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## ABSTRACT

**EFFECTIVENESS OF INCIDENT COMMAND SYSTEM (ICS) DURING THE ONSLAUGHT OF SUPER TYPHOON “LAWIN” IN CORDILLERA ADMINISTRATIVE REGION (CAR) – PILUDEN, M.K., BELINO, J.** The study aims to determine the effectiveness of ICS during the onslaught of Super Typhoon “Lawin”. It further aims to (1) determine the extent of knowledge of the Provincial Disaster Risk Reduction and Management Councils (PDRRMCs) on Incident Command System (ICS), (2) determine the challenges that the PIMT encountered during the implementation of ICS, and (3) formulate solutions in addressing these challenges.

Republic Act 10121, Executive Order No. 82, and Memorandum Circular No. 4 are some of the legal bases which ICS is pinned into as an on-scene all-hazard disaster management system for the country. The success of this study can benefit the Local Government Units (LGUs) by providing inputs on how to improve their current management systems in times of super typhoons. Furthermore, the OCD-CAR, CRDRRMCs, and other DRRMOs can benefit through improvement of their programs and trainings regarding ICS.

The study utilized the Social Learning Theory of Albert Bandura and made use of the Planning P Cycle as a conceptual framework. The study made use of quantitative-survey research where questionnaire and interview were the procedures done for the collection of data. There were 150 respondents over-all who were qualified based on the inclusion criteria.

After the data gathering procedure, data were collected, collated and was subjected to statistical analysis. The study made use of weighted mean to treat the data.

Results revealed that respondents were slightly knowledgeable (1.9) on ICS, particularly on the ICS Organizational Structure (2.24), ICS Facilities (2.06), ICS Forms (1.672), and other Legal Bases of ICS (1.73). Results also revealed that the responders were slightly effective (2.62) and leaders were not effective (1.89) in their responsibilities in the implementation of ICS during the onslaught. Challenges were also identified and were found out that it has High Impacts (3.18) on the implementation of ICS. Lastly, to address these challenges, the ICS Cadres were able to formulate solutions in addressing these challenges.

Based from the results, the researchers concluded that the null hypothesis be accepted. Firstly, the PDRRMCs were not knowledgeable on ICS. Secondly, responders and Leaders were not effective in their responsibilities during the implementation of ICS. Lastly, challenges have a high impact towards the implementation of ICS.

Finally, the researchers recommend the same study to be conducted in the incoming years to the same provinces to monitor progress. Longer duration of the study and more suitable respondents can also be included for more reliable results. Lastly, conducting the same study to the lower levels of LGUs is also suggested.

## **CHAPTER I INTRODUCTION**

### **I. Background of the Study**

Republic Act No. 10121 also known as the “Philippine Disaster Risk Reduction and Management Act of 2010” aims to strengthen the Philippine Disaster Risk Reduction and Management System, to provide for the National Disaster Risk Reduction and Management Framework (NDRRMF), to institutionalize the National Disaster Risk Reduction and Management Plan (NDRRMP), and to appropriate funds therefor and for other purposes. This is the mother legal basis for the DRRM programs. Furthermore, natural and human-induced disasters are becoming more frequent and climate change has further added to the unpredictability of these occurrences as well as their impact on society. The Philippine government through the DRRMC is therefore faced with the challenge to heighten its vigilance in ensuring that disaster risks are prevented or minimized and it is prepared to address the needs of affected population when disasters or emergencies occur (Memorandum Circular no. 4). To further support the implementation of ICS, another legal basis is the executive order no. 82. “Operationalizing the practical guide for National Crisis Managers and the National Crisis Management core manual; establishing national and local crisis management organizations; and providing funds therefor there is a need to establish and clearly delineate authority, responsibility and accountability of crisis management organizations and Incident Command Systems from the national to the local levels.”

Section 4, Paragraph D states “As soon as an incident is declared as approaching crisis level, the responding Crisis Manager activates the Incident Command System (ICS) and calls on the designated Incident Commander (IC). The Incident Commander reviews existing intra- and inter-agency / department, contingency plans for suitability and develops a Crisis Action Plan (CAP) when no useful contingency plan exists.

The ICS could also effectively address some persistent issues and problems arising at on-scene level such as who’s in-charge on-site, especially when the incident involves multi-agency participation and multi-jurisdictional , too many responders,, too many people

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reporting to one supervisor, unclear lines of authority, no check-in procedures for responders and unclear incident objectives. (Mathis, 1998)

This law has been implemented throughout the country; hence, all levels in the local government unit are obliged to follow and implement. Part of this act emphasizes the use of Incident Command System (ICS) as an on-scene management system to all disasters and incidents. Rule 7 (h), Implementing Rules and Regulations (IRR) of RA 10121, has expressly provided for the establishment of an incident command system as part of the country’s on-scene disaster response system to ensure effective consequence management of disasters or emergencies. Among the regions in the country, Cordillera Administrative Region is one of the pioneering regions.

Cordillera Administrative Region is one of the regions in the Philippines which is located in the Northern Part of Luzon. The region is composed of 6 provinces and 1 City; namely, Abra, Apayao, Kalinga, Benguet, Mountain Province, Ifugao, and Baguio City, respectively. The region has been the leading region that is prone for landslide and flashfloods due to its land formations. The mountainous region of the Cordillera is habituated by farmers and agriculturists who live on the disaster-prone areas; thus, they become a major concern in times of alert and response. Last October 15, there has been an alert that a tropical storm known as “Karen” was approaching the region; hence, preparedness was done by all the DRRM Officers. Pre-disaster Risk Assessment and pre-emptive evacuation were done. Establishment of the Operations Center also known as OpCen was observed in most provinces and municipalities.

The DRRMC OpCen, which is generally located away from the disaster site, supports the incident commander by making executive / policy decisions, coordinating interagency relations, mobilizing and tracking resources, collecting, analyzing and disseminating information and continuously providing alert advisories / bulletins and monitoring of the obtaining situation. The EOC does not command the on-scene level of the incident. (Berk, 2001)

As part of this ICS institutionalization process, all concerned shall endeavor to carry out capacity building programs for their ICS organization through the conduct of ICS training, organization of an All-Hazard Incident Management Teams (IMTs), development of stand-by arrangements and protocols for IMT notification, activation, deployment and deactivation and other related activities. The ICS Cadre defined under this Memorandum Circular shall take the lead in understanding the ICS capacity building and development program under the leadership of the Office of Civil Defense.

Regular conduct of ICS training for disaster managers and responders at all DRRMC levels, non-government organizations and private sector agencies and organizations of Incident Management Teams for disaster response and management at the on-scene level should be pursued and integrated in the ICS development and capacity building program of all DRRMCs and other agencies concerned.

The DRRMC through its Chairperson and likewise the Responsible Official, provides the Incident Commander his policy directions and strategic objectives, the mission and authority to achieve the overall priorities of the on-scene disaster response operations, namely, life, safety, incident stabilization and property / environment conservation and protection. (Brent, 1992)

The incident commander manages the incident at the scene with the support of the relevant command and general staff depending on the complexity of the situation. The IC also keeps the Responsible Official / DRRMC Chairperson and the EOC of all important matters pertaining to the incident. (Perry, 2003)

## **II. Statement of the Objectives**

General Objective:

To determine the effectiveness of Incident Command System (ICS) during the onslaught of Super Typhoon "Lawin" in The Cordillera Administrative Region (CAR).

Specific Objectives:

1. To determine the extent of knowledge of the Provincial Disaster Risk Reduction and Management Councils (PDRRMCs) on ICS.
2. To determine the impact of the challenges encountered by the Provincial Incident Management Team (PIMT) in the implementation of ICS during the onslaught of Super Typhoon "Lawin".
3. To formulate solutions in addressing the challenges encountered by the PIMT in the implementation of ICS during the onslaught of Super Typhoon "Lawin".

## **III. Statement of the Hypotheses:**

1. The PDRRMCs are not knowledgeable on ICS.
2. Challenges encountered by the PIMT have no impact on the implementation of ICS during the onslaught of Super Typhoon "Lawin".

3. There are no solutions in addressing the challenges encountered by the PIMT in the implementation of ICS during the onslaught of Super Typhoon “Lawin”.

#### **IV. Significance of the Study**

The study may contribute to Local Government Units (LGUs) by determining what to improve in their respective departments when ICS is activated and implemented. Furthermore, this will help them in formulating the ICS Organizational Structure for the Provincial IMT.

For the Office of Civil Defense – Cordillera Administrative Region, the study may identify the areas for improvement on what to improve more in the implementation of ICS in the provincial level. This may contribute in the future training on the ladder course in ICS.

For the Cordillera Regional Disaster Risk Reduction and Management Council (CRDRRMC), it can help in determining what the weaknesses of the provinces that needs improvement in the implementation of ICS; thus, the study may suggest which part in the implementation of ICS needs emphasis.

For the Regional ICS Cadres, the study may identify areas or factors that affect the implementation of ICS; and, for them to formulate solutions to address the challenges encountered by the LGUs and Local IMTs.

The study can serve as basis and reference to future researches regarding the implementation of Incident Command System.

#### **V. Scope and Limitations**

The study was conducted within Cordillera Administrative Region from November 10 to November 25, 2016 whereby a questionnaire was floated among the selected provinces in the Region; namely, Kalinga, Mt. Province, and Abra. In addition, key persons were also interviewed during the visit to the identified provinces. Respondents were chosen based on the inclusion criteria mentioned in chapter 2. The study focused only on the implementation of ICS during the onslaught of Super Typhoon Lawin. In addition, it only included the Provincial IMTs and the PDRRMCs.

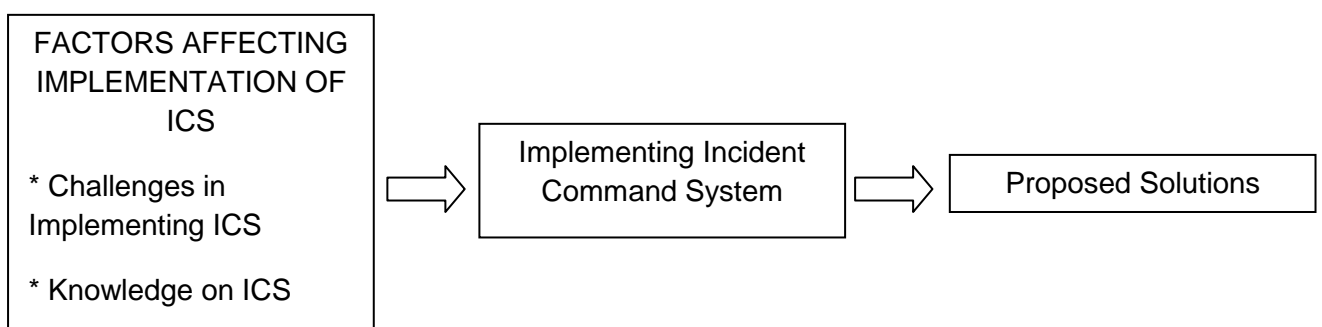
## VI. Conceptual Framework

The study utilized the Social Learning Theory by Albert Bandura. The Cognitive Social Learning Theory focuses on how people operate cognitively on their social experiences and how these cognitions then influence behavior and development. It is through an understanding of the processes involved in one’s construction of reality that enables human behavior to be understood, predicted, and changed (Stone, 2010).

In his reciprocal determinism, he emphasized that the world and a person's behavior affect each other. Humans are neither driven by inner forces nor automatically shaped and controlled by the environment. Within this perspective, humans are characterized in terms of five basic and unique capabilities: symbolizing, vicarious, forethought, self-regulatory, self-reflective. In symbolizing capability, Bandura suggests that it is symbols (images/mental pictures) that serve as the mechanism for thought. Vicarious capability refers to the human ability to learn not only from direct experience, but also from the observation of others. Forethought capability is a person’s capability to motivate them and guide their actions anticipatorily. Self-regulatory capability mediate external influences and provide a basis for purposeful action, allowing people to have personal control over their own thoughts, feelings, motivations, and actions. Self-reflective capability enables people to analyze their experiences, think about their own thought processes, and alter their thinking accordingly (Stone, 2010)

In relation to the study, the IMTs’ performance may vary greatly based on their level of expertise on the implementation of ICS. Experience, knowledge, and awareness are also some major factors that may affect the process of implementing ICS; thus, an external factor must be used to guide these IMTs in the implementation of ICS.

**Figure 1.0 Flow Chart on the Formulation of Solutions in Addressing Challenges**





This conceptual framework was taken from the tail of the Planning P framework which is the basis for planning in the implementation of Incident Command System. It describes that in the implementation of a new system in different settings to different professionals, there are certain factors that might affect its successful adaptation to the current system. Given the challenges encountered by the IMTs and their knowledge on ICS, the ideal and perfect implementation of ICS is far from realization; hence, formulation of solutions was suggested by the ICS Cadres.

## **VII. Definition Of Terms**

Area Command – an organization established to oversee the management of multiple incidents that are each being handled by a separate Incident Command System organization or of a very large or evolving incident that has multiple Incident Management Teams engaged.

Disaster – a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources.

Emergency – unforeseen or sudden occurrence, especially danger, demanding immediate action; an actual threat to an individual’s life or to public health and safety which needs immediate response.

Emergency Operations Center – (EOC) the physical location at which the coordination of information and resources to support incident management (on-scene operations) activities normally takes place.

ICS Cadre – group of individuals who successfully underwent the Training of Trainers on Incident Command System, didactic and practicum.

Incident – an occurrence or event, natural or human-induced, that requires an emergency response to protect life or property. Incidents can, for example, include major disasters, emergencies, terrorist attacks, terrorist threats, civil unrest, floods, hazardous materials spills, nuclear accidents, aircraft accidents, earthquakes, tropical storms, tsunamis, war-related disasters, public health and medical emergencies, and other occurrences requiring an emergency response.

Incident Command Post – the field location where the primary functions are performed. The ICP may be co-located with the incident base or other incident facilities.

Incident Commander – the individual responsible for all incident activities, including the development of strategies and tactics and the ordering and the release of resources.

The IC has overall authority and responsibility for conducting incident operations and is responsible for the management of all incident operations at the incident site.

Incident Management Team (IMT) – an Incident Commander and the appropriate Command and General Staff personnel assigned to the incident.

Interoperability – allows emergency management / response personnel and their affiliated organizations to communicate within and across agencies and jurisdictions via voice, data, or video on-demand, in real time, when needed and when authorized.

Preparedness – measures taken to strengthen the capacity of the emergency services to respond in an emergency.

Responsible Official – the official responsible for administering policy for an agency or jurisdiction, having full authority for making decisions, and providing direction to the management organization for an incident; he is normally the Chairperson of the DRRMC or Agency Head or their duly authorized representative.

## **CHAPTER II METHODS AND PROCEDURES**

### **Research Design**

This research utilized quantitative-survey design. Quantitative research consists of the collection, tabulation, summarization, and analysis of numerical data for the purpose of answering research questions or hypothesis. Survey research is a non-experimental research that focuses on obtaining information regarding the activities, beliefs, preferences, and attitudes of people via direct questioning of a sample of respondents. (Sevilla, 1992)

### **Population and Locale**

The research was conducted at Cordillera Administrative Region, Philippines. The researcher used purposive sampling method among the provinces, cities, and municipalities within the Cordillera Administrative Region. Upon selection of the provinces, population was determined based on the inclusion criteria. Slovin’s Formula was used to calculate the sample size (n) given the population size (N) and a margin of error (e) (Calderon, 2006); convenience sampling was also used in choosing the respondents.

The inclusion criteria include: Adult 18 to 65 years of age; male or female who were and actively involved in the management of Super Typhoon “LAWIN” at the chosen provinces, had any Incident Command System Training; and seek willingness, participation, and consent from the respondents.

### Profile

**Table A: Profile of Respondents Classified According to Gender**

Gender	No. of Respondents
Male	127
Female	23
Total	150

**Table B: Profile of Respondents Classified According to Age**

Age (years old)	No. of Respondents
25 – 30	20
31 – 40	65
41 – 50	42
51 – 60	23
TOTAL	150

### Data Gathering Tool

The researchers used a ready-made questionnaire as the data gathering tool. It is a questionnaire compiled from books and journals of Incident Command System.

The questionnaire was in English since it is the medium of instruction in the Local Government Units. The questionnaire was divided into two parts. Part one included the demographic data, name, date, agency, level of ICS training, and age. Part two consisted of the questionnaire proper whereby four tables were provided for the respondents to identify by putting an (x) mark on the numbered columns that corresponded to their perception. For table 1, the respondents rated their knowledge on Incident Command System from 1 to 4, with 4 as very knowledgeable, 3 as Knowledgeable, 2 as Slightly Knowledgeable, and 1 as Not Knowledgeable. For table 2 and 3, respondents rated their observation on the effectiveness of Incident Command System during the Onslaught of Super Typhoon “Lawin”

from 1 to 5, with 5 as Very Effective, 4 as Effective, 3 as Slightly Effective, 2 as Not Effective, and 1 as Not Done. Lastly, For table 4, respondents rated their observation on the level of impacts of the challenges in the implementation of Incident Command System during the Onslaught of Super Typhoon “Lawin”. From a scale of 1 to 4, 4 as High Impact, 3 as Moderate Impact, 2 as Low Impact, and 1 as No impact.

For objective no. 2, the researchers conducted an intensive interview to the Key persons who actively participated in the response phase during the onslaught of Super Typhoon “Lawin”.

For objective no. 3, ICS Cadres were invited in an executive session for the presentation of the challenges encountered by the IMTs during the onslaught of Super Typhoon “Lawin”. Afterwards, the formulation of proposed solutions were collated and documented.

### **Data Gathering Procedure**

A letter signed by the Regional Director of Office of Civil Defense – Cordillera Administrative Region (OCD-CAR) and Chairperson of Cordillera Regional Disaster Risk Reduction and Management Council (CRDRRMC) was forwarded to the Provincial Disaster Risk Reduction and Management Council (PDRRMC). Courtesy call was done by the researchers to the PDRRMO asking for their time and effort to participate in the data gathering procedure. The researchers explained the purpose of the study, the aim and processes, including their benefits from the study; thus, the researchers were able to acquire a verbal consent from the respondents. The data gathering process pushed through. Any respondent who refused to be part of the study was not coerced to join; hence, the interview portion was recorded using a cellphone’s voice recorder for documentation purposes. The questionnaires were also distributed among the respondents. Respondents were given only one questionnaire to answer personally. Researchers kept a 5-meter distance so as not to affect patients’ comfort in answering the questionnaires. Clarifications and questions with regards to the questionnaire were answered by the researchers. The respondents were assured that any information will not be ordinarily divulged in public. Before leaving, the researchers ensured that the questionnaires were filled-out completely and correctly. Finally, the researchers extended their gratitude to the respondents for their cooperation and time. The answered questionnaires were collated where the equivalent scores were added then subjected to statistical analysis.

For the interview portion, Key Persons were invited to be participants in the study. The title, objectives, and significance of the study were thoroughly explained to the participants. A voice recorder was used by the researchers in documenting the verbal reports of the participants. One researcher acted as the interviewer and the other as the documenter and third person observer. During the question and answer portion, the researchers ensured confidentiality, anonymity, and privacy of the interviewee. Ethical considerations were observed throughout the interview process. After the questions were answered, the researchers expressed their gratitude to the participants for their participation and cooperation in the data gathering process.

### Statistical Treatment

Objective #1 (Part 1): A scale of interpretation was used as basis for interpreting the value obtained.

$$I = \frac{\text{highest score} - \text{lowest score}}{\# \text{ of categories}}$$
$$I = \frac{4-1}{4}$$
$$I = 0.75$$

Scale of Interpretation:

- 1.00-1.75 = not knowledgeable
- 1.76-2.50 = slightly knowledgeable
- 2.51-3.25 = knowledgeable
- 3.26-4.00 = very knowledgeable

Objective #1 (Part 2): A scale of interpretation was used as basis for interpreting the value obtained.

$$I = \frac{\text{highest score} - \text{lowest score}}{\# \text{ of categories}}$$
$$I = \frac{5-1}{5}$$
$$I = 0.80$$

Scale of Interpretation:

- 1.00-1.80 = Not Done
- 1.81-2.60 = Not Effective
- 2.61-3.40 = Slightly Effective
- 3.41-4.20 = Effective

4.21–5.00 = Very Effective

Objective #2: A scale of interpretation was used as basis for interpreting the value obtained.

$$I = \frac{\text{highest score} - \text{lowest score}}{\# \text{ of categories}}$$
$$I = \frac{4-1}{4}$$
$$I = 0.75$$

Scale of Interpretation:

- 1.00-1.75 = No Impact
- 1.76-2.50 = Low Impact
- 2.51-3.25 = Moderate Impact
- 3.26-4.00 = High Impact

Weighted mean was used to determine the extent of knowledge of respondents on Incident Command System. Weighted mean is an average calculated by taking into account not only the frequencies of the values of a variable but also some other factor such as their variance. The weighted average of observed data is the result of dividing the sum of the products of each observed value, the number of times it occurs, and this other factor by the total number of observations.

Weighted Mean:

$$X = \frac{x_1n_1+x_2n_2+x_3n_3+\dots+x_n n_n}{n_1+n_2+n_3+\dots+n_n}$$

Where: x=weighted mean

- $x_1$ - score of respondents in question 1
- $n_1$ - # of respondents who answered  $x_1$  in question 1
- $x_n$ - score of respondents in question n
- $n_n$ - # of respondents who answered  $x_n$  in question n

### CHAPTER III RESULTS AND DISCUSSION OF RESULTS

Chapter III discusses the results gathered during the data gathering phase of the study. The study utilized textual, tabular, and graphical presentation of data after treating statistically.

**Table 1.0 The Level of Knowledge of the Provincial DRRMC on ICS**

AREA	NK	SK	K	VK	Mean	Interpretation
	1	2	3	4		
<b>ICS Organizational Structure</b>						
<b>Local Chief Executive</b>	25	50	49	26	2.51	K
<b>Incident Commander</b>	30	59	32	29	2.4	SK
<b>Safety Officer</b>	40	23	42	45	2.61	K
<b>Liaison Officer</b>	43	29	30	48	2.55	K
<b>Public Information Officer</b>	59	32	20	39	2.26	SK
<b>Operations Section Chief</b>	63	45	33	9	1.92	SK
<b>Planning Section Chief</b>	71	23	31	25	2.07	SK
<b>Logistics Section Chief</b>	64	39	25	22	2.03	SK
<b>Finance Admin Section Chief</b>	68	47	31	4	1.81	SK
Average mean: 2.24			Interpretation: Slightly Knowledgeable			
<b>ICS Facilities</b>						
<b>Incident Command Post</b>	20	33	50	47	2.83	K
<b>Staging Area</b>	53	36	24	37	2.3	SK
<b>Base</b>	65	29	23	33	2.16	SK
<b>Camp</b>	71	33	35	11	1.91	SK
<b>Helibase</b>	89	35	22	4	1.61	NK
<b>Helispot</b>	88	31	19	12	1.7	NK
<b>Medical Aid Station</b>	91	21	29	8	1.68	NK
<b>Evacuation Center</b>	45	40	41	24	2.29	SK
Average mean: 2.06			Interpretation: Slightly Knowledgeable			
<b>ICS Forms</b>						
<b>201 – Incident Briefing</b>	101	16	18	15	1.65	NK
<b>202 – Incident Objectives</b>	93	23	27	7	1.65	NK
<b>203 – Organizational</b>	99	28	21	2	1.51	NK
<b>204 – Assignment List</b>	105	21	16	8	1.51	NK
<b>205 – Communications Plan</b>	103	22	13	12	1.56	NK
<b>206 – Medical Plan</b>	105	20	18	7	1.51	NK
<b>207 – Org. Structure</b>	81	32	33	4	1.73	NK
<b>211 – Check-in List</b>	61	45	42	2	1.9	SK
<b>213 – General Message</b>	71	33	39	7	1.88	SK
<b>214 – Unit   Activity Log</b>	80	29	29	12	1.82	SK
Average mean: 1.672			Interpretation: Not Knowledgeable			
<b>Others</b>						

<b>Resource Tracking Method</b>	92	31	19	8	1.62	NK
<b>Incident Action Plan</b>	102	21	19	8	1.55	NK
<b>Span of Control</b>	60	30	30	30	2.2	SK
<b>Planning Cycle   Planning P</b>	92	23	21	14	1.71	NK
<b>Operational Period Briefing</b>	69	33	35	13	1.95	SK
<b>Transfer of Command</b>	99	25	19	7	1.56	NK
<b>Demobilization Process</b>	102	21	16	11	1.57	NK
<b>Contingency Plan</b>	103	22	17	8	1.53	NK
<b>Documentation Process</b>	89	21	29	11	1.75	NK
<b>ICS Terminologies</b>	88	22	20	20	1.81	SK
<b>Republic Act 10121</b>	91	21	23	15	1.75	NK
<b>Executive Order 82</b>	90	24	18	18	1.76	SK
<b>Memorandum Circular No. 4</b>	95	14	25	16	1.75	NK
Average Mean: 1.732					Interpretation: Not Knowledgeable	
<b>Legends:</b> NK – Not Knowledgeable SK – Slightly Knowledgeable K – Knowledgeable VK – Very Knowledgeable			Average Mean: 1.9 Interpretation: Slightly Knowledgeable			

Results revealed that respondents are slightly knowledgeable on Incident Command System and its legal basis. An average of 1.9, interpreted as slightly knowledgeable, was computed showing that the PDRPMC needs more orientation and training, particularly regarding ICS Organizational Structure, ICS Facilities, ICS Forms, and other ICS-related protocols and procedures. This can be due to the fact that an implementation of a management system is affected by external factors such as political, social, financial, and other governmental constraints. A research study conducted by Cole (2001) claimed that to be able to successfully adopt Incident Command System, it has to be gradually modified to adjust on the type of government which it shall be implemented. In US alone, which the system originated, it took 30 years for the full implementation of the Incident Command System. In addition, it was reported that ICS should be taught not only to the managers of an incident but to everyone who shall be involved in any incident or part of the incident management team. (Christen et.al., 2001) Inculcation of ICS into the trainings and curriculum of the different training agencies shall increase the awareness and knowledge of the trainees on the implementation of ICS. (Adams et.al., 2010) According to Bandura’s social learning theory, a person unaware and not knowledgeable on how to do the process might practice the old traditional and conventional way of handling an incident. (Stone, 2010)

For the ICS Organizational Structure and ICS Facilities, respondents were slightly knowledgeable on the roles and responsibilities of the positions identified, and to the facilities that can be established during an incident. As compared to the ICS Forms, results



revealed that respondents were not knowledgeable on the use of the ICS Forms. This is due to the fact that none among the affected provinces utilized these forms. This can be supported by the claim of the PDRRMOs that not everybody who checked-in were trained on how to fill-out the ICS forms.

The ICS Regional Cadre suggested an orientation first to the PDRRMCs on the legal basis of this ICS as an on-scene all-hazard management system. Results revealed that respondents were not knowledgeable on the RA 10121; thus the suggestion. Following the orientation is an executive course for the responsible official or local chief executives or agency administrators. Then all department heads and agency representatives which might be activated in an incident response shall complete the 3-day Basic Incident Command System Training Course. A practical exam can be done to the trainees regarding the implementation of ICS on any incident or event in the Barangay Level.

**Table 2. Effectiveness of ICS During the Onslaught of Super Typhoon “Lawin” in CAR on the Responsibilities of the Responders**

Responsibilities (Responders)	ND	NE	SE	E	VE	Mean	Interpretation
	1	2	3	4	5		
<b>Primary Responsibilities</b>							
Receive assignment, reporting location, reporting time, and travel instructions as necessary.	15	39	31	35	30	3.17	SE
Get a short description of the type and severity of the incident.	5	39	45	21	40	3.35	SE
Special communications instructions.	14	51	43	30	12	2.83	SE
Monitor Incident Status via Radio, media, or other means as possible.	5	52	44	31	18	3.03	SE
Acquire and Organize work materials including appropriate PPE for yourself.	30	41	34	38	7	2.67	SE
Use travel time to rest if possible.	36	39	31	30	14	2.65	SE
Average Mean: 2.95	Interpretation: Slightly Effective						
<b>Secondary Responsibilities</b>							
Upon arrival, check-in at check-in location.	18	40	42	37	13	2.91	SE
Receive briefing from immediate supervisor.	12	21	55	34	28	3.3	SE
Participate in IMT meetings and briefings as required.	31	35	40	22	22	2.79	SE
Maintain effective accountability for assigned personnel and resources.	21	49	31	26	23	2.87	SE

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Ensure compliance with all safety practices and procedures.	39	51	30	21	9	2.4	NE
Supervisors – organize, assign, and brief assistants.	44	33	31	22	20	2.61	SE
Average Mean: 2.81		Interpretation: Slightly Effective					
<b>Tertiary Responsibilities</b>							
Use clear text and ICS Terminologies.	55	31	23	17	24	2.49	NE
Complete necessary and required documentation and ICS Forms including your own Unit Log (ICS 214).	70	39	19	15	7	2	NE
Ensure equipment is operational prior to each work period.	69	33	25	20	3	2.03	NE
Brief replacements related to operations when changing at shift changes.	66	30	29	25	0	2.09	NE
Demobilize as directed.	88	21	19	15	7	1.88	NE
Participate in the after-action processes.	72	29	21	17	11	2.11	NE
Average Mean: 2.1		Interpretation: Not Effective					
<b>Legends:</b> ND – Not Done NE – Not Effective SE – Slightly Effective E – Effective VE – Very Effective					Average Mean: 2.62 Interpretation: Slightly Effective		

Results revealed that the responsibilities of the responders on the Incident Management Team was slightly effective as observed in the implementation of ICS during the onslaught of Super Typhoon “Lawin”. The results showed how effective did the responders implemented their responsibilities during the management of the incident. The responsibilities were divided into three; namely, primary, secondary, and tertiary. Primary responsibilities and secondary responsibilities were slightly effective during the management of Super Typhoon “Lawin”. This is due to the fact that responders are expected to set their posts as part of their preparedness for the incoming crisis. Most of the functions were done, although not as ideal, but it showed an impact to the incident. Tertiary responsibilities of the responders were observed not effective. Since these responsibilities were applicable to all the responders, strict compliance to these guidelines was bypassed. According to the National Incident Management System (NIMS), it stated that these responsibilities are required to successfully implement ICS from the highest level of management to the lowest. Therefore, whether the incident is handled by the national, regional, provincial, municipal or

even by the barangay level, performing these responsibilities is necessary for the successful implementation of ICS.

Upon consultation with the ICS Cadres, a proposal on the use of a checklist before, during, and after an incident management can be implemented to all types of incident. In addition, the presence of at least 2 ICS Cadres during the implementation of ICS in any incident shall be required to assist and shadow the implementing team.

**Table 3. Effectiveness of ICS During the Onslaught of Super Typhoon “Lawin” in CAR on the Responsibilities of the Leaders**

Responsibilities (Leader)	ND	NE	SE	E	VE	Mean	Interpretation
	1	2	3	4	5		
<b>Primary Responsibilities</b>							
Review all Personnel Checklists	81	20	30	19	0	1.91	NE
After checking in and confirming assignment, receive briefing from your supervisors.	91	18	21	12	8	1.85	NE
Participate in meetings and the operational planning process as required.	101	21	15	10	3	1.62	ND
Average Mean: 1.80		Interpretation: Not Effective					
<b>Secondary Responsibilities</b>							
Evaluate the current status of assigned area and resources.	50	41	24	20	15	2.39	NE
Assess resource needs.	61	39	21	23	6	2.16	NE
Request additional resources as needed.	41	69	19	19	2	2.15	NE
Conduct briefings to ensure understanding of the current plan.	44	40	51	13	2	2.26	NE
Assign duties to assigned staff, supervise, and evaluate efficacy.	38	39	41	29	3	2.47	NE
Average Mean: 2.29		Interpretation: Not Effective					
<b>Tertiary Responsibilities</b>							
Utilize the accountability procedures employed in the incident.	61	24	36	19	2	2.02	NE
Ensure full compliance with all safety practices.	89	31	20	10	0	1.67	ND
Facilitate demobilization of resources within the area of responsibility.	91	32	23	2	22	2.28	NE

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Debrief assigned personnel before demobilization.	99	33	18	0	0	1.46	ND
Maintain unit records including unit log (ICS form 214).	126	19	3	1	1	1.21	ND
Perform personnel performance ratings process (ICS 225).	146	2	2	0	0	1.04	ND
Average Mean: 1.61		Interpretation: Not Done					
<b>Legends:</b> ND – Not Done NE – Not Effective SE – Slightly Effective E – Effective VE – Very Effective					Average Mean: 1.89 Interpretation: Not Effective		

Table 3 showed that an average mean of 1.89, interpreted as Not Effective, reflected the effectiveness of the leaders in implementing ICS during the onslaught of Super Typhoon “Lawin”. The responsibilities of the leaders were divided into 3; namely, primary, secondary, and tertiary responsibilities. For the primary responsibilities for the leaders, an average mean of 1.80 was yielded. It means that leaders in the management of the Super Typhoon “Lawin” were not effective. Same conclusion was garnered from the secondary responsibilities which yielded an average mean of 2.29. Although, it was a bit higher than the first rows, it still fell under the slightly effective category. It only showed that the leaders were not that effective with regards to the proper implementation of ICS during the typhoon incident. Lastly, the tertiary responsibilities for an effective implementation of ICS were interpreted as not done.

After the results were collated and computed, these were presented to the ICS Cadres for their suggestions and evaluations. The cadres proposed that leaders to be trained for the managerial positions and in all ICS training courses must be screened and should pass inclusion criteria to avoid mediocre participants which in times of needs are inactive. In addition, selection of participants to be given certificate of completion and who would advance to the next training level should be strictly screened and chosen by the Cadres.

**Table 4. Challenges Encountered by the Provincial IMTs and Their Impact on the Effectiveness of ICS During the Onslaught of Super Typhoon “Lawin” in CAR**

Challenges	NI	LI	MI	HI	Mean	Interpretation
	1	2	3	4		
Delayed Time of Activation of IMT	10	23	36	81	3.25	MI
Insufficient number of resources	7	19	33	91	3.39	HI

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Delayed release monetary assistance	1	16	22	111	3.62	HI
Unpreparedness to the Disaster	21	45	31	53	2.77	MI
Delayed reports from the LGUs	18	61	29	42	2.63	MI
Few ICS-trained personnel	4	12	35	99	3.53	HI
Delayed release of proposed budget	0	11	31	108	3.65	HI
Conflict on Who's in-charge	15	18	29	88	3.27	HI
Unclear Organizational Structure	1	21	21	107	3.56	HI
Low Confidence in Implementing ICS	17	35	31	67	2.99	MI
Hesitation to perform duties due to position held	41	49	29	31	2.33	LI
<b>Legends:</b> NI – No Impact LI – Low Impact MI – Moderate Impact HI – High Impact			Average Mean: 3.18 Interpretation: High Impact			

Results revealed that the challenges encountered by the Provincial IMT in the implementation of ICS during the on-slaught of Super Typhoon “Lawin” have a High Impact. Computations produced 3.18 weighted mean that fell under the high impact category. This can be due to the fact that a new system to be fitted in the traditional way must fit with another extraneous variable. (Anderson et.al., 2004) Such variables that affected the implementation of ICS are these challenges which are classified under different categories. Political, social, and personal aspects were the primary challenges that these IMTs encountered. As claimed by the study of Bardwell (2005), results of the study revealed that political interventions greatly affect the performance of the leaders and other subordinates. On the contrary, a study conducted by Hannestad (2005), stated that these leaders educate their political officers with regards to the system; hence, leaders were encouraged and supported by their political administration.

As for the suggestions of the ICS Cadres, an executive course is proposed to all responsible officials, agency administrators, and local chief executives within the region to fully understand their role during the implementation of ICS. In addition, orientation of the council, DRRM officers, and other private agency administrators regarding the Republic Act 10121, Executive Order 82, Memorandum Circular Number 4, and their specific roles during an incident management. This is believed to improve the implementation of ICS from the barangay level to the national.

## **CHAPTER IV**

### **SUMMARY, FINDINGS, AND CONCLUSIONS**

#### Summary:

The Level of Knowledge of the PDRRMCs on ICS revealed an over-all score of 1.9 which is interpreted as Slightly Knowledgeable. For the ICS Organizational Structure, ICS Facilities, ICS Forms, and other basis of ICS such as Republic Act 10121, Executive Order No. 82, Memorandum Circular No. 4, Planning P Cycle, and Incident Action Plan (IAP); the garnered interpretation were as follows: 2.24 (slightly knowledgeable), 2.06 (Slightly Knowledgeable), 1.672 (Not Knowledgeable), and 1.73 (Not Knowledgeable).

The Effectiveness of ICS during the onslaught of Super Typhoon "Lawin" focusing on the Responsibilities of the Responders revealed an over-all score of 2.62 which is interpreted as slightly effective. The primary and secondary responsibilities were slightly effective (2.95 and 2.81, respectively) while the tertiary responsibilities were not effective (2.1).

On the other hand, for the responsibilities of the leaders, an over-all score of 1.89 (Not Effective) was yielded. The primary and secondary responsibilities were not effective (1.80 and 2.29, respectively) while the tertiary responsibilities were interpreted as ND (Not Done, 1.61).

Lastly, the challenges encountered by the Provincial IMT and their impacts on the effectiveness of ICS during the onslaught of Super Typhoon "Lawin" in CAR yielded an over-all score of 3.18 which is interpreted as HI (High Impact).

#### Findings:

1. Knowledge and awareness greatly affects the implementation of ICS during the onslaught of Super Typhoon "Lawin". This findings propose a series of refresher courses and trainings to the incident management teams of all levels in the LGUs.
2. Responders and Leaders must be oriented with the legal basis of the implementation of ICS as an on-scene disaster management. The purpose and functions stated in the course must be discussed and explained to the IMTs thoroughly. These responsibilities must also be emphasized to the IMTs for them to master and inculcate these into their practices.

3. There are certain aspects and factors that affect the implementation of ICS during an incident. Such identified factors and challenges were classified under political, personal, professional, and social. For a more realistic application and implementation of ICS towards the ideal way, addressing these challenges must be of priority.

#### Conclusions:

Based on the findings of the study, the researchers conclude the following:

1. The Provincial Disaster Risk Reduction and Management Councils (PDRRMCs) are slightly knowledgeable on ICS.
2. The challenges encountered by the Provincial Incident Management Team (PIMT) has High Impact on the implementation of ICS during the onslaught of Super Typhoon “Lawin”.
3. Solutions formulated to address these challenges were proposed to the LGUs and to the higher levels of DRRMCs.

## **CHAPTER V RECOMMENDATIONS**

The researchers recommend conducting the same study in other provinces that were not included. Modifying the inclusion criteria is also possible so that other respondents who were not qualified to be included in the study will have the chance to be evaluated. Adding the sample size can also be considered. Lastly, the researchers recommend that other studies related to the effectiveness of Incident Command System on other incidents and events in the Barangay, Municipal, Regional, and National Level. Changing the variables is also another recommendation that the researchers propose. Challenges encountered by the IMTs can be further refined into sub-disciplines.

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**APPENDICES:**

SAMPLE LETTER TO THE PDRRMCs

November 14, 2016

ATTY EDWARD CHUMAWAR  
PDRRMO  
**Mountain Province**  
Bontoc, Mountain Province

S I R:

Gawis ay Mountain Province!

I would like to express my best regards to all the responders, managers, and volunteers who helped in the disaster mitigation, preparedness, response, and recovery of Mountain Province on the onslaught of SuperTyphoon “LAWIN”. In this regard, by the order of Hon. Andrew Alex H. Uy, Regional Director of OCD-CAR and Chairperson of Cordillera Regional Disaster Risk Reduction and Management Council (CRDRRMC), we are conducting a research entitled “**Effectiveness of Incident Command System during the Onslaught of SuperTyphoon LAWIN**” in Cordillera Administrative Region”. The study aims to determine the effectiveness of ICS in your province during the onslaught of SuperTyphoon “LAWIN”; thus, your province has been chosen among the provinces to be one of the respondents of the said study.

The research team will be arriving on **November 15, 2016** (Tuesday) to conduct the study. It is composed of two parts. First is the interview portion, and second is the questionnaire portion whereby Key Persons will be interviewed by the researchers and the IMT will be given questionnaires to fill out. Rest assured that confidentiality, anonymity, and privacy will be practiced during the data gathering phase.

We look forward to your participation and cooperation. Without your help, the success of this study would not have been possible. Thank you and Godbless.

For the Community,

Mike Kenneth A. Piluden, RN, MHS, PSEMT  
Researcher

SAMPLE LETTER FOR THE ICS CADRES

November 18, 2016

Hon. Mauricio G. Domogan  
**Mayor**  
Baguio City  
City Hall, Baguio City, Philippines, 2600

S I R:

Greetings!

I would like to express my best regards to all the responders, managers, and volunteers who helped in the disaster mitigation, preparedness, response, and recovery of the region. In this regard, by the order of Hon. Andrew Alex H. Uy, Regional Director of OCD-CAR and Chairperson of Cordillera Regional Disaster Risk Reduction and Management Council (CRDRRMC), we, the ICS Cadres, are conducting a research entitled **“Effectiveness of Incident Command System during the Onslaught of SuperTyphoon “LAWIN” in the Cordillera Administrative Region”**. The study aims to determine the effectiveness of ICS in the provincial level during the onslaught of SuperTyphoon “LAWIN”; thus, we respectfully invite **MR. LOUIE GLENN LARDIZABAL** and **MS. JENNIFER BERNARDO**, ICS Cadres, as part of our expert team to conduct a SWOT Analysis for the research team. We scheduled a meeting for the ICS Cadres to participate in our study. The meeting will be held in **Guillermos Diner at Longlong, Benguet on November 21, 2016 (Monday) from 1:00 PM to 5:00 PM.**

We look forward to your participation and cooperation to the study. Without your help, the success of this study would not have been possible. Thank you and Godbless.

For the Region,

MIKE KENNETH A. PILUDEN, RN, MHS, PSEMT  
Researcher