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COMPLIANCE ON THE USE OF INCIDENT COMMAND SYSTEM (ICS): BOHOL LOCAL GOVERNMENT UNITS, PHILIPPINES

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ABSTRACT

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This study used a quantitative descriptive approach to find out how well Local Government Units (LGUs) in Bohol, Philippines, follow the Incident Command System (ICS). Although most local government units are aware of ICS, implementation remains uneven. The report recommends increasing institutionalization, capacity-building, and policy assistance to improve local government unit disaster response and ICS implementation. A structured questionnaire was distributed to 240 individuals who were members of Municipal Disaster Risk Reduction and Management Councils (with an α coefficient ranging from 0.868 to 0.929). During the examination into compliance, awareness, and impediments, they used descriptive statistics. According to the findings, local government units (LGUs) exhibited moderate

compliance (M = 3.1392, SD = 0.67216) and high knowledge (M = 3.3812, SD = 0.61206) regarding ICS. The acknowledgment of legal responsibilities and the ability to communicate effectively were two of the positives. The documentation, incident action planning, and command transfer were all found to have shortcomings during the investigation.

INTRODUCTION

Natural and human-induced hazards are recurring, and climate change has added to the unpredictability of these incidences and their effect on society. People worldwide face the reality of climate change, and the increased volatility of extreme weather events manifests this.

Over the years, disasters have greatly affected the person's well-being and safety, including communities and countries worldwide. Disasters, many exacerbated by climate change and increasing in frequency and intensity, significantly impede progress toward sustainable development (Kabir, 2016). Evidence indicates that exposure of persons and assets in all countries has increased faster than vulnerability has decreased, thus generating new risks and a steady rise in disaster-related losses, with a significant economic, social, health, cultural, and environmental impact in the short, medium and long term, especially at the local and community levels.

According to the 2024 World Index Report, the Philippines has remained the most at-risk country for extreme natural events and adverse climate change for the third year. The location of the Philippines makes the country exposed to many hazards. The hazards include floods, landslides, tsunamis, and wildfires. The index showed the Philippines at No. 1 with the highest risk (46.91 points), followed by Indonesia in second place (41.13), India in third (40.96), Colombia in fourth (37.81), and Mexico in fifth (35.93) (World Risk Index Report, 2024).

Disasters can take various forms, which include health or safety hazards that affect people and the environment on the local, regional, national, or international levels. Humanity is facing its biggest challenge. The Coronavirus COVID-19 pandemic, caused by Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-COV-2), has caused a loss of lives and a recession in the economy. The disease, which originated in Wuhan, China, has spread around the globe, resulting in countries' lockdowns to mitigate the spread of the virus (Mahesh, 2022).

The COVID-19 pandemic in the Philippines is part of the worldwide pandemic of coronavirus disease. The first case in the Philippines was on January 30, 2020. On February 1, we were the first country outside China to record a confirmed death from the disease. The government has imposed a community quarantine in response to the growing pandemic by restricting the movement of the population with exceptions. The Philippines' economy suffered a deep recession, and the COVID-19 pandemic increased unemployment. Other

disasters, such as typhoons and earthquakes, were also experienced.

The enactment of Republic Act 10121, or the Philippine Disaster Risk Reduction and Management Act of 2010, has shifted from disaster preparedness and response to disaster risk reduction and management. The government of the Philippines, through the National Disaster Risk Reduction and Management Council, adopts and integrates the ICS within the Philippine Disaster Risk Reduction and Management System, which aligns with the objectives of the ASEAN Agreement. The Implementing Rules and Regulations of Republic Act 10121, Section 3 (h) of Rule 7, states that the State must establish the Incident Command System as the country's on-scene disaster response system to ensure effective consequence management of disasters or emergencies.

As integrated into the Philippine Disaster Risk Reduction and Management System (PDRRMS), the Incident Command System (ICS) is a standardized, on-scene, all-hazard incident management concept. Its adoption aims to improve coordination and efficiency during disaster response operations across various levels of government and agencies (NDRRMC No. 04, 2012).

The Department of the Interior and Local Government (DILG) and the Office of Civil Defense (OCD) have actively promoted ICS through training programs designed to train participants with its organizational structure, operational procedures, and principles. These initiatives target Disaster Risk Reduction and Management Councils (DRRMCs), emergency management personnel, and other stakeholders to ensure a unified approach to incident management.

As for the local level, the topography of the island of Bohol Province makes it exposed to many natural and human-induced hazards. The devastating 7.2 magnitude earthquake on October 15, 2013, or "The Great Bohol Earthquake of 2013", caused widespread damage to infrastructures, facilities, and centuries-old churches. Thousands of residential homes collapsed, and several others were partially damaged. The bridges and access roads also sustained extensive damage. Since then, Bohol has gained much attention and momentum for disaster risk reduction (Damalerio, 2018). All 47 municipalities and one city in Bohol are highly susceptible to ground shaking at Intensity 7 and 8, 21% or 258,048 Boholanos, and 76% or 950,718 people are highly exposed to ground shaking. Bohol is among the areas in the Philippines threatened by the extreme effects of global warming and was ranked 9th among the top 20 provinces susceptible to one-meter level rise.

This study aims to examine the compliance of Local Government Units with the Incident Command System in managing emergencies and propose an enhancement program that addresses identified gaps and challenges, including their implementation, integration into disaster response plans, and effectiveness during emergencies. This research emphasizes the need for continuous improvement in local disaster management systems, including

targeted capacity-building programs and mandatory training and certification programs for LGU personnel to ensure a standardized understanding of ICS principles. Allocated additional financial and technical resources to support ICS compliance, particularly for LGU high-risk areas. Advocate for legislation that reinforces the adoption of ICS in local emergency management policies and ensures necessary funding and resources are provided. Implementing regular ICS drills and simulation exercises to improve coordination and communication among responders, leading to faster and more effective emergency response.

Related Literature. Disasters result from human interaction with nature, technology, and other living entities. It is unpredictable and sudden, sometimes slow and lingering, and various disasters continually affect our daily lives. Human, social, and economic development has further contributed to creating vulnerability and thus weakening the ability of humans to cope with disasters and their effects (Roy, 2018)). A disaster impedes human development. The gains in development are inextricably related to the level of vulnerability to disaster risk within any given community. The widespread disaster risk in a community is connected with the evolving choices the public uses (UNDP, 2004). Republic Act 10121, or the Philippine Risk Reduction Management Act of 2010, defines a disaster as a serious matter that includes extensive losses and damages that exceed the coping capacity of the affected community using their resources. It describes the result of exposure and hazard, the present conditions, and insufficient measures to reduce or cope with the potentially harmful effects (NDCC, 2010).

A disaster is an incident that is beyond human control. It is a massive destruction to communities that prompts victims to call for support for early assistance. These people would have acted differently if the risks had been known. The affected communities depend on humanitarian aid to rebuild their shattered lives (Comfort, 1999). Disasters can take various forms, including health or safety hazards that affect people and the environment at all levels. Humanity faces its biggest challenge due to the severe acute respiratory syndrome coronavirus-2, which originated in Wuhan, Hubei Province, China, during the recent epidemic in January 2020. The inoculation of respiratory samples into human airway epithelial cells led to the isolation of a novel respiratory virus whose genome analysis showed to be a novel coronavirus. It was named severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2). The severe acute respiratory syndrome coronavirus-2 is a beta coronavirus belonging to the subgenus Sarbecovirus. The worldwide spread of the virus and thousands of deaths led the World Health Organization to declare a pandemic on March 12, 2020. The COVID-19 pandemic has dramatically affected the world, causing many lives to be lost, increased poverty, and economic recession (Marco, 2020).

Climate Change is a serious phenomenon that must be addressed. The international community made initiatives and efforts to address this problem,

wherein the concept of sustainable development was one. Our Common Future, a report published by the World Commission on Environment and Development in 1987, promoted sustainable development (Simpson, 2016). This development addresses the present needs without compromising the needs of future generations. The Brundtland report provided the momentum for the landmark 1992 Rio Summit that laid the foundations for the global institutionalization of sustainable development (Behrens, 2014).

People worldwide have to face the reality of climate unpredictability. Climate change presents one of the most apparent challenges facing human, social, political, and economic systems. The social problem-solving mechanisms we currently have are not fully practiced and have not yet evolved to cope with anything like an intertwined set of problems of this severity, scale, and complexity. Between 1999 and 2018, an alarming and increased number of losses worldwide occurred due to extreme weather events. Research has shown primarily that social and demographic groups are more vulnerable to losing or facing significant difficulties during recovery from disaster. The Representatives or advocates for women, ethnic sectors, the differently abled, and the young and the old need to be involved in the implementation of mitigation, preparedness, and recovery activities (Fordham, 1998; Oliver-Smith, 1991; Bolin, 1986; Bolin & Stanford, 1998; Peacock, 1997; Cutter, 1995; Enarson & Morrow, 1998).

The countries that were significantly affected by disasters in 2018 are Japan, the Philippines, and Germany. Puerto Rico, Myanmar, and Haiti were most affected from 1999 to 2018(Global Climate Risk Index, 2020). In 2018, due to the impact of climate change, heat waves were one major cause of damage. Out of the ten most affected countries were Germany, Japan, and India, which suffered prolonged periods of the phenomena. Thousands of lives were lost as a result of many powerful climate events, and economic losses worldwide between 1999 and 2018 amounted to trillions of US dollars. The frequency and severity of extreme heat have a clear relationship with climate change. In other countries, extreme heat spells are a hundred times more likely than centuries ago. The countries that have experienced the strong impact of disasters also have a high ranking in the long-term index.

Over the previous years, Haiti, the Philippines, and Pakistan have been the most affected countries because catastrophes frequently affect them. Out of the ten most affected countries from 1999 to 2018, seven were developing countries in the lower-middle-income group. Thailand and Dominican countries were classified as upper-middle-income, and Puerto Rico had a progressive economy. The climate summit in Madrid addresses the lack of additional financial help to the poorest countries to manage their loss and damage due to the impact of a disaster. They are hardest hit because of their exposure and susceptibility to the destructive effects of a hazard, and they have lower coping capacities. The summit's objective was to strengthen the implementation of actions to adapt to the impacts of climate change,

determine the support needed for the affected countries, and make financial resources readily available (Eckstein, 2018).

Many international conferences culminated in 2015 for the Sendai Framework for Disaster Risk Reduction, the Paris Agreement, and the Sustainable Development Goals. It approved a global agreement that equally addresses climate change mitigation and resiliency policy, strengthening the efforts toward disaster resiliency to local communities and sectoral stakeholders. It is manifested in a specific long-term goal for adaptation, both on provisions and obligations of conduct for countries on measures to address climatic loss and damage. Adaptation is part of the core architecture of the Paris Agreement, both in its transparency rule and its ambition mechanism that, through joint evaluation of countries' climate outputs, shall ramp up countries' climate policies in five-year intervals.

The 2015–2030 Sendai Framework for Disaster Risk Reduction (SFDRR) conveys international goals to mitigate natural catastrophes. The agenda for Disaster Risk Reduction aims to guide communities and nations in dealing with threats and evading the creation of new threats. It encourages countries to support and help each other in implementing policies to recognize disaster threats, strengthen disaster management governance, invest in risk reduction and building resilience, enhance response systems, and build better programs (UNDRR, 2020). The National Disaster Risk Reduction and Management Plan 2011-2028 recognizes specific concerns across the four DRRM thematic areas. These include geologic hazards, hydro-meteorologic hazards, human-induced hazards, environmental protection, and cultural sensitivity. These issues are considered in each thematic area (NDRRMP, 2011). Disaster Risk Reduction and Management in Republic Act 10121 is the application of disaster risk reduction strategies to prevent, manage, and decrease risks. It is a relevant social concern both for private and government institutions. The Filipino communities will have a safer, adaptive, and disaster-resilient country following the National Disaster Risk Reduction and Management Framework (NDRRMF). It will be achieved through the four DRRM thematic areas: Disaster Prevention and Mitigation, Disaster Preparedness, Disaster Response and Early Recovery, and Disaster Recovery and Rehabilitation. Each thematic area has its long-term goal, which, when put together, will lead to the attainment of our country's overall vision in DRRM.

There are important reasons why the Province of Bohol must make Disaster Risk Reduction and Management and Climate Change Adaptation a priority. The province is exposed to hazards because of its natural features. It was apparent that on October 15, 2017, a 7.2 magnitude earthquake shocked the island and the leaders (PDRRMP, 2020-2022). Given the vulnerability and risk profile of the Province of Bohol, the Disaster Risk Reduction and Management – Climate Change Adaptation (DRRM-CCA) Pillar was added to the Overarching Development Framework of the Province in 2016. The programs, strategies, and activities under the DRRM-CCA pillar target

a disaster-resilient Boholano community and support the foremost goal of the Republic Act No. 10121 in strengthening the country's National DRRM System towards sustainable economic development, mainstreaming the same in all local development processes in Bohol is implemented. All the mentioned processes of mainstreaming DRRM require the organization and institutionalization of structures at all levels of the government in which policies and vital plans are developed and execution of actions and methods relating to DRRM are initiated. The Province of Bohol is high-risk and vulnerable to natural and human-induced hazards. This is why the possibility of more significant risks and likelihood is imminent, and people and communities are highly vulnerable and likely to suffer significantly from the effects and magnitude of disasters that these hazards can cause. The urgent need to put in place a short- and long-term plan, especially for the Local Government Units, is to prevent disasters, mitigate their effects, and implement preparedness and response measures and post-disaster rehabilitation and recovery actions.

The ICS in the Philippines plays a critical role in disaster response and management. While its implementation has successfully improved coordination and efficiency, challenges such as resource constraints, training gaps, and cultural adaptations remain. Continued investments in capacity-building, localized training, and inter-agency collaboration to maximize the benefits of the incident command system are essential. The Incident Command System must be implemented locally to ensure that LGUs can effectively respond to emergencies within their jurisdictions. The LGUs are also required to establish their local incident command systems. An incident is caused by a natural or human-induced phenomenon that requires immediate action by personnel equipped with emergency management skills to avoid or lessen its damaging impacts and loss of lives. The Incident Command System is flexible to match the demands and complexities of incidents. Its flexibility makes it an efficient emergency management approach for single and multiple incidents, and it is cost-effective.

Furthermore, Rule 7 (h), Implementing Rules and Regulations of Republic Act 10121, has expressly provided for establishing an Incident Command System as the disaster response system for effective consequence management of disasters. The Government of the Philippines, through the National DRRM Council, adopts and integrates the Incident Command System into the Philippine DRRM System. Regular Incident Command System training for disaster actors at all DRRM Council levels, partner stakeholders, and the organization of Incident Management Teams for managing disaster and response measures must be pursued and integrated into the Incident Command System development and capacity-building activities.

RESEARCH METHODOLOGY

The researcher used a set of researcher-made questionnaires and a checklist as an instrument to collect the data needed in the study. The respondents of this study were the Municipal Disaster Risk Reduction and Management Councils (MDRRMCs) specifically the Municipal Disaster Risk Reduction and Management Officer (MDRRMO), Municipal Planning and Development Officer (MPDO), Municipal Social Welfare and Development Officer (MSWDO), Municipal Health Officer (MHO), and the Municipal Engineer (ME), from the 48 Local Government Units in the Bohol Province. A researcher-made questionnaire was used to collect the data. It was anchored on Section 3 (h) of Rule 7, Implementing Rules and Regulations from National Disaster Risk Reduction and Management Council Memorandum Circular No. 4, series 2012, establishing an incident command system as part of the country's existing on-scene disaster response system. The research instrument was presented to the research committee for comments, suggestions, and approval for pilot testing.

The pilot testing was conducted on the ten (10) personnel of the Provincial Disaster Risk Reduction and Management Office (PDRRMO), specifically for the Telephone and Radio System Integrated Emergency Response 117 (TaRSIER 117). A set of questionnaires were distributed with fifteen (15) items. The reliability statistics using Cronbach's Alpha showed reliable results on compliance, awareness, and the challenges encountered using the incident command system. The pilot test showed promising results on the level of compliance, which is ($\alpha = 0.868$), and on the level of awareness with a consequence ($\alpha = 0.861$ respectively, and excellent results ($\alpha = 0.929$ on the challenges encountered.

The data-gathering procedure involved three phases. In the initial phase, the researcher obtained permission from the Dean of the University of Bohol Graduate School and the VP for Academic Affairs. Subsequently, permission was sought from the Bohol Local Chief Executives.

The second phase encompassed the actual process of distributing the questionnaires. Before the distribution, the researcher requested informed consent from each participant, explaining the study's purpose, procedures, and potential risks and benefits. Participants were assured of privacy and confidentiality throughout the research. The first part of the questionnaire was the profile of the respondents, which comprised their names, ages, sexes, civil statuses, highest educational attainment, number of years in the service, and level of training on ICS. The second part of the questionnaire was the profile of the respondents, which comprised their names, ages, sexes, civil statuses, highest educational attainment, number of years in the service, and level of training on ICS. The second part was the compliance of the Local Government Unit using the Incident Command System**.** It revealed how the LGU organized and institutionalized the ICS as an on-scene disaster response

and management mechanism per Memorandum Circular No. 4, series 2012. Each item has four levels of preferences, and these are:

Compliance Level	Numerical Scale	Description	Interpretation
Highly Complied	4	76-100% level of compliance with the use of ICS	High compliance of LGU on the use of ICS.
Moderately Complied	3	51-75% level of compliance with the use of ICS	Moderate compliance of LGU on the use of ICS
Slightly Complied	2	26-50% level of compliance with the use of ICS	Slight compliance of LGU on the use of ICS
Not Complied	1	1-25% level of compliance on the use of ICS	No compliance of LGU on the use of ICS

The third part was the level of awareness of the local government unit on using ICS. This shows whether the LGU knows the ICS's objectives, concepts, principles, and policies. Each item has four levels with preferences, and these are:

Understanding Level	Numerical Scale	Description	Interpretation
High Awareness	4	76-100% level of awareness of ICS	High awareness of LGU on ICS.
Moderate Awareness	3	51-75% level of awareness of ICS	Moderate awareness of LGU on ICS.
Low Awareness	2	26-50% level of awareness on ICS	Low awareness of LGU on ICS.
Very Low Awareness	1	1-25% level of awareness on ICS	No awareness of LGU on ICS.

The fourth part consists of the challenges encountered by the LGU in compliance with using ICS. It helped identify the common difficulties faced by the LGU and determined appropriate actions to address the problem. Each item also has four levels of preferences, and these are:

Extent of Challenges Encountered	Numerical Scale	Description	Interpretation
Highly Encountered	4	76-100% level of challenges encountered	The challenges of the LGU using ICS are highly encountered.
Moderately Encountered	3	51-75% level of challenges encountered	The challenges of the LGU using ICS are moderately encountered.
Lowly Encountered	2	26-50% level of challenges encountered	The challenges of the LGU using ICS are slightly encountered.
Very Lowly Encountered	1	1-25% level of challenges encountered	The challenges of the LGU using ICS have not been encountered.

The last part of the questionnaire comprised the proposed recommendations and suggestions to improve successful implementation and practices in the municipality. The researcher conducted pilot testing to determine the acceptability of the research device. To validate the instrument's reliability, the data gathered underwent statistical interpretation.

The third phase involves collecting data and validating the research findings' reliability, accuracy, and credibility. The coded data were subjected to statistical analysis to answer the study's research questions.

In the last phase, the researcher conducted data analysis and report writing after collecting data. These stages involve organizing, interpreting, and presenting the data in a way that answers the research questions or tests the hypotheses. Proper data analysis ensures that the results are meaningful and provide insights, while report writing ensures that these findings are communicated clearly and effectively to the intended audience.

To ensure safety and no harm happens to the respondents, the researcher complied with the requirements of the Ethical Review Committee of the University of Bohol. After obtaining a certificate from UB-ERC, permission to conduct the study was requested from the Local Chief Executives of 48 Local Government Units of Bohol, following the standard health protocols to ensure everyone's safety. The research followed strict ethical standards and procedures, where written informed consent was presented and given to the respondents before distributing the questionnaires. In the informed consent, respondents of the study were told that their participation was voluntary and that they were free to opt out of the survey if they decided to, with no financial obligation. The data was used only for research purposes, highly observing

privacy and strict confidentiality.

RESULTS AND DISCUSSION

Results showed that there was an equal percentage of male and female respondents with a frequency of one hundred twenty (50%), respectively. The highest percentage of the respondents belonged to the age group of 40-44 years old (15.83%). Most respondents were married (75.42%) and a Bachelor's Degree Holder (55.38%). Most of them had been in the service for 1-10 years (50.83%) and had undergone Basic Incident Management Training (62.90).

The overall compliance of LGUs with the Incident Command System (ICS) recorded a composite mean of 3.1392 (SD = 0.67216), interpreted as Moderately Complied. This suggests that while local governments demonstrate partial adherence to ICS principles, there remain areas requiring significant improvement to achieve full institutionalization of the system. he highest-rated indicators were: Understanding the legal mandate/orders/directives of the Responsible Official (Mean = 3.3875, Highly Complied, Rank 1), Use of common terminology such as clear text and plain language (Mean = 3.3417, Highly Complied, Rank 2). These findings indicate that LGUs are well aligned with the foundational requirements of ICS—recognizing the authority of responsible officials and ensuring clarity of communication. These strengths provide a reliable baseline for effective coordination during emergencies.

On the other hand, the majority of the items fell under Moderately Complied, indicating inconsistent application of key operational components. Particularly notable were weaknesses in strategic and tactical execution such as the establishment of SMART objectives, selection of strategies, span of control, supervision, and check-in procedures for responders. These results suggest that while LGUs understand the basic framework, execution at the operational level remains a challenge.

The lowest-rated indicators were: Developing an Incident Action Plan for each operational period (Mean = 2.9833, Rank 15), use of standard forms and tools for documentation (Mean = 2.9958, Rank 14), and performing the proper procedure for transfer of command (Mean = 3.0250, Rank 13)

These weak points highlight critical operational gaps in planning, documentation, and leadership transition. The absence of consistent action planning and standardized documentation can hinder coordination and accountability, while ineffective transfer of command can disrupt continuity during prolonged or large-scale incidents.

Table 3 showed Out of the 240 respondents, the majority (125 or 52.08%) indicated Moderate Compliance with the Incident Command System (ICS). This was followed by 76 respondents (31.67%) who reported High Compliance, suggesting that a significant portion of LGUs is already applying ICS principles effectively but still have room for improvement. Meanwhile, 28 respondents (11.67%) reflected Slight Compliance, and only 11 respondents

(4.58%) reported Non-Compliance, showing that very few LGUs have yet to adopt ICS practices.

The findings suggest that ICS implementation among LGUs is generally adequate but not yet fully institutionalized. Most LGUs demonstrate a moderate level of adherence, with a considerable proportion showing high compliance, indicating promising practices that can be further strengthened. However, the presence of LGUs in the categories of slight compliance and non-compliance underscores lingering gaps in knowledge, skills, and resources that need to be addressed.

Respondents had a high awareness of using the incident command system with a composite mean of 3.28. Of two hundred forty, one hundred sixty-two had high awareness, or 67.50%, fifty-two of the respondents had moderate awareness, or 21.67%, while twenty-three had low awareness or 9.58%. On the other hand, only three respondents had very low awareness or 1.25%.

Table 5 revealed that the respondents were highly aware of using the incident command system with a frequency of one hundred sixty-two, or 67.50%. At the same time, only a few respondents had very low awareness, with a frequency of three, or 1.25%.

Overall, the conclusion drawn is that Bohol LGUs have established a strong foundation of ICS awareness centered on hazard knowledge, safety, preparedness, and accountability. However, to maximize the full potential of ICS, there is a need to enhance awareness and practice of its flexibility, integration across agencies, and application to planned events. Strengthening these aspects will further improve LGUs' capability to manage complex, multi-sectoral, and large-scale emergencies effectively.

The findings in Table 6 reveal that Local Government Units (LGUs) in Bohol slightly encounter challenges in implementing the Incident Command System (ICS), with a composite mean of 2.43. The data suggest that while ICS has been adopted in principle, its operationalization still faces moderate barriers that can affect efficiency and sustainability.

The most prominent challenge is incomplete ICS training (M = 2.88), indicating that capacity-building efforts remain insufficient to fully equip responders and stakeholders with the necessary skills and confidence in applying ICS protocols. Other moderately encountered issues include limited financial resources and emergency equipment (M = 2.80), multiple assignments leading to divided attention (M = 2.78), lack of practical experience in ICS (M = 2.75), and limited manpower and volunteers (M = 2.74). These factors highlight the pressing need for resource augmentation, continuous training, and dedicated personnel to strengthen ICS implementation.

On the other hand, challenges such as lack of will from decision-makers (M = 2.29), lack of coordination among DRRM stakeholders (M = 2.29), and absence of a flexible predesigned management structure (M = 2.28) were only slightly encountered, suggesting that institutional support and coordination mechanisms are present but require further reinforcement and standardization.

Meanwhile, the absence of rescue/response units (M = 1.69) was rated as not encountered, reflecting that most LGUs already have established emergency response units

In summary, out of the two hundred forty (240) respondents, thirty-two highly encountered, or 13.33%; slightly encountered with a frequency of eighty-nine, or 37.08%; moderately encountered with a frequency of eighty, or 33.3%; and not encountered thirty-nine, or 16.25%. Table 7 shows the extent of Challenges Encountered by the Local Government Units using the Incident Command System.

Overall, the conclusion is that while ICS awareness is high among LGUs, its effective practice is hampered by gaps in training, limited resources, and human capacity. Addressing these issues through sustained training programs, increased funding for logistics and equipment, and dedicated ICS personnel will be essential to strengthen LGU readiness and fully institutionalize the system as a core disaster management framework.

Before testing the null hypotheses, normality tests were conducted, and it was found that the data of Local Government Units Level of Compliance, Level of Awareness, and Challenges Encountered in Using the Incident Command System p-values are less than 0.5, which means the data were skewed; hence, non-parametric tests were utilized. Table 8 shows the normality assessment of the key variables.

The data showed the degree of relationship between the respondents' profiles and the compliance level of the LGUs when using ICS. It showed that sex, age, civil status, highest educational attainment, number of years in the service, and level of training on Incident Command System have the computed values of 0.781, 0.552, 0.625, 0.971, 0.440, and 0.027, respectively, which were more significant than the 0.05 level of significance; hence, insignificant and failed to reject null hypotheses. These variables had no significant degree of relationship with the compliance of LGUs in using ICS. On the other hand, the level of ICS training of the LGU had a significant degree of relationship with the compliance level with a computed p-value of 0.027, thus rejecting the null hypothesis.

The findings in Table 9 demonstrate that individual characteristics such as gender, age, civil status, educational attainment, and length of service do not significantly impact the compliance level of LGUs in using the Incident Command System. This suggests that ICS compliance is not dependent on personal demographics but is instead influenced by organizational and capacity-related factors. In other words, regardless of their profile, LGU personnel are expected to follow the same procedures and protocols under the ICS framework.

Table 9. *Relationship Between Profile and Compliance Level of Local Government Units Using Incident Command System*

Variables	Chi-Square Value	p-value	Level of Significance	Results	Decision
Sex vs Compliance Level of Local Government Units Using ICS	1.096	0.781	0.05	Insignificant	Failed to Reject Ho
Age vs Compliance Level of Local Government Units Using ICS	26.660	0.552	0.05	Insignificant	Failed to Reject Ho
Civil Status vs Compliance Level of Local Government Units Using ICS	8.700	0.625	0.05	Insignificant	Failed to Reject Ho
Highest Educational Attainment vs Compliance Level of Local Government Units Using ICS	4.899	0.971	0.05	Insignificant	Failed to Reject Ho
Number of Years in the vs Compliance Level of Local Government Units Using ICS	10.296	0.440	0.05	Insignificant	Failed to Reject Ho
Level of ICS Training vs Compliance Level of Local Government Units Using ICS	33.614	0.027	0.05	Significant	Reject Ho

The Pearson Chi-Square Test was utilized to generate the exact conclusions and examine if the respondents' profiles had a significant relationship with their awareness of using ICS. It concluded that sex, age, civil status, highest educational attainment, and number of years in the service had no significant degree of relationship with the level of LGU awareness in using ICS with a computed p-value of 0.206, 0.812, 0.627, 0.170, and 0.256 respectively. The computed p-values were higher than the 0.05 significance level, meaning they were insignificant, thus failing to reject the null hypotheses. On the other hand, the level of ICS training of the LGU had a significant relationship with the awareness level with a computed p-value of 0.000, thus rejecting the null hypothesis. The data showed the relationship between the respondents' profile and the level of awareness of local government units in using the incident command system.

Overall, these findings emphasize that while demographic factors are not determinants of ICS performance, training directly enhances both awareness and compliance, making it the most critical variable for strengthening disaster

response capacities at the local level.

Table 10. *Relationship Between Profile and Awareness Level of Local Government Units Using Incident Command System*

Variables	Chi-Square Value	p-value	Level of Significance	Results	Decision
Sex vs Awareness Level of Local Government Units Using ICS	4.676	0.206	0.05	Insignificant	Failed to Reject Ho
Age vs Awareness Level of Local Government Units Using ICS	17.306	0.812	0.05	Insignificant	Failed to Reject Ho
Civil Status vs Awareness Level of Local Government Units Using ICS	7.819	0.627	0.05	Insignificant	Failed to Reject Ho
Highest Educational Attainment vs Awareness Level of Local Government Units Using ICS	15.223	0.170	0.05	Insignificant	Failed to Reject Ho
Number of Years in the vs Awareness Level of Local Government Units Using ICS	12.779	0.256	0.05	Insignificant	Failed to Reject Ho
Level of ICS Training vs Awareness Level of Local Government Units Using ICS	42.992	0.000	0.05	Significant	Reject Ho

A Pearson Chi-Square Test was utilized to examine if there was a significant relationship between the respondents' profiles and the challenges encountered. Therefore, the respondents' profiles had no significant relationship towards the extent of challenges encountered by the LGU in using ICS, with p-values of 0.099, 0.095, 0.557, 0.677, 0.238, and 0.408, respectively. The computed p-values were insignificant and higher than the 0.05 significance level, thus failing to reject the null hypotheses. Table 11 shows the relationship between the profile and the extent of challenges encountered by the local government units in using ICS.

The findings suggest that demographic factors have no significant relationship with the challenges in ICS implementation. Instead, ICS training emerges as the most influential factor in ensuring that LGUs are both compliant with and aware of ICS principles and protocols. This reinforces the

importance of capacity-building interventions in enhancing disaster response systems.

Table 11. *Relationship Between Profile and Challenges Encountered Level of Local Government Units Using Incident Command System*

Variables	*Chi-Square Value*	*p-value*	*Level of Significance*	*Results*	*Decision*
Sex vs Challenges Encountered Level of Local Government Units Using ICS	6.362	0.099	0.05	Insignificant	Failed to Reject Ho
Age vs Challenges Encountered Level of Local Government Units Using ICS	34.478	0.095	0.05	Insignificant	Failed to Reject Ho
Civil Status vs Challenges Encountered Level of Local Government Units Using ICS	9.646	0.557	0.05	Insignificant	Failed to Reject Ho
Highest Educational Attainment vs Challenges Encountered Level of Local Government Units Using ICS	9.856	0.677	0.05	Insignificant	Failed to Reject Ho
Number of Years in the vs Challenges Encountered Level of Local Government Units Using ICS	10.831	0.238	0.05	Insignificant	Failed to Reject Ho
Level of ICS Training vs Challenges Encountered Level of Local Government Units Using ICS	17.785	0.408	0.05	Insignificant	Failed to Reject Ho

The table concluded that the respondents' profiles had no significant relationship towards the extent of challenges encountered by the LGU in using ICS with p-values of 0.099, 0.095, 0.557, 0.677, 0.238, and 0.408, respectively. The computed p-values were insignificant to the 0.05 significance level, thus failing to reject the null hypotheses. The Spearman's Rank Correlation and

Coefficient were utilized to assess the degree of correlation between the level of compliance, level of awareness, and challenges encountered. It concluded that there was a significant degree of correlation between the following variables: compliance level and awareness level, compliance level and challenges encountered, and awareness level and challenges encountered with a p-value of 0.000, respectively, which is lower than the significant value of 0.01, thus rejecting the null hypotheses.

Table 12 shows the result of the statistical run for the significant degree of correlation between the respondents' compliance level, awareness level, and challenges encountered in using ICS. As shown in the table, the correlation between the respondents' level of compliance, level of awareness, and challenges encountered is significant with a p-value of 0.000, respectively, which is lower than the significant value of 0.01, thus rejecting the null hypotheses.

This indicates that higher compliance and awareness are associated with fewer difficulties in implementing ICS, highlighting the value of continuous training and knowledge-sharing in reducing operational barriers.

Table 12. *Degree of Correlation Between the Level of Compliance, Level of Awareness, and Challenges Encountered By Local Government Units In Using The Incident Command System*

			Compliance Level on Incident Command System	**Awareness Level on Incident Command System**	**Challenges Encountered**
Spearman's rho	Compliance Level on Incident Command System	Correlation Coefficient	1.000	0.652**	-0.395**
		Sig. (2-tailed)		.000	.000
		N	240	240	240
	Awareness Level on Incident Command System	Correlation Coefficient	0.652**	1.000	-0.254**
		Sig. (2-tailed)	.000		.000
		N	240	240	240
	Challenges Encountered	Correlation Coefficient	-0.395**	-0.254**	
		Sig. (2-tailed)	.000	.000	
		N	240	240	
p = 0.000	**Result: Significant**		**Decision: Reject Ho**		

Table 13 shows the degree of variance among the respondents' perceptions when grouped based on their highest educational attainment. The collected data were subjected to the Kruskal-Wallis Test to determine the significant degree of variance between the respondents' perceptions when grouped based on their highest educational attainment. When grouped based on their highest educational attainment, the respondents' perceptions showed no significant

variance with p-values of 0.797 for compliance, 0.482 for awareness, and 0.718 for the challenges encountered. It showed that the computed p-values were higher than the 0.05 significance level, thus failing to reject the null hypotheses.

From these findings, it can be concluded that awareness and compliance are interdependent, and both are critical in reducing implementation challenges. LGUs that invest in ICS training and awareness-building activities are more likely to demonstrate higher compliance with ICS protocols while encountering fewer difficulties during disaster operations. Furthermore, since educational attainment is not a determinant of compliance, awareness, or challenges, LGUs should ensure inclusive training programs that can cater to staff of different educational backgrounds, thereby leveling the playing field in ICS implementation.

Table 13. *Degree Of Variance Among The Respondents' Perceptions When Grouped Based On Their Highest Educational Attainment*

Highest Educational Attainment		**N**	**Mean Rank**	**Chi-square**	**Df**	**Asymp. Sig.**
Compliance Level on Incident Command System	Bachelor's Degree Holder	134	103.83	1.016	3	0.797
	Bachelor's Degree Holder with Masters units	53	107.08			
	Master's Degree Holder	17	91.56			
	MA Degree Holder with Doctorate Units	2	88.00			
	Total	206				
Awareness Level on Incident Command System	Bachelor's Degree Holder	134	99.62	2.462	3	0.482
	Bachelor's Degree Holder with Masters units	53	114.47			
	Master's Degree Holder	17	99.68			
	MA Degree Holder with Doctorate Units	2	105.00			
	Total	206				
Challenges Encountered	Bachelor's Degree Holder	134	104.57	1.345	3	0.718
	Bachelor's Degree Holder with Masters units	53	103.73			
	Master's Degree Holder	17	90.76			
	MA Degree Holder with Doctorate Units	2	134.00			
	Total	206				

CONCLUSIONS

The researcher drew the following conclusions based on the study's data and the summary of the findings. Based on the respondents' profiles, most have graduated from college, are married, have been in the service for 1-10 years, and have at least undergone Basic Incident Command System Training. The findings reveal that Bohol LGUs moderately comply with the core principles of the Incident Command System (Composite Mean = 3.1392). While strengths are observed in understanding legal mandates, communication using common terminology, and maintaining organizational structure, weaknesses are evident in the development of Incident Action Plans, the use of standard documentation tools, and the transfer of command procedures. Within the disaster resilience framework, this indicates that LGUs demonstrate institutional awareness and operational capacity but require further strengthening in planning, documentation, and continuity mechanisms. Addressing these gaps will enhance not only compliance with ICS but also the overall resilience of Bohol communities to disasters, consistent with the objectives of the Philippine DRRM Framework and the Sendai Framework for Disaster Risk Reduction.

Bohol's approach to incident command and multi-agency emergency response is notable for how provincial leadership, municipal practice, communications infrastructure, and community participation have been combined to make ICS not only a training topic but an operational system. At the provincial level, the PDRRMO has invested in formal ICS capacity building — delivering a multi-day Basic Incident Command System (BICS) course for provincial and municipal agencies — so that responders across disciplines speak the same "command language" when incidents occur. This training program is a foundation for consistent role clarity and smooth handovers during real events. A second distinctive element is Bohol's investment in decentralized communications and field presence through the TaRSIER117 integrated hotline and its network of substations. By extending call-taking, radio relay, and dispatch capabilities into multiple municipalities, TaRSIER117 reduces response time and enables incident command structures to function effectively even in remote barangays. The expansion of TaRSIER117 substations (for example, the 8th substation opened in Inabanga) is an example of how communications infrastructure and ICS go hand in hand.

At the municipal level, several LGUs—most prominently Tagbilaran City and municipalities such as Alburquerque, Anda, Candijay, and Sikatuna—have translated provincial policy into local practice. These LGUs have been publicly recognized (Gawad KALASAG "Beyond Compliant" awards) for active and functional disaster councils, frequent drills, community engagement, and documented procedures — which together show reliable adoption of ICS elements: formal command roles, unified planning, community liaison, and routine exercises. Tagbilaran's repeated national recognitions underscore how

an urban LGU can sustain ICS practice while coordinating layered responders (city departments, police, fire, health, NGOs).

Furthermore, the results showed that Bohol LGUs are progressing toward resilience by strengthening preparedness, ensuring coordinated response, and promoting interoperability. To achieve full resilience, LGUs must further deepen their understanding of ICS as a versatile, scalable, and cross-cutting system applicable not only to disaster response but also to governance, planned events, and regional coordination.

The findings reveal that Local Government Units (LGUs) in Bohol only slightly encounter challenges in implementing the Incident Command System (ICS), with a composite mean of 2.43. While this indicates that the system is generally functional and integrated within their disaster response operations, some barriers remain that affect its full and effective utilization. The most significant challenges moderately encountered by LGUs are incomplete ICS training, limited financial resources and emergency response equipment, multiple designations and divided attention among personnel, lack of practical experience in ICS, and limited manpower and volunteers. These results highlight the critical need to enhance both human and financial capacities to sustain and improve ICS practices at the local level.

Meanwhile, issues such as a lack of will from decision-makers, limited coordination among DRRM stakeholders, and different organizational structures among agencies were only slightly encountered, showing that political support and inter-agency collaboration are present, though they still require continuous reinforcement. The least encountered challenge was the absence of rescue or response units, suggesting that most LGUs already have organized teams in place. Overall, the results suggest that while ICS awareness and structures are in place, more effort is needed in capacity building, resource allocation, and systematic practice to maximize the effectiveness of the system.

To address these challenges, LGUs must prioritize continuous training and capacity building by institutionalizing regular ICS training, refresher courses, and simulation exercises to ensure responders are well-prepared and updated. Adequate resource allocation is also crucial; hence, LGUs should push for increased funding support for logistics, equipment, and other response needs, while also exploring resource-sharing mechanisms with neighboring municipalities and partner agencies.

Furthermore, ICS must be institutionalized in local policies through ordinances or resolutions to ensure continuity regardless of changes in leadership or staff turnover. Establishing a dedicated ICS focal team or committee within each LGU can also minimize divided attention among DRRM staff who often juggle multiple roles. Strengthening stakeholder coordination through regular joint meetings, drills, and standardized communication protocols will further enhance inter-agency collaboration. Lastly, addressing human resource gaps through volunteer recruitment and partnerships with schools, NGOs, and civic groups will provide additional manpower to support disaster operations.

By adopting these measures, LGUs in Bohol can overcome the identified challenges, improve the operationalization of ICS, and build a stronger and more resilient disaster response framework.

The findings also demonstrate that individual characteristics such as gender, age, civil status, educational attainment, and length of service do not significantly impact the compliance level of LGUs in using the Incident Command System. This suggests that ICS compliance is not dependent on personal demographics but is instead influenced by organizational and capacity-related factors. In other words, regardless of their profile, LGU personnel are expected to follow the same procedures and protocols under the ICS framework.

Notably, the significant relationship between ICS training and compliance highlights the central role of capacity-building in strengthening disaster response systems. Personnel who have undergone higher levels of training are more capable of understanding, adopting, and sustaining ICS protocols in actual operations. This underscores the importance of continuous education, refresher courses, and simulation exercises as essential strategies for enhancing disaster preparedness and response at the LGU level. While demographic factors have little to no bearing on compliance, the provision of comprehensive and sustained ICS training is vital in ensuring that LGUs can effectively institutionalize and operationalize the system, thereby improving disaster management and resilience.

The results of the study on the relationship between the profile of Local Government Units (LGUs) and their compliance, awareness, and challenges in using the Incident Command System (ICS) revealed several important insights. The statistical analysis showed that demographic variables such as sex, age, civil status, highest educational attainment, and number of years in service had no significant relationship with the compliance, awareness, or challenges encountered by LGUs in the implementation of ICS. This implies that these personal characteristics do not directly influence how ICS is understood, applied, or experienced at the local level.

However, a significant relationship was found between the level of ICS training and both compliance and awareness levels. Specifically, LGUs with higher levels of ICS training demonstrated greater compliance with ICS protocols and a stronger awareness of its principles and applications. This underscores the crucial role of training as a capacity-building mechanism that equips LGUs with the technical knowledge and operational confidence needed to effectively utilize ICS. On the other hand, ICS training did not show a significant relationship with the challenges encountered by LGUs, suggesting that difficulties in implementation may be attributed more to external or systemic factors such as limited resources, logistical constraints, and inter-agency coordination issues.

From these findings, it can be concluded that ICS training is the key determinant in strengthening compliance and awareness among LGUs,

whereas demographic profiles are not predictive of ICS performance. This highlights the importance of prioritizing training interventions over relying on individual background characteristics. At the same time, the fact that challenges remain unaffected by training suggests that systemic barriers must also be addressed to achieve more sustainable and effective disaster management practices.

The findings affirm that while training significantly improves compliance and awareness of ICS, a multi-dimensional approach that combines human capacity-building with systemic reforms is essential for strengthening disaster preparedness and response at the local government level.

The findings establish that ICS training is the most significant factor influencing both compliance and awareness among LGUs. Demographic factors such as sex, age, civil status, years in service, or educational attainment do not significantly impact ICS-related performance. Instead, practical experience and institutionalized training programs are the true drivers of effective implementation.

Furthermore, the strong positive correlation between awareness and compliance underscores their interdependence: LGUs that are more aware of ICS concepts are more likely to comply with its protocols. At the same time, the negative correlation between both awareness and compliance with challenges encountered indicates that strengthening these two dimensions is key to overcoming barriers in ICS practice.

Finally, the absence of significant variance in performance across different levels of educational attainment confirms that academic credentials are less critical than skills training, hands-on experience, and organizational readiness in ensuring effective ICS adoption.

RECOMMENDATIONS

Based on the findings and conclusions of the study, several recommendations are proposed to strengthen the use of the Incident Command System (ICS) among Local Government Units (LGUs):

1. The study's results will be presented at one of the regular meetings of the Provincial and Municipal DRRM Council to serve as a window for awareness and the importance of the results.
2. Intensify ICS training programs by institutionalizing continuous and comprehensive learning opportunities. Simulation drills, refresher courses, and advanced training modules should be regularly conducted to enhance both awareness and compliance among LGU personnel.
3. To institutionalize ICS within LGU operations by integrating its principles into local disaster risk reduction and management (DRRM) policies and emergency response plans. This will ensure consistency in practice and alignment with national standards.
4. LGUs must be provided with adequate resources and logistical

support. Allocating sufficient manpower, funding, equipment, and facilities will help address systemic challenges and operational gaps in disaster response.

5. It is important to develop monitoring and evaluation mechanisms by setting clear performance indicators. This will enable regular assessment of compliance and awareness levels and will help identify areas requiring further improvement.
6. LGUs should be encouraged to promote inter-LGU collaboration through the sharing of best practices, peer learning, and joint activities. Such collaboration will foster collective capacity-building and strengthen disaster resilience across municipalities.
7. Training programs should adopt inclusive capacity-building approaches, ensuring that all personnel—regardless of educational background—are given equal opportunities to acquire the necessary knowledge and skills.
8. Finally, it is essential to emphasize practical experience in ICS implementation. Beyond classroom-based learning, field exercises, community-based drills, and hands-on application must be prioritized to equip responders with real-world competencies and reduce the challenges faced in disaster operations.

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