

Strategic Resource Allocation and Operational Efficiency among Maritime Police Units in Panay Island

Wilmar B. Bolivar¹, Donald B. Narra²

¹Researcher, Department of Criminology, Philippine College of Criminology, Manila, Philippines

²Researcher, Department of Criminology, University of the Visayas, Cebu City, Philippines

Abstract

Strategic resource allocation is fundamental to maritime governance, centrally guiding patrol coverage, operational readiness, and emergency response capabilities. This study examined the relationship between resource allocation and the operational efficiency of Philippine National Police (PNP) Maritime Police Units stationed across Panay Island, covering the provinces of Iloilo, Capiz, Aklan, and Antique. Utilizing an explanatory-sequential mixed-methods research design, quantitative data were gathered from a census-level survey of 118 maritime police personnel, followed by qualitative thematic analysis of interviews with 10 key informants using Colaizzi's framework. Quantitative findings revealed that the overall extent of resource allocation is constrained, with manpower, equipment, and budget allocations all rated at a moderate extent due to geographic dispersion, depleted active fleets, and restricted operational allowances. Operational efficiency varied across indicators, ranging from moderate baseline efficiency in personnel numbers, training accessibility, and patrol frequency to high efficiency in length of service and communication effectiveness. Inferential analysis found no significant differences in perceptions between commissioned and non-commissioned officers, confirming a unified organizational awareness of material constraints. Moreover, correlation analysis revealed a highly significant, strong positive relationship between resource allocation and operational efficiency, indicating that resource inputs remain a primary determinant of organizational throughput. Qualitative findings contextualized these results by exposing an inverted logistical dependency on external entities, personal financial attrition, and severe fleet maintenance bottlenecks centralized at national headquarters. The study demonstrates that human capital resilience alone cannot indefinitely sustain operational outputs without structural material inputs. To address these systemic challenges, the study proposes the “Panay Maritime Operational Resilience and Efficiency Strategic Framework” to transition the units toward sustainable modern maritime governance.

Keywords: Resource Allocation, Operational Efficiency, Maritime Police, Panay Island, Strategic Framework

1. Introduction

Strategic resource allocation is a critical concern for public safety organizations, particularly where operational demands are high and resources are limited. In maritime law enforcement, the ability to effectively allocate manpower, patrol assets, and financial resources directly determines patrol coverage, response capabilities, and enforcement outcomes (Guilfoyle, 2017; U.S. Coast Guard, 2020; U.S.

Government Accountability Office [GAO], 2016). At the global level, optimizing these resources supports sustainable ocean governance and aligns with United Nations Sustainable Development Goals (SDG 8, 14, and 16). In the Philippines, an archipelagic country that depends on sea routes, maritime security is also consistent with the priorities of the Philippine Development Plan (PDP) 2023–2028, which emphasizes stronger enforcement capabilities, improved coordination among agencies, and the modernization of maritime security institutions (National Economic and Development Authority [NEDA], 2023). However, persistent systemic issues such as fleet dilapidation, limited budget, and fragmented coordination continue to compromise operational performance nationwide (Palconit & Sabijon, 2025; Co et al., 2016).

Despite the important role of resource allocation management, there is still a gap in addressing the synergy between resource allocation and operational efficiency within the maritime police units in the Philippines, more particularly in Panay Island. Anchored on the Resource-Based View (RBV), it remains unclear how the interconnectedness of manpower, equipment, and budget constraints interact with the unique geographical and security demands of the island. Existing assessments of Philippine maritime security also point to limitations in vessels, facilities, equipment, personnel, and maritime domain awareness, underscoring the need to examine how available resources are deployed and utilized (Cabigon, 2020; Monje, 2013; Palconit & Sabijon, 2025). Without empirical data, resource deployment across these maritime corridors remains reactive rather than strategic, leaving coastal communities exposed to security risks (International Maritime Organization [IMO], 2020).

This study focuses on examining how resource allocation is associated with the operational efficiency of maritime police units stationed in Panay Island, specifically covering the provinces of Iloilo, Capiz, Aklan, and Antique. These areas cover busy maritime corridors, multiple ports, extensive coastal communities, and productive fishing grounds, all of which demand a sustained maritime police presence and a rapid enforcement response. Given these conditions, the manner in which resources are distributed and utilized becomes particularly significant.

Specifically, this study seeks to identify existing resource allocation practices and gaps in the allocation and utilization of manpower, equipment, and budget, and examine the operational outcomes associated with these practices. By linking resource inputs to indicators of operational efficiency, the study aims to generate empirical evidence that can inform decision-making, resource planning, and policy development. The findings also intend to provide evidence-based insights and practical recommendations for improving resource allocation strategies and strengthening operational efficiency of maritime police units in Panay Island and other similar maritime regions.

2. Methodology

This study employed an explanatory-sequential mixed-methods design to determine the strategic resource allocation and operational efficiency among maritime police units in Panay Island, Philippines. Conceptually, this design begins with a quantitative phase to identify patterns, relationships, or differences in the target population, followed by a qualitative phase that explains, elaborates on, or contextualizes those quantitative findings through in-depth exploration (Creswell & Plano Clark, 2017).

In the quantitative phase, a total enumeration approach targeted all 124 stationed personnel across Iloilo, Capiz, Aklan, and Antique. Due to operational duties and leaves, six (6) personnel did not respond, yielding 118 complete submissions, which represent a 95.15% response rate. This rate meets NCES Statistical Standards for census surveys, which require response rates of at least 95% for census data. Thus,

the actual number of respondents in this study were the 118 maritime police personnel, of whom only nine (9) were identified as commissioned officers and the remaining 109 personnel were non-commissioned officers. Data were collected using a survey instrument validated by experts in the field and reliability tested with high internal consistency at 0.963 Cronbach's alpha. Since the data were non-normally distributed, non-parametric analysis were conducted at a 0.05 significance level, where medians described allocation and efficiency levels, the Mann-Whitney U test compared personnel rank groups, and Spearman's rho evaluated relationships between the variables.

To explain the quantitative findings, the qualitative phase purposively selected 10 key informants, consisting of five (5) were commissioned officers and five (5) were non-commissioned officers. Semi-structured, audio-recorded interviews, conducted in person and via Zoom, explored leadership practices, resource challenges, and operational bottlenecks. Interview transcripts were systematically analyzed using Colaizzi's (1978) seven-step thematic framework to identify significant statements, formulate conceptual meanings, and synthesize main themes and sub-themes. Full ethical compliance was maintained throughout, including formal administrative approvals, written informed consent, voluntary participation, and strict data anonymization in secure, aggregate formats.

3. Results and Discussion

3.1 Extent of Resource Allocation

Manpower. Table 1 presents the summary statistics for the extent of resource allocation in terms of manpower as perceived by both commissioned officers and non-commissioned officers within their respective units.

Table 1: Extent of Resource Allocation in terms of Manpower

Indicators	Group	Median	Description
1. Manpower is sufficiently allocated to cover routine coastal patrols in our unit's jurisdiction.	Commissioned Officers	3.00	Moderate Extent
	Non-Commissioned Officers	3.00	Moderate Extent
2. Recruitment and assignment of personnel to our unit are timely and effective.	Commissioned Officers	3.00	Moderate Extent
	Non-Commissioned Officers	3.00	Moderate Extent
3. Routine operations continue smoothly despite manpower shortages.	Commissioned Officers	3.00	Moderate Extent
	Non-Commissioned Officers	3.00	Moderate Extent
4. There is adequate staffing for specialized operations, such as anti-smuggling interdictions.	Commissioned Officers	3.00	Moderate Extent
	Non-Commissioned Officers	3.00	Moderate Extent
5. Personnel are distributed evenly across shifts to ensure 24/7 maritime surveillance.	Commissioned Officers	3.00	Moderate Extent
	Non-Commissioned Officers	3.00	Moderate Extent
	Commissioned Officers	3.00	Moderate Extent

6. Temporary reinforcements from other units are allocated as needed during peak operations.	Non-Commissioned Officers	3.00	Moderate Extent
Overall	Commissioned Officers	3.00	Moderate Extent
	Non-Commissioned Officers	3.00	Moderate Extent

Note: 3.25 – 4.00 = High Extent; 2.50 – 3.24 = Moderate Extent; 1.75 – 2.49 = Less Extent; 1.00 – 1.74 = Not at All.

Both commissioned and non-commissioned maritime police personnel reported the same median score of 3.00, evaluating manpower resource allocation at a Moderate Extent across all six operational indicators. This reflects a functional baseline where routine duties, shift distributions, and specialized operations continue smoothly despite underlying staffing shortages. However, qualitative insights reveal that this stability relies on multi-tasking, work adaptation, and heavy personnel endurance rather than a surplus of workforce. Small recruitment intakes combined with vast archipelagic jurisdictions keep operational capacity constrained near threshold levels.

Critical operational vulnerabilities stem from long deployment extensions and significant geographic dispersion among off-duty personnel. Commute times of four to five hours across provincial boundaries delay emergency recalls during sudden search-and-rescue operations or high-risk interdictions, while multi-week deployment overruns out at sea induce physical burnout. To bridge these staffing gaps during high-demand periods, maritime police stations depend heavily on flexible shift rotations, inter-agency augmentation, and direct coordination with local government units (LGUs) and partner agencies like the Bureau of Fisheries and Aquatic Resources (BFAR).

Theoretical and empirical literature supports these findings, illustrating how structural input deficits shape enforcement outcomes. Grounded in Barney's (1991) Resource-Based View and Weber's (1947) Public Administration and Management Theory, the results demonstrate that human capital limitations necessitate formal inter-agency reliance to sustain operations. Furthermore, these patterns mirror international evidence (Awino et al., 2025; Mogere & Muna, 2022; Msheliza et al., 2022) and local Philippine maritime studies (Monje, 2013; Juaneza, 2021; Palconit & Sabijon, 2025), confirming that geographic dispersion, personnel burnout, and logistical constraints continuously compromise operational reach across archipelagic domains.

Equipment. Table 2 presents the summary statistics for the extent of resource allocation in terms of equipment as perceived by both commissioned officers and non-commissioned officers within their respective units.

Table 2: Extent of Resource Allocation in Terms of Equipment

Indicators	Group	Median	Description
1. Our unit has adequate boats/vessels for patrol and interdiction operations.	Commissioned Officers	3.00	Moderate Extent
	Non-Commissioned Officers	3.00	Moderate Extent

2. Communication devices (e.g., radios, GPS) are available and functional.	Commissioned Officers	3.00	Moderate Extent
	Non-Commissioned Officers	3.00	Moderate Extent
3. Surveillance and protective gear (e.g., life vests, night vision) meet operational needs.	Commissioned Officers	3.00	Moderate Extent
	Non-Commissioned Officers	3.00	Moderate Extent
4. Maintenance kits and spare parts are readily allocated for equipment repairs.	Commissioned Officers	3.00	Moderate Extent
	Non-Commissioned Officers	3.00	Moderate Extent
5. Search and rescue equipment (e.g., buoys, medical kits) is sufficiently stocked per unit.	Commissioned Officers	3.00	Moderate Extent
	Non-Commissioned Officers	3.00	Moderate Extent
6. IT and data logging tools are provided for efficient reporting of maritime incidents.	Commissioned Officers	3.00	Moderate Extent
	Non-Commissioned Officers	3.00	Moderate Extent
Overall	Commissioned Officers	3.00	Moderate Extent
	Non-Commissioned Officers	3.00	Moderate Extent

Note: 3.25 – 4.00 = High Extent; 2.50 – 3.24 = Moderate Extent; 1.75 – 2.49 = Less Extent; 1.00 – 1.74 = Not at All.

Both commissioned and non-commissioned officers reported an identical median rating of 3.00, evaluating equipment resource allocation at a Moderate Extent across all six indicators. This rating reflects a functional baseline where basic gear, communication devices, and vessels support routine duties but remain insufficient for optimal operational readiness. Qualitative data reveal that operational capabilities are severely constrained by unserviceable watercraft, defective machinery, and long procurement delays for maintenance kits and spare parts. Consequently, units are forced to dock damaged vessels and rely on adaptive field fixes, asset-borrowing, and logistical assistance from local government units (LGUs) and partner agencies to maintain coastal monitoring.

These equipment deficits significantly impair maritime security and operational continuity. Grounding patrol craft creates unpoliced surveillance gaps along coastal borders that expose coastal waters to illegal fishing and smuggling, while delayed maintenance pipelines degrade unit responsiveness during search-and-rescue emergencies. Furthermore, an over-reliance on external LGU assets leads to fragmented enforcement schedules across different coastal municipalities. Institutional performance is thus dictated by adaptive field survival and external coordination rather than a seamless internal supply chain.

Theoretical and empirical literature strongly supports these findings. Grounded in Barney's (1991) Resource-Based View and Neely et al.'s (1995) Performance Management Theory, the results confirm that non-functional physical capital and slow repair pipelines directly constrain organizational capacity. Furthermore, these results align with international studies (Awino et al., 2025; Msheliza et al., 2022) and

local Philippine research (Juaneza, 2021; Palconit & Sabijon, 2025), confirming that defective watercraft, missing spare parts, and centralized procurement bottlenecks continuously degrade the tactical readiness of PNP Maritime Group field stations.

Budget. Table 3 presents the summary statistics for the extent of resource allocation in terms of budget as perceived by both commissioned officers and non-commissioned officers within their respective units.

Table 3: Extent of Resource Allocation in Terms of Budget

Indicators	Group	Median	Description
1. Budget allocation supports fuel, maintenance, and operational costs adequately.	Commissioned Officers	3.00	Moderate Extent
	Non-Commissioned Officers	3.00	Moderate Extent
2. Funds are adequately provided for personnel training in maritime law enforcement.	Commissioned Officers	3.00	Moderate Extent
	Non-Commissioned Officers	3.00	Moderate Extent
3. Emergency funds are available and accessible for unforeseen operational needs.	Commissioned Officers	3.00	Moderate Extent
	Non-Commissioned Officers	3.00	Moderate Extent
4. Overtime pay and allowances are budgeted sufficiently for extended patrols.	Commissioned Officers	3.00	Moderate Extent
	Non-Commissioned Officers	3.00	Moderate Extent
5. Allocation processes prioritize high-priority maritime threats like illegal fishing.	Commissioned Officers	3.00	Moderate Extent
	Non-Commissioned Officers	3.00	Moderate Extent
6. Budget transparency and timely releases enable effective resource planning.	Commissioned Officers	3.00	Moderate Extent
	Non-Commissioned Officers	3.00	Moderate Extent
Overall	Commissioned Officers	3.00	Moderate Extent
	Non-Commissioned Officers	3.00	Moderate Extent

Note: 3.25 – 4.00 = High Extent; 2.50 – 3.24 = Moderate Extent; 1.75 – 2.49 = Less Extent; 1.00 – 1.74 = Not at All.

Both commissioned and non-commissioned officers reported an identical median rating of 3.00, evaluating budget resource allocation at a Moderate Extent across all six indicators. This rating reflects a basic financial baseline where official Maintenance and Other Operating Expenses (MOOE) cover minimal routine tasks but lack the elasticity for extended patrols or emergency contingencies. Qualitative findings reveal that strict fuel caps force field stations to restrict patrol ranges to near-shore areas unless supplemented by local government unit (LGU) fuel subsidies. Furthermore, protracted headquarters

release delays for maintenance funds force station chiefs and personnel into out-of-pocket spending or municipal solicitation to keep vessels operational.

These financial constraints carry severe operational and policy implications. Restricted patrol ranges create unpoliced maritime corridors that leave coastal waters vulnerable to illegal fishing and smuggling. Delayed repair funding places an unfair personal financial burden on officers while increasing the risk of asset grounding. Crucially, an inverted financial dependency on LGU goodwill for basic fuel and maintenance risks compromising enforcement neutrality, making field units financially beholden to local political leadership. Thus, operational continuity is sustained through fiscal rationing, municipal subsidies, and personal contributions rather than a fully funded administrative pipeline.

Theoretical and empirical literature strongly validates these patterns. Grounded in Weber's (1947) Public Administration and Management Theory and Barney's (1991) Resource-Based View, the results demonstrate that delayed fiscal releases and inadequate funding render physical patrol assets operationally inert. Furthermore, these findings mirror international evidence (Lemarleni et al., 2017; Awino et al., 2025) and local Philippine maritime studies (Monje, 2012; Palconit & Sabijon, 2025), confirming that rigid fuel caps, delayed MOOE disbursements, and sparse maintenance allocations remain pervasive structural barriers across PNP Maritime Group field stations.

3.2 Significant Difference in the Extent of Resource Allocation as Perceived by the Two Groups of Respondents

Table 4 presents the significance difference in the extent of resource allocation in terms of manpower, equipment, and budget. Mann-Whitney U Test is used to analyze the significant difference in the extent of resource allocation as perceived by both commissioned and non-commissioned maritime police personnel across Panay Island.

Table 4: Mann-Whitney U Test Results for the Significant Differences in the Extent of Resource Allocation

Category	Mean Rank	Sum of Ranks	U-value	p-value	Description
Manpower			393.000	0.315	Not Significant
Commissioned Officers	48.67	438.00			
Non-Commissioned Officers	60.39	6583.00			
Equipment			464.500	0.789	Not Significant
Commissioned Officers	56.61	509.50			
Non-Commissioned Officers	59.74	6511.50			
Budget			409.000	0.399	Not Significant
Commissioned Officers	50.44	454.00			

Non-Commissioned Officers	60.25	6567.00			
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Mann-Whitney U test results revealed no statistically significant differences between Police Commissioned Officers and Police Non-Commissioned Officers regarding the extent of resource allocation across manpower ($U = 393.000$, $p = 0.315$), equipment ($U = 464.500$, $p = 0.789$), and budget ($U = 409.000$, $p = 0.399$). Qualitative interviews reinforce these statistical findings, showing that administrative leaders and frontline officers encounter identical daily operational hurdles, including long travel times during emergency recalls, unserviceable watercraft, capped fuel allotments, and centralized maintenance bottlenecks.

This complete perceptual alignment across command tiers confirms that resource allocation challenges represent objective, structural realities rather than rank-biased grievances. Because command officers and field operators evaluate input constraints identically, institutional policy reforms do not need to address internal perceptual gaps or communication divides. Instead, higher headquarters can focus directly on resolving systemic bottlenecks, such as decentralizing repair pipelines, expanding fuel baselines, and establishing localized emergency funds, to directly address the unified operational concerns of all maritime personnel.

These findings align with Performance Management Theory (Neely et al., 1995) and Weber's (1947) Public Administration and Management Theory, which establish that structural input constraints affect administrative performance evaluations uniformly across all organizational tiers. Furthermore, these results confirm international research (Awino et al., 2025; Mogere & Muna, 2022) and local Philippine empirical studies (Juaneza, 2021; Palconit & Sabijon, 2025), proving that logistical deficits, funding caps, and maintenance delays impact PNP Maritime Group field stations as pervasive, unit-wide challenges regardless of rank.

3.3 Level of Operational Efficiency

Personnel Training and Qualifications. Table 5 presents the perceived level of operational efficiency in terms of personnel training and qualifications as evaluated by commissioned and non-commissioned officers.

Table 5: Level of Operational Efficiency in terms of Training and Qualifications

Indicators	Group	Median	Description
1. Personnel receive regular training on maritime law enforcement skills.	Commissioned Officers	3.00	Moderately Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient
2. Training programs enhance qualifications for handling sea operations.	Commissioned Officers	4.00	Highly Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient
3. Refresher training keeps skills updated for anti-poaching and smuggling patrols.	Commissioned Officers	4.00	Highly Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient

4. Certification programs improve readiness for high-seas emergencies.	Commissioned Officers	4.00	Highly Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient
5. Training includes simulation exercises for real-world maritime scenarios.	Commissioned Officers	3.00	Moderately Efficient
	Non-Commissioned Officers	4.00	Highly Efficient
6. Access to external training (e.g., PNP Academy) boosts operational competence.	Commissioned Officers	4.00	Highly Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient
Overall	Commissioned Officers	4.00	Highly Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient

Note: 3.25 – 4.00 = Highly Efficient; 2.50 – 3.24 = Moderately Efficient; 1.75 – 2.49 = Low Efficiency; 1.00 – 1.74 = Inefficient.

Commissioned officers (PCOs) evaluated operational efficiency regarding training and qualifications at a High Extent (Median = 4.00), whereas non-commissioned officers (PNCOs) rated it at a Moderate Extent (Median = 3.00). PCOs rated nearly all indicators as highly efficient, reflecting their greater access to executive development, formal schooling, and specialized certifications. Meanwhile, PNCOs assessed most indicators as moderately efficient, citing daily patrol duties, manpower shortages, and long deployments that prevent frontline personnel from regularly attending off-site refresher courses. Significantly, PNCOs rated simulation exercises as highly efficient, emphasizing the high value frontline operators place on practical, joint-agency scenario drills over theoretical classroom instruction.

This perceptual gap highlights critical administrative and operational implications. Restricting specialized training access to leadership tiers creates an over-reliance on a few certified officers to manage complex maritime cases, while leaving field operators vulnerable to skill degradation during high-risk interdictions. To bridge these training gaps without abandoning active patrol sectors, field units rely heavily on localized simulation exercises and joint drills with partner agencies like the Bureau of Fisheries and Aquatic Resources (BFAR) and the Philippine Coast Guard (PCG).

Theoretical and empirical literature strongly supports these findings. Grounded in Performance Management Theory (Neely et al., 1995) and Barney's (1991) Resource-Based View, the results confirm that continuous human capital development and practical skill upgrading directly dictate tactical readiness and organizational efficiency. Furthermore, these findings mirror international evidence (Awino et al., 2025; Mogere & Muna, 2022) and local Philippine research (Juaneza, 2021; Palconit & Sabijon, 2025), proving that localized simulation drills and continuous specialized training remain vital for enhancing enforcement capabilities across PNP Maritime Group field units.

Personnel Length of Service. Table 6 presents the perceived level of operational efficiency in terms of length of service among Maritime Police Units in Panay Island, as evaluated by Police Commissioned Officers and Police Non-Commissioned Officers.

Table 6: Level of Operational Efficiency in terms of Length of Service

Indicators	Group	Median	VI
1. Mentoring by veteran officers enhances on-duty task execution.	Commissioned Officers	4.00	Highly Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient
2. Error rates during high-pressure interdiction missions are lower with more experienced personnel.	Commissioned Officers	4.00	Highly Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient
3. Shift stability and continuity are supported by senior staff during rotations.	Commissioned Officers	4.00	Highly Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient
4. Decision quality under uncertain conditions improves with accumulated service years.	Commissioned Officers	4.00	Highly Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient
5. Multi-day patrol operations run more efficiently with experienced teams.	Commissioned Officers	4.00	Highly Efficient
	Non-Commissioned Officers	4.00	Highly Efficient
6. Overall unit readiness is sustained by retention of seasoned staff.	Commissioned Officers	3.00	Moderately Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient
Overall	Commissioned Officers	4.00	Highly Efficient
	Non-Commissioned Officers	3.50	Highly Efficient

Note: 3.25 – 4.00 = Highly Efficient; 2.50 – 3.24 = Moderately Efficient; 1.75 – 2.49 = Low Efficiency; 1.00 – 1.74 = Inefficient.

Both commissioned officers (Median = 4.00) and non-commissioned officers (Median = 3.50) evaluated operational efficiency regarding length of service as Highly Efficient. While both groups share this high overall baseline, a distinct perceptual divergence exists across sub-indicators. PCOs rated nearly every item as highly efficient, viewing tenure as a driver of command decision-making, tactical leadership, and shift stability. On the other hand, PNCOs assessed most items as moderately efficient, rating multi-day patrols as their sole highly efficient indicator. This demonstrates that leadership views length of service as a broad executive asset, whereas frontline operators value experience most intensely during grueling, multi-day sea deployments where practical seamanship and physical endurance are tested.

Qualitative findings confirm that senior officers serve as a core operational buffer, using their institutional memory, maritime familiarity, and crisis management skills to guide junior personnel through high-stakes deployments. Experienced officers reduce operational errors during high-pressure interdictions, remaining calm during engine breakdowns or bad weather. However, moderate ratings for staff retention reflect periodic personnel reassignments, which create temporary experience gaps that field stations must

continuously manage. Strategically, preserving veteran personnel prevents critical institutional memory loss, maintains an informal mentoring pipeline, and reduces operational risks during complex maritime interdiction.

Theoretical and empirical literature strongly validates these patterns. Grounded in Barney's (1991) Resource-Based View, Neely et al.'s (1995) Performance Management Theory, and Weber's (1947) Public Administration and Management Theory, the results confirm that tacit operational knowledge accumulated through long-term service represents a vital human capital asset that minimizes errors and maximizes physical asset utility. Furthermore, these findings mirror international evidence (Awino et al., 2025; Mogere & Muna, 2022) and local Philippine research (Juaneza, 2021; Palconit & Sabijon, 2025), proving that seasoned leadership and veteran mentoring are indispensable for navigating complex maritime environments across PNP Maritime Group field units.

Number of Personnel Assigned. Table 7 presents the perceived level of operational efficiency regarding the number of personnel assigned to the unit.

Table 7: Level of Operational Efficiency in terms of Number of Personnel Assigned

Indicators	Group	Median	Description
1. Current staffing levels enable efficient completion of assigned tasks.	Commissioned Officers	3.00	Moderately Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient
2. Patrol sectors receive adequate coverage given present personnel assignments.	Commissioned Officers	3.00	Moderately Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient
3. Staffing structure provides reliable backup teams for prolonged sea engagements.	Commissioned Officers	3.00	Moderately Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient
4. Personnel numbers meet operational demands during peak seasons.	Commissioned Officers	3.00	Moderately Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient
5. Rotational staffing reduces fatigue and maintains operational efficiency.	Commissioned Officers	3.00	Moderately Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient
6. Response times to maritime distress calls are adequate given personnel strength.	Commissioned Officers	3.00	Moderately Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient
Overall	Commissioned Officers	3.00	Moderately Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient

Note: 3.25 – 4.00 = Highly Efficient; 2.50 – 3.24 = Moderately Efficient; 1.75 – 2.49 = Low Efficiency; 1.00 – 1.74 = Inefficient.

Both commissioned and non-commissioned officers reported the similar median of 3.00, evaluating operational efficiency regarding the number of assigned personnel at a Moderate Extent across all six indicators. This rating reflects a shared consensus across command levels that current staffing complements are sufficient for basic daily duties, sector coverage, and routine shift rotations, but lack the structural depth required for peak seasons, extended deployments, or simultaneous maritime emergencies. Qualitative findings reveal that personnel are stretched thin across vast coastal jurisdictions, forcing stations to rely on heavy multi-tasking, prolonged duty shifts, and inter-agency backup from local government units (LGUs) and partner agencies due to the absence of immediate internal relief teams.

Operating near numerical capacity carries significant operational and welfare risks. Sustained multi-tasking and minimal backup availability induce physical fatigue and burnout among frontline officers, which directly compromises vigilance during night patrols and high-risk interdictions. Furthermore, covering expansive maritime sectors with limited personnel creates response-time vulnerabilities during sudden search-and-rescue missions or rapid crime interdictions. Hence, operational output is maintained through flexible duty arrangements, officer perseverance, and external agency augmentation rather than an optimal internal workforce ratio.

Theoretical and empirical literature strongly supports these findings. Grounded in Performance Management Theory (Neely et al., 1995) and Barney's (1991) Resource-Based View, the results prove that operational efficiency remains capped at a moderate baseline when human resource quantities are mismatched against geographical task demands. Furthermore, these patterns mirror international evidence (Awino et al., 2025; Mogere & Muna, 2022) and local Philippine research (Juaneza, 2021; Palconit & Sabijon, 2025), confirming that numerical staffing shortages, officer fatigue, and expansive jurisdictional coverage remain pervasive operational hurdles across PNP Maritime Group field stations.

Frequency of Maritime Patrol. Table 8 presents the perceived level of operational efficiency in terms of the number of personnel assigned among Maritime Police Units in Panay Island, as evaluated by Police Commissioned Officers and Police Non-Commissioned Officers.

Table 8: Level of Operational Efficiency in terms of Frequency of Maritime Patrol

Indicators	Group	Median	Description
1. Patrols are conducted frequently enough to deter illegal activities.	Commissioned Officers	3.00	Moderately Efficient
	Non-Commissioned Officers	4.00	Highly Efficient
2. Night patrols are routine for comprehensive surveillance.	Commissioned Officers	3.00	Moderately Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient
3. Frequency increases during fishing bans or smuggling peaks.	Commissioned Officers	3.00	Moderately Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient
4. Randomized patrol timing prevents predictable gaps.	Commissioned Officers	3.00	Moderately Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient
	Commissioned Officers	3.00	Moderately Efficient

5. Patrols extend to remote Antique and Aklan coastlines regularly.	Non-Commissioned Officers	3.00	Moderately Efficient
6. Patrol logs confirm consistent frequency across shifts.	Commissioned Officers	3.00	Moderately Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient
Overall	Commissioned Officers	3.00	Moderately Efficient
	Non-Commissioned Officers	3.50	Highly Efficient

Note: 3.25 – 4.00 = Highly Efficient; 2.50 – 3.24 = Moderately Efficient; 1.75 – 2.49 = Low Efficiency; 1.00 – 1.74 = Inefficient.

Non-commissioned officers evaluated operational efficiency regarding maritime patrol frequency as Highly Efficient (Median = 3.50), whereas commissioned officers rated it as Moderately Efficient (Median = 3.00). Both groups agreed that patrols effectively deter illegal sea activities, yielding high ratings on crime deterrence. However, a subtle operational divide emerges where frontline operators (PNCOs) perceive their active presence at sea as highly effective, while unit commanders (PCOs) hold a more conservative view, recognizing that fuel caps and resource constraints restrict routine coverage, night surveillance, and remote coastline patrols to a moderate baseline. Qualitative findings confirm that maintaining consistent patrol coverage across vast municipal waters forces personnel into heavy multi-tasking and long duty shifts without immediate backup relief.

This difference in perception highlights critical duty management and strategic policy implications. Operating with limited personnel depth across expansive patrol sectors increases officer fatigue and creates response-time vulnerabilities during sudden maritime emergencies or high-stakes interdictions. To sustain effective patrol frequency without overextending personnel, stations must bridge operational gaps through flexible duty rotations, multi-tasking, and formal joint-dispatch operations with partner agencies like the Bureau of Fisheries and Aquatic Resources (BFAR) and local government units (LGUs).

Theoretical and empirical literature strongly supports these findings. Grounded in Performance Management Theory (Neely et al., 1995) and Barney's (1991) Resource-Based View, the results prove that patrol frequency and coverage speed depend on aligning physical and human resource capacities with geographical task demands. Furthermore, these findings mirror international research (Awino et al., 2025; Mogere & Muna, 2022) and local Philippine empirical studies (Juaneza, 2021; Palconit & Sabijon, 2025), confirming that resource caps, workforce fatigue, and expansive archipelagic coverage continuously constrain patrol frequency across PNP Maritime Group field units.

Communication Effectiveness. Table 9 presents the perceived level of operational efficiency in terms of communication effectiveness among Maritime Police Units in Panay Island, as evaluated by Police Commissioned Officers and Police Non-Commissioned Officers.

Table 9: Level of Operational Efficiency in terms of Communication Effectiveness

Indicators	Group	Median	Description
	Commissioned Officers	3.00	Moderately Efficient

1. Radio protocols minimize misunderstandings at sea.	Non-Commissioned Officers	3.00	Moderately Efficient
2. Briefings before missions clarify roles effectively.	Commissioned Officers	4.00	Highly Efficient
	Non-Commissioned Officers	4.00	Highly Efficient
3. Feedback loops improve communication over time.	Commissioned Officers	4.00	Highly Efficient
	Non-Commissioned Officers	4.00	Highly Efficient
4. Inter-shift handovers are clear and comprehensive.	Commissioned Officers	4.00	Highly Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient
5. Emergency signals are promptly received and acted upon.	Commissioned Officers	3.00	Moderately Efficient
	Non-Commissioned Officers	4.00	Highly Efficient
6. Tech backups (e.g., satellite) ensure reliability in poor signal zones.	Commissioned Officers	3.00	Moderately Efficient
	Non-Commissioned Officers	3.00	Moderately Efficient
Overall	Commissioned Officers	3.50	Highly Efficient
	Non-Commissioned Officers	3.50	Highly Efficient

Note: 3.25 – 4.00 = Highly Efficient; 2.50 – 3.24 = Moderately Efficient; 1.75 – 2.49 = Low Efficiency; 1.00 – 1.74 = Inefficient.

Both commissioned and non-commissioned officers reported an identical overall median rating of 3.50, evaluating operational efficiency regarding communication effectiveness as Highly Efficient. High consensus exists for human-centered administrative processes, such as pre-mission briefings and post-mission feedback loops, which both groups rated as highly efficient. However, perceptual splits emerge across specific indicators: PCOs rated inter-shift handovers higher than PNCOs, while PNCOs rated emergency signal reception higher than PCOs. Moderate ratings for radio protocols and technological backups in dead zones reveal a shared technical bottleneck, showing that while command intent and verbal coordination function at high efficiency, physical radio transmissions face persistent signal blackouts far out at sea.

Qualitative insights confirm that while briefing protocols and inter-agency coordination with the Philippine Coast Guard (PCG) and local government units (LGUs) are clear, offshore operations are severely constrained by cellular dead spots and weak radio signals. Field teams are often forced to depend on commercial cellular messaging apps or localized LGU outposts to bridge technical communication gaps during emergency distress calls. Relying on unstable commercial networks during high-seas operations exposes patrol vessels to communication blackouts, which risks delaying search-and-rescue interventions or reinforcement requests during hostile interdictions. Consequently, operational safety relies heavily on thorough pre-mission briefings to ensure role clarity before field teams enter low-signal zones.

Theoretical and empirical literature strongly supports these findings. Grounded in Weber's (1947) Public Administration and Management Theory and Neely et al.'s (1995) Performance Management Theory, the results confirm that structured feedback loops and standardized briefing protocols drive operational alignment and real-time decision-making. Furthermore, these findings mirror international evidence (Awino et al., 2025; Msheliza et al., 2022) and local Philippine research (Juaneza, 2021; Palconit & Sabijon, 2025), proving that while PNP Maritime Group field stations maintain strong internal command communication, physical signal dead zones remain a persistent structural hurdle during offshore patrols.

3.4 Significant Difference in the Level of Operational Efficiency as Perceived by the Two Groups of Respondents

Table 10 presents the significance difference in the level of operational efficiency in terms of personnel training and qualifications, personnel length of service/experience, number of personnel assigned, frequency of maritime patrol, and communication effectiveness. Mann-Whitney U Test is used to analyze the significant difference in the level of operational efficiency as perceived by both commissioned and non-commissioned maritime police personnel across Panay Island.

Table 10: Mann-Whitney U Test Results for the Significant Differences in the Level of Operational Efficiency

Category	Mean Rank	Sum of Ranks	U-value	p-value	Description
Training and Qualifications			478.000	0.892	Not Significant
Commissioned Officers	60.89	548.00			
Non-Commissioned Officers	59.39	6473.00			
Length of Service			436.000	0.558	Not Significant
Commissioned Officers	65.56	590.00			
Non-Commissioned Officers	59.00	6431.00			
Number of Personnel Assigned			425.000	0.489	Not Significant
Commissioned Officers	52.22	470.00			
Non-Commissioned Officers	60.10	6551.00			
Frequency of Maritime Patrol			402.000	0.348	Not Significant
Commissioned Officers	49.67	447.00			
Non-Commissioned Officers	60.31	6574.00			
Communication Effectiveness			487.500	0.974	Not Significant
Commissioned Officers	59.83	538.50			

Non-Commissioned Officers	59.47	6482.50			
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Mann-Whitney U test results revealed no statistically significant differences between Police Commissioned Officers (PCOs) and Police Non-Commissioned Officers (PNCOs) regarding operational efficiency across all five categories: training and qualifications ($U = 478.000$, $p = 0.892$), length of service ($U = 436.000$, $p = 0.558$), number of personnel assigned ($U = 425.000$, $p = 0.489$), frequency of maritime patrol ($U = 402.000$, $p = 0.348$), and communication effectiveness ($U = 487.500$, $p = 0.974$). Qualitative interviews corroborate these statistical findings, showing that administrative leaders and frontline officers share a uniform institutional lens regarding pre-mission briefing clarity, veteran mentorship value, shift fatigue, and technical signal dead zones.

This complete perceptual alignment across command tiers proves that evaluations of operational efficiency reflect objective organizational realities rather than rank-based biases. Because command officers and frontline operators hold a cohesive perspective on unit capabilities and bottlenecks, higher headquarters can implement capability-enhancement programs with broad internal alignment. Institutional reforms do not need to bridge internal perceptual divides; instead, higher-level decisions can focus directly on expanding simulation drills, formalizing mentorship frameworks, and resolving shared technical constraints like radio dead spots.

These findings align with Performance Management Theory (Neely et al., 1995) and Weber's (1947) Public Administration and Management Theory, which establish that standardized administrative structures and clear communication foster consistent operational evaluations across hierarchical tiers. Furthermore, these results mirror international evidence (Awino et al., 2025; Mogere & Muna, 2022) and local Philippine empirical studies (Juaneza, 2021; Palconit & Sabijon, 2025), confirming that PNP Maritime Group field personnel maintain strong internal alignment regarding unit readiness, strengths, and structural challenges regardless of rank or station assignment.

3.5 Significant Relationship between the Extent of Resource Allocation and the Level of Operational Efficiency among Maritime Police Units

Table 11 presents the significant relationship in the extent of resource allocation and the level of operational efficiency among maritime police personnel across Panay Island. Spearman rho (r_s) is used to analyze the significant relationship between the extent of resource allocation and the level of operational efficiency among maritime police units.

Table 11: Spearman Rho Test Results for the Significant Relationship between the Extent of Resource Allocation and the Level of Operational Efficiency among Maritime Police Units

Category	Level of Operational Efficiency			
	n	r_s	Sig.	Description
Extent of Strategic Resource Allocation	118	0.796*	$p < 0.001$	Significant

Spearman rho correlation analysis revealed a strong, statistically significant positive relationship between the extent of resource allocation and the level of operational efficiency among maritime police units across Panay Island ($r_s = 0.796$, $p < 0.001$). This strong positive correlation proves that as logistical, financial,

and human resource allocations increase, overall operational efficiency rises correspondingly. Qualitative insights corroborate this direct dependency, emphasizing that when units receive adequate fuel allotments, functional vessels, and prompt repair parts, field teams can execute extended patrols, respond rapidly to distress calls, and enforce maritime laws effectively. However, resource shortfalls choke operational output, forcing units to dock vessels, limit patrol ranges to near-shore areas, and rely on external municipal assistance.

Statistical analysis confirms that resource allocation acts as the primary driver of operational efficiency across field stations, with $r_s = 0.796$ demonstrating that resource inputs account for a massive proportion of performance variance. Tactical training, length of service, and officer motivation cannot fully overcome physical or financial deficits without adequate fuel, functional watercraft, and proper staffing, operational readiness remains capped. Policy-wise, higher headquarters must prioritize decentralized budgeting, expanded fuel baselines, and rapid procurement pipelines to maximize police presence at sea, as resolving input bottlenecks yields direct, measurable gains in patrol coverage, emergency response speed, and coastal crime deterrence.

Theoretical and empirical literature strongly validates these findings. Grounded in Barney's (1991) Resource-Based View, Neely et al.'s (1995) Performance Management Theory, and Weber's (1947) Public Administration and Management Theory, the results confirm that strategic acquisition and deployment of physical, financial, and human capital directly govern institutional throughput and law enforcement execution. Furthermore, these findings mirror international evidence (Lemarleni et al., 2017; Mogere & Muna, 2022; Awino et al., 2025) and local Philippine research (Monje, 2012; Juaneza, 2021; Palconit & Sabijon, 2025), proving that resource availability directly dictates the tactical mobility, operational readiness, and enforcement capability of PNP Maritime Group field stations.

3.6 Perceived Challenges of Maritime Police Personnel in Efficiently Allocating Resources Within their Units

To complement the quantitative findings, qualitative data were gathered through Key Informant Interviews (KII) with ten (10) police personnel across Iloilo, Antique, Capiz, and Aklan Maritime Police Stations on Panay Island. Transcripts were analyzed following Colaizzi's (1978) seven-step phenomenological methodology to extract significant statements, formulate meanings, cluster themes, and build an exhaustive descriptive narrative validated through member-checking. The analysis yielded four (4) main themes and eight (8) sub-themes detailing the structural bottlenecks, adaptive governance strategies, and policy interventions encountered by frontline officers as seen in Table 12.

Table 12: Thematic Matrix of Perceived Resource Allocation Challenges among Maritime Police Personnel

Main Themes	Sub-Themes	Conceptual Indicators
Theme 1: Structural Deficits and Ad-Hoc Resource Practices	Sub-Theme 1.1: Inverted Logistical Dependency on External Entities (LGUs/BFAR)	Fuel-dependent deployments, LGU utility subsidies, civilian asset borrowing, private vessel renting.

	Sub-Theme 1.2: Extreme Fleet Dilapidation and Maintenance Centralization	Six-month repair lag at Camp Crame, out-of-pocket expenses, broken watercraft, absence of regional mechanics.
Theme 2: Operational Cascades of Scarcity on Maritime Mandates	Sub-Theme 2.1: Spatial Enforcement Reductions and Abandonment of Preventive Patrols	Shifting to strict intelligence-driven operations, skipping wide-area patrols, scheduled nearshore limits.
	Sub-Theme 2.2: Operational Vulnerability and Technological Disparities	Rubber boats vs. high-powered commercial vessels, extreme weather hazards, long travel distance for personnel recall.
Theme 3: Leadership Improvisation, Adaptive Governance, and Troop Welfare	Sub-Theme 3.1: Resource Optimization through Tactical Multi-Tasking and Crew Splitting	Shrinking crew sizes from 8 to 4, dual-role port and vessel staffing, community watchdogs.
	Sub-Theme 3.2: Command Initiative and Personnel Welfare Safeguards	Managing "Picture-Only" PR critiques, out-of-pocket food banks, enduring extended sea deployments.
Theme 4: Structural Transformations and Policy Recommendations	Sub-Theme 4.1: Procurement Interventions and Localized Technical Capacity Building	Mandatory vendor-led regional mechanic training, regional repair parts, localized asset ownership.
	Sub-Theme 4.2: Financial Modernization and Institutional Stabilization	"Trip Card" implementation, predictable and fixed monthly MOOE schedules.

Theme 1: Structural Deficits and Ad-Hoc Resource Practices

The first theme exposes the foundational challenges faced by maritime policing units across Panay Island: chronic, severe deficits across manpower, equipment, and budget. Rather than operating as self-sustained entities funded entirely by the national headquarters, units have normalized a series of highly volatile, ad-hoc survival practices to maintain a basic operational presence.

Sub-Theme 1.1: Inverted Logistical Dependency on External Entities (LGUs/BFAR)

Qualitative insights expose an inverted logistical model where state enforcement depends on external stakeholders, including Local Government Units (LGUs), the Bureau of Fisheries and Aquatic Resources (BFAR), and private civilian vessel owners, to execute main sea duties. Informants from Antique and Capiz noted that rubber boats remain docked unless local municipalities supply fuel or assist with station utility bills. In Iloilo, severe asset breakdowns force officers to lease private civilian motorboats for law enforcement operations:

KII-09: "Sa water asset namin sir kung walang mabibigay yung LGU sa gasolina, hindi makaalis yung rubber boat namin sir. So yung operation namin, ma-pending." (In terms of our water assets, sir, if the LGU cannot provide gasoline, our rubber boat cannot depart. Thus, our operations are put on hold.)

KII-04: "Kung walang assets from BFAR or LGU, hindi po natin ma-cover ang buong fishing grounds ng probinsya. Mag-aantay tayo kung kailan sila may availability ng gas o sasakyang pandagat." (If there are

no assets provided by BFAR or the LGU, we cannot cover the entire fishing grounds of the province. We have to wait for when they have available gasoline or watercraft.)

This dependency conflicts with Barney's (1991) Resource-Based View (RBV), which posits that operational edge requires internal control over valuable, non-substitutable resources. Dependent on external political goodwill, organizational capability becomes highly fragmented. Furthermore, this dynamic violates Weberian principles of administrative self-sufficiency under Public Administration and Management Theory (Weber, 1947).

Sub-Theme 1.2: Extreme Fleet Dilapidation and Maintenance Centralization

The narratives highlight a severe administrative friction caused by hyper-centralized fleet maintenance at Camp Crame, Manila. High-Speed Tactical Watercraft (HSTW) and Outboard Motors (OBMs) lacking local certified mechanics must be reported or shipped to central headquarters, resulting in repair delays of up to six months. Consequently, primary watercraft remain unusable during critical search-and-rescue (SAR) operations following natural disasters, forcing officers to pay out-of-pocket for basic upkeep:

KII-08: "Plus pa kung masira pa yong gamit mo... piyesa gagawan mo ng report dadalhin mo naman doon sa crame, hindi aabot, kulang yong isang buwan dyan sir, baka abutin pa ng kalahating taon, bago mag response yong ano... Gagawan lang duration report tapos pasa doon, tapos eh kung ano hindi naman sila magpapadala ng mekaniko dito sir, yong e advice nalang diyan na ipagawa sa labas maghanap nalang kayo ng mekaniko diyan..." (Worse, if your equipment breaks down... you have to make a report for the parts and submit it to Crame. It won't take just a month, sir; it might take up to half a year before they respond... We just make a report, submit it, and then they won't even send a mechanic here. They will just advise us to have it fixed outside and find our own local mechanic.)

KII-07: "Ngayon nga sir, nung nagkaroon tayo ng disaster dito, may mga rescue na lunod doon sa may ano. Dahil sa ang ating ano is under repair pa. So... Yun, talagang nagkakamit tayo ng problema sa pag-rescue agad sa mga biktima ng lindol or typhoon or baha." (Now, sir, when we experienced a disaster here, there were rescue operations for drowning victims in that area. Because our asset was still under repair... we really encountered difficulties in immediately rescuing victims of the earthquake, typhoon, or flood.) Over-bureaucratized centralization delays resource preservation workflows (Weber, 1947). Under Performance Management Theory (Neely et al., 1995), these administrative bottlenecks directly degrade measurable public safety outputs, including disaster response times and patrol frequencies. Under Performance Management Theory, this bottleneck directly degrades quantifiable public safety outputs, such as disaster response times and patrol coverage, showing how structural administrative delays lead to reduced organizational performance.

Theme 2: Operational Cascades of Scarcity on Maritime Mandates

The second theme maps out how structural deficits degrade the quality, frequency, and safety of law enforcement and patrol deployments. Scarcity forces a strategic contraction of operations, introducing systemic gaps that commercial lawbreakers actively exploit.

Sub-Theme 2.1: Spatial Enforcement Reductions and Abandonment of Preventive Patrols

Capped fuel allocations have led stations to eliminate continuous, wide-area preventive sea patrols. Units have shifted to intelligence-driven operations or restricted schedules (e.g., patrolling once a week or twice a month nearshore), launching vessels only upon receiving specific reports of illegal fishing:

KII-04: "Naka schedule lang po yung pag patrol namin gawa ng aming gas allocation. At standard operational expense logic dynamic area... regular navigation logic control base is limited na once a week or twice a month lang po kami nakakapag sea patrol operation." (Our patrols are strictly scheduled based

on our gasoline allocation. Following our standard operational expense logic for our dynamic area... our regular navigation and control base is limited to only once a week or twice a month for actual sea patrol operations.)

KII-05: "Sa subong nag bag-o na ang features. Operational targeted and intelligence-driven na kita subong. Indi na pwede mag facial patrol... Kung diin may report sang illegal fishing, to lang kadtuan para indi ma-waste ang fuel allocations ta." (Currently, our operational features have changed. We are now targeted and intelligence-driven. We can no longer perform wide-area visual patrols... We only go to areas where there is an active report of illegal fishing to avoid wasting our fuel allocations.)

While intelligence-driven operations optimize short-term fuel use, they leave large maritime sectors unpoliced for extended periods. This contraction represents a drop in quantitative enforcement outputs (Neely et al., 1995). Under RBV (Barney, 1991), physical capital constraints (fuel shortages) bottleneck human capital expertise (trained personnel).

Sub-Theme 2.2: Operational Vulnerability and Technological Disparities

Significant technological disparities exist across field stations. While tourist hubs like Boracay utilize high-speed craft, rural field units rely on small, low-powered rubber boats. Officers report that pursuing commercial poachers in small rubber boats is tactically unviable and exposes personnel to severe sea weather. Unpredictable open-ocean conditions frequently cause engine breakdowns ("matroubolan"), forcing law enforcement teams to request civilian towing assistance:

KII-09: "Kunwari yung makina ng isang fishing vessel is malakas. E paano namin mahabol sir kung bangka yung gagamitin namin sir?" (If, for instance, the engine of an illegal fishing vessel is high-powered, how can we possibly pursue them using only our small boat, sir?)

KII-08: "Madalas matroubolan kami sa gitna ng dagat. Wasted fuel, yong mga tao pagod na, tapos kailangan mo pa magmakaawa sa mga sibilyang bangka na hilahin ka pabalik sa pampang. Nagiging negative results tuloy ang operasyon." (We often break down in the middle of the sea. It's wasted fuel, the crew is exhausted, and then you even have to beg civilian boats to tow you back to shore. It ends up ruining the whole operation.)

Compounding this operational vulnerability is a geographical personnel mismatch. In stations like Antique, almost all personnel are originally from Iloilo or Capiz, introducing a 4 to 5-hour overland travel delay when trying to emergency-recall off-duty troops during sudden maritime disasters:

KII-09: "Halos lahat dito sir taga Iloilo sir eh. Ako yung taga Capiz, 4 to 5 hours din yung biyahe sir. Yan yung mga difficulties sir. Yung... layo kung i-recall ang tao." (Some of my colleagues here are from Iloilo, so it takes them 4 to 5 hours to travel. It's especially hard during emergencies and disasters. Almost everyone here is from Iloilo, sir. As for me, I'm from Capiz, which is also a 4 to 5-hour travel time. Those are the difficulties, sir... the sheer distance when we need to recall personnel.)

The extreme technical disparity and resulting physical risk represent a critical failure in the institutional deployment of resources under Resource-Based View (RBV) Theory. When personnel are deployed in assets that lack the speed and seaworthiness to match commercial poachers, the "physical capital" component of the RBV model fails to support the organizational mission. Furthermore, under Performance Management Theory, the inability to operate safely in adverse weather directly reduces operational efficiency, as units are forced to abort missions due to safety limitations, leading to zero-apprehension outcomes.

Theme 3: Leadership Improvisation, Adaptive Governance, and Troop Welfare

Theme 3 documents the strategic creativity of unit commanders and field personnel in the face of structural

scarcity. Rather than accepting operational standstill, leadership relies heavily on adaptive management, community networks, and resource pooling.

Sub-Theme 3.1: Resource Optimization through Tactical Multi-Tasking and Crew Splitting

To compensate for severe personnel deficits across highly dispersed deployment zones, stations enforce extreme multi-tasking protocols. Commanders have structurally modified deployment models, cutting standard vessel crew sizes in half to maintain a nominal presence across multiple essential ports and outposts simultaneously:

KII-05: "Kulang gid ang manpower namon... Spreading of personnel to different areas like monitoring team in Boracay, law enforcement team in Dumaguít, high-speed watercraft, plus the three jetty ports... Field personnel must multi-task as vessel crew, port security, and office desk collectors... Standard sea operations require at least 8 personnel per crew, but we are forced to operate with only 4 personnel just to distribute the remaining warm bodies to the ports." (Our manpower is severely lacking... We have to spread our personnel across different areas, such as the monitoring team in Boracay, the law enforcement team in Dumaguít, our high-speed watercraft, plus the three jetty ports... Field personnel must multi-task as vessel crew, port security, and office desk collectors... Standard-sea operations require at least 8 personnel per crew, but we are forced to operate with only 4 personnel just to distribute the remaining warm bodies to the ports.)

KII-10: "Boracay and Dumaguít kaya kailangan talagang mamaximize yung personnel lalo na may spread tayo sir... nagkaroon na tayo ng MOE sa lower units. So... achievable na natin nagagamit yung budget natin to, to utilize it properly... gumagamit tayo ng wise based practical water craft." (Because of Boracay and Dumaguít, we really have to maximize our personnel, especially since our deployments are highly spread out, sir... but we now have MOOE distributed to the lower units. So, it is achievable to utilize our budget properly... we make use of wise, practical watercraft choices.)

This adaptive practice is a clear manifestation of the Public Administration and Management Theory tenet of administrative improvisation. In the absence of sufficient formal resources, leaders create informal coordination networks, prioritize tasks, and modify official operational safety parameters (such as cutting crew sizes) to maintain basic operations. From an RBV perspective, the unit relies heavily on the "human capital" and organizational capability dimensions to compensate for the severe lack of physical capital (vessels) and financial capital (budget), optimizing what little resources remain through internal consultations.

Sub-Theme 3.2: Command Initiative and Personnel Welfare Safeguards

When central emergency funding is unavailable, local command structures establish internal donation initiatives (e.g., officer-funded "food banks") to support disaster relief and maintain community goodwill. Furthermore, field teams report enduring extended sea deployments, such as 45-day offshore assignments on speedboats originally scheduled for 15 days:

KII-10: "Example ko sir dito yung experience namin nung pinadala kami sa Masbate... yung expected naming na deployment is only 15 days but nagkaroon ng... additional days for deployment so naabot kami ng 45 days sir. So nandoon lang ka sa laot sir walang babaan kumbaga yung magiging ano nyo sir magiging bahay nyo ah speed boat... advanced nalang tayo sa pag gawa ng plano." (My example here, sir, is our experience when we were deployed to Masbate... our expected deployment was only 15 days, but it was extended, and we ended up staying for 45 days. We were just out at sea with no shore leave, so the speedboat essentially became our home... we had to rely on advanced tactical planning to survive.)

Commanders also manage administrative pressures from higher headquarters, which frequently demand photographic proof of compliance without supplying requisite fuel or food allowances:

KII-01: "Minsan ang hinihingi lang sa taas is picture at compliance report. Hindi nila tinatanong kung may gas ba kami o kung may pagkain ang mga tao sa bangka. Kinakailangan ng command initiative para protektahan ang welfare ng mga tao ko habang gumagawa ng paraan para may maipakitang compliance." (Sometimes, all that the higher headquarters demands is a photograph and a compliance report. They do not bother to ask if we have enough gasoline or if our personnel on the boat have food to eat. It requires strong command initiative to protect the welfare of my men while simultaneously finding ways to submit our compliance reports.)

This dynamic underscores a tension in Performance Management Theory (Neely et al., 1995), where output-oriented metrics (photo-compliance) are enforced without corresponding input provisions (fuel and food). Informal leadership mechanisms act as critical buffers preventing administrative collapse (Weber, 1947).

Theme 4: Structural Transformations and Policy Recommendations

The final theme aggregates the explicit policy insights and systemic reforms proposed by the maritime personnel. These institutional changes aim to shift the PNP Maritime Group away from temporary tactical fixes toward sustainable structural modernization.

Sub-Theme 4.1: Procurement Interventions and Localized Technical Capacity Building

To eliminate the 6-month repair lag, personnel recommend amending procurement contracts to require vendor-led regional maintenance training before watercraft deployment. Establishing organic regional mechanics and spare parts inventories would minimize asset downtime. Additionally, informants proposed an LGU co-management model where local governments purchase watercraft while maritime police provide trained operational crews:

KII-06: "Dapat before siguro i-purchase na ang ara-ara na resources, so dapat i-train mismo sang company ang personnel dapat naton Sir... para, at least ya, may galingon kita nga trained na personnel. So, indi na kita kinanlan nga magdalagan didtu [sa Crame]. Indi na kinanlan ipadala didto." (Perhaps, before purchasing these resources, the vendor company should directly train our regional personnel, sir... so that, at the very least, we possess our own organic, trained technicians. This way, we do not need to constantly run to Crame or ship our equipment back there.)

KII-09: "Ang pinakamagandang solusyon in the future is mag-purchase ang LGU ng sarili nilang water asset, tapos kami ang magbibigay ng trained personnel para mag-operate. Mas mabilis kasi silang bumili at magpanatili ng gamit kaysa sa national system natin." (The best solution for the future is for the LGU to purchase their own water assets, and then we will supply the trained personnel to operate them. This is because local governments can acquire and maintain equipment much faster than our highly centralized national system.)

Developing regional technical skills transforms human capital into an active organizational capability (RBV; Barney, 1991). Decentralizing procurement workflows reduces bureaucratic friction and improves localized emergency response times (Weber, 1947).

Sub-Theme 4.2: Financial Modernization and Institutional Stabilization

Informants emphasized that operational predictability requires stabilizing Maintenance and Other Operating Expenses (MOOE) release schedules. Field officers recommend adopting a standardized "Trip Card" fuel allocation system linked to jurisdictional distance rather than rigid monthly caps, alongside predictable, direct disbursements to field stations:

KII-08: "Siguro sir... MOOE lang natin hindi kasi fix yong kwan yong kunyari petsa kinse darating talaga yan, minsan kaya ganon ba para ma budget... minsan na no norpresa, tapos ngayon wala na ilang buwan na wala pa, yon sana sir monthly kung totoo talaga... dapat monthly sana sir siguradong naga whole time..." (Perhaps, sir... our MOOE should be released on a fixed schedule. For example, arriving exactly on the fifteenth of every month so we can budget systematically. Currently, we are often left in surprise in which several months pass with absolutely no release. I hope it becomes a predictable monthly disbursement...)

KII-10: "Dati kase sir, a... iba yung, kung matatandaan natin yung fuel is ah...quarterly...dumadating, so ngayon sir, updated na, meron ng trip card e... na tinatawag so.. madali lang sir sa pag ano sa pag ahh... tawag neto, pag expense and utilize ng ating fuel sir." (Previously, sir, our fuel was distributed on a highly rigid quarterly basis. Today, the system is updated and we now utilize what is called a 'trip card,' which makes it significantly easier to expense, track, and utilize our fuel, sir.)

Establishing predictable financial flows provides the elasticity required for sustained sea patrols and rapid emergency response, aligning with financial capital optimization under RBV (Barney, 1991) and system predictability under Public Administration Theory (Weber, 1947).

Proposed Output of the Study: The P.M.O.R.E. Strategic Framework

Beyond mere diagnostic assessment, this study translates empirical evidence into a data-driven mandate for an Institutional Modernization and Operational Sustainability Model. Quantitative findings depict a highly competent workforce operating under severe material duress, with resource allocation consistently constrained at moderate levels. Non-parametric statistical tests confirm that these logistical constraints directly govern unit performance, while qualitative data further contextualize this reality by revealing an inverted logistical dependency on external entities, personal financial attrition, and hazardous operational improvisations such as reducing vessel crews from eight down to four personnel.

To bridge these systemic gaps, this study proposes the Panay Maritime Operational Resilience and Efficiency (P.M.O.R.E.) Strategic Framework as its primary practical output. Serving as an empirically grounded, multi-layered institutional blueprint, this framework is specifically designed to transition Panay Island's maritime police units from volatile, ad-hoc survival practices into a structured, self-sustaining operational ecosystem.

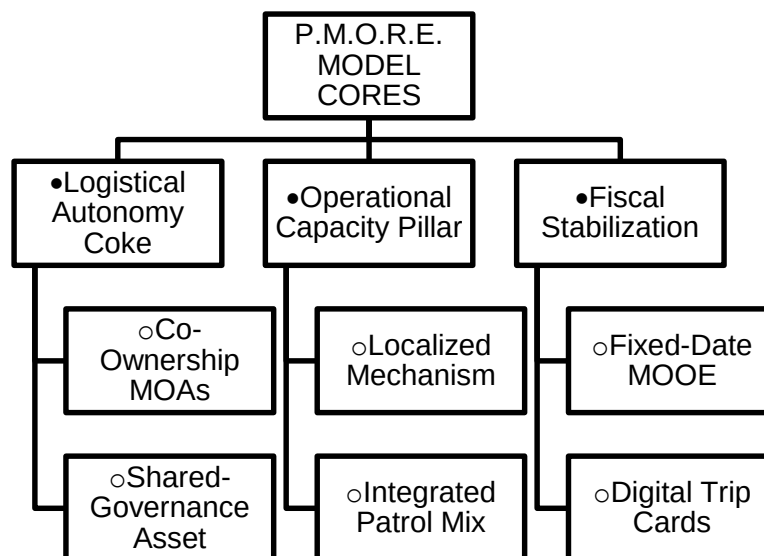


Figure 1: The Panay Maritime Operational Resilience and Efficiency (P.M.O.R.E.) Strategic Framework

Pillar 1: Shared Governance and Logistical Autonomy

- Empirical Grounding: Derived from quantitative fleet shortages and qualitative findings detailing inverted logistical dependencies on external agencies.
- Action Plan & Implementation:
 - Standardized Shared-Governance MOAs: Formalize policy templates for Memorandums of Agreement between the PNP Maritime Group, Coastal LGUs, and BFAR.
 - Shared-Asset Ownership Clause: Authorize LGUs to acquire and register watercraft to bypass centralized procurement, while the Maritime Police provide certified operational crews.
 - Institutionalized Fuel Subsidies: Embed recurring fuel allocations into municipal and provincial Annual Investment Plans (AIP), eliminating ad-hoc crisis requests.

Pillar 2: Localized Technical Capacity and Integrated Patrol Matrix

- Empirical Grounding: Addresses restricted spatial coverage, six-month maintenance delays at national headquarters, and spatial patrol contractions.
- Action Plan & Implementation:
 - Vendor-Led Certification: Mandate that all future watercraft procurement contracts include vendor-funded technical maintenance training for regional personnel prior to asset turnover.
 - Regional Spare-Parts Hub: Establish localized mechanical depots at the Regional Maritime Unit (RMU) level to eliminate maintenance bottlenecks at Camp Crame.
 - Dynamic Intel-Driven Patrol Matrix: Transition from routine preventive roaming to data-driven deployments, utilizing community watchdogs to focus fuel and assets on high-probability zones.

Pillar 3: Fiscal Stabilization and Troop Welfare Program

- Empirical Grounding: Directly responds to quantitative deficits in overtime/allowance provisions and personal financial attrition, including out-of-pocket operational spending and officer-funded "food banks".
- Action Plan & Implementation:
 - Fixed-Date MOOE Disbursement Policy: Issue administrative directives enforcing predictable, fixed monthly releases of Maintenance and Other Operating Expenses (MOOE).
 - Digital "Trip Card" Optimization: Implement electronic trip cards across all stations for automated real-time fuel logging, speedier accounting, and rapid replenishment.
 - Regional Emergency Contingency Reserve: Earmark a dedicated percentage of regional funds for field allowances and unexpected deployments, eliminating out-of-pocket spending.

3.8 Strategic Implementation Roadmap

To transition this framework from a theoretical model to an operational reality, the Regional Maritime Unit should implement these pillars through a phased, 10-to-18-month timeline:

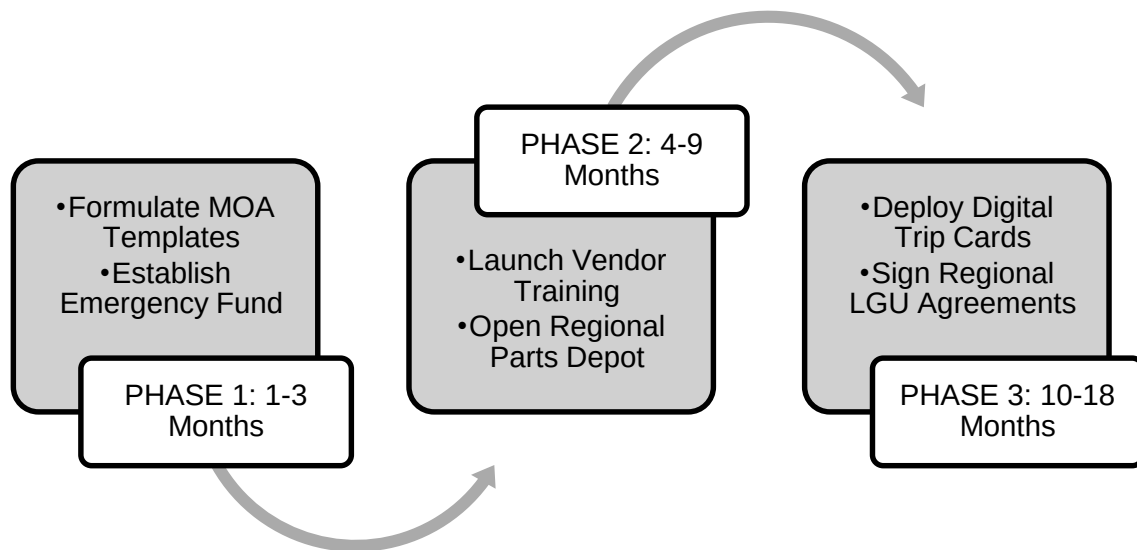


Figure 2: Strategic Implementation Roadmap

By implementing this model, it can move beyond a simple academic assessment and becomes a practical blueprint for institutional reform. It offers a clear path to balance the high operational efficiency of the workforce with the reliable, resilient resources they need to secure the coastal waters of Panay Island.

4. Conclusions

Maritime Police Units in Panay Island operate under near-survival resource allocations. While manpower provides flexibility, severe vessel depletion, maintenance delays, and capped fuel create critical vulnerabilities during extended patrols. These constraints are structural realities felt equally across all ranks, confirmed by strong perceptual alignment between commissioned and non-commissioned officers on shortages in manpower, equipment, and budget. Human capital remains the primary stabilizing asset, sustaining efficiency through simulation-based training, veteran mentoring, adaptable rotations, and disciplined pre-mission protocols.

However, institutional performance is fundamentally constrained by resource inputs. The strong positive relationship between resources and efficiency shows that expanding investments in manpower, fleet modernization, and funding directly improves outcomes, making reliance on troop endurance unsustainable. Persistent supply delays and maintenance bottlenecks restrict enforcement to nearshore zones, creating maritime blind spots and forcing dependency on local government support and operational improvisations that compromise officer welfare. To address these, adopting the Panay Maritime Operational Resilience and Efficiency (P.M.O.R.E.) Strategic Framework is essential to transition units from survival practices to a self-sustaining ecosystem through shared governance, regional maintenance depots, and predictable fiscal allocation.

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