

Disaster Awareness and Local Government Unit Actions on Disaster Management

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Abstract

This thesis entitled, “Disaster Awareness and Local Government Unit Actions on Disaster Management” intended to find out answers to the following questions: 1.) What is the status of Disaster Awareness in Municipality of Kalayaan, Laguna in terms of knowledge, capabilities? 2.) What is the action of local official in the Municipality of Kalayaan, Laguna in terms of allocations, and ordinance? 3.) What is the status of Disaster Management in Municipality of Kalayaan, Laguna in terms of prevention/mitigation, preparedness, response, and rehabilitation/recovery? 4.) Is there a significant relationship between the status of disaster awareness and disaster management in the Municipality of Kalayaan, Laguna? and 5.) Is there a significant relationship between the action of the local officials and disaster management in the Municipality of Kalayaan, Laguna?

A descriptive method is used in the study to determine the relationship of the disaster awareness to disaster management. The instrument used was questionnaire in the form of a checklist and a Five-Likert scale gather information needed to accomplish the study. The primary respondent of this study was the selected head of the family who belong to disaster-prone area in their barangay, and the officials/member of MDRRMO. The list of disaster-prone area came from MDRRMO, and two hundred (200) are served as respondent of the study, one hundred eighty-five (185) from the selected head of the family and fifteen (15) are came from officials and members of MDRRMO.

The findings shows that the disaster awareness was observed to have a significant relationship to the disaster management. This means that the knowledge and capabilities of the residents about disaster awareness made them manage the disaster effectively.

On the other hand, the findings shows that the action of local officials was observed to have a significant relationship to disaster management. This means that the ordinance and allocations of local officials that being implemented in the municipality had a noticeable impact on how effectively disaster were managed.

The study concludes that the status of disaster awareness showed a significant relationship in disaster management in municipality. The null hypothesis “there is a significant relationship between the status disaster awareness and disaster management in the Municipality of Kalayaan, Laguna.” is rejected.

The action of local official showed a significant relationship in disaster management in municipality. The null hypothesis, “there is a significant relationship between the action of local officials and disaster management in the Municipality of Kalayaan, Laguna.” is rejected.

This recommends that residents may continue to engage their self in developing disaster preparedness program. And local officials may continually prioritize disaster preparedness and response in conducting risk assessments, developed more contingency plans, and investing in disaster-resilient infrastructure.

Keywords: Disaster awareness; disaster management; municipality; local officials; allocations; ordinance; prevention; mitigation; preparedness; response; rehabilitation; recovery

1. Introduction

Every community faces a variety of hazards and disaster risks that may result in environmental emergency situations. The potential impacts from these accidents and disasters may vary substantially depending upon the characteristics of the community and its access to preparedness and emergency response resources.

The Philippines have law regarding to it, Republic Act No. 10121, also known as the Philippine National Disaster Risk Reduction and Management Act of 2010 (NDRRM Act), it's a significant legislation that sets the policy direction and institutional arrangements for disaster risk reduction and management in the Philippines, with the goal of building a disaster-resilient nation that can effectively mitigate and respond to disasters and protect the well-being of its people.

One of the provinces in the Philippines who make action regarding to it is Laguna, it is located mere 30 km outside Manila, which has caused them to be exposed to multitude hazards, and primary is flooding. (Lim, 2015).

The municipality of Kalayaan is one of the thirty municipality of Laguna and it also consider as one of the smallest municipalities of the province, it only has three barangays, namely Longos, San Antonio and San Antonio. It also considered as landlocked municipality, it means that it is surrounded by land and some possible hazards that may bring from Laguna de Bay. The municipality is exposed to multitude of hazards, which are flooding, falling of rocks and landslide. That lead to Municipal to create their own Municipal Risk Reduction Management Office (MDRRMO).

The action of local officials plays a big role in establishing disaster management and disaster awareness to the community. It reduces the vulnerability of the municipality and its communities to disaster, and to ensure the effectiveness and coordination response when emergencies happen. However, having laws and awareness to disaster doesn't always plays well when unforeseen disaster happens, local officials and residents need to be prepared and knowledgeable about it. The research aims to determines the status of disaster awareness and local government unit actions on disaster management in Municipality of Kalayaan, Laguna among to the disaster-prone area of the three barangays.

1.1. Structure

The study was guided by the three different theories: Crunch and Release Model, the Protective Action Model (PADM), and the Comprehensive Emergency Management (CEM).

Disaster theory presents two necessary models for disaster preparedness. According to Hai and Symth (2012), the Crunch and Release Model state that, only when hazards meet a vulnerable situation does a disaster happen and people are vulnerable where they are unable to adequately anticipate, with stand and recover from disaster. The crunch model explains what disaster all it is about and why happens. It also states that several factors influence vulnerabilities to disaster, specifically the constructed/structural design, economic, natural, individual, and social aspects. The release model, on the other hand, looks at how disaster is avoided or minimized, it states that to reduce the risk of disaster the factors that cause risk must be addressed. It also emphasizes that action may be necessary at the local, natural, and even international level. (Hai, and Smyth, 2012).

The theory is related to the one that is being studies right now since Hai and Smyth believes that there are several factors why disaster happen, specifically it's the economic, natural, individual, and social

aspects of the community. Because of this, the action of the local officials when disaster happens in the community needs to be address consistently.

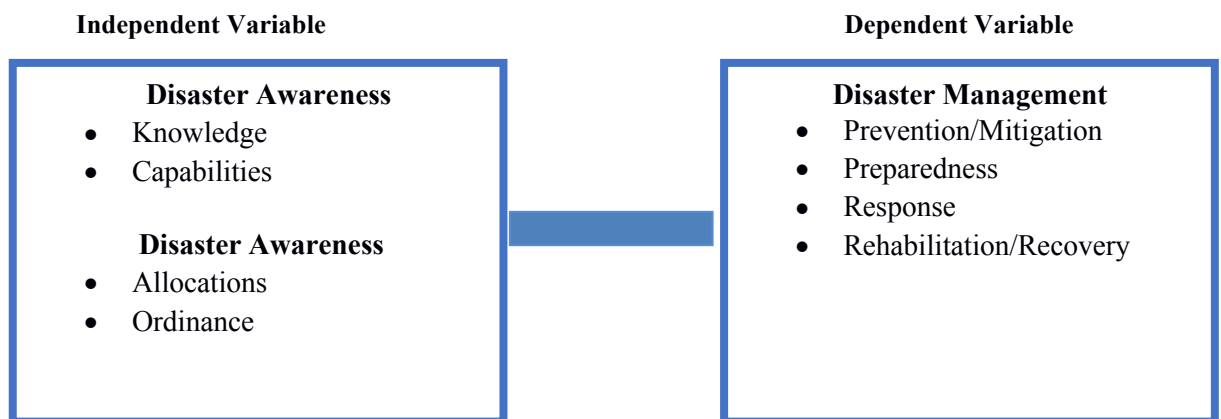
A multistage approach called the Protective Action Decision Model (PADM) was developed by Dennis Mileti and his colleagues, it's about how individuals react to environmental dangers and natural disasters. The models are combines the analysis of data produced from social and environmental signals with messages that social sources communicate to persons who are at risk through communication channels, as defined by Lindel and Perry (2012). The PADM outlines three crucial precision processes that come before all other processing: receiving, attending to, and comprehending warnings or exposure; attending to and interpreting environmental/social cues. The updated model identifies three fundamental perceptions: stakeholder views, protective action perceptions, and threat perceptions. These three perceptions serve as the cornerstone for judgments regarding how to react to a short- or long-term threat. A behavioral reaction is the result of the protective action decision-making process, situational facilitators, and barriers.

Since disaster awareness is about how individual reacts to environmental and natural disaster, the mentioned theory is pertinent to the study that is now being worked out. As Lindell and Perry says, it's important to provide accurate and timely information to individuals so that they can make informed decisions about how to protect and ready their self. It also highlights the need for individuals to take personal responsibility for their safety and to have a plan in place for responding to disasters.

The term "Comprehensive Emergency Management" (CEM) refers to a holistic approach that considers all potential threats to life and property, including those arising from natural, technological, and intentional hazards. It provides a structured emergency management framework that can be applied to various types of disasters. CEM involves four phases of emergency management: mitigation, preparedness, response, and recovery. Mitigation involves reducing or eliminating the risks associated with potential hazards through planning and preparedness. Preparedness includes developing emergency plans, training staff, and conducting drills to ensure readiness in case of emergencies. Response involves taking swift action to protect people and property during emergencies, while recovery involves restoring normalcy after an emergency has occurred. (Ismail, K., 2020)

According to Comprehensive Emergency Management (CEM) theory, it provides a framework for disaster management that can guide local officials in their efforts to promote disaster awareness and preparedness in their municipality. The ongoing study can get benefit from the CEM theory by using its four-phase approach as a guide for developing effective disaster management strategies. The study can assess the municipality's preparedness, response, and recovery during emergencies, and identify gaps and areas for improvement in the disaster management plan. It can also provide insights that can help local officials enhance their municipality's disaster management capabilities and ensure the safety and well-being of their community in times of crisis.

Conceptual Framework



1.2. Tables

Results and Discussion**Table 1. Status of Disaster Awareness in Municipality of Kalayaan, Laguna in terms of Knowledge STATEMENTS**

STATEMENTS	MEAN	SD	REMARKS
<i>I am aware of the disaster-prone areas in my Municipality.</i>	4.66	0.53	Always
<i>I receive enough information about the disaster from the local government unit.</i>	4.00	0.71	Often
<i>I receive information on the government office that should be contacted in the event of a disaster.</i>	3.86	0.74	Often
<i>I am aware of emergency procedures when a disaster happens.</i>	4.00	0.75	Often
<i>In the event of a disaster, I am familiar with evacuation center in our community.</i>	4.77	0.45	Always

Weighted Mean

4.26

SD

0.75

Verbal Interpretation

Very High

Table 1 shows the status of Disaster Awareness in Municipality of Kalayaan, Laguna in terms of knowledge. The residents are always familiar with the evacuation center in their Municipality ($M=4.77$, $SD=0.45$). Residents are also aware of the disaster-prone area on their Municipality ($M=3.86$, $SD=0.74$). On the other hand, residents receive information on the government when event of disaster happen ($M=4.24$, $SD=0.76$).

The weighted mean scores of 4.26 indicates that the status of disaster awareness in Municipality of Kalayaan, Laguna in terms of knowledge is very high. It reveals that majority of the respondent were fully informed on the evacuation center of their barangay and what place in their area who belong to disaster-prone.

Table 2. Status of Disaster Awareness in Municipality of Kalayaan, Laguna in terms of Capabilities STATEMENTS

STATEMENTS	MEAN	SD	REMARKS
<i>I can bounce back from a catastrophe.</i>	3.43	0.60	Often
<i>In case of an unforeseen disaster, I am prepared.</i>	3.00	0.69	Sometimes
<i>I have faith in the local government's ability to rebuild after a disaster.</i>	3.48	0.70	Often
<i>I tune in to the radio weather forecast during rainy season.</i>	3.85	0.94	Often
<i>I can respond quickly to unforeseen disasters through local government.</i>	3.05	0.83	Sometimes

Weighted Mean

3.36

SD

0.82

Verbal Interpretation

Moderately High

Table 2 shows the status of disaster awareness in Municipality of Kalayaan, Laguna in terms of capabilities. The residents often tune the radio for weather forecast during rainy season ($M=3.85$, $SD=0.94$). Residents have faith in the local government's ability to rebuild ($M=3.48$, $SD=0.70$). On the other hand, residents are prepared in case of unforeseen disaster ($M=3.00$, $SD=0.69$).

The weighted mean score of 3.36 indicates that the status of disaster awareness in Municipality of Kalayaan, Laguna in terms of capabilities is moderately high. It can be means that the bouncing back after a

disaster is not that easy and being ready to unforeseen disaster will not make residents of Kalayaan prepared.

Table 3. Action of Local Official in the Municipality of Kalayaan, Laguna in terms of Allocations

STATEMENTS	MEAN	SD	REMARKS
<i>The LGU has set aside funds for post-disaster recovery.</i>	4.29	0.58	Always
<i>The LGU has resources for maintaining the community's infrastructure.</i>	4.14	0.64	Often
<i>The LGU has allotted funds for community infrastructure improvement.</i>	4.03	0.69	Often
<i>The LGU has budgeted money for repairing roads and other infrastructure to be prepared for disasters.</i>	3.92	0.74	Often
<i>Every barangay will receive funds from the LGU for disaster assistance and relief supplies.</i>	4.48	0.58	Always
Weighted Mean		4.17	
SD		0.67	
Verbal Interpretation		High	

Table 3 shows the action local official in Municipality of Kalayaan, Laguna in terms of allocations. The residents and barangay received funds from LGU for disaster assistance and relief supplies (M=4.48, SD=0.58). The LGU had set aside funds for post-disaster recovery (M=4.29, SD=0.58). On the other hand, LGU had budgeted money for repairing roads and other infrastructure after disaster (M=3.92, SD=0.74).

The weighted mean score of 4.17 indicates that the action of local officials in Municipality of Kalayaan, Laguna in terms of allocations is high. This means that giving relief goods and allocating funds to every barangay before and after disaster happen is being followed.

Table 4. Action of Local Official in the Municipality of Kalayaan, Laguna in terms of Ordinance

STATEMENTS	MEAN	SD	REMARKS
<i>The Municipality have ordinance about disaster preparedness.</i>	4.99	0.12	Always
<i>The LGU communicates its policies to the public for better disaster preparedness.</i>	4.34	0.69	Always
<i>The LGU has policies regarding disaster awareness that are widely disseminated and clearly explained to the community.</i>	4.45	0.64	Always
<i>The LGU allots time to hold a seminar or even a workshop in every barangay to educate the public about disaster preparedness.</i>	4.02	0.78	Often
<i>The LGU has a law requiring residents to have an evacuation plan in the event of an emergency.</i>	4.54	0.66	Always
Weighted Mean		4.47	
SD		0.69	
Verbal Interpretation		High	

Table 4 shows the action local official in Municipality of Kalayaan, Laguna in terms of ordinance. The Municipality have ordinance about disaster preparedness (M=4.99, SD=0.12). The LGU had a law requiring residents to have an evacuation plan in the event of emergency (M=4.54, SD=0.66). On the other hand, LGU allot time to hold a seminar or even workshop in every barangay to educate the public about disaster preparedness (M=4.02, SD=0.78).

The weighted mean score of 4.47 indicates that the action of local officials in Municipality of Kalayaan, Laguna in terms of ordinance is high. This means that the municipality have existing ordinance

about disaster awareness and the residents are familiar to it and ordinance is well implemented to the community.

Table 5. Status of Disaster Management in Municipality of Kalayaan, Laguna terms of Prevention/Mitigation

STATEMENTS	MEAN	SD	REMARKS
<i>The LGU educates its citizens through training programs and workshops on conducting rescue, evacuation, and medical first aid drills.</i>	4.43	0.66	Always
<i>In the event of flooding, the LGU provides information to its citizens regarding environmental management policies related to DRRM.</i>	4.35	0.63	Always
<i>If barangay floods, the LGU notifies its residents about the emergency plan or recommended evacuation route.</i>	4.56	0.56	Always
<i>To lessen flooding when it occurs, the LGU offers pieces of trainings and seminars about disaster prevention to the residents.</i>	4.35	0.64	Always
<i>Residents were made aware of the vulnerabilities by the LGU in case the barangay experienced a disaster or flooding.</i>	4.13	0.74	Often
Weighted Mean		4.37	
SD		0.66	
Verbal Interpretation		Very High	

Table 5 shows the status of disaster management in Municipality of Kalayaan, Laguna in terms of prevention/mitigation. When there are floods in barangay, the LGU notifies the residents about the emergency plan and recommended evacuation route ($M=4.56$, $SD=0.56$). The LGU educates its citizens through training programs and workshop on conducting and workshops on conducting rescue, evacuation, and medical first aid drills. ($M=4.43$, $SD=0.66$). On the other hand, LGU made the residents aware of the vulnerabilities of disaster or flooding in case it happened to their barangay. ($M=4.13$, $SD=0.74$).

The weighted mean score of 4.37 indicates that the status of disaster management in Municipality of Kalayaan, Laguna in terms of prevention/mitigation is very high. This means that LGU notifies the residents about the emergency plan and evacuation route when disaster happen to their barangay, they also provide prevention to community by giving training, workshop, seminars about evacuation plan, rescue operation and medical first aid drills.

Table 6. Status of Disaster Management in Municipality of Kalayaan, Laguna in terms of Preparedness

STATEMENTS	MEAN	SD	REMARKS
<i>The LGU encourages residents to participate actively in local disaster preparedness program.</i>	4.36	0.62	Always
<i>The LGU advised residents to secure their important papers and delicate appliances to protect them from flooding.</i>	3.70	0.84	Often
<i>To meet the needs of the locals during or after the flooding, the LGU prepared rescue equipment and supplies.</i>	4.23	0.70	Always
<i>The LGU keeps the general public informed about how to be ready in case of disaster or unforeseen environmental</i>	4.54	0.56	Always

events.

The LGU used social media for a public announcement to spread information about the impending flooding disaster and raise public awareness.

4.77

0.50

Always

Weighted Mean

4.32

SD

0.74

Verbal Interpretation

Very High

Table 6 shows the status of disaster management in Municipality of Kalayaan, Laguna in terms of preparedness. The LGU used social media for a public announcement to spread information about the impending flood and to raise public awareness ($M=4.77$, $SD=0.50$). The LGU keeps the residents informed and ready for unforeseen environmental events ($M=4.54$, $SD=0.56$). On the other hand, residents are advised to secure their important papers and delicate appliances to protect from flooding ($M=3.70$, $SD=0.84$).

The weighted mean score of 4.32 indicates that the status of disaster management in Municipality of Kalayaan, Laguna in terms of preparedness is very high. This means that LGU used social media to make a public announcement to spread information and awareness about incoming calamities or possible disaster, it also shows that residents used social media to check updates about the weather.

Table 7. Status of Disaster Management in Municipality of Kalayaan, Laguna in terms of Response

STATEMENTS	MEAN	SD	REMARKS
<i>The assistance from MDRRMO is prompt and responsive to residents' needs both during and after flooding.</i>	4.36	0.7	Always
<i>The MDRRMO staff provided timely and attentive medical or emergency services in response to the needs of the locals both during and after the disaster.</i>	4.18	0.66	Often
<i>If the LGU indeed requires assistance or support from the general public, they have proper coordination with the Laguna Capitol or Provincial DRRM Offices.</i>	3.77	0.77	Often
<i>The LGU's guarantees resident safety during or after flooding.</i>	4.72	0.51	Always
<i>The residents in the barangay receive disaster relief service from the LGU both during and after flooding.</i>	3.92	0.90	Often
Weighted Mean		4.19	
SD		0.79	
Verbal Interpretation		High	

Table 7 shows the status of disaster management in Municipality of Kalayaan, Laguna in terms of response. The LGU's guaranteed residents safety during and after flooding ($M=4.72$, $SD=0.51$). The assistance from MDRRMO is prompt and responsive to residents needs during and after disaster ($M=4.36$, $SD=0.70$). On the other hand, if the LGU requires assistance or support from public, they have proper coordination with the Local Capitol or Provincial DRRMO Offices ($M=3.77$, $SD=0.77$).

The weighted mean score of 4.19 indicates that the status of disaster management in Municipality of Kalayaan, Laguna in terms of response is high. This means that guaranteeing the safety of the residents after and before flooding is number priority of the LGU, as well as the assistance from MDRRMO is responsive.

Table 8. Status of Disaster Management in Municipality of Kalayaan, Laguna in terms of Rehabilitation/Recovery

STATEMENTS	MEAN	SD	REMARKS
<i>After a disaster, the LGU works properly with private or utility companies to restore utility services as soon as</i>	4.55	0.53	Always

possible.

The LGU integrates disaster rehabilitation measures for the residents after flooding.	4.08	0.74	Often
The LGU provides emergency rescue services, clears construction sites, and demotes hazardous structures during and after barangay flooding.	4.30	0.65	Always
The LGU implemented measures to restore the livelihood of the residents after the flooding.	3.55	0.72	Often
There is a restoration of the damaged infrastructures of the barangay facilities within its jurisdiction after the flooding.	4.16	0.77	Often

Weighted Mean

4.13

SD

0.76

Verbal Interpretation

High

Table 8 shows the status of disaster management in Municipality of Kalayaan, Laguna in terms of rehabilitation/recovery. After the disaster, the LGU works properly with private or utility companies to restore services that interrupted during disaster ($M=4.55$, $SD=0.53$). The LGU provides emergency rescue services, clears construction sites and demotes hazardous strictures during and after disaster ($M=4.30$, $SD=0.65$). On the other hand, the LGU implemented measures to restore the livelihood of the residents after and during the disaster ($M=3.55$, $SD=0.72$).

The weighted mean score of 4.13 indicates that the status of disaster management in Municipality of Kalayaan, Laguna in terms of rehabilitation/recovery is high. This means having a small amount of land for planting vegetables and fruits is number livelihood of the residents, that's why being prone to landslide and flooding is number one enemy of the farmers.

Table 9. Significant relationship between Disaster Awareness and Disaster Management in the Municipality of Kalayaan, Laguna

Disaster Awareness	Disaster Management	r value	Degree of Correlation	p value	Analysis
Knowledge	Prevention/Mitigation	0.2192	Weak relationship	0.0016	Significant
	Preparedness	0.3343	Weak relationship	0.0000	Significant
	Response	0.3393	Weak relationship	0.0000	Significant
	Rehabilitation/Recovery	0.2247	Weak relationship	0.0012	Significant
	Prevention/Mitigation	0.0615	Very Weak relationship	0.0076	Significant
Capabilities	Preparedness	0.1990	Very Weak relationship	0.0042	Significant
	Response	0.3253	Weak relationship	0.0000	Significant
	Rehabilitation/Recovery	0.3253	Weak relationship	0.0000	Significant

The Knowledge and Capabilities of the disaster awareness was observed to have a significant relationship to the disaster management. This is based on the computed r values obtained from the tests with very weak to weak relationship. Furthermore, the p-values obtained were less than the significance alpha 0.05, hence there is a significance.

The results means that there is a significant relationship between a variable of knowledge and

capabilities related to disaster awareness and their ability to manage disasters effectively. However, the degree of correlation between the two variables is weak to very weak, indicating that there may be other factors that also influence a person's and local government ability to manage disasters. In other words, while having knowledge and capabilities related to disaster awareness is important for effective disaster management, it is not the only factor that determines success in disaster management.

Table 10. Significant relationship between the Action of the Local Officials and Disaster Management in the Municipality of Kalayaan, Laguna

Disaster Awareness	Disaster Management	r value	Degree of Correlation	p value	Analysis
Allocation	<i>Prevention</i>	0.2684	Weak relationship	0.0000	Significant
	<i>/Mitigation</i>				
	<i>Preparedness</i>	0.2655	Weak relationship	0.0001	Significant
	<i>Response</i>	0.3908	Weak relationship	0.0000	Significant
	<i>Rehabilitation/R</i>	0.2278	Very Weak relationship	0.0010	Significant
	<i>ecoverly</i>				
Ordinance	<i>Prevention/</i>	0.2662	Weak relationship	0.0001	Significant
	<i>Mitigation</i>				
	<i>Preparedness</i>	0.3719	Weak relationship	0.0000	Significant
	<i>Response</i>	0.3253	Weak relationship	0.0106	Significant
	<i>Rehabilitation/</i>	0.2706	Weak relationship	0.0000	Significant
	<i>Recovery</i>				

The Allocation and Ordinance of the action of local officials was observed to have a significant relationship to the disaster management. This is based on the computed r values obtained from the tests with very weak to weak relationship. Furthermore, the p-values obtained were less than the significance alpha 0.05, hence there is a significance.

The results appear to be showed that there is relationship between the allocation and ordinance of local officials' actions and disaster management. It also means that the correlation between the allocation and ordinance of local officials' actions and disaster management was not particularly strong, ranging from weak to moderately strong. In other words, while there was a relationship between these factors, it was not always consistent or predictable.

Findings and Conclusion

The findings shows that the status of disaster awareness in terms of knowledge was very high. This means that the residents are aware of the disaster-prone area in their barangay, and they are also fully informed by their barangay officials.

The findings shows that the action of local officials in terms of allocations was high among the respondents. This means that giving relief goods and allocating funds to every barangay is being followed.

The findings shows that the status of disaster management in terms of prevention/mitigation was very high. This means that LGU notifies the residents about the emergency plan and evacuation route when disaster happen. The status of disaster management in terms of preparedness was very high among the respondent. This means that they used social media to make a public announcement to spread information and awareness about incoming calamities. The status of disaster management in terms of response was very high. This means that the guaranteeing the safety of the residents after and before flooding is number priority of the

LGU. Lastly, the status of disaster management in terms of rehabilitation/recovery was high among the respondent. This means that the LGU have a proper coordination to private companies that going to help the community to restore some services that got interrupted during or after disaster.

The findings shows that the disaster awareness was observed to have a significant relationship to the disaster management. This means that the knowledge and capabilities of the residents about disaster awareness made them manage the disaster effectively.

The findings shows that the action of local officials was observed to have a significant relationship to disaster management. This means that the ordinance and allocations of local officials that being implemented in the municipality had a noticeable impact on how effectively disaster were managed.

The status of disaster awareness was observed to have a significant relationship on the disaster management of municipality. The null hypothesis “there is a significant relationship between the status disaster awareness and disaster management in the Municipality of Kalayaan, Laguna.” is rejected.

The action of local officials was observed to have a significant relationship in disaster management of municipality. The null hypothesis, “there is a significant relationship between the action of local officials and disaster management in the Municipality of Kalayaan, Laguna.” is rejected.

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