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PERCEIVED COMPLIANCE AND PROTOCOL ENHANCEMENT OF THE PHILIPPINE NATIONAL POLICE IN DISASTER RISK REDUCTION MANAGEMENT: A MULTI-GROUP ANALYSIS

Deno P Catian
Master of Science in Criminal Justice with Specialization in Criminology

ABSTRACT
The Philippine National Police (PNP) plays a critical role in enforcing Disaster Risk Reduction and Management (DRRM) protocols to enhance community safety and mitigate the impact of disasters. This study, titled "Perceived Compliance and Protocol Enhancement of the Philippine National Police in Disaster Risk Reduction Management: A Multi-Group Analysis," assessed the extent of PNP compliance across the pre-disaster, disaster response, and post-disaster stages in the municipalities of Tubod, Baroy, Lala, and Kapatagan in Lanao del Norte. The research aimed to evaluate PNP performance in alignment with existing guidelines, specifically PNP Memorandum Circular No. 2020-081, and examined perceptions from four distinct respondent groups: PNP personnel, Barangay Officials, Barangay Peacekeeping Action Team (BPAT) members, and MDRRMO personnel. Using a descriptive comparative research design with a quantitative approach, the study employed a self-administered questionnaire as the primary data collection instrument. Data was collected through a survey and analyzed using descriptive and inferential statistics. The study identified areas needing improvement and recommended targeted strategies to enhance disaster preparedness and inter-agency coordination.

KEYWORDS: *Early Warning Systems, Disaster Response Stage, Implementing Awareness, Pre and Post Stage, And Security to Evacuation Centers.*

INTRODUCTION

Disasters have a global impact on society and nature, affecting all victims without exception. This is a significant concern because it can destroy properties and kill thousands or affect millions of people. The Philippines is vulnerable to almost all natural disasters due to its geographical location and tectonic structure. The country lies along the Pacific Typhoon Zone, where weather conditions such as typhoons frequently occur. On average, 20 typhoons enter the Philippine Area of Responsibility (PAR) every year, with five being major disasters. The Philippines is one of the countries with the highest risk in the world.

The Philippine National Police (PNP) hold a significant role in disaster proactive assessment, disaster response, and post-disaster stages. However, the PNP's capability in the role is dependent on their versions of the DRRM standards and their ability to respond to disasters. Despite the existing Disaster Risk Reduction and Management policies, there are concerns with the Philippine National Police's compliance with disaster operations. Lanao del Norte, one of the disaster-prone provinces in the 10th Region of Mindanao, was chosen for this study to evaluate the current practices of the PNP and consult with its military counterparts. PNP Memorandum Circular No. 2020-081, also known as the "2020 PNP Critical Incident Management and Operating Procedures," will be used to evaluate.

This study aims to strengthen the capacity of local communities to reduce the consequences of disasters, improve the performance of the Philippine National Police, and provide actionable recommendations for enhancing disaster preparedness and response. Policymakers can benefit from this research by understanding the outcomes of existing disaster risk management (DRRM) strategies, identifying areas that require improvement, and assisting in the development of the organizational environment. According to international standards, proper training and management of resources are essential, but many provinces like Lanao del Norte may lack the necessary training and equipment for effective disaster response. This gap highlights discrepancies with SDG 4 (Quality Education) and SDG 16 (Peace, Justice, and Strong Institutions), which emphasize capacity development and institutional preparedness, especially for frontline responders.

Literature Review

The role of law enforcement agencies in Disaster Risk Reduction and Management (DRRM) has become increasingly crucial due to the growing frequency and severity of both natural and manmade disasters. According to the International Federation of Red Cross and Red Crescent Societies (2020), law enforcement plays a significant role in disaster response and recovery, ensuring public order and safety during crises. Globally, DRRM has progressed through better governance, interagency collaboration, and community engagement. For example, in the United States, collaboration between the Federal Emergency Management Agency (FEMA) and local police has proven effective in disaster prevention, while Japan uses technology for early warning and rapid response. These international models highlight the importance of law enforcement in improving disaster management systems.

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The importance of legal frameworks in disaster management is emphasized by various scholars and organizations. McLeod (2023) discusses how the International Federation of Red Cross and Red Crescent Societies has influenced the development of disaster risk governance, helping to create frameworks that align with global standards like the Sendai Framework. However, gaps remain in cross-sectoral commitment and DRR law scholarship, which continues to limit the effectiveness of these frameworks. The United Nations Office for Disaster Risk Reduction (2020) notes disparities in disaster impacts, particularly between low- and high-income countries, and stresses the need for policies that consider these inequalities. This highlights the ongoing challenge of making disaster risk management inclusive and effective for all populations.

The Philippine National Police (PNP) plays a pivotal role in disaster response, as outlined by the National Disaster Risk Reduction and Management Plan (NDRRMP). The PNP's involvement in disaster management, such as the Typhoon Fabian relief efforts, underscores its significant contribution to national disaster resilience. Laufs and Waseem (2020) emphasize the need for effective communication and coordination between law enforcement and other agencies to enhance disaster response. However, challenges like limited resources, inadequate infrastructure, and inconsistent policy enforcement continue to hinder the full implementation of DRRM strategies. Caliwan (2020) and Nazario et al. (2020) emphasize the importance of continuous training and acquisition of necessary equipment to improve the PNP's effectiveness during crises. The integration of local NGOs and civil society organizations (CSOs) with government efforts also plays a crucial role in filling gaps in disaster management, furthering the importance of multi- sectoral collaboration.

Theoretical Framework/Conceptual Framework/Paradigm of the Study

This study anchored the following theories and philosophies, providing insights: The Theory of Planned Behavior (TPB). This theory is appropriate to explore compliance-type behavior as found in the case of the Philippine National Police (PNP) when it has something to do with Disaster Risk Reduction Management (DRRM). The theory of planned behavior suggests that an individual's behavior is determined by his or her intentions, and these in turn are predicted from: attitude towards the behavior (positive/negative evaluation a person makes toward type of conduct); subjective norms (the pressure felt by one to perform/ not perform certain type) and perceived behavioral control as defined -by usability: the extent over which performing the behavior is believed be difficult experience. According to the theory, PNP officers can assess their level of compliance with BDRRM protocols based on how they perceive what is expected from them and by others in relation to DRRM within the community, having friends at work, and freedom of ideas for action.

This theory provides a suitable framework for evaluating PNP's compliance with DRRM protocols. According to the theory, people act according to their intentions, which are constructed from their attitudes, social norms, and the belief in their competence to perform the behavior. The PNP's approach to DRRM strategies depends on their attitudes toward preventing disaster, pressure from the community, and the opposite levels of power, and access to supportive resources and institutional guidance. TPB analyzes the effects of these influences on the PNP's willingness and ability to implement DRRM measures. This framework thus exposes the underlying psychological and institutional causes of police behavior, helping develop a plan to improve compliance.

This study viewed the norms and attitudes as behaviorally perceived control influencing the adherence of PNP to the protocols from DRRM. This study analyzes the gaps that exist in their current practices and can design strategies for improvement. The philosophies of pragmatism and the underlying philosophies support a fuller framework for formulating efficacious, efficient, and also moral DRRM strategies. Due to the emphasis on practical implications and results, the study can provide specific suggestions for improving PNP's disaster preparedness and performance.

It is palpable from the theoretical and philosophical treatments that the specific strategies of DRRM should be workable, realistic, culture-sensitive, and culturally driven. TPB, Systems Theory, and Contingency Theory stress the requirement for behavior intentions, systemic integration, and situational adaptability in the PNP. At the same time, Pragmatism, Utilitarianism, and Humanism stress the efficiency of the management processes, the production of the maximum benefit, and the protection of human worth in disaster situations. Combining such approaches, the study could offer a comprehensive assessment of PNP's compliance with DRRM underpinnings and bring practical, evidence-based suggestions for the improvement of disaster preparedness. This integrated approach helps guarantee that the study responds to the fact that disaster risk reduction and management IS an intricate process that requires a multi-faceted process as well as intervention. Literature well supports this reality.

Therefore, this theoretical framework could be deemed as a strong foundation for assessing the PNP's preparedness and adherence to DRRM. It includes the adoption of behavioral theories, understandings emanating from the system's thinking approach, and elements of pragmatic philosophies to capture all the influences that may affect the DRRM activities of PNP and devise actionable approaches to enhance the scenario. This means that the recommendations were not only aligned with theoretical frameworks but also realistic and feasible, thus improving the disaster management system's capability and flexibility.

This study employs Input-Process-Output model as its conceptual framework. The Input includes the variables of the study such as compliance of PNP in Lanao del Norte in DRRM during Pre-

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Disaster Stage-Proactive Assessment, Disaster Response Stage-Disaster Incident Management Post Disaster Stage-Recovery and Rehabilitation Support; the evaluation of PNP Compliance of Disaster Risk Reduction Management (DRRM) specifically in terms Implementing awareness and educational campaign materials, Developing and maintaining early warning systems, and Providing Security to Evacuation Centers and Relief Goods Operations. The Process contains the administration of the validated self-made questionnaire, mainly sourced from a primary research instrument. Its analysis and interpretation using appropriate statistical tools set the stage to establish the validity and standing of the results, which will serve as the springboard to conceptualize the expected output of the study, which is the Disaster Risk Reduction Management protocol enhancement.

Significance of the Study

The results of this study were beneficial to several groups. For PNP Uniformed Personnel, the findings provided a basis for viable actions and alternatives to address problems in disaster risk reduction. For Disaster Risk Reduction Management Office Personnel, the results helped gather more information regarding the type of disasters frequently occurring in various municipalities of Lanao del Norte, particularly in disaster-prone areas, and contributed to establishing a strategic plan for mitigating actions. PNP Force Multipliers benefited from the study by gaining timely and relevant information, along with acquired skills to improve their mechanisms and ensure the safety of their constituents during disasters. Local Government Units found the study valuable as it provided updated information on the capacity of their respective police stations to handle disasters and supported the annual procurement of budgets for disaster programs. The community benefitted by gaining insights into disaster preparedness, ensuring their safety through awareness of necessary actions, and engaging in training activities such as drills, seminars, and demonstrations for better disaster mitigation. Finally, the findings served as a reference for future researchers and the researcher himself, offering a foundation for analyzing related variables and indicators to improve disaster risk reduction management in the future.

Objectives of the Study

This study aimed to assess the compliance with Disaster Risk Reduction Management (DRRM) protocols of the Philippine National Police (PNP) as perceived by four groups of respondents. It also explored how these perceptions differed across various stages of disaster management and key DRRM functions. Specifically, it sought to answer the following questions:

1. What is the extent of the compliance with DRRM protocols of the Philippine National Police as perceived by the four group of respondents in terms of:
   1.1. Pre-Disaster Stage-Proactive Assessment (Level 1- Green).
   1.2. Disaster Response Stage-Disaster Incident Management (Level 2- Red); and
   1.3. Post Disaster Stage- Recovery and Rehabilitation Support (Level 3- White)?
2. Is there a significant difference in the extent of the compliance with DRRM protocols of the Philippine National Police among the four groups of respondents?
3. What is the level of agreement of the Philippine National Police (PNP) in complying with the Disaster Risk Reduction Management (DRRM) protocol as perceived by the four groups of respondents in terms of:
   3.1. Implementing awareness and educational campaign materials.
   3.2. Developing and maintaining early warning systems.
   3.3. Providing Security to Evacuation Centers and Relief Goods Operations.
4. Is there a significant difference among the four groups of respondents in their evaluation of the compliance of Philippine National Police (PNP) in Disaster Risk Reduction Management (DRRM)?
5. Based on the findings, what revised protocols could be made to improve disaster resilience?

By addressing these research questions, the study provided a multi-group analysis of the PNP's DRRM performance and recommended a protocol enhancement to strengthen disaster management efforts in the province of Lanao del Norte.

METHODOLOGY

Research Design

Quantitative research design is the most suitable approach for this study because it allows for the systematic and objective measurement of the Philippine National Police's (PNP) compliance with Disaster Risk Reduction and Management (DRRM) protocols. By using a self-made questionnaire, the study will gather numerical data that can be analyzed statistically, providing an objective basis to assess the level of compliance. This design provides a clear and measurable understanding of the PNP's DRRM performance, free from subjective bias. This involves distributing a questionnaire to the identified respondents, with items specifically designed to quantify their perceptions of compliance across various stages of disaster management.

Research Method

The research method employed in this study is descriptive comparative. This method is used to describe the extent of the PNP's compliance with DRRM protocols and to compare the perceptions of four distinct groups of respondents: PNP personnel, Barangay Officials, BPAT, and MDRRMO personnel. This approach allows for a comprehensive analysis of the topic, providing both a detailed account of the compliance levels and an understanding of how different stakeholders view the PNP's performance.

Population of the Study

The study participants were officials selected through proportional quota sampling from the municipalities involved in disaster risk reduction and management (DRRM). Specifically, the inclusion criteria include people with direct experience and knowledge of DRRM practices and policies, ensuring that the

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collected data and those from professionals are specialized. Thus, there are four subject populations in the study: PNP personnel, barangay officials, members of BPAT, and MDRRMO personnel. To ensure the generality of the results, we excluded civilians. The study population consists of four groups of respondents: 84 PNP Uniformed Personnel, 48 MDRRMO Personnel, 32 Barangay Officials, and 36 BPAT members, resulting in a total of 200 participants. The selected participants are involved in DRRM activities in Tubod, Baroy, Lala, and Kapatagan municipalities. The selection of participants was guided by specific inclusion criteria, requiring them to be active, official members of one of the four target groups with direct involvement and knowledge of local DRRM practices and policies.

Data Gathering Tool/s

The primary data-gathering instrument employed in this study is a self-made questionnaire that measures the extent to which the PNP follows the standard measures in line with DRRM at the pre-disaster stage, during the disaster response phase, and the post-disaster phase. The instrument's items are mainly sourced from the PNP Memorandum Circular No. 2020-081, which establishes the general guidelines on DRRM to be implemented by the PNP. The researcher constructed other items to cover other essential dimensions of DRRM compliance that may be unique to the province of Lanao del Norte. Such a procedure to minimize method variance can help ensure that the only variance we get in the result is method variance. At the same time, the questionnaire's content covers the essential and relevant components of the official guidelines and items constructed by the researcher. After collecting the responses of the non-respondents, Cronbach's Alpha was used to calculate how consistent subject responses were among the questions in the instrument. This was to mathematically determine the reliability coefficient and measure the internal consistency drawn from the respondents' answers. To establish the instrument's validity, this was submitted by the four officers or heads of the MDRRMO from the selected municipalities within the province of Lanao del Norte. The validation process includes the assessment by some highly experienced specialists from disaster management and research methodology. These validations scrutinized the questionnaire based on the content validity and readability of the items to the study objectives.

Data Gathering Procedure

The data collection procedure was used in this study, guided by the following: First, the researcher made a letter request to the Dean of the Philippine College of Criminology. Second, the researcher also made a letter request to the selected four Municipal Police Stations, the head of the Provincial Disaster Risk Reduction and Management Office; Officers of the selected four Municipal Disaster Risk Reduction and Management Personnel Office; and the selected barangays. It was approved, and the researcher arranged the distribution of the questionnaires to the respondents with a consent letter. The data collection was conducted, and the researcher explained the study to the respondents, as well as how to fill out the questionnaires. Once the questionnaires were collected, the data were tabulated and then submitted to a statistician for analysis.

Treatment of the Data

Descriptive and inferential statistics were used in this study's data analysis. Primary data analysis involved measurements such as means, standard deviations, and frequency distributions, which analyzed the respondents' perceptions of PNP's compliance with the DRRM measures and protocols. The mean and standard deviation have been computed to search for coefficients that signify recurring patterns or trends represented by proportions indicative of the general degree of compliance in the disaster management process at different stages. Inferential statistics were used to examine the research hypotheses and thereby determine the perceived level of compliance between the four groups of respondents. Thus, statistical significance was ascertained with ANOVA (Analysis of Variance), which checks whether the difference in mean scores is statistically significant. These analyses brought better insight into the nature of differences and indicate whether some aspects of PNP compliance require enhanced attention.

According to the Statement of the Problem (SOP), specific research objectives direct data treatment. Appropriate statistical tests were used for each SOP to establish the presence or absence of correlation and contrast in the variables. For instance, when testing hypothesis H, the mean of compliance perceptions of the four respondent groups is significantly different, and the analysis of variance (ANOVA) is conducted to vary the groups' mean. Subsequently, the results of these statistical tests are interpreted in terms of the findings pertinent to the research objectives, and guidelines for relevant conclusions and recommendations are given. Therefore, data treatment in this study is preceded by bi-variate and multi-variate statistical descriptive and inferential analyses, respectively. The outcomes of such analyses were employed to certify the PNP's adherence to DRRM procedures and pinpoint opportunities for enhancement. Statistical treatment helps avoid biases in data analysis and allows the study to draw conclusions based on the data analysis.

Ethical Considerations

This research respected the ethical issues required for the participants' safety and appropriate use. The researcher formally asked the participants for consent and explained the purpose and goals of the study, the procedures that were followed, the risks and benefits of the research, and the participants' rights. Before data collection, all the respondents were given a consent form to fill out, and the study is entirely voluntary. Study subjects were free to request the removal of their data after they were informed that they could withdraw from the study at any time with no repercussions. The form will ensure that the participants understood the survey content, whose details they gave, and were moderately Compliant to participate. For those who cannot be persuaded to participate in the study, a plan is put in place to honor their decision. Any respondent who seemed to be reluctant to participate in the study respected their decision without further

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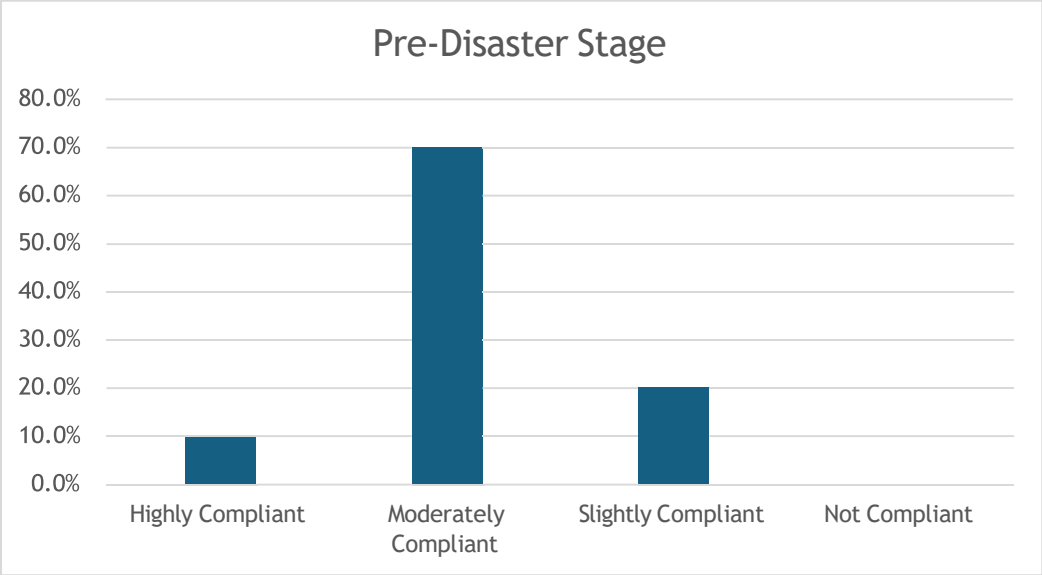
convincing them. No vulnerable groups, including children, prisoners & disabled, were included in the study. So, ethical considerations were observed in protecting the participant's anonymity and their data. All questions in the questionnaire were general, and no individual identifier was asked of the respondents; the data to be collected will be used solely for the research.

RESULTS AND DISCUSSION

The data obtained among the four groups of respondents which included the Municipal Police Station (MPS), the Municipal Disaster Risk Reduction and Management Office (MDRRMO), Barangay Officials, and the Barangay Peacekeeping Action Team (BPAT) will be thoroughly analyzed and explained.

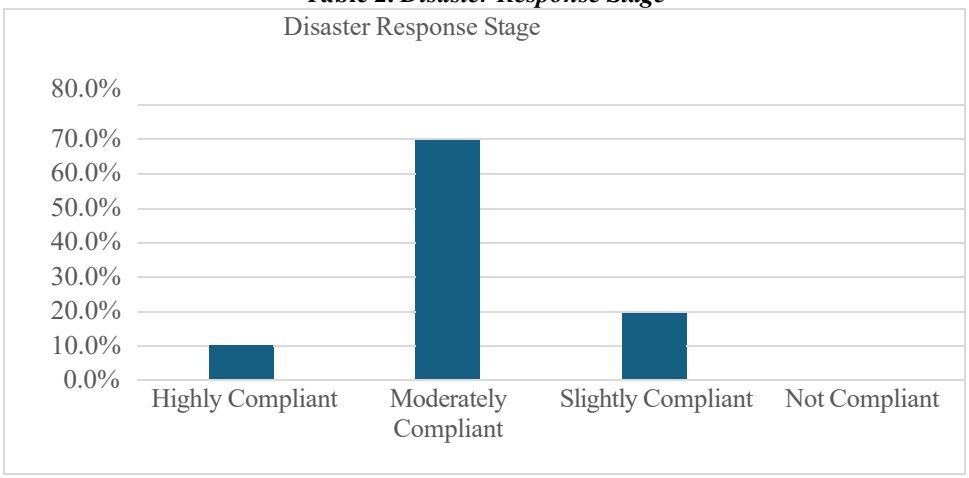
1. The Extent of the compliance with DRRM protocols of the Philippine National Police in terms of:

Table 1. ***Pre-Disaster Stage***



The overall evaluation of the PNP's pre-disaster compliance across the four groups yielded a general weighted mean of 2.86, interpreted as "Moderately Compliant". This score, combined with a standard deviation of 19.89, reflects a positive but varied perception of the PNP's readiness. The implication is that while the PNP was seen as competent in foundational planning, enhancing the execution of community-level implementation—especially in socially complex tasks like relocation and ensuring the broad reach of information campaigns—is necessary. This would bridge the gap between planning and practice, thereby strengthening the overall disaster resilience of the communities in Lanao del Norte.

Table 2. ***Disaster Response Stage***

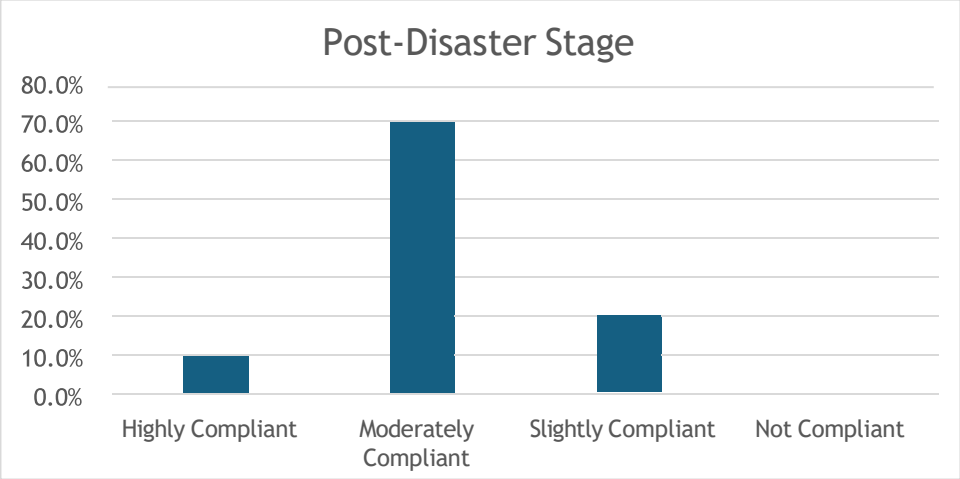


The general weighted mean for the disaster response stage across all groups was 2.87, interpreted as "Moderately Compliant". This overall positive score signifies that stakeholder collectively viewed the PNP's management of disaster incidents as proficient

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and procedurally sound. The primary implication of this analysis is that while formal activation and inter-agency coordination were strong points, there is an opportunity to improve the readiness and deployment protocols for reserve personnel. Strengthening this aspect would ensure that the full capacity of available manpower can be leveraged, enhancing the robustness and efficiency of the overall crisis response.

Table 3. ***Post-Disaster Stage***



The general weighted mean for the post-disaster stage was 2.84, with an overall interpretation of "Moderately Compliant". This score indicates a solid and consistent approval of the PNP's performance in recovery and rehabilitation support across the four stakeholder groups. The key implication is that while the PNP's operational and humanitarian contributions to post-disaster efforts were well-regarded, there is a critical need to strengthen the administrative protocols for damage assessment and inter-agency reporting. Improving these back-end processes would ensure that recovery is not only visible and immediate but also data-driven and strategically sound.

2. Difference in The Extent of The Compliance with DRRM Protocols of The Philippine National Police Among the Four Groups of Respondents.

Table 4. ***ANOVA on the Perceived Extent of PNP Compliance in the Pre-Disaster Stage***

Source of Variation	*SS*	*MS*	*F*	*P-value*	Decision H_0	Interpretation
Between Groups	9.28	3.09	19.92	<0.001	Reject H0	Significant
Within Groups	30.42	0.16				

The respondents' perceptions of the PNP's compliance were analyzed using the pre- disaster stage Analysis of Variance (ANOVA), which showed statistically significant differences among all four groups of respondents. The calculated F-statistic is 19.92, and the p-value of less than 0.001 is less than the conventional level of alpha = 0.05.

Table 5. ***ANOVA on the Perceived Extent of PNP Compliance in the Disaster Response Stage***

Source of Variation	*SS*	*MS*	*F*	*P-value*	Decision H_0	Interpretation
Between Groups	9.58	3.19	20.49	<0.001	Reject H0	Significant
Within Groups	30.54	0.16				

The ANOVA results for the disaster response stage show a statistically significant difference in the respondents' perceptions of PNP compliance. The value of the F-statistic was 20.49, and the p was less than 0.001. Because the p-value is much lower than 0.05, the null hypothesis is rejected.

Table 6. ***ANOVA on the Perceived Extent of PNP Compliance in the Post-Disaster Stage***

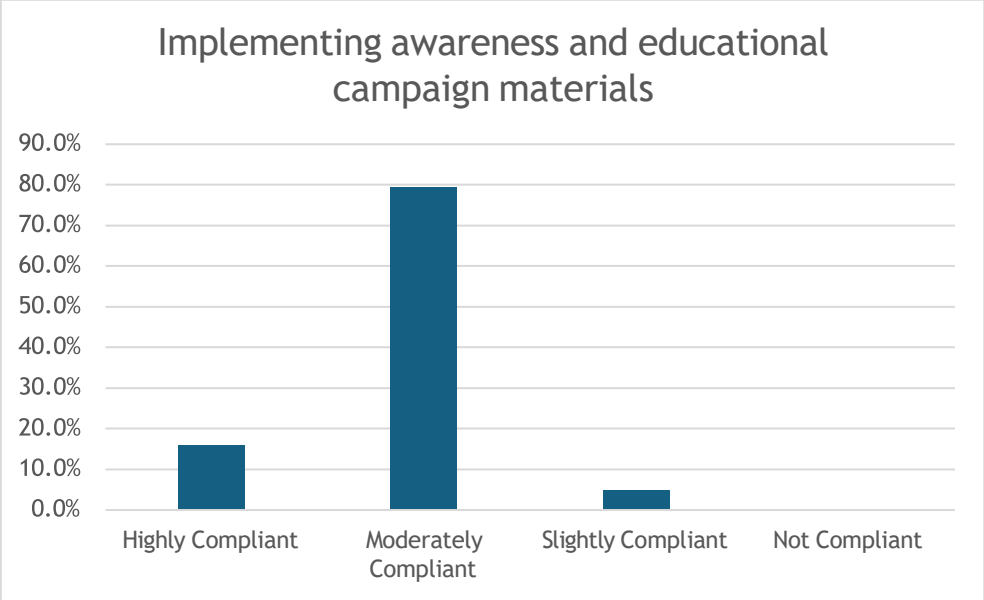
Source of Variation	*SS*	*MS*	*F*	*P-value*	Decision H_0	Interpretation
Between Groups	9.11	3.04	19.36	<0.0001	Reject H0	Significant

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In the post-disaster phase, the ANOVA test also indicates that there is a significant difference between the four groups of respondents in terms of their evaluation of PNP compliance. The value of the F-statistic calculated is 19.36, and the p-value is less than 0.0001. This is a very small p-value that provides good evidence against the null hypothesis, and such vectors can reject the null hypothesis. The results indicate that the perceptions of the MPS, MDRRMO, Barangay Officials, and BPAT vary significantly when evaluating the PNP's role in recovery and rehabilitation.

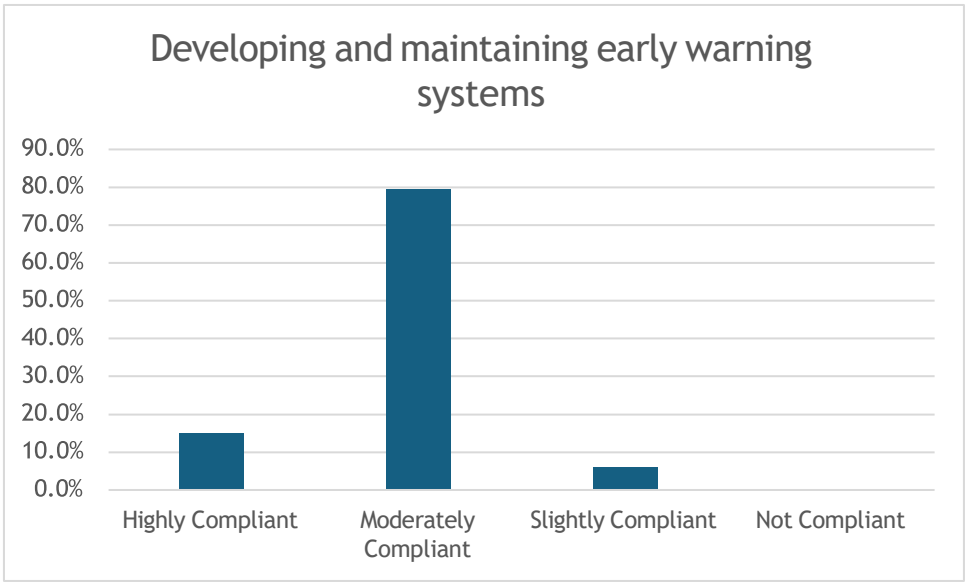
3. Evaluation on the compliance of Philippine National Police (PNP) in Disaster Risk Reduction Management (DRRM) in terms of:

Table 7. ***Implementation of Awareness and Educational Campaign Materials of the Four Groups of Respondents.***



The general weighted mean for the implementation of awareness campaigns was 3.09, interpreted as "Moderately Compliant". This overall positive score reflects a consistent and favorable view of these educational efforts across all stakeholder groups. The primary implication of this analysis is that while the PNP has developed a strong, responsive, and effective campaign structure, future strategies must focus on overcoming the "last mile" challenge. A more targeted distribution plan is needed to ensure that valuable educational materials are truly accessible to every community member, thereby enhancing universal preparedness.

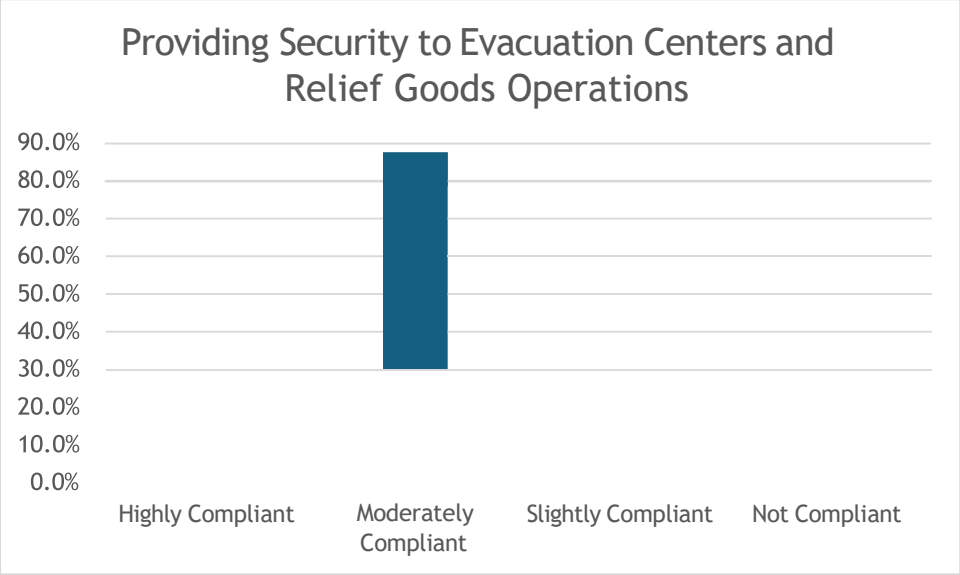
Table 8. ***Developing and Maintaining Early Warning Systems of the Four Groups of Respondents.***



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The overall assessment of the development and maintenance of early warning systems resulted in a general weighted mean of 3.05, interpreted as "Moderately Compliant". This score reflects a strong and favorable perception of how these critical systems were managed. The primary implication is that while the technical framework and inter-agency coordination are robust, there is a clear need to prioritize human-centered design. Enhancing the accessibility and user-friendliness of these systems is crucial to ensure that timely alerts effectively translate into timely, life-saving actions for every individual in the community.

Table 9. ***Providing Security to Evacuation Centers and Relief Goods Operations of the Four Groups of Respondents.***



The general weighted mean for this function was 3.13, interpreted as "Moderately Compliant," reflecting an overwhelmingly positive assessment of the PNP's security operations. The implication of this analysis is that the PNP is highly effective in its fundamental security role during disasters. However, to address the lowest-perceived area, investing in continuous, specialized DRRM training for all personnel is recommended. This would elevate their capabilities from simply providing security *during* a disaster to being experts specifically trained *for* disaster response, further solidifying community trust and resilience.

4. Difference Among the Four Groups of Respondents in their Evaluation of The Compliance of Philippine National Police (PNP) in Disaster Risk Reduction Management (DRRM),

Table 10. ***ANOVA on the Evaluation of PNP's Implementation of Awareness and Educational Campaigns***

Source of Variation	*SS*	*MS*	*F*	*P-value*	Decision H_0	Interpretation
Between Groups	2.80	0.93	8.82	<0.001	Reject H_0	Significant
Within Groups	20.78	0.11				

The implementation of the PNP awareness and education efforts is ranked; there have been various results that indicate a significantly varying trend in the four groups of respondents. ANOVA gave the F-statistic as 8.82 and the p-value as less than 0.001. Such a p-value is lower than 0.05; hence, the null hypothesis is rejected. This analysis shows that the four groups do not evaluate the educational and awareness programs of the PNP in the same manner. The between-score measure of variance (MS=0.93) is significantly higher than the within-score measure of variance (MS=0.11).

Table 11. ***ANOVA on the Evaluation of PNP's Development and Maintenance of Early Warning Systems***

Source of Variation	*SS*	*MS*	*F*	*P-value*	Decision H_0	Interpretation
Between Groups	2.84	0.95	8.65	<0.001	Reject H_0	Significant
Within Groups	21.42	0.11				

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The ANOVA outcome shows that there exists a statistically significant difference in the ratings of the four groups that were tested on the development and maintenance of early warning systems. The calculated F value is 8.65, and the p-level is less than 0.001. This coefficient is much less than the alpha value of 0.05, and therefore, it rejects the null hypothesis. The respondents have views that do not support the consistency of the PNP in managing the early warning systems across the groups, and the data ascertains its inconsistency.

Table 12. ***ANOVA on the Evaluation of PNP's Provision of Security to Evacuation Centers and Relief Goods Operations.***

Source of Variation	*SS*	*MS*	*F*	*P-value*	Decision H_0	Interpretation
Between Groups	1.12	0.37	3.07	0.029	Reject H0	Significant
Within Groups	23.94	0.12				

The ANOVA test led to the F-statistic of 3.07 and the p-value of 0.029. Since the p-value is lower than 0.05, which is the level of significance, the null hypothesis is rejected. This result proves that the four groups have varying perceptions of the usefulness of the security service of the PNP in instances of disasters.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. The Philippine National Police (PNP) is perceived as generally compliant across all three phases of DRRM: Initiative-taking Assessment (Pre-Disaster), Disaster Incident Management (Disaster Response), and Recovery and Rehabilitation Support (Post- Disaster). The organization demonstrates clear strengths in foundational planning, procedural activation during crises, and post-disaster security operations.
2. Despite the overall positive perception of compliance, a statistically significant disparity exists in the views held by the four stakeholder groups (PNP, MDRRMO, Barangay Officials, and BPAT). This lack of a unified perspective is a critical finding, highlighting a disconnect in how performance is measured and understood across different agencies and community levels.
3. The PNP's specific DRRM actions are evaluated favorably, particularly in the areas of community engagement for educational campaigns, inter-agency coordination for early warning systems, and securing relief operations. However, the study also identifies areas for improvement, such as the universal accessibility of information and the perceived timeliness of alerts.
4. The significant differences in perception across all analyzed areas strongly indicate that gaps in inter-agency communication and coordination are a core challenge. While the PNP may execute its duties effectively based on its internal protocols, the impact of these actions is not being uniformly understood or valued by its partner agencies and community force multipliers.

Recommendations

The following recommendations could be made to improve disaster resilience:

1. For the Local Government Units (LGUs), PNP, MDRRMO, and PNP Force Multipliers: To address the significant gap in perceptions, it is strongly recommended that a formal Municipal Inter-Agency DRRM Council be established. This council, composed of leaders from all four stakeholder groups, should meet regularly to co-develop and standardize DRRM protocols, establish shared success metrics, and conduct joint after-action reviews. This will foster a common operational picture and directly benefit community members through more seamless and coordinated disaster management.
2. For the PNP Uniformed Personnel: It is recommended that the PNP conduct a targeted review of its lowest-rated protocols. Specifically, an improvement plan should be developed to enhance the accessibility of educational materials for all community segments and to increase the perceived timeliness and effectiveness of early warning systems. This internal enhancement will directly strengthen the PNP's operational capabilities and improve the safety outcomes for community members.
3. For the PNP, MDRRMO Personnel, and PNP Force Multipliers (Barangay Officials and BPAT): To improve operational cohesion, it is recommended to institutionalize regular joint training exercises and integrated disaster simulation drills. These activities will not only enhance technical skills but also strengthen inter-personal relationships, clarify roles during a crisis, and create a more unified and effective response team, benefiting the entire community.
4. For the Community Members: It is recommended that community members actively participate in the feedback mechanisms offered by the PNP and other agencies. By providing constructive input on educational campaigns and the effectiveness of warning systems, they can help authorities tailor DRRM strategies to better meet local needs, thereby enhancing their own safety and resilience.
5. For Future Researchers: The present study recommends that a follow-up qualitative study be conducted to explore the underlying reasons for the perceptual differences identified in the ANOVA results. Using methods such as focus group discussions or in- depth interviews can provide a richer context and deeper understanding of why stakeholders view DRRM activities differently, offering more nuanced insights for policy improvement.

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