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Maritime Security Awareness and Community Resilience in Contested Coastal Environments

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ABSTRACT

This study was anchored on the growing need to understand maritime security from the standpoint of coastal communities living near contested waters. It determined the level of maritime security awareness and community resilience in contested coastal environments, with emphasis on how local people understood maritime risks, safety advisories, rights and responsibilities at sea, reporting channels, and community-based response procedures. The study used a community-centered predictive correlational design with a contextual descriptive component. Data were gathered from coastal community respondents in selected areas of Palawan through a validated and reliability-tested survey questionnaire. The instrument obtained an overall Cronbach's alpha of 0.94, indicating excellent internal consistency. Weighted mean, standard deviation, Spearman's rho correlation, and bootstrapped multiple regression were used to analyze the data. Results showed that maritime security awareness was high, although knowledge of reporting and assistance channels and familiarity with response procedures remained moderate. Community resilience was also high, with social cooperation as the strongest area, while livelihood continuity, adaptive capacity, and preparedness for maritime-related disruptions needed further strengthening. A significant strong positive relationship was found between maritime security awareness and community resilience. Regression results further revealed that awareness of maritime risks, understanding of safety advisories, and awareness of rights and responsibilities at sea significantly predicted community resilience. The findings indicate that informed communities are better positioned to cope with maritime uncertainty, but awareness must be supported by clear reporting systems, practical preparedness mechanisms, and livelihood assistance.

Keywords: *Coastal communities, community resilience, contested coastal environments, livelihood continuity, maritime security awareness, Palawan*

INTRODUCTION

The sea has always been central to the security, livelihood, and identity of coastal communities. For countries surrounded by water, maritime issues are not limited to naval patrols, legal claims, or diplomatic negotiations. They are also felt in the daily lives of fisherfolk, coastal households, local leaders, traders, and residents whose income, movement, safety, and sense of security are closely tied to the condition of nearby waters. In contested coastal environments, the meaning of maritime security becomes more immediate because communities are not only observers of maritime tension. They are among the first to experience its consequences.

In the Philippine setting, the West Philippine Sea has become one of the most visible spaces where national security, maritime governance, and community welfare meet. The 2016 South China Sea Arbitration clarified important legal issues concerning maritime entitlements and found that certain claims inconsistent with the United

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Nations Convention on the Law of the Sea had no lawful effect beyond what the Convention allows (Permanent Court of Arbitration, 2016). While the ruling strengthened the legal position of the Philippines, the situation at sea has remained difficult for communities whose livelihood depends on fishing grounds, safe navigation, and access to marine resources. For coastal residents, maritime security is therefore not an abstract matter of foreign policy. It is connected with where they can fish, how safely they can travel, how they receive information about threats, and how prepared they are when maritime incidents affect their locality.

Recent scholarship has emphasized that maritime security should not be viewed only through the lens of state power or military response. Li (2023) argued that maritime security has to be understood through a broader and more sustainable framework because threats at sea are connected with governance, human welfare, ecological protection, and the everyday interests of communities. This view is important in contested coastal environments because the security of the sea also affects food security, local economies, public confidence, and the ability of communities to adjust to risk. When maritime security is framed only as a matter of defense, the experiences of coastal populations may be overlooked. However, when it is approached through a people-centered perspective, the awareness, preparedness, and resilience of communities become part of the wider security picture.

Baviera (2016) likewise showed that the West Philippine Sea dispute affects several domestic stakeholders, including the defense sector, maritime law enforcement agencies, fisheries groups, local governments, and economic actors. Her analysis stressed the need for stronger consultation and more inclusive decision-making, especially because policy choices made at the national level carry real consequences for local groups. This point is relevant to the present study because coastal communities are not passive recipients of government action. Their awareness of maritime security issues, trust in available information, experience with maritime risks, and capacity to respond to disruptions may influence how resilient they become in the face of contested sea conditions.

Maritime security awareness refers to the extent to which people understand threats, risks, rights, responsibilities, and response mechanisms related to the maritime environment. In coastal areas exposed to contested waters, such awareness may include knowledge of restricted or risky fishing zones, understanding of safety advisories, recognition of suspicious maritime activities, familiarity with government support channels, and awareness of the broader implications of maritime disputes. Awareness is important because communities that understand risks are more likely to make informed decisions, coordinate with local authorities, and respond calmly when incidents occur. Without sufficient awareness, misinformation, fear, and uncertainty may weaken community action.

Community resilience, on the other hand, refers to the capacity of a community to prepare for, withstand, adapt to, and recover from disruptions. In maritime settings, resilience may be reflected in livelihood adjustment, local cooperation, trust in institutions, access to timely information, emergency readiness, and the ability of residents to maintain social and economic stability despite pressure from external risks. Studies on maritime governance have increasingly recognized that ocean-related problems require the participation of many actors, including government institutions, local communities, and civil society groups (Wu, 2026). This means that community resilience should be examined not only after disasters or natural hazards, but also in areas where security tensions affect daily life.

The situation in contested coastal environments is made more complex by the overlap of traditional and nontraditional maritime concerns. Territorial disputes, foreign vessel presence, law enforcement challenges, illegal fishing, environmental degradation, and livelihood insecurity can occur within the same maritime space. Khan (2025) noted that disputed maritime areas create continuing law enforcement problems because legal ambiguity and competing claims often affect coordination and practical response. For communities, these problems may appear in simpler but more painful forms: reduced fishing access, fear of harassment, uncertainty about safety, or dependence on delayed information. These conditions show why maritime security should be studied not only from the viewpoint of institutions, but also from the perspective of those living closest to the contested waters.

In Palawan and other coastal areas connected to West Philippine Sea operations, the role of communities deserves closer academic attention. These communities often serve as witnesses to maritime developments, users of marine resources, partners in local reporting, and beneficiaries of government protection efforts. Their level of maritime security awareness may shape how they interpret risks and how they cooperate with local and national

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agencies. At the same time, their community resilience may determine how well they sustain livelihoods, protect families, maintain confidence, and adapt to continuing uncertainty. Studying the relationship between these two variables can provide useful evidence for local governance, maritime security education, community-based preparedness, and policy support.

This study was developed from the need to place coastal communities at the center of maritime security research. While many discussions on the West Philippine Sea focus on state strategy, naval capability, diplomacy, and international law, there remains a need to understand how people in affected coastal environments perceive, process, and respond to maritime security realities. By examining maritime security awareness and community resilience among coastal stakeholders, the study aims to contribute to a more grounded understanding of maritime security, one that recognizes the importance of people, place, livelihood, and local preparedness in sustaining security in contested maritime spaces.

Literature Review

Maritime Security Awareness in Coastal Communities

Maritime security awareness has moved beyond the technical concern of surveillance agencies and naval institutions because people living near contested waters also need to understand the risks, rights, and responsibilities attached to the sea. Bueger and Edmunds (2017) explained that maritime security studies must address the problem of "seablindness," where societies fail to recognize how deeply public safety, livelihood, trade, food systems, and national stability depend on maritime spaces. In coastal communities, this awareness is especially important because residents may directly encounter the effects of illegal fishing, vessel harassment, restricted access to traditional fishing grounds, and conflicting narratives about maritime rights. Li (2023) added that maritime security should be understood through a sustainable and integrated lens, where security concerns are connected with governance, environmental protection, economic welfare, and human security. This perspective is useful in the present study because maritime security awareness among community members is not limited to knowing the existence of a territorial dispute. It also involves recognizing maritime risks, understanding official advisories, knowing where to seek assistance, and appreciating how local actions contribute to wider security efforts. In contested coastal environments, awareness becomes a practical community asset because it helps residents respond to uncertainty with better judgment rather than fear, rumor, or silence.

Contested Coastal Environments and Community Exposure

Contested coastal environments place local communities in a difficult position because geopolitical disputes are experienced not only through national policy but also through daily livelihood conditions. The 2016 South China Sea Arbitration affirmed important legal principles under the United Nations Convention on the Law of the Sea and clarified that certain expansive maritime claims had no legal basis under the Convention (Permanent Court of Arbitration, 2016). However, Baviera (2016) emphasized that the West Philippine Sea issue affects domestic stakeholders in uneven ways, including the defense sector, maritime law enforcement, fisheries groups, local governments, energy interests, and coastal communities. For fisherfolk and coastal residents, contestation may appear through disrupted access to fishing areas, uncertainty over safety at sea, dependence on government patrols, and anxiety over encounters with foreign vessels. McCabe (2023) further argued that maritime insecurity is often shaped by environmental and socioeconomic pressures, meaning that communities exposed to contested waters may also face overlapping problems related to resource decline, poverty, weak governance, and livelihood vulnerability. This shows that contested coastal environments should not be studied only as strategic locations on a map. They should also be examined as lived spaces where ordinary people negotiate risk, survival, belonging, and trust in institutions.

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Community Resilience in Maritime Risk Settings

Community resilience refers to the ability of people and local institutions to prepare for, absorb, adapt to, and recover from disruptions that threaten their safety and well-being. In coastal settings, resilience is often discussed in relation to climate change, disasters, and ecosystem degradation, but it is also relevant to maritime insecurity because coastal residents may face risks that are political, economic, environmental, and social at the same time. The Intergovernmental Panel on Climate Change (2022) stressed that coastal communities are among the groups most exposed to climate-related hazards, sea-level rise, livelihood disruption, and adaptation challenges. Although the present study focuses on maritime security rather than climate alone, this literature is relevant because resilience in coastal areas depends on similar capacities: access to reliable information, livelihood flexibility, social cooperation, local leadership, preparedness, and institutional support. Steven et al. (2020) likewise argued that coastal resilience requires attention to equity, ecosystem protection, infrastructure, and the needs of people who depend on marine and coastal resources. In contested coastal environments, community resilience may therefore be seen in how residents sustain livelihoods, protect families, cooperate with barangay and maritime authorities, respond to warnings, and maintain confidence despite uncertainty. A resilient community is not one that is free from risk, but one that has the social, informational, and institutional capacity to endure and adapt.

Governance, Institutional Support, and Community-Based Maritime Security

The literature on maritime security increasingly recognizes that durable security cannot be produced by military presence alone. It also requires governance systems that connect national institutions, local governments, coastal residents, fisherfolk, civil society, and maritime law enforcement agencies. Li (2023) noted that maritime security becomes more sustainable when it is treated as a governance concern involving coordination, shared responsibility, and long-term public welfare. This is consistent with Baviera's (2016) argument that the West Philippine Sea issue requires attention to the interests and participation of domestic stakeholders, particularly those whose livelihoods and security are directly affected by policy decisions. In the same way, Bueger and Edmunds (2017) emphasized that maritime security involves different actors and practices, not only naval operations, because threats at sea often overlap with crime, environmental harm, economic disruption, and public safety. For coastal communities, institutional support may include timely advisories, livelihood assistance, safety training, reporting channels, community education, visible government presence, and coordination between barangays and maritime agencies. In the context of the present study, governance support becomes important because maritime security awareness may only translate into resilience when communities have trusted institutions that help them act on what they know. Awareness without support may produce concern, but awareness combined with responsive governance can strengthen preparedness, cooperation, and confidence.

METHODS

Research Design

The study used a community-centered predictive correlational design with a contextual descriptive component. This design was selected because the study did not merely describe the level of maritime security awareness and community resilience, but also examined whether awareness-related dimensions could meaningfully predict the resilience capacity of people living in contested coastal environments. The design was appropriate for a study involving coastal communities because maritime security awareness may vary according to lived exposure, access to information, local experience, and interaction with authorities. At the same time, community resilience was treated as an outcome shaped by preparedness, trust, adaptive capacity, cooperation, and access to support systems.

The contextual descriptive component allowed the study to present the existing condition of maritime security awareness and community resilience as perceived by community respondents. The predictive correlational component provided a deeper statistical reading by determining whether higher awareness of maritime threats,

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safety procedures, institutional channels, and community-based response mechanisms was associated with stronger resilience. This design gave the study both practical and analytical value because it described the situation of the community while also identifying which awareness indicators were most relevant to resilience in coastal settings affected by maritime uncertainty.

Research Locale

The study was conducted in selected coastal communities in Palawan that were socially and geographically connected to maritime activities, coastal livelihood, and West Philippine Sea-related concerns. These communities were considered appropriate research sites because residents were exposed to maritime issues through fishing, coastal transport, local monitoring, community advisories, and proximity to areas affected by contested sea conditions. The locale provided a meaningful setting for examining how ordinary people understood maritime security and how prepared they felt in responding to risks that could affect their livelihood, safety, mobility, and community stability.

The selection of the locale was guided by the relevance of the area to the study rather than convenience alone. Coastal communities in Palawan occupy a strategic position in discussions on maritime security because they are located near waters where national security concerns, resource protection, livelihood dependence, and community welfare intersect. The setting therefore allowed the researcher to gather responses from individuals whose experiences were closely related to the central variables of the study.

Participants and Sampling Technique

The participants of the study were community members from selected coastal areas whose daily life, livelihood, residence, or local responsibilities were connected to the maritime environment. They included individuals who had sufficient familiarity with coastal community life and were capable of giving informed responses about maritime security awareness and community resilience. The study focused on people in the community rather than military personnel so that the findings would reflect civilian understanding, preparedness, and resilience in contested coastal environments.

The study used a stratified purposive sampling technique. This approach allowed the researcher to include participants from different community sectors while ensuring that they were relevant to the purpose of the study. The stratification helped represent different local voices from the coastal community, while purposive selection ensured that the participants had actual exposure to maritime-related concerns. This sampling technique was appropriate because the study required participants who could provide meaningful information about awareness, perceived risks, community support, and resilience in the context of coastal security conditions.

Research Instrument

The primary research instrument was a researcher-made survey questionnaire developed from the study variables, related literature, and the specific context of contested coastal environments. The instrument was divided into two major parts. The first part measured maritime security awareness in terms of awareness of maritime risks, understanding of safety advisories, knowledge of reporting and assistance channels, awareness of rights and responsibilities at sea, and familiarity with community-based response procedures. The second part measured community resilience in terms of preparedness, adaptive capacity, social cooperation, trust in institutions, livelihood continuity, and confidence in community response.

The questionnaire used a five-point Likert scale to capture the level of agreement or extent of observation among the participants. The response scale allowed the researcher to quantify community perceptions while still reflecting the practical realities experienced by coastal residents. Items were written in clear and community-appropriate language to ensure that respondents could answer without needing technical knowledge of naval operations or international law.

To establish validity, the instrument was submitted to a panel of experts composed of specialists in maritime studies, public administration or governance, research methodology, and community development. The validators examined the instrument in terms of relevance, clarity, alignment with the research questions, cultural

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appropriateness, and suitability to the coastal community context. Their comments were incorporated into the revised version of the questionnaire. Items that were too technical, ambiguous, or repetitive were reworded or removed to improve the quality of the instrument.

A pilot test was conducted among coastal residents from a comparable community that was not included in the actual data gathering. The pilot test helped determine whether the items were understandable, whether the directions were clear, and whether the questionnaire could produce consistent responses. After the pilot testing, reliability analysis was performed using Cronbach's alpha. The maritime security awareness scale obtained a Cronbach's alpha value of 0.91, while the community resilience scale obtained a Cronbach's alpha value of 0.93. The overall instrument obtained a Cronbach's alpha value of 0.94, which indicated excellent internal consistency. These results showed that the instrument was reliable for measuring the intended variables of the study.

Data Gathering

The researcher first secured the necessary permission from the concerned local authorities and community gatekeepers before the actual conduct of the study. Coordination was made with the appropriate offices to explain the purpose of the research, the nature of the participants, and the expected process of data gathering. After permission was granted, the researcher identified the target coastal communities and coordinated with local leaders to determine the suitable schedule and venue for administering the questionnaire.

Before answering the questionnaire, the participants were informed about the purpose of the study, the voluntary nature of their participation, and the confidentiality of their responses. The researcher explained that the study was conducted for academic purposes and that no respondent would be personally identified in the presentation of results. Participants were given enough time to read the instructions and answer the questionnaire honestly.

The survey was administered in a manner that respected the availability, safety, and comfort of the participants. Assistance was provided only for clarifying directions or explaining unfamiliar words, but the researcher avoided influencing the answers. After the questionnaires were retrieved, the responses were checked for completeness. Incomplete or invalid responses were excluded from the encoding process. The valid responses were then coded, organized, and prepared for statistical analysis.

Data Analysis

The data were analyzed using both descriptive and predictive statistical procedures. To determine the level of maritime security awareness and community resilience, the study used weighted mean, standard deviation, and ranked mean scores. The weighted mean described the general level of responses for each indicator, while the standard deviation showed the degree of consistency or variation among the participants' answers. Ranking was used to identify the strongest and weakest indicators within each variable.

Before testing the relationship between the major variables, the distribution of the data was examined using normality checks and visual inspection of response patterns. Since community-based survey data often contained clustered perceptions and ordinal tendencies, the study used Spearman's rho correlation to determine the strength and direction of the relationship between maritime security awareness and community resilience. This treatment was appropriate because it measured association without requiring strict normal distribution.

To provide a more advanced and meaningful analysis, the study also used bootstrapped multiple regression analysis. This was selected because it allowed the researcher to identify which dimensions of maritime security awareness significantly predicted community resilience while reducing dependence on strict distributional assumptions. Bootstrapping generated more stable confidence intervals and strengthened the reliability of the findings, especially for community-based data. The regression model helped determine which awareness factors had the strongest influence on resilience, such as knowledge of maritime risks, access to advisories, familiarity with assistance channels, and confidence in local response mechanisms.

The level of significance was set at 0.05. The results were interpreted using both statistical values and practical meaning. This allowed the findings to be discussed not only in terms of whether a relationship existed, but

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also in terms of how the results could inform maritime security education, community preparedness planning, and local governance support in contested coastal environments.

Ethical Consideration

The study observed ethical standards throughout the research process. Participation was voluntary, and the respondents were informed that they had the right to decline or withdraw from the study without any negative consequence. Informed consent was obtained before the participants answered the questionnaire. The purpose of the study, the expected participation, and the use of the gathered data were clearly explained to the respondents.

Confidentiality was strictly maintained. The study did not require the disclosure of sensitive personal information that could identify the respondents. The responses were used only for academic and research purposes. Data were encoded, stored, and reported in summary form to prevent the identification of individual participants or specific households.

The researcher also observed cultural sensitivity and community respect during the conduct of the study. Since the research involved coastal communities exposed to maritime security concerns, the questions were framed carefully to avoid creating fear, political tension, or discomfort among the participants. The study focused on awareness, preparedness, and resilience rather than on confidential security operations. The researcher ensured that the conduct of the study did not interfere with the livelihood, safety, or local responsibilities of the participants.

RESULTS AND DISCUSSION

Table 1. *Level of Maritime Security Awareness among Coastal Community Respondents*

Indicators of Maritime Security Awareness	Mean	SD	Descriptive Interpretation	Rank
Awareness of maritime risks in nearby waters	3.92	0.71	High	1
Understanding of safety advisories issued by authorities	3.78	0.76	High	2
Awareness of rights and responsibilities at sea	3.63	0.80	High	3
Familiarity with community-based response procedures	3.41	0.84	Moderate	4
Knowledge of reporting and assistance channels	3.28	0.88	Moderate	5
Overall Mean	3.60	0.80	High	

Scale: 4.21 to 5.00 Very High, 3.41 to 4.20 High, 2.61 to 3.40 Moderate, 1.81 to 2.60 Low, 1.00 to 1.80 Very Low

Table 1 presents the level of maritime security awareness among coastal community respondents. The overall mean of 3.60 indicates a high level of maritime security awareness. This suggests that the respondents generally understood the presence of maritime risks in their environment and were conscious of safety-related concerns affecting their community. The result implies that maritime security issues were already part of local awareness, especially among people whose daily activities were connected to fishing, coastal travel, local trade, and community monitoring.

Among the indicators, awareness of maritime risks in nearby waters obtained the highest mean of 3.92, described as high. This shows that the respondents were strongly aware that their coastal environment was exposed to possible security concerns, such as unsafe sea movement, restricted access to certain fishing areas, presence of unfamiliar vessels, and uncertainty caused by maritime tensions. This result is understandable because residents of coastal communities often develop awareness through repeated exposure to events, local conversations, official advisories, and the lived experience of people who depend on the sea for livelihood. Their awareness was not necessarily technical or legalistic, but it was grounded in practical community experience.

The second highest indicator was understanding of safety advisories issued by authorities, with a mean of 3.78, also interpreted as high. This indicates that many respondents were able to understand advisories, warnings, and reminders provided by local officials or maritime authorities. The finding suggests that safety communication had already reached many members of the community. However, the standard deviation of 0.76 also shows some

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variation in responses, which may mean that not all residents received advisories with the same clarity, frequency, or confidence.

The indicator awareness of rights and responsibilities at sea received a mean of 3.63, described as high. This finding suggests that respondents had a generally favorable level of awareness regarding their duties and entitlements in maritime spaces, particularly in relation to safe fishing, compliance with local rules, respect for community protocols, and responsible use of marine resources. However, this awareness may still require strengthening because contested coastal environments involve more complex issues, such as lawful access, documentation of incidents, safety reporting, and coordination with proper agencies.

Two indicators received only moderate ratings. Familiarity with community-based response procedures obtained a mean of 3.41, while knowledge of reporting and assistance channels obtained the lowest mean of 3.28. These results reveal an important problem in the study. Although respondents were generally aware of maritime risks, their knowledge of what to do, whom to contact, and how to report incidents was less developed. This means that awareness was stronger at the level of recognizing risks than at the level of organized response. The finding suggests a gap between knowing that a maritime security problem exists and knowing how to act when that problem occurs. In practical terms, communities may be aware of possible danger, but they may still lack confidence in formal reporting systems, assistance mechanisms, or response procedures.

The overall result indicates that maritime security awareness was present, but not yet fully operational. The community appeared informed about the existence of maritime risks, yet less prepared in terms of procedural knowledge. This has direct implications for local governance and maritime security education. If community members are expected to support maritime safety, coastal monitoring, and local preparedness, awareness programs should move beyond general information campaigns. They should include clear, simple, and repeated orientation on reporting channels, emergency contacts, documentation procedures, and barangay-level response protocols.

Table 2. Level of Community Resilience among Coastal Community Respondents

Indicators of Community Resilience	Mean	SD	Descriptive Interpretation	Rank
Social cooperation among community members	3.86	0.70	High	1
Confidence in community response during maritime-related concerns	3.64	0.75	High	2
Trust in local institutions and authorities	3.48	0.82	High	3
Preparedness for maritime-related disruptions	3.36	0.87	Moderate	4
Adaptive capacity in times of livelihood disruption	3.25	0.91	Moderate	5
Livelihood continuity despite maritime uncertainty	3.18	0.94	Moderate	6
Overall Mean	3.46	0.83	High	

Scale: 4.21 to 5.00 Very High, 3.41 to 4.20 High, 2.61 to 3.40 Moderate, 1.81 to 2.60 Low, 1.00 to 1.80 Very Low

Table 2 shows the level of community resilience among coastal community respondents. The overall mean of 3.46 indicates a high level of community resilience. This means that the respondents generally perceived their community as capable of coping with maritime-related risks and uncertainties. The result shows that the community had existing strengths, particularly in social cooperation, local response confidence, and trust in institutions. However, the results also reveal several areas requiring attention, especially preparedness, adaptive capacity, and livelihood continuity.

The highest-rated indicator was social cooperation among community members, with a mean of 3.86, interpreted as high. This finding suggests that the respondents believed their community had strong interpersonal support systems. In many coastal communities, cooperation is often seen in shared warnings, assistance during emergencies, lending of tools or boats, collective fishing practices, and informal communication among families and neighbors. This result indicates that local social bonds served as an important foundation of resilience. Even

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when formal systems were not always strong, community members appeared to rely on one another for information, support, and adjustment during uncertain situations.

The indicator confidence in community response during maritime-related concerns ranked second, with a mean of 3.64, also described as high. This implies that respondents generally believed their community could respond when maritime-related problems occurred. Such confidence may come from previous experience, local leadership, barangay coordination, and the ability of residents to mobilize quickly during emergencies. However, the result should be interpreted carefully because confidence does not always mean full preparedness. A community may believe it can respond, but still lack formal training, equipment, livelihood support, or structured response procedures.

The indicator trust in local institutions and authorities obtained a mean of 3.48, interpreted as high. This shows that respondents still had a favorable level of trust in local officials, barangay leaders, and agencies involved in community safety and maritime concerns. Trust is important because people are more likely to follow advisories, report incidents, and participate in preparedness activities when they believe that institutions are responsive and credible. However, the mean is close to the lower boundary of the high category, which suggests that trust may not be equally strong among all respondents. The standard deviation of 0.82 also shows differences in perception, possibly caused by varying experiences with assistance, communication, and response time.

The lower-rated indicators reveal the more serious concerns of the community. Preparedness for maritime-related disruptions obtained a moderate mean of 3.36. This suggests that while the community had some level of readiness, it was not yet strong enough to be considered highly resilient in practical terms. Preparedness may be limited by the absence of regular drills, lack of clear protocols, weak household-level planning, or insufficient access to timely information. Similarly, adaptive capacity in times of livelihood disruption received a mean of 3.25, indicating only moderate resilience. This means that when maritime tensions affect fishing, sea travel, or coastal work, many residents may struggle to adjust their income sources or daily routines.

The lowest-rated indicator was livelihood continuity despite maritime uncertainty, with a mean of 3.18, described as moderate. This is a significant finding because it reveals that livelihood remains the most vulnerable part of community resilience. Even if residents are aware of maritime risks and willing to cooperate, their resilience may weaken when their income is disrupted. For fisherfolk and coastal households, reduced access to fishing grounds, fear of going farther into the sea, rising fuel costs, delayed catch, or dependence on limited alternative livelihood programs may reduce their capacity to recover from maritime-related disturbances.

The overall result suggests that community resilience was socially strong but economically fragile. The respondents showed confidence in local cooperation and community response, yet their resilience was challenged by livelihood uncertainty and limited adaptive options. This finding supports the need for resilience programs that do not focus only on emergency readiness. Coastal resilience in contested environments must also include livelihood protection, alternative income support, local safety education, access to assistance, and stronger coordination between communities and government institutions.

Table 3. *Spearman's Rho Correlation between Maritime Security Awareness and Community Resilience*

Variables Correlated	Spearman's rho	p-value	Strength of Relationship	Decision	Interpretation
Maritime Security Awareness and Community Resilience	0.682	0.000	Strong Positive	Significant	Higher maritime security awareness was associated with stronger community resilience

Level of significance: 0.05

Table 3 presents the correlation between maritime security awareness and community resilience using Spearman's rho. The result shows a correlation coefficient of **0.682** with a p-value of **0.000**, which is lower than the 0.05 level of significance. This indicates a statistically significant and strong positive relationship between maritime security awareness and community resilience. Therefore, the findings show that respondents with higher maritime security awareness also tended to report stronger community resilience.

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The result suggests that awareness plays an important role in strengthening community capacity in contested coastal environments. When people understand maritime risks, safety advisories, reporting channels, rights and responsibilities, and response procedures, they are more likely to participate in community preparedness and respond constructively to security-related concerns. Awareness helps reduce confusion and fear because residents are better able to interpret events, verify information, follow advisories, and coordinate with local authorities.

The strong positive relationship also indicates that resilience was not only shaped by material resources or government support. It was also influenced by what the community knew, understood, and believed it could do. In coastal communities, practical knowledge can be a protective factor. Residents who are informed about maritime risks may be more cautious when going to sea, more willing to report suspicious activities, more responsive to advisories, and more prepared to help others during disruptions. In this sense, maritime security awareness becomes part of the community's social defense and adaptive capacity.

However, the result should not be interpreted to mean that awareness alone is enough. The previous tables showed that the weakest areas were knowledge of reporting and assistance channels, preparedness, adaptive capacity, and livelihood continuity. This means that while awareness and resilience were strongly connected, the community still needed stronger systems that would convert awareness into concrete action. Awareness may improve resilience, but its effect becomes stronger when supported by reliable institutions, clear communication, livelihood assistance, and community-level response mechanisms.

The finding has important implications for maritime security governance. Public information campaigns should not only explain broad maritime issues. They should also strengthen the ability of coastal residents to act safely and confidently. Community orientations, barangay-based maritime safety briefings, fisherfolk reporting systems, and regular coordination meetings may help transform awareness into readiness. In contested coastal environments, informed communities can become active partners in local resilience, provided that their knowledge is supported by accessible and trusted response systems.

Table 4. *Bootstrapped Multiple Regression Analysis of Maritime Security Awareness Dimensions as Predictors of Community Resilience*

Predictor Variables	B	SE	Beta	Bootstrap 95% CI	p-value	Interpretation
Awareness of maritime risks in nearby waters	0.214	0.061	0.251	0.091 to 0.336	0.001	Significant predictor
Understanding of safety advisories issued by authorities	0.188	0.058	0.223	0.073 to 0.304	0.002	Significant predictor
Awareness of rights and responsibilities at sea	0.142	0.055	0.171	0.034 to 0.251	0.011	Significant predictor
Familiarity with community-based response procedures	0.096	0.052	0.112	-0.006 to 0.202	0.067	Not significant
Knowledge of reporting and assistance channels	0.081	0.049	0.098	-0.014 to 0.176	0.094	Not significant
Model Summary						
R	0.724					
R^2	0.524					
Adjusted R^2	0.508					
F-value	32.614				0.000	Significant model

Level of significance: 0.05
Bootstrap samples: 5,000

Table 4 presents the results of the bootstrapped multiple regression analysis used to determine which dimensions of maritime security awareness predicted community resilience. The regression model was statistically significant, with an F-value of 32.614 and a p-value of 0.000. The model obtained an R value of 0.724, indicating

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a strong combined relationship between the awareness dimensions and community resilience. The R^2 value of 0.524 shows that 52.4 percent of the variance in community resilience was explained by the combined dimensions of maritime security awareness. This means that maritime security awareness contributed substantially to how resilient the community perceived itself to be.

Among the predictors, awareness of maritime risks in nearby waters emerged as the strongest significant predictor, with a beta value of 0.251 and a p-value of 0.001. This suggests that respondents who were more aware of maritime risks were more likely to report stronger resilience. The result is reasonable because recognizing risks is often the first step in preparing for them. When residents understand that their coastal environment is exposed to possible maritime disruptions, they become more alert, cautious, and responsive to local advisories. Risk awareness also helps people make better decisions about fishing activities, sea travel, household safety, and community cooperation.

The second significant predictor was understanding of safety advisories issued by authorities, with a beta value of 0.223 and a p-value of 0.002. This finding indicates that community resilience improved when respondents could understand and interpret official warnings or guidance. The result highlights the importance of clear, timely, and locally understandable communication. In coastal communities, advisories that are too technical, delayed, or inconsistently delivered may fail to guide action. On the other hand, advisories that are explained well can help people prepare, avoid danger, and coordinate with local officials.

The third significant predictor was awareness of rights and responsibilities at sea, with a beta value of 0.171 and a p-value of 0.011. This means that respondents who understood their rights and responsibilities as coastal residents or sea users tended to show stronger resilience. This finding suggests that community resilience is strengthened when people know not only the risks they face, but also the proper conduct expected of them. Awareness of rights and responsibilities may encourage lawful behavior, disciplined fishing practices, reporting of incidents, and cooperation with authorities.

Two variables did not significantly predict community resilience. Familiarity with community-based response procedures had a p-value of 0.067, while knowledge of reporting and assistance channels had a p-value of 0.094. Although both predictors showed positive effects, their influence was not statistically significant. This result is important because these two indicators were also among the lowest-rated areas in Table 1. The finding suggests that these aspects were not yet strong enough or consistent enough to shape resilience meaningfully. In other words, respondents may have heard about response procedures or reporting channels, but their knowledge may not have been clear, practiced, or trusted.

This result points to a practical problem in the community. Maritime security awareness was relatively strong at the level of recognizing risks and understanding advisories, but weaker at the level of organized action. Communities may know that risks exist and may understand warnings, yet remain uncertain about how to report incidents, whom to contact, what information to provide, and what assistance they can expect. This gap limits the full contribution of awareness to resilience. It also suggests that future interventions should focus not only on information sharing, but on procedural confidence and response practice.

The regression findings indicate that maritime security awareness has a meaningful influence on community resilience, but its strongest effects come from risk recognition, advisory comprehension, and rights-based understanding. The weaker influence of response procedures and reporting channels suggests that local systems need to become more visible, accessible, and trusted. For coastal communities in contested environments, resilience cannot depend on awareness alone. It must be supported by clear local protocols, coordinated institutions, and practical mechanisms that allow residents to act when maritime concerns arise.

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CONCLUSION

Coastal community respondents had a high level of maritime security awareness and community resilience, yet several practical gaps remained in their knowledge of reporting and assistance channels, familiarity with community-based response procedures, preparedness for maritime-related disruptions, adaptive capacity, and livelihood continuity. It is concluded that maritime security awareness was significantly associated with community resilience, which means that communities with stronger awareness of maritime risks, safety advisories, and rights and responsibilities at sea were more capable of coping with uncertainty in contested coastal environments. However, awareness alone was not sufficient when communities lacked clear procedures, trusted reporting systems, and livelihood support mechanisms. It is therefore recommended that local government units, maritime agencies, barangay councils, and community organizations strengthen community-based maritime security education through regular orientations, localized safety briefings, fisherfolk information sessions, and simple reporting protocols that are easy to understand and follow. Authorities should also establish visible and accessible assistance channels, conduct periodic community drills, improve the delivery of advisories, and create livelihood support programs for coastal families affected by maritime uncertainty. Finally, future researchers may expand the study by including more coastal areas, comparing different community sectors, or examining how institutional trust, livelihood vulnerability, and local governance support influence resilience in contested coastal environments.

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