun Reef. Following this announcement, the Philippine Coast Guard (PCG) swiftly increased patrols to Titu and Second Thomas, indicating a shift in focus by Philippine officials. Instead of solely criticizing the presence of the Chinese militia at Whitsun Reef, there was now an effort to document China's paramilitary presence throughout the Spratley's.

Since the Whitsun Reef incident, the Philippines has taken further actions to increase patrols near Scarborough Shoal, which has brought it into closer contact with the China Coast Guard (CCG). For instance, on April 24-25, the Philippine Coast Guard (PCG) dispatched two vessels—the BRP Sindangan and its largest ship, the BRP Gabriela Silang—near the shoal. In response to this increased presence, National Security Adviser Hermogenes Esperon publicly condemned the actions of the China Coast Guard (CCG) vessels, accusing them of engaging in "shadowing, blocking, dangerous maneuvers, and radio challenges."

The AIS signals from the Chinese vessels were too intermittent during that incident to verify Esperon's claim of dangerous maneuvers. But AIS and satellite imagery paint a clearer picture of a more recent patrol on May 19, when the Philippines sent four vessels: the BRP Gabriela Silang, BRP Sindangan, BRP Habagat, and MCS 3005 to Scarborough.

During that incident, the Philippine vessels sailed directly to a location within 10 nautical miles of Scarborough Shoal, which falls within its contested territorial sea. Upon arrival, they encountered the China Coast Guard (CCG) vessels, specifically the CCG 3301 and 3102.

As the Philippine vessel MCS 3005 circled around one side of Scarborough Shoal, it was trailed closely by the CCG 3301. Similarly, the CCG 3102 pursued the Philippine vessel Habagat on the other side before eventually changing its direction towards the larger Philippine ship, Gabriela Silang. A satellite image taken at 9:50 a.m. local time captured the CCG 3102 at only 400 meters (about 1312.34 ft) from the Philippine vessel Habagat during this encounter.

This incident underscores the high level of proximity and interaction between the Philippine and Chinese vessels in the contested waters around Scarborough Shoal. The situation illustrates the complexities and sensitivities

surrounding territorial disputes in the South China Sea, with both sides maintaining a visible presence in the region.

The importance of maintaining healthy seas is increasingly recognized as it directly impacts the resilience of both nations and communities. Many communities depend on the health of the oceans for their basic needs, with over 10 million people in Southeast Asia relying on the fishery sector, which provides 60 percent of the region's protein. Southeast Asia is estimated to have contributed approximately 52% of the total global fishery production in 2018, indicating the significant role the region plays in the fisheries industry.

The Philippines' increased patrol efforts send a message that Manila is determined to assert its rights. But they pale in comparison to China's near-permanent coastguard and militia presence throughout the South China Sea. A limited

number of PCG and BFAR vessels have the endurance to travel safely to the Spratly's and Scarborough. These few Philippine ships have embarked on staggered tours across the South China Sea every couple of weeks since March, spending only one or two days at contested features before moving on. Chinese vessels, by contrast, operate as sentries, staying at targeted features for weeks at a time and usually leaving only once a replacement has arrived to continue the watch.

The CCG 3303 and four Chinese fishing vessels, the Qiongsanshayu 00311, Yuezhanyu 08035, and the Zhongyue 62 and 63, were also present at Scarborough on May 19, though their AIS signals were too intermittent to observe whether they interacted with the Philippine vessels.

Compared with land troopers, maritime police are responsible for vaster regions, which have implications for the design of patrol routing problems. The number of suspicious ships is much lower than that of hot spots in the road network. Little information can be obtained and utilized to locate the position of suspicious ships, and limited resources (e.g., the number of patrol boats) can be invested to complete this mission. These characteristics require a novel approach and tailored models to address this problem. Routing is widely investigated in other transportation problems, such as drone-truck joint routing (Gonzalez-R et al., 2020, Zeng et al., 2022), liner shipping routing (Duan et al., 2021, Li et al., 2022, Zhen et al., 2020), vehicle routing (Bahrami et al., 2020, Basso et al., 2022, Gmira et al., 2021, Lin et al., 2021, Liu et al., 2021, Poon et al., 2022, Wang et al., 2020), as well as orbit and machine layout problem (Qi et al., 2022) to name a few. We enrich the literature by applying routing methods to the maritime patrol process.

Every moment, maritime crimes are taking place around the world, including but not limited to illegal fishing and harvesting, ocean dumping and discharge, illicit drug trafficking, and other crimes (Icpo, 2019, Unodc, 2011, Unodc, 2021). Areas such as Eastern and Southern Africa, the Indian Ocean region, the Gulf of Guinea, the Red Sea and the Gulf of Aden, and the Sulu and Celebes Seas are recognized hot spots for maritime crime (Icpo, 2020, Icpo, 2021a, Icpo, 2021b; Stable Seas, 2019). Therefore, our proposed patrol routing methods are applicable in a wide range of scenarios.

Yeo and Gloria (2022) conducted a study examining the persistent dispute between China and the Philippines, as well as the negative perceptions held by Filipinos during the Duterte administration. Despite former President Duterte's pro-China stance, China's diplomatic efforts failed, and activities such as the invasion of the West Philippine Sea and involvement in casino-related gaming businesses reinforced Filipinos' perception of China as deceitful and bullying. The study also found a correlation between the decrease in public trust among Filipinos in China and the increase in Chinese public diplomacy.

In a study by Go (2019), the concept of "saving face" and its impact on China's response to foreign relations were investigated. The study focused on how the Philippines addressed the behavior of the People's Republic of China (PRC) in the South China Sea conflict from the perspective of Confucianism during the term of former President Benigno Aquino III. The study highlighted China's display of power and arrogance towards the Philippines through the reinforcement of structures in the disputed area. It also shed light on the need for dialogue and negotiation between Chinese foreign policy and foreign entities.

Another study focused on evaluating the Philippine government's stance on the West Philippine Sea conflict with China. The researcher collected information from written books, news articles, Supreme Court rulings, and relevant laws, both local and international. The study traced the history of varied positions and actions taken by the Philippine government, noting that resolving the disagreement at the International Court was a common point of agreement. The study highlighted China's forceful claim on the West Philippine Sea and its impact on nearby fishing vessels (Batin, 2017).

Maritime security issues encompass a range of national security concerns, including territorial and resource disputes, sanctions violations, terrorist activities, piracy, trafficking, illegal fishing, shipping and transit, chokepoints, and environmental damage. For governments, commercial entities, academic institutions, and non-governmental organizations vested in maritime security, sustainable seas, and adherence to the rule of law, the potential of SSBD technology to observe and capture misconduct is crucial. However, research suggests that transparency alone may be insufficient to prevent misbehavior or alter the actions of powerful states (Pekkanen, 2022).

Edwards (2020) examines maritime security issues in the Philippines, which encompass a wide range of concerns, such as terrorismsupporting kidnappings, piracy affecting cargo transportation worth billions of dollars, drug trafficking, weapons smuggling, human trafficking, cigarette, alcohol, and fuel smuggling, and illegal fishing that harms marine habitats and the Philippine economy. While the government and Navy primarily focus on traditional geopolitical areas, particularly China's conflicting claims in the South China Sea, this may divert attention from addressing various transnational maritime crimes occurring in Philippine waters.

Ginga (2020) investigates an innovative approach to maritime terrorism in Africa, emphasizing the role of national security. The study explores the correlation between maritime terrorism growth in Africa and the geopolitical context and involvement of political leaders. It argues that a joint security regime among African states is crucial in addressing maritime terrorism threats and challenges to national and territorial security. The study emphasizes the significance of centralizing the role of states in countering transnational terrorism trends and promoting regional security.

Enforcement of maritime security faces challenges due to the variety of maritime risks involved. The National Coast Watch Center (NCWC), Navy, Coast Guard, and National Police Maritime Group (NPMG) constitute a complex network of organizations responsible for distinct aspects of maritime security. However, these entities are primarily concerned with their perceived lack of capability, often associated with physical attributes. This common concern unites them. Advocacy and education are considered essential in increasing public awareness of the magnitude of maritime security challenges. Initiatives like the National Coast Watch Council's Maritime and Archipelagic Nation Awareness Month contribute to cautious optimism that the Philippines can enhance maritime security through strengthened coordination domestically and internationally, despite expected capability gaps (Zhao, 2017).

Luttenberger and Sliskovic (2020) focus on the implementation challenges of the Marine Strategy Framework Directive in the Republic of Croatia. The directive, adopted in 2008, aims to protect the resource base necessary for maritime-related economic and social activities and achieve Good Environmental Status (GES) of the EU's marine waters by 2020. By examining the history, content of official EU country reports, and potential obstacles to adoption, the study proposes a more effective

strategy for preserving the Adriatic Sea. The study suggests that clearer and more transparent communication of the adoption process for national marine policies is necessary to engage the public and expert community in developing a strategic vision.

Numerous studies and expert opinions are related to the selection of multi or single agency systems of marine patrol (Chapsos and Malcolm 2017; Collin 2016; Febrica 2015; Keliat 2009; Li and Cheng 2007; Parameswaran 2016). The discourse on the agency system for marine security patrol is divided into two approaches: a security approach for a single agency system and a prosperity approach for a multi-agency system (Kemenkeu 2014). The security approach entails having only one agency (a single agency system) with its primary function focused on security and sovereignty, while other features are considered secondary.

Conversely, best practices of multi-agency systems are observed in countries like Indonesia, Argentina, South Korea, France, and Australia, among others. The advantages of this system are related to clear administrative, management, and juridical accountability by individual agencies. However, a disadvantage is

the potential for overlapping implementation of marine law enforcement when multiple offices are involved, especially in cases of inconsistent regulations or unclear procedures and mechanisms (Guilfoyle 2017).

## METHODOLOGY

This study utilized a descriptive research design. The researcher conducted a non-obtrusive study without inadvertently affecting the participants by solely explaining, interpreting, and clarifying the current circumstance. It sought to answer what, where, when, and how questions, but did not address why questions in its accurate and methodical description of a population, circumstance, or event. In contrast to experimental research, the researcher simply observed and measured the variables without ever controlling or altering them (McCombes, 2020).

A descriptive correlational research design was employed, involving the collection of data to describe the relationship or association between variables of interest without manipulating any variables. In this case, the study aimed to describe and analyze the evaluation ratings of the respondents regarding the comprehensive strategy for efficient maritime security.

The researcher adapted the questionnaire of Kothari (2008) from his study – The role of technology in maritime security: a survey of its development, application, and adequacy." The research questionnaire evaluates and critiques the current maritime strategy, and the standard operating procedures currently in place.

As per the consultation with some experts such as Mr. Richard Cribello, LPT, MA and Dr. Dennis Caballes, LPT, PhD, Post-Doc, the questionnaire itself can be applied in the Philippine setup. The selection of the available questionnaire for this pursuit is a rigorous process to take. The adapted or modified questionnaire of Kothari (2008) covers what is intended to measure in the pursuit. There is nothing to be changed or improved (except for the future validators' recommendations) if this quantitative research instrument gets accompanied or supported with the qualitative questions that can be done through an interview of FGD.FGD.

Statistical tools such as frequency count and percentage were used to describe the profile of the respondents in terms of gender, age, highest educational attainment, and years in service. This descriptive analysis provided a snapshot of the characteristics of the respondents.

## RESULTS AND DISCUSSION

The respondents were male, accounting for 77.90% (53 out of 68). Female respondents constituted a smaller proportion, comprising 22.10% (15 out of 68) of the total sample.

Table 1.1

Demographic profile of the respondents in terms of gender

Gender	f	%
Male	53	77.90
Female	15	22.10
<b>Total</b>	<b>68</b>	<b>100.00</b>

The respondents' ages were distributed across various age brackets. The largest group was within the 45-49 years age bracket, with 25.00% (17 out of 68) of the respondents falling within this range. The age brackets with the next highest proportions were 30-34 years and 35-39 years, both accounting for 25.00% (17 out of 68) and 17.65% (12 out of 68) of the total sample, respectively. The age brackets with the lowest proportions were 50-54 years, 40-44 years, and 25-29 years

Table 1.2

Demographic profile of the respondents in terms of age

Age Bracket	f	%
50-54 years	7	10.29
45-49 years	17	25.00
40-44 years	7	10.29
35-39 years	12	17.65
30-34 years	17	25.00
25-29 years	8	11.76
<b>Total</b>	<b>68</b>	<b>100.00*</b>

In terms of educational attainment, many respondents held a bachelor's degree, constituting 64.71% (44 out of 68) of the total sample. The next largest group had a master's level of education, accounting for 27.94% (19 out of 68). The smallest group held a Doctoral level of education, representing 7.35% (5 out of 68) of the respondents.

Table 1.3

Demographic profile of the respondents in terms of highest educational attainment

Level of Education	f	%
Doctoral Level	5	7.35
Master's Level	19	27.94
Bachelor's Degree	44	64.71
<b>Total</b>	<b>68</b>	<b>100.00</b>

The respondents' years in service were distributed across various ranges. The largest proportion of respondents, 29.41% (20 out of 68), had served for 9-13 years. The next highest proportion was within the 19-23 years range, with 16.18% (11 out of 68) of the total sample falling within this category. The ranges with the lowest proportions were 29-33 years, 24-28 years, and 4-8 years.

Table 1.4

Demographic profile of the respondents in terms of years in service

Years of Service	f	%
29-33 years	7	10.29
24-28 years	8	11.76
19-23 years	11	16.18
14-18 years	12	17.65
9-13 years	20	29.41
4-8 years	10	14.71
<b>Total</b>	<b>68</b>	<b>100.00</b>

The indicators related to national security received a high evaluation from the respondents. The overall weighted mean for this aspect is 3.97, indicating a strong agreement (SA) and very efficient (VE) interpretation. The

respondents agreed that the developed comprehensive policy addresses various national threats such as war, invasion of territories, and overexploitation of marine resources. They also agreed that the Philippine Coast Guard plays a vital role in providing and securing national and maritime security.



Table 2.1

**Comprehensive strategy for efficient maritime security in terms of national security**

Indicators of National Security	X	D	R	INT
1. The developed comprehensive policy shows the standard operating procedure in the event of national threats such as the occurrence of war between Philippines and China and other countries; invasion of territories such as in northwest Palawan regions; and overexploitation of marine and area and resources such as the Scarborough shoal.	4.00	SA		VE
2. The developed comprehensive strategy addresses and gives sanction to any of the following: piracy and armed robbery against the ship, distressed vessels, maritime terrorism, drug trafficking, illegal migration, human trafficking, and container crimes.	3.99	SA		VE
3. Based on the developed comprehensive strategy, the Philippine Coast Guard (PCG) plays a vital part in providing and securing national and maritime security in areas like the West Philippine Sea.	3.96	SA		VE
4. The suggested frequency of maritime patrol operations in the West Philippine Sea is sufficient to address the national security issues present in the West Philippine Sea.	3.96	SA		VE
5. The reporting of maritime incidents and national threats together with its assessment and response based on the developed strategy is efficient.	3.97	SA		VE
<b>Overall Weighted Mean</b>	<b>3.97</b>	<b>SA</b>		<b>VE</b>

  

Scale	Mean/Score	Descriptive/Reliability (DE)	Interpretation (INT)
4	3.25 - 4.00	Strongly Agree (SA)	Very Efficient (VE)
3	2.51 - 3.25	Agree (A)	Efficient (E)
2	1.75 - 2.50	Disagree (D)	Inefficient (I)
1	1.00 - 1.75	Strongly Disagree (SD)	Very Inefficient (VI)

The evaluation of respondents regarding natural security aspects of the comprehensive strategy was also positive. The overall weighted mean for this aspect is 3.97, indicating a strong agreement (SA) and very efficient (VE)

interpretation. The respondents agreed that the strategy effectively identifies, assesses, and addresses the level of emergency and damages caused by natural threats such as typhoons, tsunamis, and storm surges. They also found the frequency of maritime patrol operations suitable for typhoon and monsoon seasons.

Table 2.2

**Comprehensive strategy for efficient maritime security in terms of natural security**

Indicators of Natural Security	X	D	R	INT
1. The level of emergency and seriousness of damages and casualties incurred during natural threats such as typhoons, tsunamis, storm surges, and others has been identified, assessed, and addressed accordingly based on the constructed comprehensive policy.	3.97	SA		VE
2. The frequency of maritime patrol operations is suitable for the months when typhoon season and monsoon seasons are occurring according to the developed strategy.	3.96	SA		VE
3. Allocation of resources such as equipment, workforce, and other essentials for the mission relating to maritime patrol operation during a natural disaster is adequate by the developed comprehensive policy.	3.97	SA		VE
4. Inter-agency coordination for an efficient assessment, information dissemination, and response during a natural threat such as typhoon, tsunami, storm surge, and others has been clearly stated in the developed comprehensive strategy.	3.96	SA		VE
5. Before, during, and after the occurrence of a natural threat, the developed comprehensive strategy has a clear standard operating procedure that timely addresses the following period.	3.97	SA		VE
<b>Overall Weighted Mean</b>	<b>3.97</b>	<b>SA</b>		<b>VE</b>

The evaluation of respondents regarding the non-renewable source of energy aspect of the comprehensive strategy was positive. The overall weighted mean for this aspect is 3.96, indicating a strong agreement (SA) and very efficient (VE) interpretation. The respondents agreed that the suggested monthly monitoring and maritime patrol operations adequately cover and address threats to national security, natural security, non-renewable resources, and physical security. They also acknowledged the streamlined standard operating procedures and sufficient allocation of resources for monthly monitoring.

Table 2.3

**Comprehensive strategy for efficient maritime security in terms of non-renewable source of energy**

Indicators of Non-Renewable Source of Energy	X	D	R	INT
1. The suggested monthly monitoring stated on the instigated comprehensive policy will be efficient to address the current threats to National Security, Natural Security, Non-Renewable resources, and Physical Security, among others.	4.0	SA		VE
2. The developed comprehensive strategy has monthly monitoring through maritime patrol operations to cover sufficiently and address the threats to National Security, Natural Security, Non-Renewable resources, and Physical Security in Philippine Maritime Territories such as the West Philippine Sea.	3.9	SA		VE
3. Concerned Philippine governing agencies including the Philippine coast guard have streamlined and structured standard operating procedures for monthly monitoring to cover threats to national security, natural security, non-renewable resources, and physical security.	3.9	SA		VE
4. Sufficient allocation of resources such as equipment, workforce, and other essentials for the monthly monitoring through maritime patrol operations during threats to national security, natural security, non-renewable resources, and physical security.	3.9	SA		VE
5. Before, during, and after the occurrence of threats to national security, natural security, non-renewable resources, and physical security, the developed comprehensive strategy has a clear standard operating procedure for monthly monitoring that timely addresses the following period.	4.0	SA		VE
<b>Overall Weighted Mean</b>	<b>3.9</b>	<b>SA</b>		<b>VE</b>

The evaluation of respondents regarding the physical security aspect of the comprehensive strategy was positive. The overall weighted mean for this aspect is 3.97, indicating a strong agreement (SA) and very efficient (VE)

interpretation. The respondents agreed that the developed policy can pacify the present situation in the West Philippine Sea where harassment and restrictions are faced by fisher folks and residents. They also believed that future events leading to harassment, exploitation, and violence would be deterred through deployed maritime

assets and enforced sanctions. Additionally, the strategy was seen as beneficial to coastal communities in terms of their security and economic stability.

Overall, the respondents evaluated the comprehensive strategy for efficient maritime security positively, with strong agreement and very efficient interpretations across all indicators. This suggests that the strategy is perceived as effective in addressing national

security, natural security, non-renewable sources of energy, and physical security concerns.

Table 2.4

**Comprehensive strategy for efficient maritime security in terms of physical security**

Indicators of Physical Security	X	D	R	INT
1. The present situation in the West Philippine Sea where fisher folks and residents near its region are being harassed and restricted will be pacified by the developed comprehensive policy.	3.91	SA		VE
2. Future events that will lead to harassment, exploitation, and violence towards the Filipino people exercising the freedom to fully utilize the resources in the West Philippine Sea will be deterred due to deployed maritime assets and sanctions enforced for every violation as stated in the developed policy.	4.00	SA		VE
3. The instigated comprehensive strategy will be beneficial to the coastal communities in the West Philippine Sea in terms of their Security and Economic Stability.	4.00	SA		VE
4. Allocation of Resources such as equipment, workforce, and other essentials for the mission relating to maritime patrol operation during the occurrence of a physical threat such as terrorism and piracy is adequate based on the comprehensive policy.	3.96	SA		VE
5. The suggested frequency of maritime patrol operations in the West Philippine Sea is sufficient to address the physical security issues present in the West Philippine Sea.	3.99	SA		VE
<b>Overall Weighted Mean</b>	<b>3.97</b>	<b>SA</b>		<b>VE</b>

The comparison of evaluation results between male and female respondents on comprehensive strategy for efficient maritime security reveals that the differences shown by the maritime security indicators are not significant. The computed t-values are not enough to show that significant differences as evaluated by males and females. Hence, the hypothesis is accepted because there is no significant difference in the evaluation results of males and females.

Table 3.1

**Significant difference between the evaluation of the respondents based on gender**

Indicators of Maritime Security	Mean Difference	Computed t-value	df	Sig.	Decision
National Security	.0003	.013	66	.495	Accept Ho
Natural Security	-.0111	-.447	66	.328	Accept Ho
Non-Renewable Source of Energy	-.0148	-.638	66	.263	Accept Ho
Physical Security	.0136	.648	66	.260	Accept Ho

Using One Way ANOVA, the significant difference between and among the evaluation of the respondents on comprehensive strategy for efficient maritime security is observed on national security ( $F=3.363$ ,  $p<.001$ ). The computed F-ratio or value is high enough to cause differences in the evaluation of the respondents based on the age brackets, and there is no equality or similarity of mean scores in each age bracket or group. Hence, the hypothesis is rejected.

Table 3.2

**Significant difference between and among the evaluation of the respondents based on age**

Indicators of Maritime Security	df	Mean Square	F-Ratio	Sig.	Decision
National Security	25 / 42	.005 / .005	1.034	.451	Accept Ho
Natural Security	25 / 42	.013 / .004	3.363	<.001	Reject Ho
Non-Renewable Source of Energy	25 / 42	.008 / .005	1.606	.086	Accept Ho
Physical Security	25 / 42	.006 / .005	1.285	.232	Accept Ho

The analysis reveals that significant differences exist on natural security when the respondents are grouped based on their years in service ( $F=2.524$ ,  $p=.002$ ). This is because the mean scores of the groups formed due to the number of years that each respondent has been in service are not similar or equal. Hence, the hypothesis is rejected. On the other indicators, significant difference is not achieved. Hence, the hypothesis is accepted.

Table 3.3

**Significant difference between and among the evaluation of the respondents based on highest educational attainment**

Indicators of Maritime Security	df	Mean Square	F-Ratio	Sig.	Decision
National Security	2 / 65	.008 / .005	1.697	.191	Accept Ho
Natural Security	2 / 65	.042 / .006	7.075	.002	Reject Ho
Non-Renewable Source of Energy	2 / 65	.040 / .005	7.665	.001	Reject Ho

Indicators of Maritime Security	df	Mean Square	F-Ratio	Sig.	Decision
National Security	20 / 47	.005 / .005	1.030	.191	Accept Ho
Natural Security	20 / 47	.012 / .005	2.524	.002	Reject Ho
Non-Renewable Source of Energy	20 / 47	.006 / .007	.877	.001	Accept Ho
Physical Security	20 / 47	.005 / .005	.949	.007	Accept Ho

**STRATEGIC DEVELOPMENT PLAN**

Enhance Inter-Agency Coordination: Strengthening coordination among relevant agencies is critical to ensure a unified and effective response to maritime security threats. A cohesive and integrated approach will enhance overall capabilities and responsiveness.

Update and Refine Policies and SOPs: Regularly reviewing and updating policies and SOPs is essential to address emerging threats and challenges in maritime security.

Adapting to changing circumstances will enable the strategy to remain relevant and effective.

**Invest in Training and Capacity Building:** Equipping personnel with the necessary skills and knowledge is crucial for efficient handling of threats and utilization of advanced technology. Well-trained personnel will be better prepared to respond to emergencies effectively.

**Continuous Monitoring and Evaluation:** Establishing a robust system for monitoring and evaluation ensures that the comprehensive strategy remains effective over time. Regular assessments and adaptations will strengthen its impact.

**Improve Reporting and Incident Response Mechanisms:** Implementing efficient reporting and response mechanisms will enhance the overall monitoring and timely addressing of security issues.

**Increase Maritime Patrol Operations:** Expanding the frequency and coverage of maritime patrols is important, especially in areas prone to threats. Adequate allocation of resources will support these operations.

**Promote Public Awareness and Participation:** While public awareness and participation are essential, they are placed lower in this ranking as they may have a more indirect impact on immediate security challenges compared to the other actions.

## DISCUSSION

Based on the analysis and interpretation of the data, the following conclusions can be drawn:

**Demographic Profile:** The respondents in the study consisted of 68 individuals. Most of the respondents were male (77.90%) compared to females (22.10%). In terms of age, the respondents represented various age brackets,

with the highest number in the 45-49 years bracket (25.00%). In terms of educational attainment, most of the respondents held a bachelor's degree (64.71%). Regarding years in service, the respondents had diverse experience, with the highest number in the 9-13 years bracket (29.41%).

**Evaluation of Comprehensive Strategy:** The respondents evaluated the comprehensive strategy for efficient maritime security across four indicators: national security, natural security, non-renewable source of energy, and physical security. The overall weighted mean for all indicators ranged from 3.96 to 3.97, indicating an important level of agreement and efficiency in the evaluation.

**Gender Differences:** There were no significant differences observed in the evaluation of the comprehensive strategy between male and female respondents across all indicators. The computed t-values were not sufficient to indicate significant differences, suggesting that gender does not play a significant role in the evaluation results.

**Age Differences:** Significant differences were observed in the evaluation of the comprehensive strategy based on age for the indicator of national security. However, there were no significant differences observed for the indicators of natural security, non-renewable source of energy, and physical security. This indicates that age influences the evaluation of national security but not the other indicators.

**Educational Attainment Differences:** Significant differences were observed in the evaluation of the comprehensive strategy based on educational attainment for the indicators of natural security, non-renewable source of energy, and physical security. This suggests that respondents with different educational backgrounds have varying evaluations of these indicators.

**Years in Service Differences:** Significant differences were observed in the evaluation of the comprehensive strategy based on years in service for the indicators of natural security and non-renewable sources of energy. However,

there were no significant differences observed for the indicators of national security and physical security. This implies that years of service have an impact on the evaluation of natural security and non-renewable sources of energy but not on national security and physical security.

Based on these conclusions, it is recommended to focus on addressing the specific areas where significant differences were observed, such as national security for different age groups and natural security, non-renewable source of energy, and physical security for respondents

with varying educational attainment and years in service. Additionally, the identified strategic development plans can be implemented to further improve the comprehensive strategy for efficient maritime security.

Based on the conclusions drawn from the study, the following recommendations can be made to enhance the comprehensive strategy for efficient maritime security:

### Addressing National Security

Conduct further research and analysis to understand the specific concerns and needs of different age groups regarding national security. This will help tailor the strategy to effectively address the security threats and challenges faced by each age bracket.

Develop targeted awareness campaigns and educational programs to increase the understanding and involvement of different age groups in matters related to national security.

Strengthen inter-agency coordination and collaboration to ensure a cohesive response to national threats, such as war, invasion of territories, and overexploitation of marine

resources. This may involve conducting joint exercises, sharing intelligence, and developing protocols for effective crisis management.

### Enhancing Natural Security

Conduct regular assessments to identify and address vulnerabilities and potential damage caused by natural threats such as typhoons, tsunamis, and storm surges. This will help in developing proactive measures to minimize the impact on maritime security

Ensure that the frequency of maritime patrol operations aligns with the occurrence of natural disasters, particularly during typhoon and monsoon seasons. This will help in effectively monitoring and responding to any emergencies that may arise.

Strengthen inter-agency coordination and information dissemination during natural disasters to facilitate timely response and resource allocation. This can involve conducting joint training exercises, improving communication systems, and establishing clear protocols for inter-agency collaboration.

### Managing Non-Renewable Sources of Energy

Review and update the comprehensive strategy to ensure that monthly monitoring adequately addresses the threats to national security, natural security, non-renewable resources, and physical security in Philippine maritime territories.

Streamline and enhance standard operating procedures for monthly monitoring, involving concerned governing agencies such as the Philippine Coast Guard. This will help in ensuring efficient allocation of resources, including equipment, manpower, and essentials required for monitoring operations.

Emphasize the importance of sustainable and responsible practices in the utilization of nonrenewable resources, considering the long-term environmental and security implications. This may involve promoting awareness, implementing regulations, and fostering cooperation with relevant stakeholders.

### Strengthening Physical Security

Ensure the comprehensive policy adequately addresses the security concerns of coastal communities in the West Philippine Sea, particularly regarding harassment, exploitation, and violence. This can be achieved through increased presence and deployment of maritime assets, along with strict enforcement of sanctions for violations.

Review and assess the suggested frequency of maritime patrol operations in the West Philippine Sea to ensure it effectively addresses the physical security issues present in the region. This may involve conducting risk assessments, analyzing threat patterns, and adjusting patrol schedules accordingly.

Collaborate with coastal communities to develop strategies that enhance their security and economic stability. This can include providing training programs, livelihood opportunities, and support systems to empower local communities and promote their well-being.

Overall, these recommendations aim to refine and improve the comprehensive strategy for efficient maritime security by addressing specific areas of concern identified in the study. By implementing these measures, it is expected that the strategy will become more effective in

safeguarding national and natural security, managing non-renewable resources, and ensuring the physical security of coastal communities and maritime territories.

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